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Living the Urban Modernity Towards the Future

Modern Movement represents an innovative approach to community life, public space and urban territory organization. The search for the functional city follows the Housing Reform and Garden Cities movement. Modern architecture and expression, standardization, hygiene, urbanism, school education, governments and the modern architecture debate were the issues identified by the first CIAM in the early 20's. As it was stated then, "town planning is the organization of the functions of collective life; it extends over both the urban agglomerations and the countryside...the redistribution of land, the indispensable preliminary basis for any town planning, must include the fair division between the owners and the community of the unearned increment resulting from works of joint interest." Towards a better life, was the goal of the discussion on housing and leisure, work and circulation. In fact, CIAM's influential concept of "functional city" stands in a kind of "floating somewhere between socialism and social welfare, always with an upward line point towards the future" to quote Aldo Van Eyck. After World War II, the CIAM efforts concentrated in finding a new basis for a socially engaged architecture idea.

As we all know, happiness as a myth or a contemporary invention is one of the human being goals which modernity converted in an exigency. Sometimes it appears as a collective conquest, other times as a return to some kind of private happiness. Following Giedion's "eternal present" concept, one must deal with the task of making a better society based on a "New Tradition", searching for the roots of our time, the contemporary time. But how can we find roots in this time in which a permanent movement is promoting the rapid growth and transformations of urban areas into metropolis and conurbations? This time, in which "modernity has been detached from the past and must jump ahead in a vertigo rhythm that doesn't allow it to establish roots and pushes it into survival just from one day to the other; modernity can return to its origins and to its renovation abilities". Following Octavio Paz reflection we must fight for the modern tradition possibility as the consequence of our historical time acceleration. The theme of the "core" of the city was indeed a demand to look over this real tradition with fresh eyes and modern values without losing the roots. A new idea has been stated, linking past to future and assuring the recognition of the modern pioneer generation effort to establish the fundamental union between all the architect responsibilities: social, technical and artistic commitment.

Social approach became so important that Bruno Zevi defended that the mission of modern architecture was to fight formalism and to serve the daily needs of the common man. Working for the creation of a physical environment to both satisfies "man's emotional and material needs and stimulate his spiritual growth" (CIAM 8, Hoddesdon, England, 1951: The Heart of the City) became a priority in order to answer Le Corbusier's "Charter of Habitat" proposition.

In fact this social and collective purpose is deeply related with the process of “Living in the Urban Modernity”, the subject of our conference which deals with a wide range of themes. From space organization and planning to urban design; from monumentality and representation to metropolis and city core concepts; these are questions to debate now, in Mexico, at the UNAM’s unique space and atmosphere. Sessions on Modern Living and everyday architecture, on Social Infrastructure and Planning, on The Modern City and its (monumental) representation, on Modern Habitat Technology and finally on the University City as a new urban planning paradigm related to the possibility of a New Monumentality are challenges for a fruitful debate that will be inspired by the UNAM, the 20th century World Heritage Site which hosts our Conference.

Ana Tostoes
Docomomo Chair

MEXICO 2010

In 2010 we commemorate the Bicentennial of the beginning of the war of Independence of Mexico. In 2010 we commemorate the Centennial of the start of the Mexican Revolution. In 2010 we commemorate the first hundred years of the foundation of the National University. In 2010 we commemorate the seventy fifth anniversary of the establishment of the Instituto de Investigaciones Estéticas, of the UNAM. In 2010 we have the great opportunity to celebrate the 11th Conference of Docomomo International in Mexico City, and we are happy to welcome you all.

“Living in the Urban Modernity” is the central theme of this Conference, in which the participants will analyze the different components which transformed the city and its architecture in the first part of the 20th Century. During this period the growth of urban areas created a positive environment for the presence of modern architecture. The new materials alongside the new-found technologies brought about novel forms of expression. At the same time social changes acted as triggers for transformation; education, health, hygiene, housing, and the right to work and leisure were essential in shaping buildings and cities, with innovative architectural proposals within inventive urban fabric.

To explore and evaluate the different elements that transformed the city and its architecture, this conference offers four central themes. “Modern Living” deals with the relevance of housing in the configuration of modern society, as a device that provided solutions to the emerging proletariat as well as to an educated bourgeoisie. Inspiration came from technological development, as well as from the concern for dignified design; the modern way of life and the definition of the minimum living unit, found their expression in simplicity and mass production, and the results can be seen in the postwar urban renewals or in the suburban expression of the Americas.

The significance of “Civic and Social Infrastructure”, considered as an essential consequence of modernity, calls for the appraisal of the distinct circumstances in which these buildings came into being. We refer not only to the socio-political and economical framework, but also to the ideology of the designs and, most importantly, the urban significance of their contributions. The analysis of both the large scale urban creations and smaller private buildings, takes into account development policies and new architectural typologies in order to facilitate their preservation and rehabilitation.

Analyzing the triumph and failure of urban modernity, while at the same time taking into account both architecture and planning, is the aim of the third theme: “The Modern City”. The interest in the design of ideal towns, where technological progress was a guiding principle, and the problems posed by ever growing cities in some parts of the world, created a new urban approach based on the idea of wellbeing; densities, housing and nature were the topics of the period when the contemporary city began to take shape. A balanced

reevaluation of both achievements and failures would appear to be the proper attitude today.

The essence of the Modern Movement, which draws on material and technical innovation, is at the foundation of unique conservation challenges, philosophical and technical, which have been central to discussions within Docomomo. The theme “Technology for a Modern Habitat” encourages the discussion of the theoretical and practical aspects of the protection and preservation of buildings and structures; this discussion is accompanied by examples of new approaches or technologies for the adaptation of modern buildings to the new standards of environmental performance and sustainability.

The campus of the National University of Mexico, a UNESCO World Monument, is the venue for this Conference; the significance of this site provided a last theme, “The University City” as the embodiment of a particular architectural language that represents the role of education within the social ideals of the time within the framework of official statements on progress and cultural growth. Architects tested new ideals for planning and welcomed the integration of major artworks in these ensembles; sculpture, mosaics, murals and landscaping, endowed each campus with its own identity.

The challenge of conserving the integrity of particular buildings as well as large-scale complexes, their art- works and landscapes, and the studies that allow us to deal with the individual aspects of research and analysis of our 20th Century heritage are at the core of this academic event. You are all invited to share in this XI DOCOMOMO International Conference, and enrich the ideas, proposals and actions towards the documentation and conservation of “Living in the urban Modernity”.

Louise Noelle Gras Sara Topelson de Grinberg
Conference Chairs

Welcome Letter

Dear colleagues,

II welcome you to the Architecture Faculty of Mexico's Autonomous National University, a school with over two centuries of educational tradition. It was founded in 1774 – during the last decades of Spanish rule – under the name of Academy of San Carlos, originally located in a historic building in downtown Mexico City.

For almost sixty years now, the university has drawn increasing satisfaction from its location within the most emblematic compound built during the XXth century in Mexico: Ciudad Universitaria (University City), a large collective project conceived by a myriad of brilliant architects and plastic artists according to the theoretical and formal principles of the Modern Movement. In 2007 the campus was included on the World Heritage List, among other reasons because of its successful integration of avant-garde forms and technologies with the millenary Mesoamerican tradition of monumental open spaces.

The experience of "living the modernity" of Ciudad Universitaria is manifest when strolling through its ample terraces, paths and gardens embellished with local flora, contemplating plastic works by the great masters of Mexican mural painting, or treading on the large scale stairways, but it is most apparent in the intense urban use of its spaces by university community members on week days and city residents during week-ends and holidays.

This spatial living experience will no doubt leave a deep cultural and personal impression on each of the distinguished participants to the XI International Conference for the Documentation and Conservation of Buildings, Towns and Neighborhoods of the Modern Movement (Docomomo) in 2010.

Jorge Tamés y Batta
Dean of the Faculty of Architecture

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During this year of celebrations, in which Mexico's fundamental historic hundredth anniversaries are observed, we have the pleasure to celebrate seventy five years of existence of the Instituto de Investigaciones Estéticas. It is important to emphasize that since the beginning of our institution, the research field of art history and, particularly, of architecture, has been fundamental in the studies done by those who have preceded us and who have published an important amount of books on the subject. At the same time, this institution and its members have been committed in the safeguard of the artistic heritage of Mexico, fighting numerous battles in search of preserving the rich artistic legacy that we have inherited. Speaking of this matter, we can mention the creation, in 1991, of the Seminario de Estudio y Conservación del Patrimonio Cultural and its seventeen international symposiums and publications, organized through this years.

For all this, the Instituto de Investigaciones Estéticas, which I proudly lead, has been part, since the beginning, of the 11th Internacional Docomomo Conference Mexico 2010 "Living in the Urban Modernity" hosted in Ciudad Universitaria of the UNAM, which we are proudly part of. The devotion of a group of members of this institution has been essential in the construction of this academic event, to which I welcome you. Furthermore, I wish that your endeavors within this Conference are successful and result in the safeguard and the protection of the Modern Movement and its architectural heritage.

Arturo Pascual Soto
Director of the Instituto de Investigaciones Estéticas, UNAM

MODERN LIVING

Death of Architecture or Death of State Authority: Housing as a Generator of Achitectural and Social Change

When Charles Jancks classified the 1972 demolition of the Pruitt Igoe residential district in St. Louis as “the death of modern architecture”, substantial part of his argument concerned the architectural form, which was viewed as the main reason why this modern residential complex has been rejected. As it turned out, however, the outer appearance was but an external symptom of complex issues refused by the occupants. The rejection resulted in the death of architecture.

Comparably in Slovakia, a small European country, criticism in the late 1980s of the biggest modern residential complex of Pertžalka had also become one of the essential catalysts for the removal of the authoritarian regime. The refusal of a modern residential complex resulted in the death of a political system in 1989.

We can ask why was it a modern residential complex of all things that ultimately became a paradigm of the crisis of architecture or the crisis of the state authority (rather than a modern villa, a factory, or a convalescent hospital, which symbolize the modern movement just as well).

A decent living for every human was earlier dreamt of by Thomas More in his Utopia. In his Anydros city, we already find a vision of future modern housing: there is no private domain, houses have an ambition to satisfy any type of user and exhibit simple geometric forms and flat roofs. As part of social utopias, ideas of ideal housing were further developed by several architectural thinkers of the 19th century and these became the key factors in defining the problem of housing in the 20th century by the modern movement. In the 1920s, modern living became one of the main elements of the modern movement agenda.

Conceptual background of these thoughts was largely formed by socialist or even communist ideology and its implementation assumed a certain degree of suppression of individual. Concepts developed by the architects at the time, however, were mostly implemented only after the World War II. Social circumstances and technical capabilities of the time caused broad reduction of the ideas with no critical reflection, resulting by contrast in a reality pushing the interests of the individual to the very margin of general interest. The most favourable conditions for the implementation of modern movement concepts were in the countries with centralized governments and in authoritarian regimes, where these concepts could even materialize free of any public scrutiny. Thus, there are hundreds or thousands of modern housing complexes and developments where the margin between success and failure of the modern housing project is extremely fragile and ambiguous. After all, can anyone denounce as a failure the mentioned Petrzalka district, which provided 130,000 individuals with a spacious, hygienic and fully-functional

shelter? On the other hand, the fact that the users themselves labeled later on their dwellings “a rabbit hutch” calls for caution in the evaluation.

Many modern housing projects, as illustrated in following articles, have undergone several phases of positive as well as negative assessments in the course of their existence and provide a valuable lesson. Housing development as a tool in the hands of the state remains a discussed issue not only in authoritarian regimes. Noble intention to provide for its citizens is behind social housing and state-sponsored housing projects, which create interesting opportunities for architects. It is here that new progressive solutions are often being generated. Although they tend to postulate the same requirements as the modern movement- and thus bring the same risks. Research and evaluation of a huge capacity offered by the modern movement in respect to housing is an important source of enlightenment that may represent a valuable feedback to current projects. Lessons learned from the history of modern housing and permanent introspection of creative architects can help to prevent residential housing from being the cause of death of the architecture or of the state authority.

Henrieta Moravcikova
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SOCIAL HOUSING COMPETITIONS IN FRANCE; FROM MODERN RIGIDNESS TO POST-MODERN PLURALITY

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In the history of modern movement, competitions constitute normally a notorious field of study, being often referred to, as lost opportunities for the predomination of a dynamic avant-garde. The three competitions examined here are emblematic ones, both for the theoretic frictions manifested in their framework and for the realisations they have engendered. All of them may be considered as marking changes of course in the politics of French social housing and as illustrative examples of the architectural / urban debates characterising the thirty-year period after the Second World War.

Examining competition procedures organized in France and Switzerland during the interwar period, R. Quincerot and M. Nicholas note that their interest lies exactly in the fact that they were "snobbed" by "modern" historiographers, who based their narrative to a faith that the course of history will unequivocally lead to the prevalence of modern movement[1]. They argue over the importance of social mission for the definition of the architectural profession, directly associated with the idea of a "well-meaning", "free concurrence" between architects, framed by the competition procedure, and underline the significance of the state's attitude, commenting the results for the Palace of Soviets competition (1931): "*…to everyone's surprise, the decision does not establish the modern architecture that had made the international reputation of "Bolshevik architecture", but projects quite " monumental"…; simply, the soviet authorities no more wanted that architecture. (author's translation)*"[2]

In the after-war era, international scenery changes significantly. "*The period [1945 - 1975] was certainly marked by a strong state voluntarism, putting collective housing in focus and accepting the modernist principles without guilt and almost without restraint.*"[3] Through the study of competitions in this period we pass from the era of a wider consensus on functionalist theories, to a generalization and fading out of these principles and the emergence of new ideals. Iain Borden points out that French social housing during the eighties and nineties is not so much the representation of a special social need, as "*the representation of provision*" – the measures taken by authorities to organize everyday activities and by specialists to provide form and meaning for these activities.[4] In this sense, competitions become "manifestos" of the State's mobilization, where different aspects of *innovation* are constantly sought.

In the years immediately after the end of World War II, the housing shortage in France is a rather complicated affair. Not only a large number of dwellings are destroyed, but yet another large percentage is deteriorated. As priority is offered to reconstruction needs, during the first years there is insufficient financing for "updating" the housing stock. With the appointment of Eugène Claudius-Petit to the Ministry of Reconstruction and Urbanism (MRU) in 1948, France enters truly in the after-war era of the *grands ensembles*, the era of intensive construction of social

dwellings[5]. State's first concern is producing a sufficiently large number of apartments in a short period, as the economic rebooting draws more and more people away from the country. The objective fixed is the industrialisation of housing production. Large contractors and engineers, integrating till then technological advancements in the domain of public works, have to be drawn to the housing sector.

For this purpose, MRU lances a number of competitions for experimentation with building types and construction standardization. The competition for "cité Rotterdam" in 1951 is the first one for an intervention of this size – 800 apartments. While asking for submissions of joint groups of architects and investors, as usual, the MRU also fixes a price and an eighteen-month deadline for the project's realization. The competition is won by Eugène Beaudouin, fourth prize attributed to Le Corbusier's project. Thanks to an extremely rationalised construction system and a limited number of construction elements[6], all program prerequisites are fulfilled by the final result.

Still, Beaudouin's project (along perhaps with the Fayeton & Herrenschmidt participation) is the exception to the rule. As most of his colleagues, he adopts unitary, linear forms of large scale. Nevertheless varied building height and the blocks' positioning in the plot – forming a kind of "enclosed" open space – are elements differentiating his proposition: "*…looking almost as the exception in the middle of the twenty-three other projects, Eugène Beaudouin's proposal foretells that the moderate positions he defends are to be attenuated by the open and orthogonal order of the "grands ensembles"… (author's translation)*"[7] Strange though it be that the project obtains first prize in a period where "modernist" doctrines get widely spread, the composition of the jury, in which a significant number of Beaux-Arts architects participate, offers a probable explanation, already "commented" at the moment: "*Admitting the existence of an ideal jury, perfect rules and an excellent account of the posed problems, the presented projects elude more or less fatally a classification… (author's translation)*"[8]

In these first years of intensive production, with respect to the dwelling unit the struggle remains more on its equipment's "modernization"[9], according to the prototypes exhibited every year in the Salons des Arts Ménagers[10], than on the radical re-organisation of the plan. The elimination of a number of small pieces and corridors, destined before the war to the dwelling's representation, the regrouping of certain functions and the granting of separate rooms to members of the family, are elements now constantly integrated in the plan[11]. The magazine *Techniques et Architecture*, while publishing by schematic plans the apartment types of the Strasbourg competition, comments: "*…it must be taken into account the fact that some competitors have conceived very "open" plans, without separation between certain rooms, […]; the adopted here notation cannot therefore pretend any rigorous accuracy in the demarcation of surfaces… (author's translation)*"[12]

A decade later and with the production scale consequentially increased, it is clear that even more drastic measures have to be adopted. "Modernist" urban dogmas are put to question by more ambitious "successors", the movement's second generation: the Team X group, and more specifically in France, the studio AUA and the Atelier Montrouge. In 1961, three years after the "invention" of ZUP urbanism – *Zones à Urbaniser en Priorité* aiming to new housing districts with their own commercial infrastructure and equipment – the city of Toulouse organizes a competition for almost 30000 dwellings, in the Toulouse-Le Mirail new district. This time, the authorities search for "*new ideas*"[13], models for new cities where a part of the

population can stay and work: the exact opposite of the "cité-dortoirs" that many *grands ensembles* have become. Candilis, Josic & Woods get to be the first "moderns" to realize a complex of that size. Their project distinguishes itself from the rest of the competition's participations that follow more or less Beaux-Arts compositional principles, and overpowers equally the Groupe Régional d'Architecture featuring a vague Le Corbusier collaboration. It is a multi-layered, continuous mesh with a central spine of public services in direct relation with the housing blocks posed in 120° angle. "*The urban space did not have to be any more the result of a work of monumental composition, but an informal organization susceptible to accommodate a multitude of functions. (author's translation)*"[14] For the apartment units, Candilis team uses prototypes already presented in previous studies[15] that do justice to their authors for their human quality. The advantages of urban density "…*social support, choice within walking distance – […] public transport,* ***sense of connection***"[16] are greeted in the project's realization. But in terms of urban forms, although the problem of the housing blocks' articulation to the public space is finally affronted and the buildings break up with the usual parallelepiped prisms, the project is already outdated by concepts of megastructures, appearing in the end of the fifties[17].

In the beginning of the seventies, despite the "failure" of ZUPs being decried by the social sciences, research in terms of urban planning still aims "big", with an ever present optimism and without notion of the fall in construction rhythms within the decade to come. The competition for the *ville nouvelle d'Évry* (1971) presents two versions of urban megastructures[18]: a "vertical" and monumental – second prize by AUA and R. Bofill, and a horizontal and homogeneous one – first prize by Andrault & Parat. Évry is one of the five "new cities" authorized in 1965 for to put some order to the "*anarchic growth of the Parisian agglomeration*"[19]. 7000 dwellings, offices, shops, schools, sporting facilities constitute the competition's program. The jury notes on the diversity of the propositions: "*The very wide range of approaches followed by the groups, [...] may show a lack of doctrine on conceptions for the city [...], and the highly subjective character of market studies [...]. (author's translation)*"[20] Issues evoked already in Toulouse, are reflected here as primary concerns of the organizers: quality of the general "*cadre de vie*", "*integration into neighborhood of public facilities*", praise of pluridisciplinary approaches: "*Certain schemes have resulted from […] the participation of multivalent teams of architects, sociologists, artists, university teachers. A few never got away from a traditional scheme … (they set public facilities at peripheries and close to main motorways).*"[21] It is evidently the case of Niemayer's elegant *barres pliées*, not included in the final classification. Andrault & Parat note regarding their intentions as to the project's urban character: "*…a habitat structure that will dispel the notion of "building", whose "simplicity" of forms is experienced as an imposed constraint.(author's translation)*"[22] Their "pyramid" model, adopted later in several other state operations, promotes also a new ideal as to the unit's organization; the "intermediate" housing type that "*meets actual users' wishes (semi-collective habitations with inside car parks).*"[23]

With the creation of the Plan Construction by the Ministry of Equipement in 1971 and the housing shortage already dealt with from a quantitative point of view, the authorities focus on qualitative, innovative research regarding typological solutions for the dwelling unit. They rely once again to architects' creativity, assuring – by the organisation of the first PAN competitions, the Europan predecessor – the participation of younger members of the profession. "*This qualitative research leads to recommend the diversification of apartments, the improvement of their flexibility, and a range of services – terraces, for instance – that moves closer apartments built*

within the social housing framework, to individual houses.(author's translation)"[24] It is the time of appreciating traditional urban tissues' complexity, of urban sociology and of multidisciplinary planning approaches…

We have followed French housing production through the "thirty glorious years" after-war, where competitions and their results act as models for a mass production. In the first years, "*…the rules of the competition were deliberately framed to be as souples and as flexible as possible in order to encourage the widest range of experimentation and innovation*"[25] and to attract large contractors, then by giving emphasis to "new" ideas for the city and finally refocusing on cellule, the State functioned as model promoter and debate animator. Competition results can be read as decisions of certain professional "groups" but they can also be translated as procedures promoting architectural quality independently of predominant styles. They certainly allow for a continuation in architectural research, sometimes in a more theoretical way, others in an infinite more practical one.

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[8] "*En admettant l'existence d'un jury idéal, d'une réglementation parfaite et d'un énoncé excellent des problèmes posés, les projets présentés échappent plus ou moins fatalement à un classement…*" 1951, "Concours pour l'édification de constructions expérimentales à *Strasbourg*", *L'Architecture d'Aujourd'hui* 36, lxix-lxxiv

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[11] Bullock, N., 2006, *idem,* 109: "*…l'excitation stupéfié des enfants devant leur nouveau logement: baignoire et chambres séparées, une pour la fille et l'autre pour le garçon.*"

[12] *"… il faut tenir compte du fait que quelques concurrents avaient conçu des plans très libres, sans séparation entre certaines pièces, […] ; l'indication adoptée ici ne peut donc prétendre à une exactitude rigoureuse dans la délimitation des surfaces…*" 1951, "M.R.U. Le concours de Strasbourg", *Techniques et Architecture* 10 (11-12), 38-93.

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[14] "*L'espace urbain ne devait plus être la résultante d'un travail de composition monumentale, mais une organisation informelle susceptible de recevoir une multitude de fonctions.*" Abram, J., 1999, *L'architecture moderne en France, v.2. Du chaos à la croissance. 1940-1966*, Éditions Picard, Paris.

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[19] 1973, "An urban development contest for Evry 1", *Cahiers de l'Institut d'Aménagement et d'Urbanisme de la Région Parisienne* 31
[20] "*L'éventail très large des voies suivies par les groupements, […], peut montrer l'absence de doctrine sur les conceptions de la ville […], et le caractère très subjectif des études de marché […].*" *Ibidem*
[21] *Ibid.*
[22] "*…une structure d'habitat qui fasse disparaître la notion de « bâtiment », dont la « simplicité » des formes […] est alors vécue comme une contrainte imposée.*" *Ibid.*
[23] *Ibid.*
[24] "*Cette recherche qualitative conduit à préconiser la diversification des logements, l'amélioration de leur flexibilité, et une offre de prestations – des terrasses, par exemple – qui rapprochent des maisons individuelles les appartements construits dans le cadre du logement social.*" Monnier, G., 2002, "La croissance et l'innovation typologique" *in* Monnier, G. and Klein, R., *Les années ZUP. Architectures de la croissance 1960-1973*, Picard, Paris, 281-292.
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REMODELACIÓN REPÚBLICA COMPLEX IN THE AFTERMATH OF MODERN HOUSING IDEAS DISSEMINATION THROUGH ARQUITECTURAL PERIODICALS IN CHILE.

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In the late fifties, architectural periodicals in Chile were almost nonexistent. This was a period of deep changes and the time for a new generation of architects to take the leadership of the profession. Early architectural breakthroughs were featured during the 1935-1950 period in magazines such as "ARQuitectura", "Urbanismo y Arquitectura" and "Arquitectura y Construcción". Their dissemination effort gave way for a wider acceptance of modern architecture, in a culturally conservative society. Public housing was then at the frontline of the country's modernization and the professional activity of many young architects. In the mid-sixties, new architectural periodicals in Chile such as "Revista de la Construcción", "CA" and "Auca" published the buildings that were the result of state policies regarding public housing. The Remodelación República complex was one of them.

Historial Background: Housing as a state affair in Chile

Before the big earthquake of 1939 in Chillán, public housing was already established as a state matter, along with education and health care[i]. Political turmoil in the years following the end of WW1 and the 1929 economical crackdown were amplified in Chile by the nitrate crisis[ii]. Chile had to improve its economical framework and its social structure. As a result, a new policital leadership was put at the head of the state with the help of new urban middle classes, and in the first place, several state institutions began their own housing plans. They hardly managed the population growth, and the deficits kept on growing at increasing speeds.
In 1934, a new state institution was created in order to put an end to the situation. Caja de la Habitación Popular (CHP)[iii] was the first truly modern institution dedicated to mass-housing projects. It was led by professionals with a technical background largely based on european building codes and manuals[iv]. The CHP was intended to embrace all the state housing programmes into a single, centralized organization. Along with it, Corporación de Reconstrucción y Auxilio[v] and many other organizations were put to work in 1939, many of them with their own housing plans.

State modernization was focused on industrial production, education and housing as part of a general attempt to reduce poverty, economical instability and social distress. Architecture periodicals such as "ARQuitectura" in 1935 and "Arquitectu-

ra y Construcción (AyC)" in 1945-1950, strongly criticized the results of such attempt. They prompted the authorities and the architects to adopt truly modern design processes, construction methods and materials. *ARQuitectura* used the CIAM-oriented approaches on density, rationality and urbanism. *AyC* published some local buildings as demonstrations of future possibilites for the state housing projects. In 1953, a new political *statu quo* led to a huge state reorganization. The CHP was dissolved and melted down with other institutions to create a new one: *Corporación de la Vivienda*, CORVI. In practical terms, CORVI inherited the CHP projects, and it was not until 1958 that it began the implementation of new developments under an ambitious nation-wide housing plan. The plan was to be implemented as soon as possible and, for the first time in Chile, it came from a powerful organization, directly dependent on the Ministry of Public Works.

By the time the CORVI plan was officially published, high-rise housing in Chile was in full development. It was the time of some of the most stricking projects in Santiago: Unidad Vecinal Portales[vi] and Unidad Vecinal Providencia were among the biggest and most radical proposals. They were being drawn on the boards of some of the most prestigious professional teams, and were built by private agencies with state technical and financial support. CORVI was commited to provide the best possible quality standards to low and middle-income inhabitants and could expropriate urban land in order to give way for new housing plans.

Remodelación República, a demonstration project.

One of the first projects laid out entirely by an in-house CORVI team of architects was the REMODELACIÓN REPÚBLICA (RR). Following an internal competition, architects Bruna, Wijnant, Sepúlveda and Perelman won the comission. It called for twin 15 story-high apartment blocks and an independent building for shops and services. It was to be built in a decaying district near the historical centre of Santiago. To generate enough land space, CORVI expropriated two blocks and a half, resulting in a odd-shaped lot, totalizing 12.367 square meters.

According to architect Orlando Sepúlveda, "The adopted solution consists of two overlapped blocks, allowing a double orientation to the east/west facades. In addition, the shops were partiallly submerged [...]. The roof was used as a terrace and a suspended garden, open to the public as a complement to the garden space left between the apartment buildings. The complex comprises 282 flat units, with an average 80m2 area"[vii]. It reached nearly a 75% over the average central Santiago density at the time.

The apartment units were distributed in a rather complex manner: There are common central corridors separated by two flat levels. On one side, there is a strip of single-level flats. On the other side, the entrances to multi-level apartments. They are grouped in bays, every four units, with coupled door entrances. One of them leads to an upward apartment, the other to a downward one. The kitchen and the living/dining-room are located in these levels. The following upward/downward level is on the opposite side of the building. A staircase leads to a hall over/under the central corridor and to two or three bedrooms and a bathroom. Despite the complexity of this grouping system, it has technical and spatial benefits. On one hand, it creates a central longitudinal "spine", a reinforced concrete nucleus that concen-

trates the dynamic stresses caused by earthquakes. On the other hand it allows cross-ventilation and a double orientation for every flat. The window and balcony texture on the facades is the result of a design where different kinds of rooms/functions are clearly expressed.
At the time it was completed in 1969, RR received a general public acclaim. On professional grounds, it had mixed criticism. The relatively large scale of the complex, its height and the contrasting presence of the blocks on a low-rise neighborhood were the matter of some concern. Nevertheless, the chilean institute of architects[viii] gave RR a "honour prize", as one of the best architectural achievements of the year. According to Sepúlveda, it was the "architectural expression" that caused such an impact. In fact, there are some features that deserve attention. The project deals with a *honest* expression of the apartment grouping system in many ways: The horizontal strip of single-level apartments, the section overlapping system revealed on the north/south facades and the balcony and window strips are emphasized by the use of white ceramic tiles and bare concrete surfaces. Other aspects of the internal-external relationship has to do with the vertical circulation system. On one side of the block, staircases are clearly expressed, while on the opposite side, elevator shafts emerge among horizontal lines corresponding to each level.

Architectural periodicals in Chile (*Auca* in 1967, *Revista de la Construcción* in 1964, 1966) and Argentina (*Summa*, 1968) featured the Remodelación República as one of the main state contributions to the consolidation of modern ideas in South America. At the time, it represented a hopeful anticipation of things to come in the field of public housing programmes. Nevertheless, it remained an isolated effort. It was intended as a demonstration housing complex in terms of its size, urban infill, flat units distribution and, as a technical *tour de force* in the chilean context of the time. Despite its similarity with foreign contemporary proposals, it was locally significant in different ways: the structural design had to deal with seismic-resistant criteria, yet providing generous ventilation and lighting; it had to set new standards in terms of its size, durable materials and overall cost.

The times they are-a-changing: Then and now

The RR apartments were occupied by middle-class private and state employees. They applied for finantial help and savings made in state institutions such as the Caja Nacional de Ahorros. Many of them rose their families and eventually letf the complex in the mid-seventies. Economical conditions changed dramatically during the military rule (1973-1990). State finantial support for the administration of complexes like RR were reduced or cut. Tenants had to deal on their own with maintenance, security, gardening and so on. CORVI and other corporations were closed and state housing plans were dropped or deeply modified to meet new economical rules.

This stuation led to a fast decay of RR. Only a small number of the original dwellers remained in the complex. They had to deal with conflicts arousen by newcomers, their economical difficulties and a general distress situation caused by security problems.

As a result, the tenants decided to build a fence around the gardens, parking lot and the roof of the shops building. This step towards privatization of public areas

was made in the late eighties, at the eve of a new political change in Chile. The restauration of democracy came with new prosperity in economical terms, and the RR community had some help from city plans aimed at the recovery of decaying areas surrounding the historical centre of Santiago.
Actually RR is privately administered by the tenants (nearly 50% of them are flat land-owners) and other propietors who rent flats. A significant 15% of the residents are students. The University Neighbourhood created in 2003 brought a new kind of clientèle for available housing stock, and RR appears to be a suitable place to live in.

This situation is slowly evolving towards an increaring figure of residents as owners of the apartment units. The head of the western block Neighbours Commitee once stated: "We are encouraging residents to buy the flats they rent, we need to improve some common areas in order to bring value to our properties, investing the common wages we all pay. "We are keeping the elevators working, we regained security control of corridors and external areas, we built a children's playground and so on"[ix]. Undoubtly, RR has passed the test of time and social change in many aspects. But certainly, some problems are threatening it: urban gentrification and land speculation near central Santiago.

From partial recovery to full potential refurbishing

When RR was built, it set new standards both in urban and living conditions. Actual new private housing speculative projects were encouraged by the state and the city specially in old areas that are constantly threatened by gentrification and decreasing figures in population. This had put RR in an odd situation. On one side, many residents were attracted by these new housing projects. But, as the Neighbours Commitee head stated, "many of them realized that their RR apartments were by far a better place to live in, they had more space, cross ventilation, an unbeated east and west orientation and privacy conditions, that are generally absent in those new projects. "The major disadvantage in RR is the lack of parking space for everyone".

Another side of the situation is the size and grouping system. The neighbours' commitees work independently for each block and the shops building. Based on an administration model commonly used in similar speculative housing complexes, RR is similar in size and tenant social profile. At this point, an interesting paradox arises concerning the actual condition and the future of Remodelación República.
Recent research work, along with an increasing interest in modern buildings that truly represent key moments in Chile's recent history, RR is featured among several publications related to housing and modern heritage. In addition, new high-rise apartment buildings appear in the horizon, overlooking the north side of the complex. Although it remains surrounded by low-rise houses, it has become an essential part of the University Neighbourhood and a landmark project that is largely recognized as an architectural state achievement that anticipated the growth of private housing projects.

RR is now in the hands of its dwellers. There is no state policy to help them make extensive repairs needed in sewers, electrical and gas networks, and general external cleaning and weather protection. In the meantime, commercial value of the

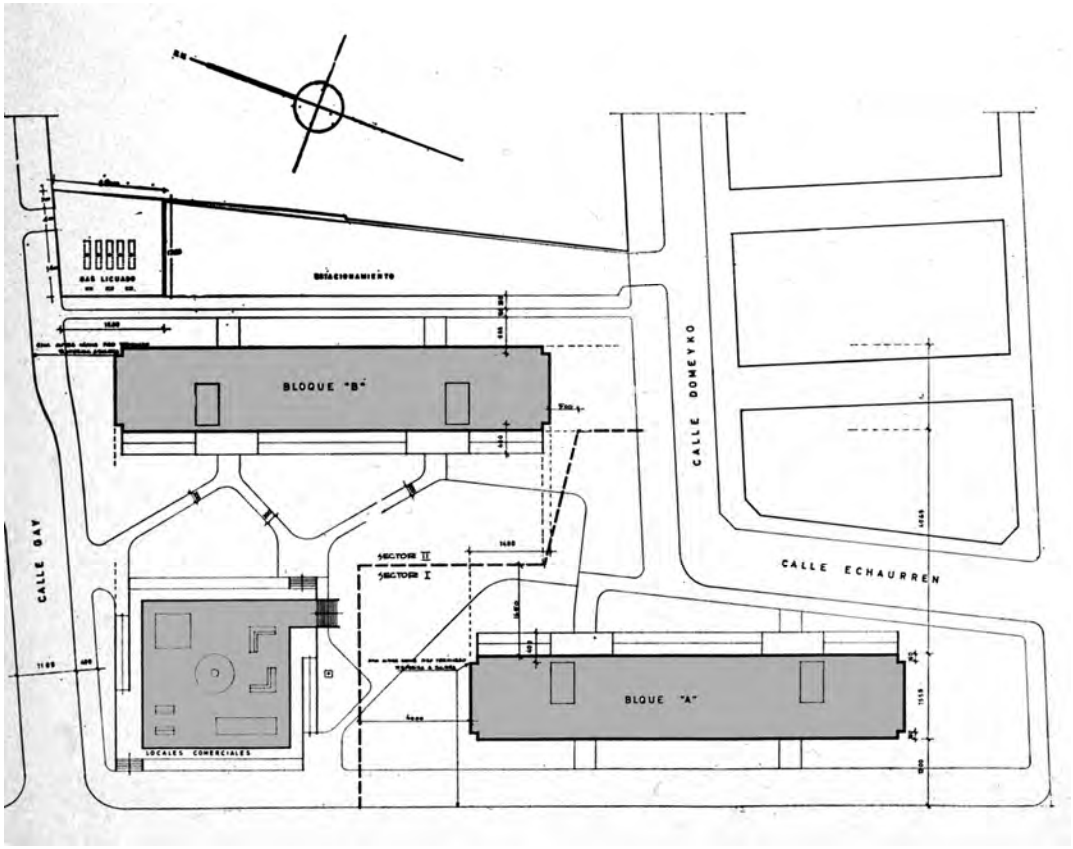
apartments has not decreased, and further actions are to be implemented, specially on the parking space issue. There are three interesting aspects of the design that can be considered as potentials:
-The apartment grouping system and structural design. It offers a flexibility rarely found in contemporary projects. In fact, many apartments have been modified to introduce a small “internet corner”, open kitchens, and the conversion of some bedrooms into working or leisure spaces. In addition, the facade design largely prevents the negative effects of balconies enclosure and external sun shades.
-The two-block layout has allowed a rather efficient administration of the whole complex, dividing the maintenance tasks into smaller groups in charge of them. This has led to a “democratic micro-state” within the complex that has played a positive role during the last 15 years.

-A new opportunity for a general upgrade is arousen by increasing demand from students and young professionals. The size of the apartments (areas are in the 75-110m2 range) and the grouping system offer a wide variety of internal distribution layouts. This general upgrade can only be achieved with the commitment of the tenants community as a whole. Increasing value to their homes, considering the actual situation, requires technical advise, economical resources and collective action. The community has demonstrated that it can do some things by itself. They can be in the position to ask for financial help from private or city-owned institutions. Eventually, they can become partners in a general refurbishing project.

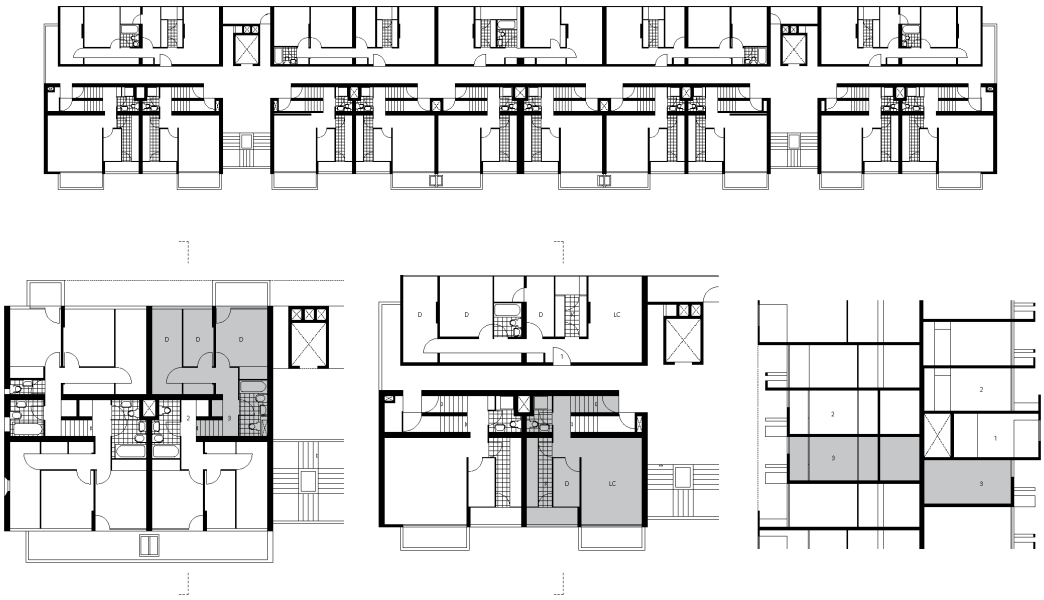
Conclusion

Modern Living standards, as applied to the RR complex passed the test of time. A paradoxical situation places its future in the hands of private institutions, along with the tenants efforts to keep the complex running in general good condition. It was planned as a demonstration project in the context of the materialization of urban and social utopia. It was caught in the middle of deep political changes that almost brought it to total failure. But new economical conditions, and a renewed general acknowledgement of its qualities gave it a new chance. Actually the residents managed to stop general decay but technical advise is needed to prevent some negative action on their part. The recovery of common areas like gardens and playgrounds has been secured by the privatization of such areas. The enclosure fence is an aggressive security measure that was not considered in the original project, and the occupation of garden space with parking facilities on the eastern part of the block are among the major threats to the complex. A potentially new kind of tenants and the collaboration with universities located in the neighbourhood can bring further actions to give Remodelación República a largely deserved upgrade and recovery of its original pristine aspect of 1969. New social and economical conditions based on capitalist rules can give a new life to a 40+ year dream of a democratic society based on high quality housing standards for all. Finally, the RR project is to be considered as a key moment in the dissemination of modern ideas. Architectural periodicals prepared the cultural and professional ground on which the state housing policies had to find its roots, and they were at the aftermath of their earlier effort: they welcomed this achievement as one of the most clear demonstrations of modern living in Chile.

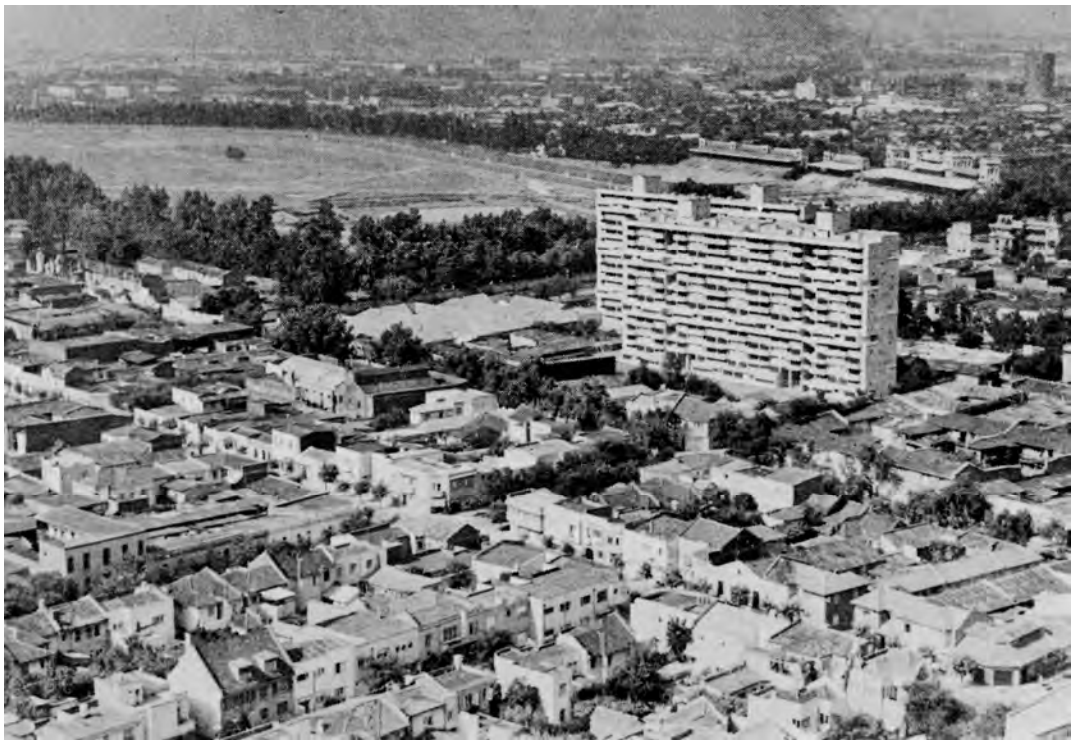
Illustrations



Remodelación República site plan. (Source: Revista de la Construcción December 1964 issue)



Remodelación República Typical main floor; Lower/upper level; Main Level; Section. (Source: Téllez, A.; Molina, C. “Residencias Modernas”. Ediciones UDP, Santiago, 2009)



Aerial View (Source: AUCA Nº 6-7, 1967, Santiago)

External view, services block on the foreground. (Author: Andrés Téllez, 2007)

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Notes

[i] An extensive historical research on state mass-housing policies can be found in Hidalgo, R., 2004, *La vivienda social en Chile y la construcción del espacio urbano en el Santiago del siglo XX*, Instituto de Geografía P. Universidad Católica de Chile, Centro de Investigaciones Diego Barros Arana.
[ii] By 1929 an artificial substitute to natural nitrate was developped in Germany. Until then nitrate was Chile’s main natural resource.
[iii] Popular Housing Savings Institution.
[iv] The first reinforced concrete extensive housing projects were built by the CHP, closely following the seismic building codes established after the 1939 earthquake.
[v] Reconstruction and Welfare Corporation. In 1951 it was melt down with other institutions like the CHP to create the CORVI, Corporación de la Vivienda (Housing Corporation).
[vi] See Bonomo, U. 2008, *The Portales Neighborhood Unit. Change and Continuity of a Housing Project in Santiago de Chile*, in van der Heuvel, D. et.alt. *The Challenge of Change-Dealing with the Legacy of the Modern Movement*, IOS Press BV, Amsterdam, 429-431.
[vii] The final project was designed by Vicente Bruna, Víctor Calvo, Jaime Perelman and Orlando Sepúlveda. A personal testimony by Sepúlveda can be found in Sepúlveda, O., 2007, “Retrospectiva del conjunto habitacional Remodelación República”, *Revista INVI*, Santiago, 132-150.
[viii] Colegio de Arquitectos de Chile.
[ix] The Neighbours Commitee head was interviewed by the author in 2007.

MODERN LATIN AMERICAN HOUSING AS HERITAGE

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A concise explanation is necessary to circumscribe the subject we are attempting to qualify as modern patrimony. Dwelling is neither a specific matter of the 20th century, nor a novelty as architectural heritage. As 'modern', we are not talking the way Julien Guadet alludes in the chapter "La chambre dans l'habitation moderne" on his *Éléments et Théorie del'Architecture*.[1] In European context, books like *Les Habitations à bon marché en France et à l'étranger* by Charles Lucas, prepared late 19th century,[2] and international meetings as the Deuxième Congrès International D'Assainissement et de Salubrité de L'Habitation, held in Genève in 1906,[3] are samples of documents which established references to the collective housing at issue early 20th century. The roots of the modern social housing are in such initiatives, described and analyzed in these and in dozens of related contemporary literature, and probably in silent remnants somewhere. But the building and urban typology under our consideration are not among those early cases.

A new class of dwellings should be identified having as a starting point – or at least, one of the conceptual sources –, the discussion levered by the CIAM meetings from 1928 on.[4] In particular, at the CIAM III, Rationelle Bebauungswelen (Brussels, 1930), Walter Gropius' report "Low, medium-high or high-rise building"[5] was a forerunner idea to the development of building and urban settlements for social living facilities proposals. Housing blocks – towers and slabs, amid parks and open areas – were the tour-de-force of 20th century architecture and town planning. These theoretical proposals, nurtured in between World Wars period, bloomed in Europe and America after 1945.

This typology was one of the outstanding features all over Latin America as well. But the Postwar decades in Latin America was not a period of reconstruction as in Europe. Social housing ensembles were a governmental effort in many countries, facing the challenge of producing mass-scale dwellings for low income tenants, embedded in modern principles. The prosperous years after World War 2 were the moments for the *building* of a new cultural, educational and technological landscape in the emerging countries of the region. The 1940s to the 1960s were the decades of great enthusiasm on governmental undertakings all over Latin America for upholding new horizons to surpass historical limitations. Modern architecture in Latin America was the visible symbol of the essential infrastructure for building a new world. It championed the cause of historical change of the region and expressed the wish of

self-affirmation and the search of regional identity merging national distinctive aspects in the modernist trends and contributing to renew the meanings of modern architecture in the international context.

Henry-Russell Hitchcock, in his overview article in *Latin American Architecture since 1945* to the Museum of Modern Art of New York in 1955, reports that "in most Latin American countries today there is both quantity and quality in architecture".[6] The book features some social housing complexes: Centro Urbano Presidente Juárez Housing Development (1950-52) in México City by Mario Pani, the Pedregulho Apartment Housing (1948-50) in Rio de Janeiro by Affonso Eduardo Reidy, the Matute Housing Development (1952) in Lima by Santiago Agurto, the Cerro Piloto Housing Development (1954) in Caracas, by Guido Bermúdez and team, and a low cost housing development (1952-53) in Bogotá by Cuellar, Serrano, Gómez.[7] The author dedicated no analysis to the building typology itself, but isolated-case comments. Such complexes were brand-new and very recent experimentation to the eyes of historians like Hitchcock. Not only in the New World, but also in the Old World.

However, social housing blocks factual experience was a nuisance to modern architecture. The nowadays ruinous condition or demolition of some of these ensembles leveled severe criticism. A diffused and spectacular hostile position is the open chapter of Charles Jencks' *The Language of Post-modern Architecture*, which conclude that the death of modern architecture occurred in 1972, when the Pruitt-Igoe Housing in St. Louis, Missouri, was imploded.[8]

What about the Latin American housing ensembles after passed about half a century of their heydays? Were they the failure of modern planning and modern architecture as well? Regarding them as a historical symbol of modern architecture and town planning, involving today dwellers of various social latitudes in distinctive contexts from the early days: is this typology worth, or conceivable, as an object of preservation? Could these buildings be considered and protected as heritage?

So appraised or worldwide published experimentation at the time, as Affonso Eduardo Reidy's Pedregulho complex in Rio de Janeiro[9] looks like shanty town blocks today. The governmental initiatives in Panamá City for low income families, as the Edificio Renta 1 (1944, architect Ricardo J. Bermúdez), Edificio Pesé (1948, architect Rosa Palacio), Multifamiliar Renta 9 (1845-46, architects Octavio Méndez Guardia and Guillermo Andreve), Multifamiliares Santa Cruz 1 (1945-47, architects Stephen Arneson and Guillerme de Roux), are in bad maintenance condition and modified.[10] The massive 2 de Diciembre (known as 23 de Enero Development) Housing Development in Caracas (1954-57),[11] designed by a team led by the most important Venezuelan architect, Carlos Raúl Villanueva, architect and planner of the UCV University City, a modern World Heritage Monument listed by Unesco, was considered in its own country, at the peak of the post-modernism criticism, as an arc-

hitectural error, that "counts up to the general failure of Modern Architecture."[12] The mammoth Nonoalco Tlatelolco complex (1964) in Mexico City, designed by Mario Pani – another author of a modern Word Heritage listed monument, the UNAM University City – is considered a "modernism crime", a sample of "abuses of what came with the internationalism, and quickly transmuted in monotony of the new built landscape, the lost of individual human identity, tackling the collectivity as an amorphous conglomerate without territorial roots or social cohesion," according to Enrique Xavier de Anda.[13]

As in Europe and United States, modern social housing complexes in Latin America are under vigorous objection.

On the other hand, sweeping statements like Jencks' could conduct to general inaccuracy. Not all the social housing schemes were vandalized, mutilated and defaced as Pruitt-Igoe. Or such decayed degrees are not a permanent state. Repairs and refurbishments by government initiative at the 23 de Enero Housing in Caracas in the 1990s alleviated the uncomfortable ambience of the development, and the community supported leftists movements for social changes in recent years. The so criticized Nonoalco-Tlatelolco complex, once a vandalized and ill urban part at the core of Mexico City, regenerated in a way that distance the housing from those chaotic environment of decades ago.

Its architect, Mario Pani, won a governmental competition in 1946 for the first dwelling complex for public servants of medium income in Mexico. The Multifamiliar Presidente Miguel Alemán, a Le Corbusier-inspired scheme of superblock, with open gardens, car-free, commerce on the ground floor, and duplex units distributed in none slabs with 13 floors and six with 3 floors, is an accomplished case of a modern housing complex, "a social success and a landmark in the development of the city", as evaluated by Miquel Adrià,[14] or by myself, as a visitor. Xavier de Anda, so critical to Nonoalco-Tlatelolco, evaluated that Miguel Alemán "resulted a very important urban and architectonic response facing the problem not only of dwelling deficit, but also a way to mediate social interaction needs and recreation with the minimum of living comforts."[15] A careful survey conducted late 1990s by Graciela de Garay is a fine systematized documentation of the achievements of the Miguel Alemán housing.[16] From William Curtis' point of view, the Multifamiliar Miguel Alemán is only an example of a "pervasive international formula of high rise-slabs laid out [...] in indentantions."[17]

The Passo D'Areia residential unit, in Porto Alegre, Brazil, has a similar profile as Miguel Alemán's accomplishment. Built in the 1940s and 1950s by a governmental branch, the Social Security Institute for Industrial Workers (which acronym in Portuguese is IAPI), according to a Edmundo Gardolinski and Marcos Kruter plan, the Vila do IAPI was a subject of an historic survey held by the Secretary of Culture of the City of Porto Alegre late 1980s focusing its preservation.[18] Another well

maintained housing development built by IAPI is the Moóca Residential Unit in São Paulo, designed by Paulo Antunes Ribeiro late 1940s.[19]

The physically decayed, but socially active Pedregulho Housing in Rio de Janeiro is now a scene for a laboratory of art, memory and society. A non-governmental organization, supported by the Brazilian National Historic and Artistic Heritage Institute (IPHAN) organized early 2010 an artistic initiative named *Pedegrulho – Residência Artística*, involving artists, architects, urbanists art theorists and the community participation. According to the group, "the main target with this Project is elaborate, throughout the creation in contemporary visual arts (with heterogeneously formed teams), a series of questions starting from considering Pedregulho as a 'patrimony', inquiring its cultural and historical heritage, taking the opportunity to launch a focus on the symbolic and structural recuperation of the building, and to outline problematics of cultural, social, economic issues inherent to the modern utopia."[20]

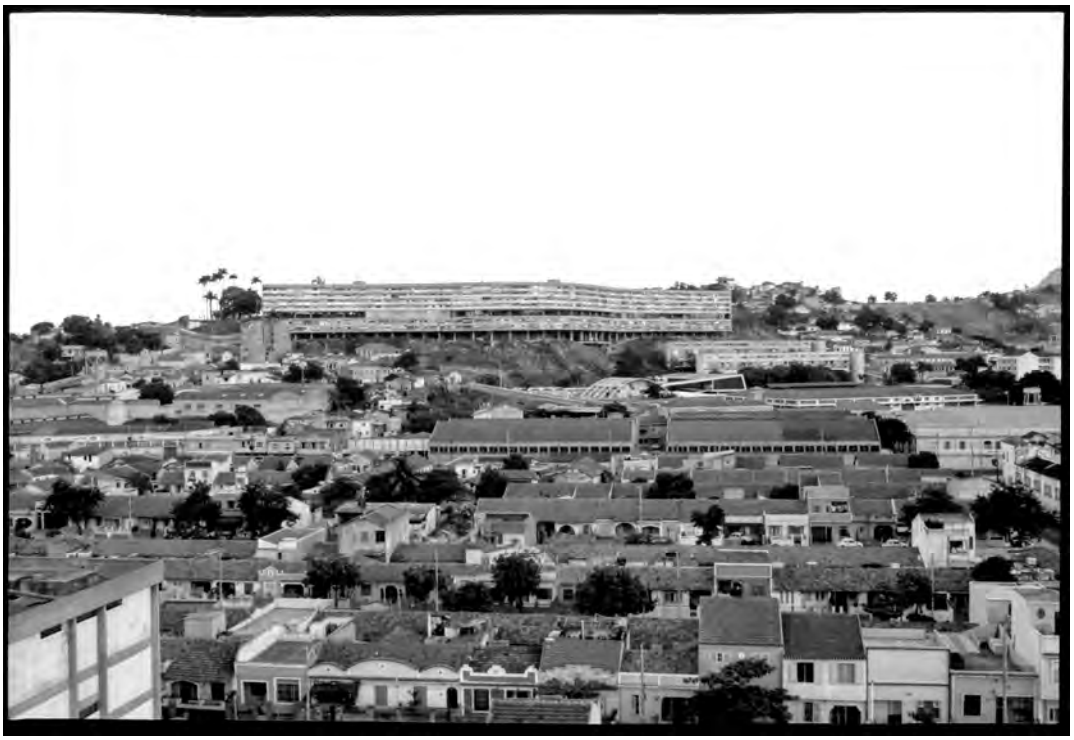
This unorthodox way to discuss the heritage of a modern social housing neighbourhood could be a feasible strategy to regenerate this kind of building and urban typology, within the framework discussed above. Understanding social housing complexes as heritage requires a multiple perception: their original schemes and their nowadays conditions, the city scales (the meaning of such complexes in the development of the cities) and the change of urban physical, social and infrastructural tissues, and housing phenomenon (dwellers, actual uses), among numerous possible criteria. This paper is a starting assignment to examine the Latin American modern housing as a heritage.

Illustrations

Carlos Raúl Villanueva: 23 de Enero Development, Caracas, Venezuela, 1954. Photo Hugo Segawa

Mario Pani: Presidente Alemán Urban Center, México D.F., México, 1948. Photo Hugo Segawa

Mario Kruter, Edmundo Gardolinski: Passo D'Areia Development, Porto Alegre, Brazil, 1946. Photo Hugo Segawa



Affonso Eduardo Reidy: Pedregulhos Neighborhood Unit, Rio de Janeiro, Brazil, 1947. Photo Hugo Segawa

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MODERN LIVING
Cultural Liberation and Architectural Diversification

Most interpretations of modern architecture have stressed its technological, economical and sociological correctness. Modern architecture was to provide rationally mass-produced proletarian dwellings, and either assist or/prevent revolution. Whichever way, modern architecture in the 1920s was also about freedom from the constraints imposed by nineteenth century bourgeois culture. It was to provide light, transparent, flexible, uncluttered houses for bodies revamped by sports, gymnastics and personal hygiene, houses whose upkeep did not slave the occupants by devouring their time and energy.

Hopefully, healthy bodies would devote their free time to achieve satisfaction of the spirit, and there was more than a hint of stoicism, and of ascesis, involved in the equation. Somehow, the active life was but a prelude for a worthier contemplative one. Wealthy patrons of modern, avant-garde art could be equated to priests of a contemporary secular religion, even more commendable than the factory worker. Indeed, it could be argued that wealthy art patrons provided role models for the liberated worker in the admirable new world that the machine was bringing about.

Nevertheless, this account remains partial; specially after the 1929 stock exchange crash shattered the machine mystique. First, light, air, openness and golden tans could also be sensual, Bohemian even, the more so when weather was sunny and balmy, and the sea was close. Bernard Tschumi once observed that sensuality was known to overcome the most rational of buildings. Modern architecture could serve Epicurean if not Hedonist leanings, and at the limit turn into a surrealist vindication of the eccentric individual. Then, there was diffuse light, and the realization that it could serve domestic purposes as well as painter's studios or industrial work-spaces. Sunny aeries on stilts did not preclude the materialization of luminescent caves made of glass brick walls, as if moonlit, attached to the ground and eventually vaulted. Materials started to be enjoyed for their own sake. The monopoly of chalky surfaces was broken, replaced by a range of textures running from rubble to marble, rusticity to luxury, vernacular to high-brow. Meanwhile, experience was showing that too much sun could not be taken as an unmitigated blessing and too much light could serve control as well as freedom.

In short, the formal diversification of modern architecture in the thirties and the forties is better described as the expansion of a limited vocabulary and syntax than as the adaptation of consolidated elements. Among other reasons, diversification sought to correct technological, economical and sociological naiveté. The best minds on both sides of the Atlantic understood that in order to survive enemy fire, modern architecture had to qualify its alliance with the machine and show itself to be an inclusive system, capable of embodying, as the need arose, both protocol and spontaneity, publicness and intimacy, literacy and bricolage. Modern architecture was a matter of both-and long before Robert Venturi. True, as it triumphed everywhere in the Cold War fifties, many decried inclusiveness as deviation, obviously unhappy with, say,

Epicurism graphically manifest in free forms both co-existing and competing in the market with symmetrically planed pristine repeatable pure prisms or rough blocks amidst greenery. Should not we today know better and recognize the richness of diversity as well as its underlying unity?

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AIR-SOUND-LIGHT: THE 1933 CIAM LECTURE OF LE CORBUSIER IN ATHENS, MODERN LIVING AND THE RADIANT CITY

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In his keynote address at the 4th International Congress of Modern Architecture in Athens Le Corbusier proposed a comprehensive treatment of modern living in the society of the near future, which combined modern construction technology and climate control with an image of well-being of modern man. The most interesting in this proposal is that it relies on both the ideal past of the Parthenon and the modern factory in order to create large housing units, which could be fitted equally in Athens, Moscow and Rio de Janeiro, the housing unit being the direct analogue of the ocean liner. The past serves as a metaphorical machine, in terms of principles and ideas, to bring a major revolution that will strangely secure continuity as well, and works as a literal machine, which gives all working people the same scientifically necessary means of life, in the level of physical necessity (the same means as those provided by God - *air, sound, light*).

Le Corbusier addressed to the delegates of the 4th CIAM and the Greek public in the evening of Thursday, August 3, 1933. The lecture was given in the gardens of the Athens's Polytechnic in front of the neoclassical building of the School of Architecture. The audience was great, in every sense of the word. The lecture was attended by the Prime Minister himself, another two Ministers, the President of the Senate, party leaders, professors and academics.

The subject-matter of his speech, entitled "Air, Sound, Light", remained the same as proposed for the Conference that was to take place in Moscow.[1] The theme was la *respiration exacte*, that is *correct* or scientific *breathing.* But now his invocation of the machine architecture would rely on the primacy of the Parthenon, and the Acropolis, which appeared in the distance under the moonlight. In a publication of the speech in 1933, Le Corbusier says that the lecture was given "in front of the Parthenon".[2] The organization of the Congress in Athens may have been uncalculated and the speech may have been written in between 1930 and 1933, but consciously or unconsciously, the lecture on "correct breathing" and the whole theory of the "radiant city" was a *revelation* that Le Corbusier should do "in front of the Parthenon". That was his real audience, the ultimate arbiter of his words and his works, the only interlocutor. All the others, delegates, architects, ministers, academics, were silent people, dummies. That is why his lecture "Air, Sound, Light" begins with an appeal to the ultimate measure of the Acropolis.

“23 years have passed since I came to Athens; I stayed 21 days on the Acropolis to work without stopping and to feed me the admirable spectacle. (…) I have gained the notion of the irreducible truth. I went, crushed by the superhuman aspect of things on the Acropolis; crushed by a truth that is not smiling or light, a truth which is strong, which is one, and relentless. (…) When I went back in the West and I wanted to follow the teachings of the schools, I saw that they were lying in the name of the Acropolis. (…) I had learned to think, look and go to the bottom of the question. It is the Acropolis that made me a revolutionary.”[3]

This is a clear-cut confession, which is revealing retrospectively the 1911 Journey to the East in the light of industry and modern architecture. In a remarkable way the old exists in the new and gives it ancient power, making it actually modern. This continuity of spirit is a bridge connecting the past to the perfect house of the machine age future.

Unexpectedly, the same Le Corbusier found immediately after a huge crisis of the cities due to the disastrous spread of the machines: "The cities are suffering from a fatal illness. (...) The great wave of mechanization, which has disrupted, which has overturned everything, broke over our cities spreading everywhere the mud: in the age of new techniques, the ancestral life is fragmented due to the new measures of time - and man felled by millennial pace. His lungs are diseased. His ears tearing from the noise. There is no more sun falling in his body. His eyes are seeing the sad spectacle of the stone walls of houses. Architecture is revolted, it is given. But town planning is lacking principles.”[4] Therefore the city needs a set of principles that may be provided by “the great discoveries of the century of the machines” inside the triangle "Air, Sound, Light", which combines “the consequences of all these countless phenomena, retreading them in only one value: psychology and human biology.”[5] The machinery of Le Corbusier can kill or heal. The meaning is twofold. And this machine, in the broader sense of Le Corbusier, is a set of principles that keeps onto the five points of new architecture to make the modern city be radiant, *cité radieuse* - but the words were not to be expressed in Athens.

The new construction technique that he characterizes "healthy", turned the stone walls into thin columns, creating horizontal windows that may even run across the whole facade of the buildings. “Henceforth the sun will floodlight the house.” However this success was compensated by the adverse effects of large surface area of the glass “too much cold in winter, high summer heat in summer”. From Moscow to Paris and the tropical, the result is the same: “rheums, bronchitis, perhaps pneumonia”. Since a lot of moisture, "in Rio de Janeiro mushrooms grow in wardrobes”. The problem affects the “human lung”, “it is a question of breathing”. This biological failure, we might consider as an “architectural” disease of the new construction methods can be “cured” with the literal and metaphorical help of the machine - that is with an induction of logical relations and the use of mechanical means. In this way, the nature that was “built” by God could now mutate and be regulated by human intervention: this is one of the most subversive conditions in

modern living that was suggested by Le Corbusier in 1933 in Athens. The proposal would be able to solve both the “fatal disease” of the old cities and the “architectural” disease of modern construction.

“Truth appeared me without detour, imperative; it is about human lung; here is a question of breathing; it is air that must be given to the inhabitants, air befitting human lung at 18º approximately. (…) It is about air of correct hygrometry. In other words, exact air. We have to manufacture exact air for human lung, under all latitudes. In many cases we must renounce God's air. (…) And this artificial air (...) has only now to be sent to the premises of living and working by very simple means that manufacturers apply for a long time in the industry; fans. And suddenly, here are all the problems of heating, refrigeration, ventilation simplified, reduced to a single technique: 'exact breathing'. (…) Total freedom in the house and the ability now to live behind walls of glass with an air always as clean and healthy as the air of the ocean. You will be sitting behind your glazing, and still be under the Sun as in your beach: your lungs will be filled with fresh air, exact air.”[6]

Addressing the problem of the “fatal disease” was particularly impressive if we grasp that Le Corbusier was giving his lecture outdoor in Athens, which had not experienced those years the "fatal" problems of major European cities. But the problem is not purely technical. The literal machine to which Le Corbusier refers is only a necessary means to achieve an even higher target, which clearly refers to the house as a machine to live-in and recognize in the elements of nature, and landscape, the spectacular view that you enjoy *alone* through the ideal glass window of your multi-storey building, like traveling on an ocean liner over lands and seas. The premise is simple: the construction of completely isolated cells, with one side of glass, mechanically controlled and stacked in two dimensions, like the buildings of the radiant city and later on the *Unité d’habitation* of Marseille. The description of Le Corbusier is therefore crucial for the theoretical formation of his architectural ideal:

“ To activate our exact breathing mechanism, we must close our windows; better than this: we need no window! (...) the facade will be sealed. The facade of the liner that crosses the Tropics, such as the façade of a Building in Buenos-Ayres, as one of the large housing or working complex in Moscow. Another consequence, immediately: hermetic glass facades bring silence in the house, i.e. insulation from outside noises. If (...) I double my facade glass thickness, I get a full insulation of outside noise.

Soundproofing, sound insulation inside and outside the house! From now on we are protected from the noise of the modern city. The radiophone of all the neighbors, the gramophone, the abominable noise from the street! Silence is finally retrieved. Our nerves are finally tranquilized. What promises of a better life. Air, sound, light! Lung, ear, eye satisfied. The citizens organism will recover again, all at once, in the primordial conditions of development of biological life.”[7]

The crisis that brought to the West the predominance of the machine will be reversed thanks to the same machine that will achieve satisfaction “of all terms required by human biology from the beginnings of the world, creating a new urban center where we can take into account the factors: *Air, Sound, Light*.” The transition from the very depths of urban hell in the eternal paradise of pure nature, which depend on these three factors is a return to Genesis and a redefinition of the Creator himself.

“ If we want to take advantage of God’s true air and not of the abominable stale air produced in our cities by dust, gases, and microbes; if we want to receive at home the invaluable sunlight benefits; if we want to immerse our work, our leisure time, our meditations, our nerves in the vital and refreshing bath of silence; in other words if we want life in cities to conform again to fundamental human biology laws and thus to brings serenity, joy and courage, we need to consider the necessity of grasping technical inventions, which are the progress, and we have to upset centuries-old habits of architecture and town planning in *creating new units of quantity* for our homes, our workplaces and premises of leisure. This is how we can coldly and wisely determine what constitutes the 'essential joy', in other words what gives life its real flavor.”[8]

Exceptional promise. Seated behind a large glass window that does not open, under the beneficial impact of rays of sun that do not affect the room temperature, breathing the scientific air, you are enjoying the magnificent and unobstructed view from the high-raised living room of your building. The lecture of Le Corbusier was not based on illustrations but the illustrations developed in parallel from the 1930 CIAM Congress in Brussels to the Unité d’habitation in Marseille may fill the gap and help interpretation of architectural models. In his Radiant City of 1934 the human lungs illustrate the theme of “correct breathing”, which provides the biological function of the machine. Further on, a living unit that towers above earth is dependent only on the provision of scientific air, water, telephone, gas and electricity, turning its hermetically sealed glass side to the panoramic view of the world. This living unit is a product of the machine and works like a machine.

That is why the Papastratos tobacco factory invoked by Le Corbusier in Athens was the best argument to support that "the principle of ‘correct breathing and wall neutralization’ was practically feasible” and could help solving the critical problems of architecture and the city. “Ce matin au Pirée - he was saying in the garden of the School of Architecture - j’ai visité la fabrique des tabacs Papastratos et j’y ai trouvé appliqué le principe de la distribution de l’air conditionné. Et comme, pour mille raisons que je je ne puis énumérer ici, je manifestais ma satisfaction à Mr. Papastratos, celui-ci me répondit. ‘All this comfort, I can give my workers in the factory, I cannot give them at home; I cannot even give it to me in my place'. Here's where inserts new dimensions, new units of quantity, for the solution of which we gathered in Congress of architects and planners.”[9] A tobacco factory in Piraeus, which was built in 1931, is the standard solution that Le Corbusier was looking for in order to house modern man, because this standard could provide the large

number with those conditions of comfortable residence which could not be offered to each cell separately regardless of the social status of the residents. The difference lies in the massive, mechanical and finally *industrial* answer to the problem. The *functional city* is a machine that operates as the human lungs, where blood is oxygenated in countless lung cells but the desired effect is achieved only when they operate as a whole. The conditions of housing envisioned by Le Corbusier in the new functional city - the radiant city - are "practically feasible" only if the house is produced in the factory and then becomes a "factory" for housing, or a new large housing unit in which many people will live together.

In other words, Le Corbusier was seeking for a new and large housing unit, a kind of apartment building, that would be produced as an industrial product and would have been the analogue of an ocean liner: "Transport the manufacture of dwellings in the large factory, in the large manufactory with all machines and all our prodigiously specialized teams. The example already exists: the magnificent steamer, the sleeper, or the dining car."[10] The demand for a return to the mechanical biology of man is transformed to the demand for a housing unit that will sail, like a 'double sided' ocean liner, both the primal purity of nature and the eternal elements of the world - natural paradise on the one side and the great values of the past on the other side. And the latter was actually requested by Le Corbusier in the gardens of the Polytechnic, next to the definition of the factory-housing building: " Read the whole, understand where details must be arranged; measure what are the requirements and possibilities of the mind; how to recognize permanent elements in the inheritance of human works, and then, from Athens to Piraeus, from the liner, the big 'liner' that is sailing across, up to the looking Parthenon, - through sublime landscape, and a city that has to pull together and grow in grace and beauty, there is only one attitude : spirit."[11] The factory-housing building is a residential machine that moves like a terrestrial ocean liner, like the "big 'liner' that is sailing across", and you are sitting on the deck - as a new spirit, an *esprit nouveau* - to look at the spectacle of the "human works" that evolves in front of your eyes like a movie, depending of the spirit of your own modern time. The deck of the ship on the cover of *Toward an Architecture*, meets the Parthenon as a "pure creation of the mind" - a *pure création de l'esprit* - in the most subversive pages of the book. Now in Athens, the Parthenon relationship with the Papastratos factory is directly proportional to the relationship of the Parthenon with the Delage Grand Sport automobile, which corresponds to the relationship of the Acropolis and the metropolis that can be viewed as a final link between ancient and modern city and architecture.

The large housing unit, which combines these two origins, will become part of nature, in the sense of free establishment in a nature-spectacle, and will also become independent of nature, in the sense of environmental autonomy. The shape of this ideal relationship, *air-sound-light*, which was first suggested by Le Corbusier in the 2nd CIAM in Brussels, 1929, now passes through the filter of scientific devices: 'respiration exacte' in a closed air-conditioned, soundproofed and sunbathed place of residence located in a vertical distance from the ground.

“And the 'essential pleasures' have entered the house. Nature is included in the lease. The pact is signed with nature. Trees have entered the living room.”[12] *Air-sound-light* is putting together the core of the Radiant city in 1934, and will be perfectly visualized in 1943 in a sketch published in *La maison des hommes*, showing a sitting man behind the closed glass wall of his high raised apartment to enjoy the spectacle of beautiful nature in Rio de Janeiro: “Palm trees, banana trees, the tropical splendor is animating the site. You stop, install your chair. Crac'h! A frame all around. Crac'h! The four angled perspective! Your room is installed to face the site. The whole landscape has entered your room. (…) Rio de Janeiro is a famous site. But Algiers, Marseille, Oran, Nice and the côte d'Azur, Barcelona and both sea or continental cities have admirable landscapes!” [13] This will be also the scheme of the Unité d’habitation in Marseille, the *paquebot magnifique* that is sailing across nature in a well-known collage by Le Corbusier. And the same pattern of technologically independent unit residence will be critically reintroduced by Reyner Banham and François Dallegret in their environment-bubble in 1965.

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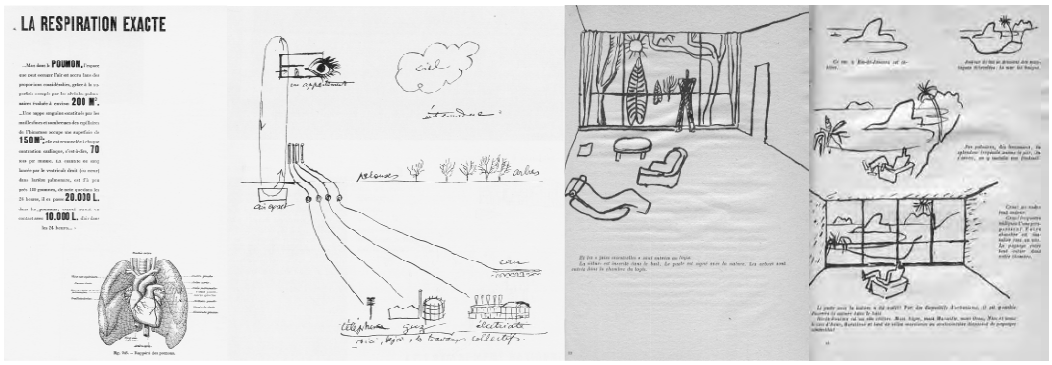
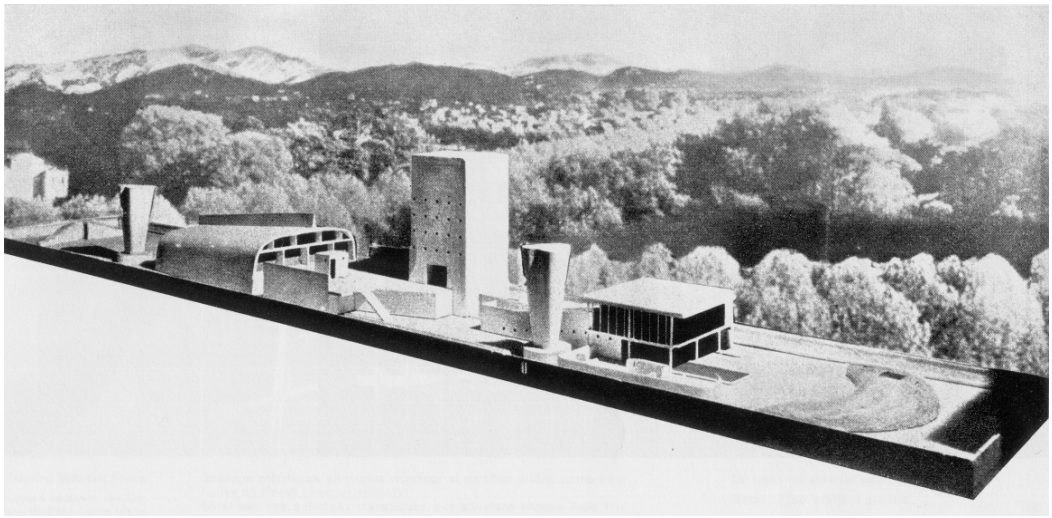
In these standards of modern living lays the vision of the return to human primary housing, to the ideal conditions of natural paradise, without calling into question the technological advances of the machine age, which was based on the optimistic view of human liberation. The invocation of an archetypal relationship *air-sound-light* is simultaneously associated with the past, present and future, the Parthenon and the machine, and the social vision of society without class differences, and thus without revolution.





[1] Cf. «Der Fragebogen von Le Corbusier 'Air – Son – Lumière'», in Martin Steinmann (ed.), *Internationale Kongresse für Neues Bauen: Dokumente 1928-1939*, Basel, Birkhäuser, 1979, pp.82-85, and Le Corbusier, *La ville Radieuse*, Paris, L'Architecture d'Aujourd'hui, 1935, pp.47-50.

[2] « Air, Son, Lumière. Conférence par Le Corbusier prononcée devant le Parthénon », *Chantiers*, 1933, σελ.1124-1129. I am quoting from the first publication of this lecture in the Congress proceedings : « Air, Son, Lumière », *Annales Techniques* 44-46, Octobre-Novembre 1933, pp.1140-1145 (Athènes, Grèce). The « Discours d'Athènes » was also published in *L'Architecture d'Aujourd'hui* 10, 1933, pp.80-89 .

[3] « Il y a 23 ans que je suis venu à Athènes ; je suis resté 21 jours sur l'Acropole à travailler sans arrêt et à me nourrir de l'admirable spectacle. (…) J'y ai acquis la notion de l'irréductible vérité. Je suis parti, écrasé par l'aspect surhumain des choses de l'Acropole. Ecrasé par une vérité qui n'est ni souriante, ni légère, mais qui est forte, qui est une, qui est implacable. (…) Quand je suis rentré en Occident et que j'ai voulu suivre les enseignements des écoles, j'ai vu qu'on mentait au nom de l'Acropole. (…) J'avais appris à réfléchir, à regarder et à aller au fond de la question. C'est l'Acropole qui a fait de moi un révolté. » (Le Corbusier, « Air, Son, Lumière », op.cit., p.1140).

[4] Ibid., p.1141-42.

[5] Ibid.

[6] "La vérité m'est apparue sans détour, impérative; c'est du poumon de l'homme qu'il s'agit; c'est ici une question de respiration ; c'est de l'air qu'il faut donner aux habitants, un air fait pour le poumon humain à 18□ environ. (…) C'est d'un air à juste hygrométrie qu'il s'agit. En un mot de l'air exact. Il faut fabriquer de l'air exact pour le poumon humain, sous toutes les latitudes. Il faut renoncer dans bien des cas à l'air du Bon Dieu. (…) Et cet air artificiel (…) il suffit dorénavant de l'envoyer dans les locaux d'habitation et de travail par des moyens bien simples que les constructeurs appliquent

depuis longtemps dans l'industrie ; les ventilateurs. Et, d'un coup, voici tous les problèmes de chauffage, de réfrigération, de ventilation simplifiés, ramenés à une seule technique : 'la respiration exacte'. (…)Une liberté totale à l'intérieur de la maison et la possibilité désormais de vivre derrière des murailles de verre avec un air toujours aussi pur et salubre que l'air de l'Océan. Comme sur vos plages, vous pouvez, derrière vos vitrages, être en plein soleil : votre poumon sera rempli d'air frais, d'air exact." (Ibid., p.1143).

[7] "Pour faire agir notre mécanisme de la respiration exacte, il faut fermer nos fenêtres ; mieux que cela : il ne faut plus de fenêtre ! (…) la façade sera hermétique. La façade du paquebot qui traverse les Tropiques, comme la façade du Building de Buenos-Ayres, comme celle du Grand groupe d'habitation ou de travail de Moscou. Autre conséquence, immédiatement : l'herméticité des façades de verre apporte le silence dans la maison, c'est-à-dire l'isolation des bruits du dehors. Si (…) je double l'épaisseur de ma façade de verre, j'obtiendrai une isolation totale des bruits extérieurs.

Insonorisation, isolation des bruits intérieurs et extérieurs de la maison ! Nous voici dorénavant à l'abri des bruits de la ville moderne. La T.S.F. de tous les voisins, le grammophone, le bruit abominable de la rue ! Le silence enfin reconquis. Nos nerfs enfin tranquillisés. Quelles promesses d'une vie meilleure. Air, son, lumière ! Le poumon, l'oreille, l'œil satisfaits. L'organisme des citadins remis à nouveau, et d'un coup, dans les conditions primordiales du développement de la vie biologique." (Ibid., p.1143).

[8] « Si nous voulons bénéficier du véritable air du Bon Dieu et non pas de l'abominable air vicié fabriqué dans nos villes par les poussières, les gaz et les microbes ; si nous voulons recevoir chez nous les bienfaits inestimables de la lumière solaire ; si nous voulons plonger notre travail, nos loisirs, nos méditations et nos nerfs dans le bain indispensable et rafraichissant du silence ; en un mot si nous voulons que la vie dans les villes redevienne conforme aux lois fondamentales de la biologie humaine et nous apporte ainsi de la sérénité, de la joie et du courage, nous devrons envisager la nécessité de nous saisir des inventions techniques, qui sont le progrès, et nous devons bouleverser les habitudes séculaires de l'architecture et de l'urbanisme *en créant de nouvelles unités de grandeur* tant pour nos habitations que pour nos lieux de travail et de loisir. C'est ainsi que nous pourrons froidement et sagement déterminer ce qui constitue les '*joies essentielles*', autrement dit ce qui donne à la vie sa vraie saveur. » (Ibid., p. 1144).

[9] "Tout ce confort que je puis donner à la fabrique, à mes ouvrières, je ne puis pas le leur donner chez-elles; je ne puis même pas me le donner chez moi'. Voici où s'insère le problème des nouvelles dimensions, des *nouvelles unités de grandeur*, pour la solution duquel nous sommes réunis en Congrès d'architectes et d'urbanistes." (Ibid).

[10] « Transportons la fabrication des logis dans la grande usine, dans la grande manufacture, avec toutes les machines et toutes nos équipes prodigieusement spécialisées. L'exemple existe déjà: Le paquebot magnifique, le wagon-lit ou le wagon-restaurant. » (Ibid., p.1144-1145).

[11] « Lire l'ensemble, comprendre où le détail doit aller se ranger; mesurer ce que sont les exigences et les possibilités de l'esprit; savoir reconnaître dans l'héritage des travaux humains, les éléments permanents, et alors, d'Athènes au Pirée, et du paquebot, du grand 'liner' qui passe, jusqu'au Parthénon qui regarde, - à travers le paysage sublime, et une ville qui se doit, de se ressaisir et de pousser dans la grâce et la beauté, une seule attitude: l'esprit. », Ibid., p.1145.

[12] « Et les 'joies essentielles' sont entrées au logis. La nature est inscrite dans le bail. Le pacte est signé avec la nature. Les arbres sont entrés dans la chamber du logis. » (Le Corbusier, *La maison de hommes*, Paris, Plon, 1942, p.89).

[13] « Des palmiers, des bananiers; la splendeur tropicale anime le site. On s'arrête, on y installe son fauteuil. Crac! Un cadre tout autour. Crac! Les quatre obliques d'une perspective! Votre chambre est installée face au site. Le paysage entre tout entier dans votre chambre. (…) Rio de Janeiro est un site célèbre. Mais Alger, mais Marseille, mais Oran, Nice et toute la côte d'Azur, Barcelone et tant de villes maritimes ou continentales disposent de paysages admirables! » (Ibid., p.69).

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FROM CUBISM TO PURISM: ART AND DWELLING IN LE CORBUSIER'S LA ROCHE HOUSE-GALLERY.

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Between 1921 and 1923, during the auctions of the Kahnweiler collection, the Swiss banker and art collector Raoul La Roche purchased a great deal of cubist works of art, thanks to the consulting of Le Corbusier and Amédée Ozenfant. As a consequence, his collection, that held also purist paintings, became too large to be contained in La Roche's old apartment in Paris and Le Corbusier convinced him to build a new home with art gallery, in order to display his new collection.

La Roche was a bachelor who lived in total independence. His only passion was contemporary art, to which his great friend Le Corbusier had initiated him.
Before meeting Le Corbusier, La Roche's old apartment was indeed decorated with eighteenth-century engravings.

After visiting the first Purist exhibition at the Thomas Gallery in 1918, La Roche discovered in Purism a mirror of his own aesthetic sense.

He completely agreed both on Le Corbusier's art and ideas. The neoplatonic idealism, the formal rigour, the great admiration for the engineer and industry and the explicit reference to a "puritan" lifestyle had a great appeal on this austere Swiss Protestant.
He immediately started collecting purist paintings, and became one of Le Corbusier's major supporters. Soon after, La Roche was also one of the financing stakeholders for the foundation of «*L'Esprit Nouveau*».

Thus, as La Roche himself affirmed, this gave to Le Corbusier maximum freedom in the house design, allowing him to finally carry out some of his avant-garde ideas in architecture.

Le Corbusier had also total freedom in purchasing the paintings at the Kahnweiler auctions, carefully chosen according to the purist sensitivity.

The project for the house, therefore, arose from the fundamental purpose of exhibiting the art collection. The work of art became the reference for an architectural space built around it, in a mutual relation of valorization, as we can see from the first design sketches. In the house, domestic and public spaces were parts of a single exhibition path articulated in different levels of privacy and accessibility along an architectural "promenade".

The program complexity was submitted to the need of sharing the living space with a collection of works of art, even open to the public. Another issue was the conflict born between La Roche's request of a «frame for a collection» and Le Corbusier's aspiration to make a «poem in walls»[1], that concerned the balanced presence of an art collection inside a pure work of architecture.

Unfortunately, today the art collection is no longer in the house, because La Roche donated it to the Basel Kunstmuseum in 1962, before his withdrawal in Switzerland for health reasons.

The didactic purpose of the exhibition prepared by Le Corbusier in 1926, after the achievement of La Roche house, intended to demonstrate his personal thesis on art. Indeed, the pictures hanging in 1926 were considered to show the artistic path leading from the early works of the analytic period of Picasso's and Braque's Cubism, through the «crystal» period, to the final "purist" synthesis of Le Corbusier's and Ozenfant's painting.
This attempt was the logical consequence of Le Corbusier's ideas asserted in his book *La Peinture Moderne* (1925) and in various articles issued in the *Esprit Nouveau*, that seem a radical change of mind compared to what he had previously affirmed in *Aprés le Cubisme* (1918).

Indeed, in *Aprés le Cubisme* Ozenfant and Jeanneret criticized Cubism harshly, doubting its theoretical assumptions and asserting that it was unfit for modern times, while Purism was presented as transcending Cubism and as the right art for modern epoch.
In *La Peinture Moderne* the tone changed completely: criticism was softened in the separation among the different periods of Cubism, and the «crystal» period was intended to be the link that connected Purism to the artistic experience of Cubism.

This change of route was not casual. Le Corbusier understood that, with the project for La Roche's house, he had the great opportunity to display his Purist paintings together with the masterpieces of Cubism (La Roche's collection included works of Picasso, Braque, Gris, Lipschitz and Léger). Therefore, the whole exhibition path (as the entire house) was designed in order to legitimate Purism and demonstrate his personal thesis.
According to Le Corbusier, geometrical research and synthetic clearness was the only right direction pursued by Cubism. This was clearly expressed by some works of Picasso, Braque and, particularly, Juan Gris. Purism arose from this idea of geometrical perfection exemplified by crystals in nature.

The original display of La Roche's collection may be seen on the photos taken by Fred Boissonnas in 1926.

Starting from the beginning of the display path, a photo[2] of the hall shows the hanging in this space, that was the "presentation" of the general display meaning. Cubist and Purist paintings are programmatically compared directly. On the left, there is Braque's *The musician* (1917-1918), on the right wall Lipchitz's "crystal" work *Composition with guitar* (1920) and, in front of the visitor, *Woman and child* of Léger (1922). This last one, placed off-center, seems to indicate the continuation path to the upper floor. Léger was considered by Le Corbusier as a Purist, therefore this also represents, metaphorically, the "future" path of painting.

To complete this cycle, in another Boissonnas's photo[3] we recognize on the right side wall the large Purist still life *The buffet* (1925) of Amédée Ozenfant, probably painted on purpose to be exhibited here. Pursuing the path to the upper floor, the transition space before the gallery presents a significant example of mutual interaction between art and architecture: two Lipchitz's sculptures are carefully placed on different planes, in order to be theatrically exposed to the dramatic crossing light of the two side windows.
Boissonnas's photos of 1926 show the gallery as it was before the renovation works of 1928 that changed significantly this space, carried out in collaboration with Charlotte Perriand.

In a picture[4] we see Lipchitz's bas-relief *Still Life with Musical Instruments* (1918), over a concrete shelf made on purpose to sustain it on the curved ramp inner wall. This work is also clearly recognizable in the drawings of the gallery renovation of 1928.

Braque's painting *Pedestal table*, (1911) leans against the same curved wall. This was one of La Roche's favorite paintings, so we find it in many photos, even in different positions. Ozenfant's *Still Life* of 1921 is placed at the beginning of the ramp, on the background curved wall, as to indicate the pursuing of the *promenade* to the library. In the bottom wall we distinguish Braque's *Still Life with jag,* published on *La Peinture Moderne.*

In this picture the gallery is still lightened with a provisory system, made with some simple incandescent lamps, hanged on electrical cables. Besides, La Roche was worried here about the strong light coming from the large south-east window, that could damage his paintings.

Le Corbusier found a solution for both problems in 1928, when he added the long *brise-soleil*, that worked also as an electrical indirect light source, projected on the ceiling.
In another photo[5], next to Braque's painting, the place of honour is reserved to Picasso's *Bullfighter* (1912). At its right, after an unidentifiable painting, there is probably Braque's *Still Life harp and violin* (1911/12) and the large canvas *The white pot*, painted on purpose by Ozenfant in 1925 to be displayed in this gallery.

Comparing Boissonnas' photos with the ones taken by other photographs sometime later[6], differences and "invariants" allow us to grasp the catalyzing properties of the spaces.
For instance, a picture taken upon Le Corbusier's request for the *Almanach d'architecture moderne*[7] shows, through a calculated shot, a futurist transparence that joins into a dramatic visual relation the close-up Lipchitz's *Composition with guitar* (1920) with the transatlantic-shaped canopy of the roof-garden.

Going back to Boissonnas's photos the display path continues up the ramp, to the mezzanine and the library. Before 1928, those spaces where in a closest relation because of the absence of the glazing door, added with the renovation works.

In the mezzanine[8], over the sofa we had Ozenfant's *Still Life with glass of red wine.* On the shelf we distinguish Picasso's collage *Pipe, Bottle and dice*. The shelves of the mezzanine, as we see from the picture, were used as "*casiers à tableaux"* to store small paintings. According to Le Corbusier's opinion, the paintings had to be used as books, taking them out only for their contemplation.

The adjoining library[9], hermitage of La Roche's studies, seems a further approaching step between Cubism and Purism. Here indeed, we identify Léger's *Two women at the toilet* and Le Corbusier's *Book, pipe and glass.*

La Roche's path from this meditation space, to his bedroom, in the evening, was long and complex. He had to go back downstairs through the ramp, pass the bridge overlooking the hall, then go up the staircase again. Here he found, finally in his bedroom, the eulogy of Purism.

The famous "*chambre puriste*"[10] indeed, conclusion of the exhibition path, was completely dedicated to Purist painting, as already occurred in La Roche's old apartment in rue Costantine[11].

Here, in this last episode, purist painting finally finds its celebration as the legitimate successor of Cubism.

In this very simple room, with a monastic rarefied atmosphere, there were three paintings. On the front wall, two Ozenfant: *Jug, bottle, guitar in a cellar* (1919) and a *Still Life* (1921-23). On the right, in the place of honor over the bed, there was Jeanneret's *Still Life with white jug on blue bottom* (1920). La Roche reserved this place, usually occupied by religious icons in bourgeois houses, to his lay Purist prophet: Le Corbusier.

The role of paintings in this essential room was fundamental for the architecture completeness, defining the space.

Even architectural polychromy played a fundamental role in the space characterization. Le Corbusier mentioned, indeed, how his studies on the use of color in architecture came out from his experience as a painter[12].

La Roche however, was completely faithful to the aesthetic principles of Purism, and patiently endured all the building's faults.

He lived his exceptional house with stoicism and living comfort was often sacrificed to nourish his spirituality.

Six months after moving in his new house there was not yet an efficient lighting in many spaces. In several photos the only visible lighting source are just some small neon *Chalier* or few incandescent lamps. The lighting levels in 1920's buildings were much lower than today, and we can imagine Raoul La Roche at late evening, walking in the semi-darkness like a devoted monk, throughout the long path from the library to his bedroom. There were also many problems of thermal insulation, condensation, and even acoustic problems, requiring the addition, in 1936, of some insulation panels in the gallery. This will lead La Roche to affirm: «my house is like a beautiful lady: capricious and expensive.»[13]
Focusing on the concept of Le Corbusier's design for La Roche house, it is evident how the main generating principle was the *promenade architecturale*, that coincided with the display path.

The works of art played with the architecture a mutual interaction, qualifying the "tension" of the space. Thus, the work of art had, in this architecture, quite a metaphysical role.
Le Corbusier stated: «*The painting will come, at the right moment and at the right place, to bring meditative pleasures. In this house, where centres of gravity, of attraction, affirm themselves, a painting will be, in these places, as the clear crossing of the perfect accord..*»[14]

The presence of the works of art in many drawing details, led us to consider how some spaces were designed on purpose to hold some works of art. It seems evident, as well, that Le Corbusier and Ozenfant made some paintings on purpose to be displayed in that house. Thus, La Roche's house and its collection can be considered together as an outstanding example of modern *Gesamtkunstwerk.*

For a long time, a remarkable contradiction in the La Roche house has been the interruption of the «*promenade architecturale*» (the bedroom was not accessible to the public from 1975 until November 2009) and the absence of the La Roche collection.
Recently, this masterpiece of Le Corbusier's domestic architecture was restored in its physical body, but without taking into consideration the deep metaphysical relations

established with the works of art, so that today this architecture expresses a silent incompleteness.

Nowadays, to recover these lost relations, besides having restored the *«promenade architecturale»* it would be necessary to reinstate also the display path of 1926.
Unfortunately, the original works of art are today scattered among the Basel Kunstmuseum, the Centre Pompidou and other private collections. We are aware, therefore, of the great difficulty to recover them even just for a temporary exhibition. Such a challenging task, nevertheless, could allow us to finally grasp La Roche house's lost *Aura*.

In addition to this, a further essential and irreplaceable element, is definitely absent in the house: its owner, Raoul La Roche.

Passionate art collector, with his radical Purist lifestyle, La Roche was the perfect dweller for Le Corbusier's ideological building.

Alone, in his chapel consecrated to an Huguenot worship of beauty, he lived personally the utopian Saint-Simonian project of a synergic collaboration among the elites of art, finance and industry. In this manner, he emblematically personified the political and cultural program of «*L'Esprit Nouveau*».

Illustrations

1) La Roche house, above: The entrance hall. Photo Fred Boissonnas, 1926, FLC L2(12)102; below: Gallery access, Photo Fred Boissonnas, 1926, FLC

2) La Roche house, on the left: view of the roof canopy from the gallery (from Almanach d'Architecture Moderne); on the right: Gallery view, with Lipschitz's bas-relief, Photo Fred Boissonnas, 1926, FLC L2(12)144

3) La Roche house, above: Gallery view, Photo Fred Boissonnas, 1926, FLC L2(12)148; below: Gallery view in a messy state after the renovation of 1928, Photo Fred Boissonnas, 1928, FLC L2(12)104

4) La Roche house, above: The mezzanine, Photo Fred Boissonnas, 1926, FLC L2(12)146; below: La Roche's bedroom, Photo Fred Boissonnas, 1926, FLC L2(12)145

[1] Cf. Letter of La Roche to Le Corbusier, may 24th - FLC P5(1)209
[2] FLC L2(12)102
[3] FLC L2(12)81
[4] FLC L2(12)144
[5] FLC L2(12)148

[6] Among them, some interesting photos, taken by Frank Yerbury probably in 1927, represent a more natural site state.
[7] Le Corbusier, *Almanach d'architecture moderne*, collection de l'Esprit Nouveau, Ed. Cres, Paris, 1926
[8] FLC L2(12)146
[9] FLC L2(12)109
[10] FLC L2(12)145
[11] «I hanged your large painting in front of my bed, it is really remarkable and it gives me great delight. Purist painting is concentrated in my bedroom, and it is a whole quite more perfect than the cubist paintings of the living room». Letter of La Roche to Le Corbusier (FLC E 2-7 (129), may 1923.)
[12] Le Corbusier «Polychromie architecturale», in Arthur Ruegg, *Polychromie architecturale*, Birkhauser, Basel, 1998
[13] Quoted by Philip Speiser, in *Villa La Rocca* (Brochure), Bernard Artal Graphisme, Paris 2009, p.4
[14] Le Corbusier, March 1926, «Notes à la suite» in *Cahier d'Art* n.3, Editions A. Morancé

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LEARNING FROM THE PEOPLE.
VERNACULAR, IDENTITY AND HOUSING DESIGN IN PORTUGAL

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Modernity and Vernacular

In his essay "Universal Civilization and National Cultures" (originally published in 1955), Paul Ricoeur stated that "everyone experiences the tension between the necessity for the free access to progress and, on the other hand, the exigency of safeguarding our heritage". Therefore, he points out the paradox: "How to become modern and to return to sources?"[1]

This dialectic between modernity and cultural identity has recently been addressed again by scholarship in publications such as "Vernacular Modernism"[2] or "Modern Architecture and the Mediterranean: Vernacular Dialogues and Contested Identities"[3]. The previous argue that "the notion of a faceless and abstract modernism was much less hegemonic in twentieth-century architecture than is often assumed. (...) The vernacular was employed, consciously or inadvertently, as a corrective to modernity's universalism"[4] and the latter "aims to bring to light the creative debt that twentieth-century modernist architecture owes to extant vernacular traditions of the Mediterranean region."[5]

This paper aims at contributing for this reassessment of the presence of vernacular within the modern, exploring the dialogue between modernity and vernacular and its echo in Portugal. It will discuss the process that lead to the emergence in Portugal of a *third way* where architectural design could assume its modernity without breaking with tradition.

The modernity of vernacular architecture

In 1936, Giuseppe Pagano, director of Casabella, curated an exhibition at the Trienalle de Milano whose title was "Architettura rurale italiana: Funzionalità della casa rurale"[6]. Although by then a supporter of the fascist regime of Benito Mussolini, Pagano was critical about the regime's architecture and used vernacular references to support his functionalist approach. According to Michelangelo Sabatino, the 1936 exhibition "convincingly demonstrated the extent to which vernacular buildings and urban forms suggested vital, 'functionalist' design solutions in contrast with the stale, historicizing tendency of official Fascist architecture."[7] Pagano was at the same time interested in the

affirmation of the functionalist character of Modern architecture and in its relation with Italian national identity.

One year later, in 1937, Brazilian architect Lúcio Costa, published an article in the journal of the Brazilian Heritage Preservation Service (SPHAN) claiming for a study about Brazilian vernacular architecture and its origins[8]. In this article he claims that more attention should be given to the "uneducated" works built by the *mestre-de-obras portuga* (Portuguese emigrant master builder), and for its building's "correctness of the proportions and the absence of *make up*", which contributes for its "perfect plastic health"[9].
Lúcio Costa had a clear goal for this research. He claimed that "we, the moderns, can learn from an experience of more than three hundred years, in other way than simply reproducing its already dead appearance"[10]. As an expected conclusion, Costa argues that from that exam, "certain current prejudices" [against modern architecture] would be challenged, revealing even how [modern architecture] is also part of the natural evolution that is under development[11].

In 1943, opens in the Museum of Modern Art, in New York, the "Brazil Builds" exhibition curated by Philip Goodwin. This exhibition became a big success, travelling around the world[12], and its bilingual catalogue (English and Portuguese) would be an influential reference for a generation of Portuguese architects educated and practicing in the late 1940's and 1950's[13]. In Portugal it was called "the Bible"[14]. In fact, in an interview given in 1988, Távora refers that at the final stage of his architectural education "Le Corbusier's architecture was arriving triumphal (…) and at the same time Brazilian architecture was also emerging with Lúcio Costa, Niemayer, etc. One book appeared, 'Brazil Builds'".[15]

Apart from its impact revealing the architectural achievements of a generation of new and talented Brazilian architects, this exhibition was also interested in creating a link between modern architecture, history and the vernacular. The subtitle of the exhibition and catalogue was "Architecture new and old 1652-1942". In fact, together with modern buildings and projects by Lúcio Costa and Óscar Niemayer, buildings and settlements such as historical colonial towns and villages, *fazendas* (rural communities), churches, or fishermen's huts were also displayed.
This event will launch a series of exhibitions held at MoMA which will contribute for the conciliation of modernity with tradition, after the "International Style" exhibition of 1932, which according to Elizabeth Mock created a "genuine suspicion of the romantization of the machine", producing "cold abstractions".[16]

Between traditionalist formalism and architectural internationalism

As in Pagano's Italy, in the 1940's Portugal was also under a dictatorial regime and therefore the architectural debate about tradition and modernity became also related with nationalism and style. An important contribution for this debate started in 1933, when the English and German educated Portuguese architect

Raul Lino published one of the best-seller architecture books in Portugal: "Casas Portuguesas"[17]. According to the anthropologist João Leal, Lino's program consisted of two main ideas: "what is popular is beautiful and what is popular is national"[18].

Naturally this program was fully supported by the Portuguese dictatorial regime of the period, which was interested in the association of the nationalist language of the *Casas Portuguesas* movement with its own nationalist discourse. It was the desired model for the regime's pastoral project of creating a society with the virtues of rural communities.

In the mid 1940's, Fernando Távora and Keil do Amaral challenged the premises of this movement and argued for a deep study on vernacular architecture to verify if such thing as a "national architectural language" could be found at the site. In the same way Lúcio Costa argued ten years before, Távora claims that "the vernacular house will supply us with great lessons when properly studied, as it is more functional and less fanciful, or in other words, more in accordance with the new intentions[19].
For Távora, at this particular moment in his career, these *new intentions* were Modern Movement's principles and it was important to make a clear distinction between the vernacular and the regime's supported traditionalist formalism.

Again, this debate was replicating the one experienced in Brazil at the end of the 1930's between those who supported a neo-colonial architectural approach and those who where engaged with modern architecture. The project for the new Ouro Preto Hotel is a good illustration of this debate and the role of Lúcio Costa as moderator was crucial for the final solution, contributing with a conciliatory approach "concerned with the expression of a modernity supported by tradition and the affirmation of the country's identity within the western civilization".[20]

This debate about architecture and national identity was a central theme in the first Portuguese National Architects Congress in 1948 and one of the outcomes of this Congress was the decision to develop a serious research on Portuguese regional architecture. The Brazilian influence, both directly and indirectly through its well know modern architects and the MoMA catalogue cannot be overlooked. It encouraged the young generation of Portuguese architects to look to their (common) roots without prejudice.

After several years of pledging for support, the survey on "Portuguese Regional Architecture" was launched in 1955 and the results of the research were published in 1961 in the book "Arquitectura Popular em Portugal"[21].
According to Távora, "[With] the publishing of the text "O Problema da Casa Portuguesa" [1947] and the project "Casa à beira mar" [1950] as its plastic equivalent together with the survey on Portuguese Regional Architecture [1955-1961], a third way or a new modernity was being launched."[22]
This *third way* or *new modernity* was an alternative path to both the mimetic historicism of the nationalistic "Portuguese House" movement, and to the

modern idea of a universalizing architectonic style. Or, according to Giovanni Leoni, “the foundation of a third way to Modern Architecture, between the regime’s traditionalist formalism approach and the architectural internationalism.”[23]

Approximately during one decade, from 1947 until 1956, the search for this *third way* will emerge progressively and the dialogue between modernity and vernacular will have a fundamental role as support for a methodological shift in the architectural approach in general and housing design in particular. This shift can be illustrated by Fernando Távora´s early housing projects.

Modern as a counterproposal: Campo Alegre and Ramalde

In 1948, while working at the Porto Municipality technical office, Távora was given the commission to develop a plan for a housing district for the Campo Alegre area. The outcome was a plan with an orthodox modern affiliation, notably with the principles of the Athens Charter (Fig. 1). According to Esposito with this plan Távora intended to develop an urban design experience as a “counterproposal to the Portuguese official urban design, which had Muzio and Piacentini as two essential references.”[24] However, the plan was disapproved by the authorities arguing that it should be a “national solution, within the traditions of Porto”[25].

In a critical review of Távora’s work, written in 1961 by Nuno Portas, the latter claims that Campo Alegre’s plan "is a statement of radical modernity, which was the counterproposal to the precedent plans of the Italians (Piacentini and Muzio), and it constituted one of the first urban design proposals founded in the promotion of a social life with vigorously urban characteristics"[26]. In fact, at this point Távora was struggling against the "demagogic falsity" of the so-called "Portuguese style", and he praised modernity as a condition of being Portuguese. According to Nuno Portas, he believed in "the optimistic conclusion that the qualified application of Modern Movement's principles (following the CIAM principles) would allow the desired synthesis"[27].

Despite the unsuccessful outcome of Campo Alegre’s plan, Távora was comissioned in 1951 to plan Porto's Ramalde housing district (Fig. 2).
Távora therein proposes a "functionalist method, with its declared dependence on facade orientation, its concept of free area and 'core', in an explicit zoning definition"[28]. In the same review mentioned previously, Nuno Portas states that despite its late arrival "this was still the first and legitimate and even necessary opportunity for, a quarter of a century after, build 'our Siemens district'".[29]

However, the affiliation of the plan with interwar references reveals the displacement of Távora’s work with his contemporary writings. In fact, at the same time he designs a “Portuguese siemens district”, he also claims for an architecture contaminated by its circumstance, its context. In an article published in 1952, Távora claims that “The modernity of an event can be measured from the relation that it establishes with the conditions where it

happens. In terms of architecture and urban planning, modernity means the perfect integration of all the elements that can influence the realization of any work, using all the means that lead to a better accomplishment of a certain goal"[30].

In the buildings designed by Távora for Ramalde, the relation of the neo-plastic upper floors with the ground, are no longer made by *pilotis* but mediated by a basement in granite stones (typical of Porto traditional architecture). Although subtle, this seems to be the way Távora finds to produce that integration, essential, as he claimed, as a condition of modernity.

A methodological shift: The "Habitat Rural" CIAM grid

Among the six regions studied in the survey on "Portuguese Regional Architecture" during the period 1955-1961, the leaders of the two northern regions (Minho and Trás-os-Montes) were Távora and Lixa Filgueiras, both members of the CIAM-Portugal. In 1956, while still engaged with the field work for the survey, these two architects together with Viana de Lima (who was the leader of the CIAM Portugal group), developed a project for a new agricultural community as the Portuguese contribution for the 10th CIAM congress in Dubrovnik[31]. Its location was a rural area in the northeast of Portugal, which Filgueiras was studying for the survey (Fig. 03).

The Portuguese "Habitat Rural" grid emerged in the Dubrovnik congress as a reference for the ongoing debate about community and identity leaded by some of the Team 10 members. The report of the first session of the commission headed by the Smithsons, stated that "the problem of the cluster is one of developing a distinct total structure for each community, and not one of sub-dividing a community into parts."[32]. For the Portuguese group this was also an important issue, which could be achieved through an analysis of pre-existing settlements. In fact, the project presented at Dubrovnik was designed for a group of about 40 families, based on the average size of other existing communities in the region (25-50 dwellings each) and replicating their basic urban structure.

Concerning the issue of identity, this project explored it from two perspectives. One the one hand, the design of the buildings deliberately seek to achieve a synthesis of local building traditions (which were being studied for the survey), with a contemporary approach. On the other hand, it allowed (and even stimulated) the participation of the users in the building process. The architects argued that "the principles followed by the general plan and by the dwellings plan allows a truthful and permanent collaboration of all people in the architectural and urban works, collaboration which entitles them to say my house, my village."[33]

Regarding the design of the family cell, they claimed that the "plan allows a great variety of types, which can be adapted to the growth of the household, which members could themselves initiate the development of necessary work to

adapt the house to the needs of the moment."[34] The project intended to provide a basic structure, which could have the flexibility to be transformed according to each family's needs (Fig. 04).

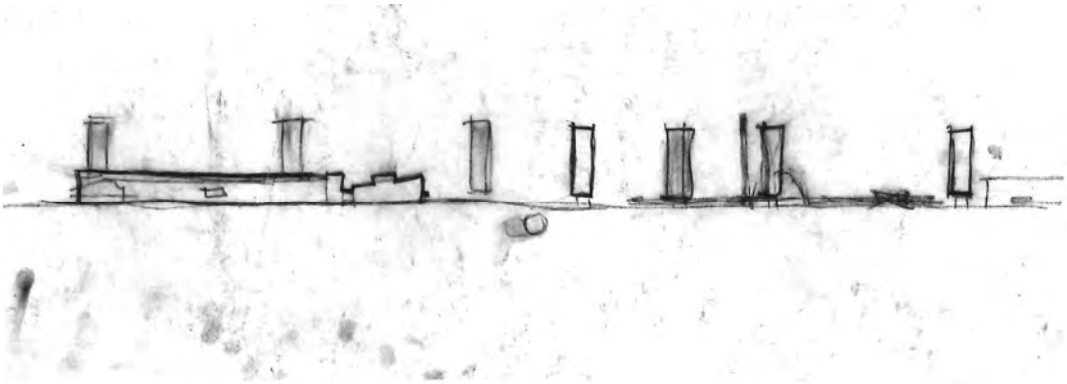
The flexibility of the design was highlighted in Bakema's commission report, where it was stated that the Portuguese project was an example of their proposal that "the architect-urbanist must provide (…) elements which can be changed by individuals and by groups in order that they may express creatively their separate identities."[35]

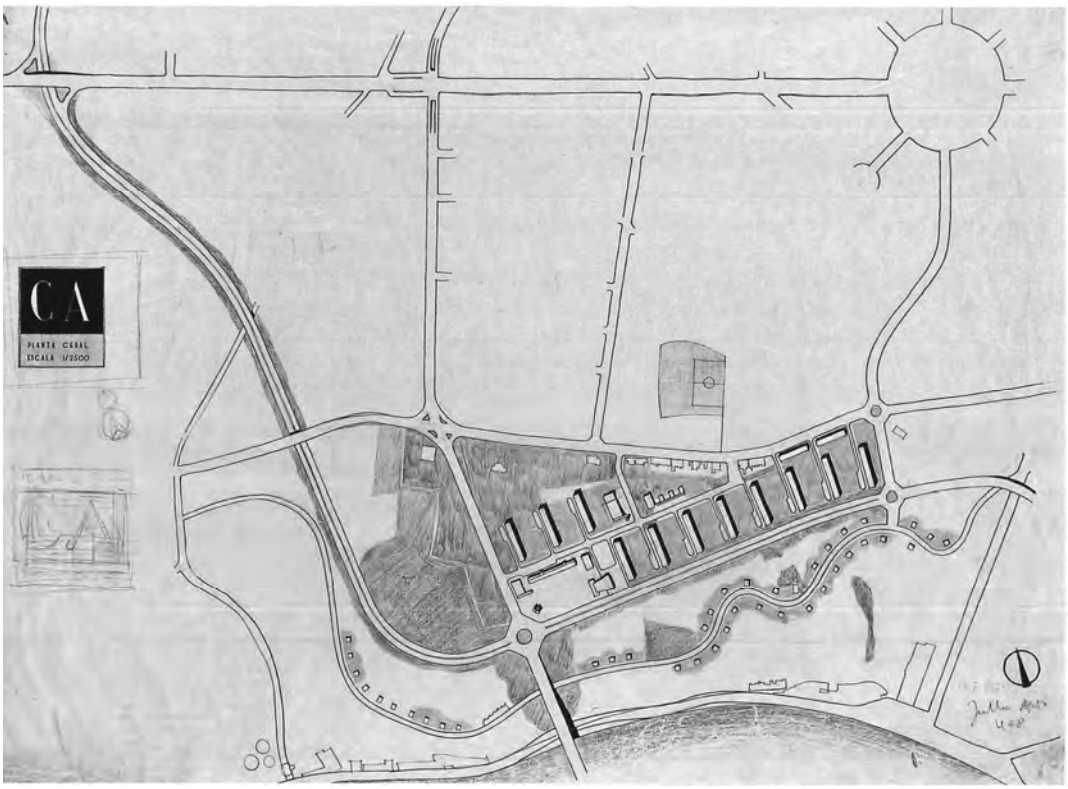
A *third way* emerging from the periphery

Although unbuilt, the "Habitat Rural" project represented an important step to a change of paradigm. In the late 1940's Távora challenged the idea of a "national architectural language", arguing for an insightful study on vernacular architecture. This research was intended to illustrate how the premises of vernacular architecture were close to modern architecture's principles, hence legitimating the latter, which essentially was also Pagano and Lúcio Costa's agenda. In fact, Távora's late 1940's and early 1950's projects were still affiliated with interwar modern references, without signs of contamination from the vernacular.

However, with his engagement in the survey on Portuguese Regional Architecture an important shift occurred. Now, vernacular references became more than a simple instrumental support, they became a methodological tool for a novel approach to architecture, especially to housing design.
The Portuguese "Habitat Rural" project can be read as a reference for the debate that was at stake in the mid 1950's among the avant-garde *fora.* Vernacular references and the "architecture without architects" became the support for an architectural approach addressed no longer for the ideal man but for the real man.

The project presented at Dubrovnik brought this anonymity to the heart of the design method. The spontaneous process of how a community is organized was used and replicated as support for the architectural approach. As stated by Esposito, "the group proposes an antiheroic architectural idea which looks without disregard for a role of anonymous service to the community."[36]
From his peripheral position, from the *arrière-garde*, Távora progressively allowed modern principles to be contaminated by vernacular references, thus defining his *third way* approach between "traditionalist formalism" and "architectural internationalism".

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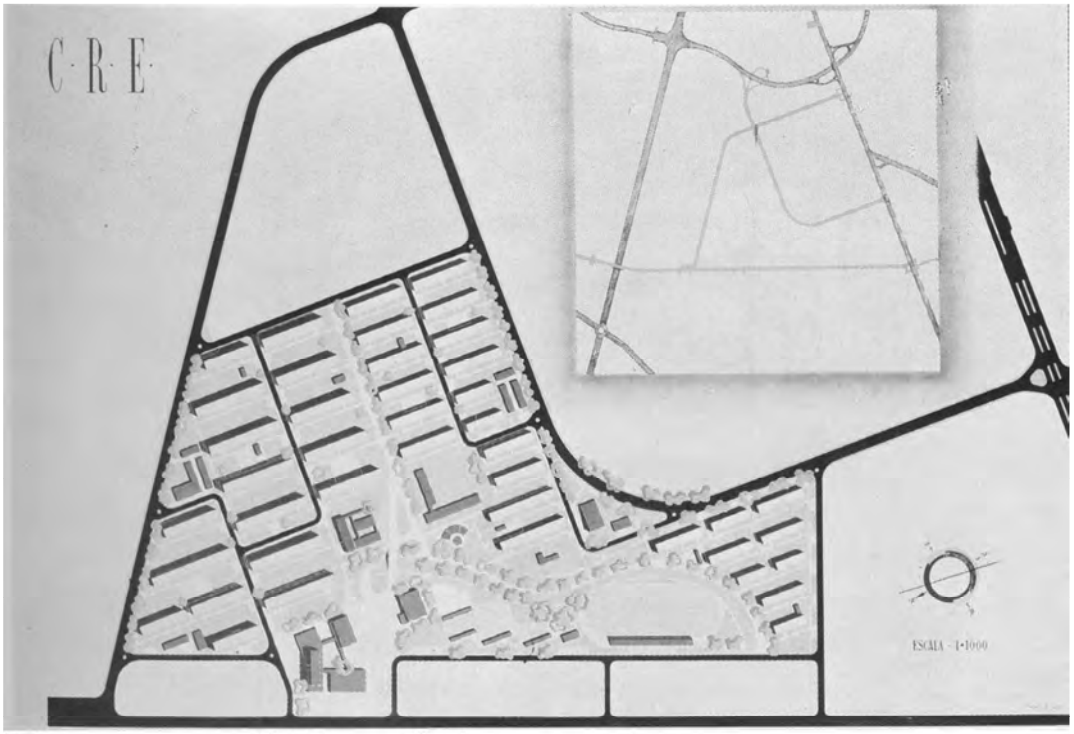
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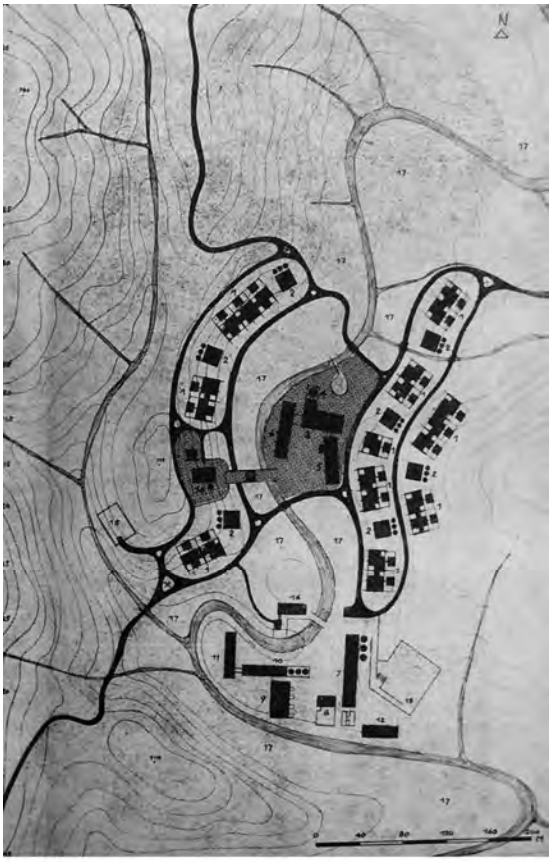

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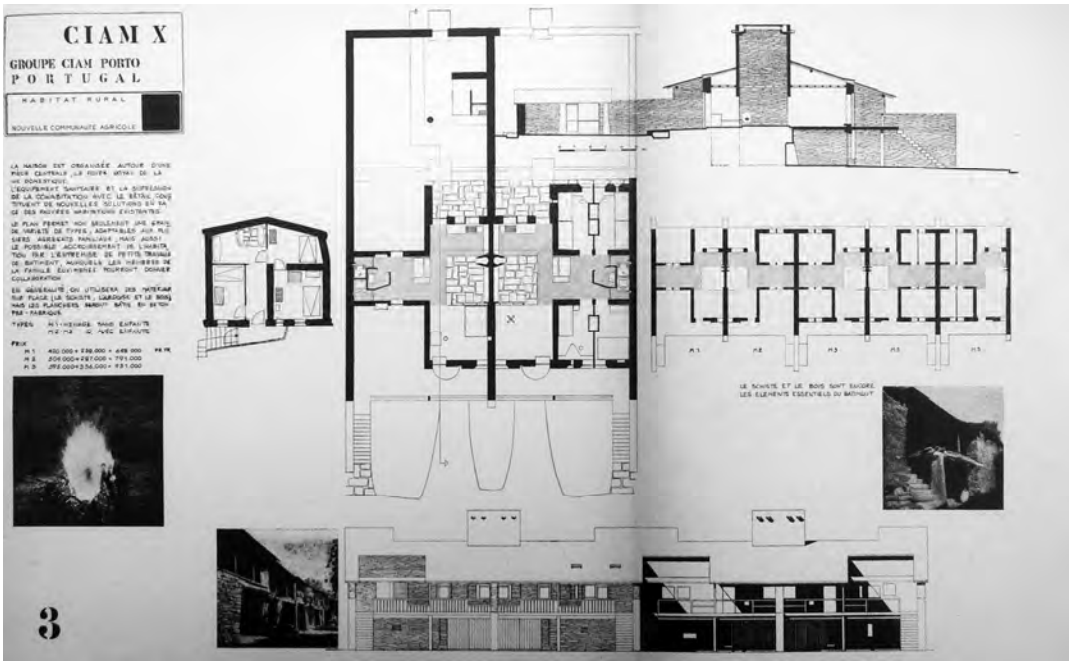

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I wish to thank Prof. Dick van Gameren, Prof. Dirk van den Heuvel, Prof. José António Bandeirinha and Prof. Carlos Eduardo Comas, for their insightful critical contributions to the writing of this paper. This work was supported by the University of Coimbra and the Fundação para a Ciência e Tecnologia (SFRH / BD / 60298 / 2009).

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[35] CIAM 42-X-115a, 95.
[36] Esposito, A., 2005, 18.

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RICHARD NEUTRA AND THE HUMANIZATION OF THE MODERN SPANISH HOME

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In the 1950s, Spain plunged headlong into an accelerated and at times superficial modernization that left many Spanish intellectuals craving a deeper substance. In his 1960 essay entitled "It Isn't Geniuses We Need Right Now," José Antonio Coderch decried this trend towards a facile understanding of the work of the masters of modern architecture.[1] As he and other Spanish architects such as Francisco de Asís Cabrero searched for substance in the work of the masters they found a salient example in Richard Neutra. They discovered two aspects of Neutra's modern humanism that jointly set him apart from the other masters: his emphasis on self-actualization in Nature and his minute attention to the uniqueness of every human being. By appropriating these two tenets in their designs for single-family housing, they advanced the humanization of the modern Spanish home.

The two primary conduits in this trans-cultural exchange were Neutra's visits to Spain in the 1950s and the publication of his works and theories in the Spanish press.[2] Of these two conduits, the second represented a more sustained exchange. Certainly Coderch, and likely Cabrero also, first came into contact with Neutra as avid readers of GATEPAC's pre-Civil War journal *Documentos de la Actividad Contemporánea* (*AC*).[3] In *AC*, photographs of Neutra's works appeared more frequently than those of any other architect, Spanish or foreign. In the 1950s and 1960s, the Spanish journals *Arquitectura* and *Informes de la Construcción* continued the precedent established by *AC* by publishing a large number of articles on Neutra's works and theories.

As Coderch, Cabrero and other Spanish architects delved further into the content of Neutra's humanism, they discovered an architecture designed for human self-actualization by means of a connection with Nature; such connection was readily evident in Neutra's work due to his fusion of modern psychology, central European rationalism and Wright's attention to Nature. Alfonso López Quintás understood Neutra's primary concern as "the necessity to understand man in vital interaction with his environment."[4] For Neutra, the relationship between the human being and the environment is one of mutual definition; Neutra stated that "the individual is strong […] when he exercises influence over his surroundings, when he himself is stimulated by these and he

vitally configures himself within them."[5] Hence, for Neutra, direct contact with Nature is critical for the development of the human being's self-image.

Neutra defined Nature as that which "comprises all the requirements and characteristics of live organisms" and always referred to Nature as a proper noun.[6] For him, Nature was less a matter of green trees and good weather and more the substance of a continually changing *gestalt*. Neutra lamented the tendency of modernization to eliminate the critical contact between human and Nature. For this reason, while remaining highly "modern," his single-family houses demonstrate his attempt to bridge this separation.[7] As early as 1952, Spanish architect Francisco Sáenz de Oiza recognized Neutra's effort. He published a photomontage (Figure 1) that proposed Neutra's 1948 Atwell house as the direct heir of human tradition precisely because of its ability to reconnect the modern human being to Nature in a way that encourages the return to a timeless self-image.[8] López Quintás explained that self-actualization cannot occur without such integration and therefore belongs to the interstice of human and Nature. For this reason he proposed a dissolution of the empirical categorization of *inside* and *outside*, and found such a bond throughout Neutra's residential architecture of the 1940s, 1950s and 1960s.[9]

Neutra's successful blurring of interior and exterior spaces is a direct result of both Loos's *Raumplan* and Wright's harmonization of architecture with Nature. As a result of this fusion, Neutra achieved a rich, seamless spatial sequence that flows into, out of and through the house, and in which no "room" is either entirely interior or entirely exterior. As the inhabitant moves through the house and gardens, he or she is continually exposed to Nature to varying degrees. Therefore, according to Neutra, the entire house serves as a catalyst for human self-actualization.

During the 1950s Cabrero adapted this attribute of Neutra's humanism in the design of two houses for his own family in Puerta de Hierro. Before Cabrero set out to design the first house in 1952, six Neutra houses had already appeared in Madrid's architectural journals. One of these six houses, Neutra's little-known 1948 Sokol House was published in *Cortijos y Rascacielos* in 1951 and likely served as a reference for Cabrero's 1952 house.[10] As is evident in the photographs of his completed house Cabrero could have equally drawn inspiration from Neutra and Aalto; however, the site plan and floor plans reveal a clear Neutra thumbprint (Figure 2). Similar to Neutra's Sokol House, Cabrero chose to locate his house close to the street, reserving the rest of the long, narrow site for a private garden. This private garden is conceived as a natural extension of the most public interior spaces, to which it is connected by means of a long covered veranda. However, the sequence of interior and exterior "rooms" falls short of the seamless transition present in the Sokol House. While Cabrero's interior spaces indeed direct all activity towards the exterior, the

abrupt level change at the edge of the veranda and the undeveloped design of the garden result in an unconvincing connection between architecture and Nature.

Almost a decade later, Cabrero designed a second house (Figure 3) for his family on the same site as the first, in which the interior/exterior spatial flow is much more developed. Even more than in the first house, the interior spaces of the second house are clearly directed towards the exterior, thanks to Cabrero's choice of a structural steel frame that permitted large, diaphanous living spaces, ample use of plate glass and deep eaves that not only provided sun shading but also sheltered a veranda that served as an interior/exterior transition. Furthermore, the garden of the second house is much more developed than in the first house; indeed, this exterior "room" is less of a garden and more of a vernacular Spanish *patio*, being very clearly defined by the wings of the house and the lower tennis court, and serving as a natural extension of the interior spaces.

Neutra's humanism also emphasized the unique individuality of every human being, an aspect that was accepted by many as appropriate for the humanization of the modern Spanish home. When Neutra spoke of "the client," "the inhabitant" or "the user," he did not normally indicate abstract collective ideas such as "mankind" or "the human being;"[11] rather, he stated that, "'the tenant in the abstract' is a nebulous client."[12] Furthermore, Neutra argued that that there was no one ideal human form. On the contrary, his humanism embraced billions of uniquely ideal human forms, of all shapes and sizes, as represented by the planet's billions of inhabitants. He believed that it is for these individual and perfect forms that the modern architect must design. It is perhaps in this aspect that Neutra's humanism most distinguishes itself; while Le Corbusier followed the great humanists of the Renaissance to devise an idealized proportioning system based on his abstract, universal concept of the *Modulor*, Neutra's approach was more concrete and personalized.

In order to facilitate this attention to the individual client, Neutra developed what he considered a highly scientific method to ascertain the particularities of each individual client, which likely stemmed from his exposure to Freudian psychoanalysis as a young architect in Vienna.[13] This aspect of his humanism appeared in well-developed form as early as his 1929 Lovell Health House and more formally in his 1938 Windshield House.[14] For his Spanish audience, he outlined this "scientific" method in a 1960 article published in *Informes* under the title "Interrogation of the Client: An Art and a Science."[15] In this article Neutra proposed a series of specific interview questions that the architect could ask the client before embarking on the design process, such as musical tastes, sensitivity to light and cold, olfactory preferences, morning routines and preferential differences expressed by the individual members of the family.

Neutra even compared the initial conversations between architect and client to a medical consultation.[16] Therefore, Neutra saw the architect's task not as one of persuasion, in which the professional expert dictates to the uneducated layperson the correct mode of living; on the contrary, he argued that the architect must take the role of the student and learn this information from the client.[17]

Going beyond the idea of the architect as a student, Neutra argued that "the design of structures, if we take it 'not in the abstract,' concerns, above all, labor for human beings, and *with* them. Human beings must be served […]."[18] Agreeing with Neutra and always highly critical of Le Corbusier, Coderch stated that "the architect should adapt him or herself to the people's way of living, trying to serve them, not teaching them how to live."[19] Indeed, Coderch criticized Le Corbusier for having "fat hands" that designed over-scaled and insensitive architecture.

"In Le Corbusier, there was something that bothered me. I have always said one thing: that the way to do things well is not to follow some ideals [that are] more or less invented, very abstract and all that. They are very dangerous. [We] must go looking at things to see what happens."[20]
Therefore, it is no wonder that Coderch would prefer Neutra's emphasis on the real and individual human being to Le Corbusier's abstract, universalistic humanism.

Although Federico Correa, one of Coderch's greatest disciples, asserted that the greatest reference in Coderch's work was Neutra, and not Mies van der Rohe as has often been assumed, Coderch scarcely cited Neutra directly in his few writings.[21] This fact might raise questions about the suggested parallels between the architectural theories of the two architects; however, such doubt is quickly dispelled upon comparing their works. Kenneth Frampton cited the resemblance between the sliding louvered screens of Coderch's Catasús House and similar architectural devices in Neutra's Kaufmann Desert House as a clear sign that Coderch had studied Neutra's work.[22] Although Coderch was always generally well-informed of current events in architecture worldwide, he was probably first exposed to Julius Shulman's seductive photographs of the Kaufmann House in Neutra's 1954 Madrid lecture entitled "La arquitectura del factor humano," in which the house figured as a primary protagonist.[23] Taking into account the uncanny visual relationship between the photographs of the two houses (Figure 4) and the fact that Coderch finished construction on the Catasús in 1956 (only two years after Neutra's visit), it is probable that Coderch had the Kaufmann in mind while designing the Catasús. The stunning photographs taken by Català-Roca of the Catasús even replicate the twilight settings and precise camera angles previously chosen by Neutra and Shulman for the Kaufmann. Coderch was so pleased with this outcome that in 1969 he

sent Neutra photographs of his work, most likely including this photograph of the Catasús, to which Neutra replied "Thank you very much for your very beautiful photographs."[24]

However, the similarities are perceived beyond the photographs. The cross-shaped plan of the modest Catasús verges on the pinwheel plan of the more grandiose Kaufmann; moreover, the fixed planar walls that extend from Coderch's house, which Frampton accurately ascribes to Dutch Neoplasticism could equally be an interpretation of the "spur walls" and "spider-leg columns" that Neutra used throughout his residential work in an attempt to fuse interior and exterior space.[25] Moreover, Coderch's carefully planned yet generous openings, along with his use of exterior materials that penetrate the interior evoke Neutra's conceptual blurring of inside and outside.

As a result of a keen awareness of his work, these houses designed by Coderch and Cabrero disclose the thumbprint in Spanish architecture of Richard Neutra's brand of modern humanism. By delving further into the content of this modern master's theory, Coderch and Cabrero found a resonant model of modern humanism and applied it to the humanization of the modern Spanish home.

Illustrations

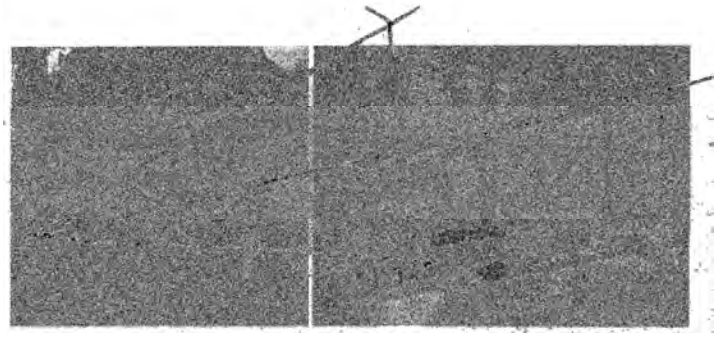

Figure 1: Neutra's Atwell House as the modern dwelling of the eternal human spirit, according to Francisco Sáenz de Oiza. Sáenz de Oiza, F. J., 1952, "El vidrio y la arquitectura", *Revista Nacional de Arquitectura*, 129-130, 11-67.

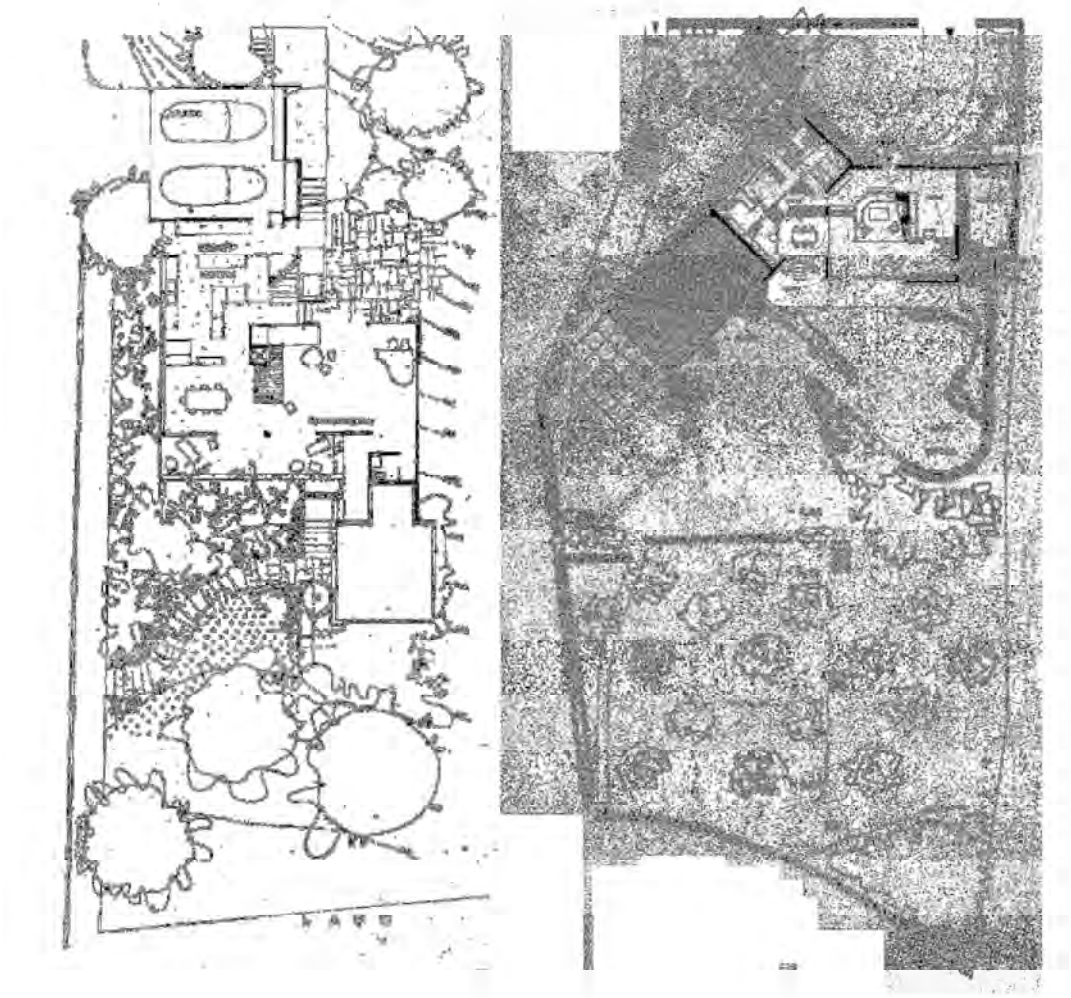

Figure 2: Left, Neutra's 1948 Sokol House; right, Cabrero's first house in Puerta de Hierro. Left, Unknown author, 1951, "Una 'Villa' de Ricardo Neutra en Los Ángeles", *Cortijos y Rascacielos*, 64, 27-29. Right: Cabrero, F. A., 1975, "La Obra de Francisco Cabrero", in J. C. Ortiz (ed), 1978, *Francisco Cabrero, arquitecto. 1939-1978*, Xarait Ediciones, Madrid.

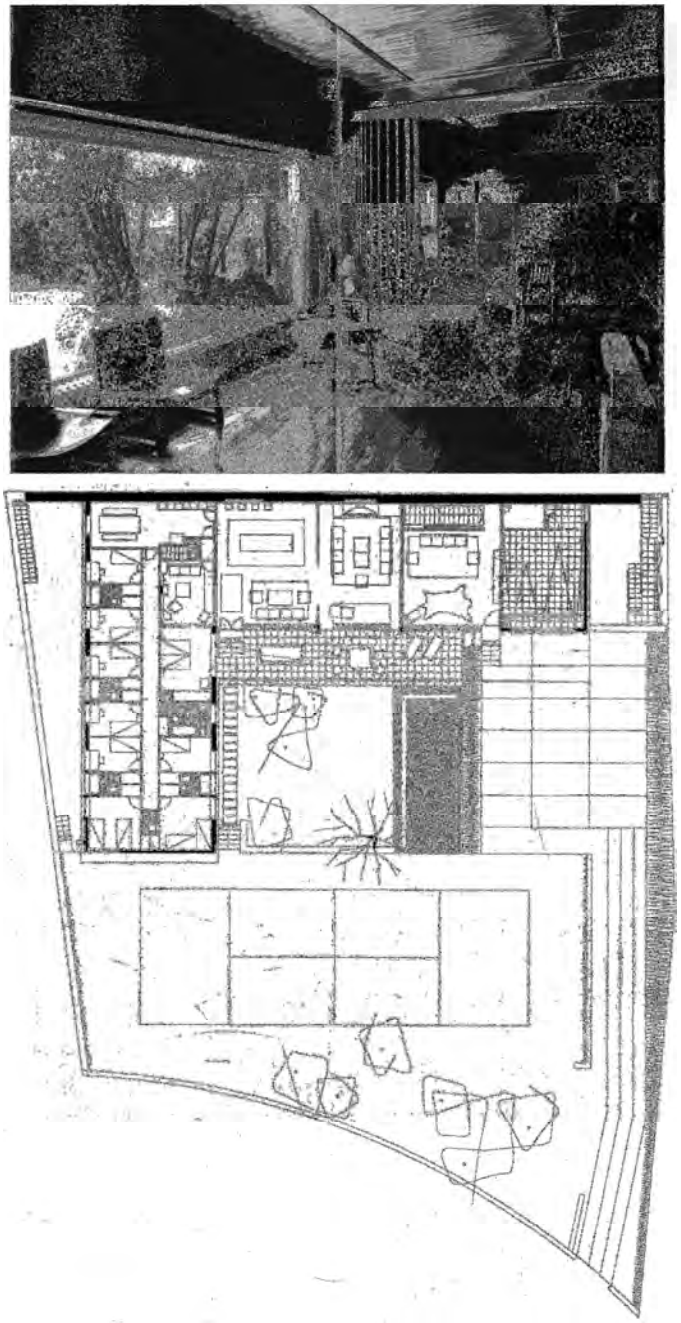

Figure 3: Cabrero's second house in Puerta de Hierro. Top and bottom, Cabrero, F. A., 2002, *Casa Cabrero en Puerta de Hierro, Madrid 1961*, T6 Ediciones, Pamplona.

Figure 4: Top, Neutra's Kaufmann Desert House; bottom, Coderch's Catasús House. Top, Julius Shulman, taken from Lamprecht, B. M., 2000, *Richard Neutra, Complete Works*, Taschen, Köln; Bottom, Francesc Català Roca, taken from Fochs, C., 1998, *J.A. Coderch de Sentmenant : 1913 – 1984*, Gili, Barcelona.

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THE SHADOWY MODERNITY OF SOME PAULISTA BRUTALIST HOUSES

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In 1950s–1970s Brutalism was a label often attributed to some architectures sharing rhetoric and results in several international forums; in Brazil the trend flourished in a more consistent way among São Paulo architects[i]. Not being an isolated manifestation neither being rooted in a strictly local context, nevertheless its houses do define a set of peculiar characteristics or a local mood: they seem to challenge the 20th century Modern paradigm of a thin, glassy, transparent house, in favor of a quasi opposite pattern of thickness and shadows.

Despite conventional program and site limitations, the design of Modern houses had often a very special status, oscillating between fitting the inhabitant's uniqueness and celebrating the architect's skills, the exclusiveness and particularity of haute couture and the utopian idea of a generic shelter to fit the necessities of great masses, both aspiring to please an extreme individuality and to achieve a broad universality. "Perhaps the house is a prestige construction in that it is the one program that most succinctly represents the ethos of a group of people [...] As the mediator between our most intimate lives and the outside world it is also about how we meet and negotiate our relationship with the universe: physically and psychologically, prosaically and poetically"[ii].

Modern dwellings were meant to be exemplary places where the combination of comfort and rationality would create the new adequate standards of living for the individual inhabitant and families. Nevertheless, architects and architectural critics have frequently admitted the necessity of surpassing the boundaries of comfort and conventionality, accepting house design as a fertile field to check new and daring ideas: "in the architectural practice the house is sometimes the only and certainly the best occasion for a design experimentation"[iii]. On occasion, a house may be designed not only as a family home but also a manifesto. In this sense, houses may be studied as valuable subjects when the task ahead is a critical debate or an effort to take the temperature of a given moment and place. In this study, houses design is considered to suggested some reflections on the variety of the modernity architectural legacy.

The place: São Paulo

Founded in the middle of the 16th century São Paulo was the first Portuguese settlement in the hinterland, standing in the Tropic of Capricorn 60 km from the Atlantic sea over a 750-800 m high plateau, with no outstanding geographical landmarks but a distant and seldom visible Jaraguá peaks to the North. For three centuries it remained a small village despite its strategic role as the spearhead to conquer the hinterland. After

the end of 19th and along 20th century the city grew exponentially thanks to the riches brought about by coffee plantations and the following industrialization. The city spread into a huge amorphous metropolitan area; differently from the Spanish colonial villages, with no pre-established urban pattern. After the 1920s, high-class garden suburbs with big parcels and strict regulations appeared and were quickly absorbed by the continuous urban sprawl.

In such scenario, most Paulista modern houses tended to explore intimacy and closeness, instead of the frank openness of windows. Architect Rino Levi at the Castor Delgado Perez house (1958) completely closed the house to the street, opening its social spaces into two pergola-covered patios. The exceptional site of Lina Bo Bardi's own house (1951) favored the extensive use of glass in the main façade, but its private and service quarters discretely opened to rear patios and the trees around soon provided a shield to protect its intimacy. But at least until the end of the 1950s most local modern houses still maintained the typical modern pattern of light walls and clarity of ambiances.

From the end of the 1950s Paulista Brutalist houses detached from the European Modernist white box / crystal box paradigm, experimenting with the opposite qualities of darkness and shadows. What seems to distinguish them is a sheer appreciation of a "non light" condition, encompassing a wide variety of situations, from dark deep shadows to more or less profound penumbra. In most cases this condition is obtained by an internal disposition emphasizing a large common space, very shaded, relatively closed to the outside, with wide protected openings that may filter very little natural light. This non-light ambience is accentuated by a grayish lightning environment achieved by the intensive use of raw concrete as an almost exclusive material used for structure, floors, walls, and furniture.

Interlude: natural light, form and effects

Says Spanish architect Alberto Campo Baeza:

> "Light is not something vague, diffuse, which is taken for granted because it is always present. (...) [But] light, like gravity, is something inevitable, absolutely inevitable, for Architecture has marched throughout history thanks to these two primordial realities: light and gravity. (...) And if the fight to win and conquer gravity is still a dialogue from which architecture is born, the search for light, the dialogue with it, brings this dialogue to more sublime levels."[iv]

Our appreciation of the luminous ambience of an environment never occurs only by understanding of the functional qualities of light. Pieter de Bruyne says that "the history of architecture begins with the challenge of darkness: the first humans to venture, with a torch in hand", within "a naturally formed cave"[v]. To win darkness becomes a challenge - but darkness is also shelter, comfort and inner tranquility in contrast to the dangers of the outside world. Charles Moore opines that,

> "Traditionally, rooms in houses have not always had a great deal of light because other concerns - the need for heat and privacy, as well as the cost of glass - have militated against it, and custom has often decreed the use of screens, Venetian blinds, curtains and draperies to control and at the same time minimize what little light small windows gave. The natural light source in a room,

> nevertheless, has great evocative power, and the images, for instance, of light falling through shutters, onto polished floors, or illuminating the sides of deep-set windows, or sliding across a white wall, as in the rooms Vermeer painted, strongly color our remembrance of places. What we mostly remember, of course, is not the light source itself, but the surfaces onto which the light falls: the polished floors, the casements, the wall. [...]" [vi]

The idea of "non light" proposes a notion of intimacy, of inner tranquility, which is inversely proportional to the vision of the city as a troubled and troublesome environment. It is a mute critique opposing to this environment a more perfect microcosm, of individualistic disposition. It is possible to understand this "tendency to use dark spaces as a means to express psychological interpretations, symbolic, metaphysical and philosophical. (...) But one cannot easily draw the line between these interpretations and merely functional intentions of the builder."[vii]

Paradoxically the interior spaces Paulista Brutalist houses are meant for a very "public" use for their immediate inhabitants. Their impermeability and privacy are dissolved by the spatial arrangement that converges to an open but covered common area that acts like a totalizing, panoptical space. It is not possible to have total darkness inside a house, so in these houses the situation is nuanced by the controlled access of light. In a few moments light is allowed to enter in a frank and direct way – but never at the façades. A variety of strategies limit the access of light. It occurs mostly indirectly, barring the possibility to use the light openings to visualize the surrounding landscape and stripping the natural light of its usual capacity of connecting the inside of the house with the natural world. The light is then sculptured, like a materially qualified architectural entity. But it is never introduced in a generic or inattentive way.
In some traditional cultures the lack of technological resources is counterpointed by the pursuit of the aesthetic values of gloom and darkness. In the book "Light in Japanese Architecture", Henri Plummer points out the relationship between tradition and modernity in Japanese architecture, establishing some poetic categories of analysis. In the chapter "Moonlit Gray" he says:

> "A cool gray lies in the inmost heart of Japanese space. These diluted tones create a calm but oddly remote atmosphere, which slightly turns away, and just elude our senses. Every surface seems to be fading, leaving behind a world of silence and a feeling of absolute loneliness. (...) The penumbra helps define the choice of materials and finishing and the general ambience of the rooms (...) On entering a room where the colors are tamed and scarce, the effect is not only of calm but a sense of numbness. The mind, senses and emotions are not only calmed but almost sedated."[viii]

Mendes da Rocha 'bandeirante' house

Jorge Torres Cueco proposes that Mendes da Rocha own house (designed and constructed in 1964-8) "starts on the desire to cover an earth's fraction as an elemental and primeval way of possessing it" [ix]. One may also say that its design combines the three fundamental ways of defining a home: the tent, the hut and the cave. A brief description reveals the simplicity of the house and confirms the boldness of its parti.
A curved artificial slope protects the urban boundaries of the flat street-corner parcel in a garden city quarter. They define an interior patio where the quasi-square volume of the house stands elevated, defining the somber ground level. Four columns prop up two

superimposed and successively staggered slabs, sustained by a bi-direction grille of beams, thus defining the exposed concrete supporting structure. This four-sided homogeneous structure is partially concealed by closing of the two lateral façades thus defining a box with only two main opposite openings. The box-like idea is reinforced by the fact that all the walls are either of exposed concrete or exposed concrete bricks, in this case, painted with dark violet hues, so that the result sounds almost black & white.
A detached and structurally independent staircase, beside the rear façade, provides the only entrance to the upper floor, where the whole program is accommodated. A family room stretches along the access/rear façade like a closed veranda or a large corridor. In front of the door a passage separates the kitchen area from the five sleeping rooms, each with private hygienic facilities, and leads to the extended main room along the other façade. Both these opposite façades have ribbon windows deeply protected from the direct sun by cantilevered pergolas above and the extension of the lateral closed walls beyond the floor slabs. This disposition partially restricts the views preserving the intimacy of the inhabitants.

Still, it is possible to appreciate, on the other side of the street in a slightly elevated site a small wooded park with and old construction: a rare preserved example of a typical 17th century Paulista house of thick pisé walls. The old and the modern houses are defined by a tripartite plan akin to the Palladian nine- square scheme with two central verandas on opposite sides: more literally in the colonial one and with an almost reversed variation in the modern.

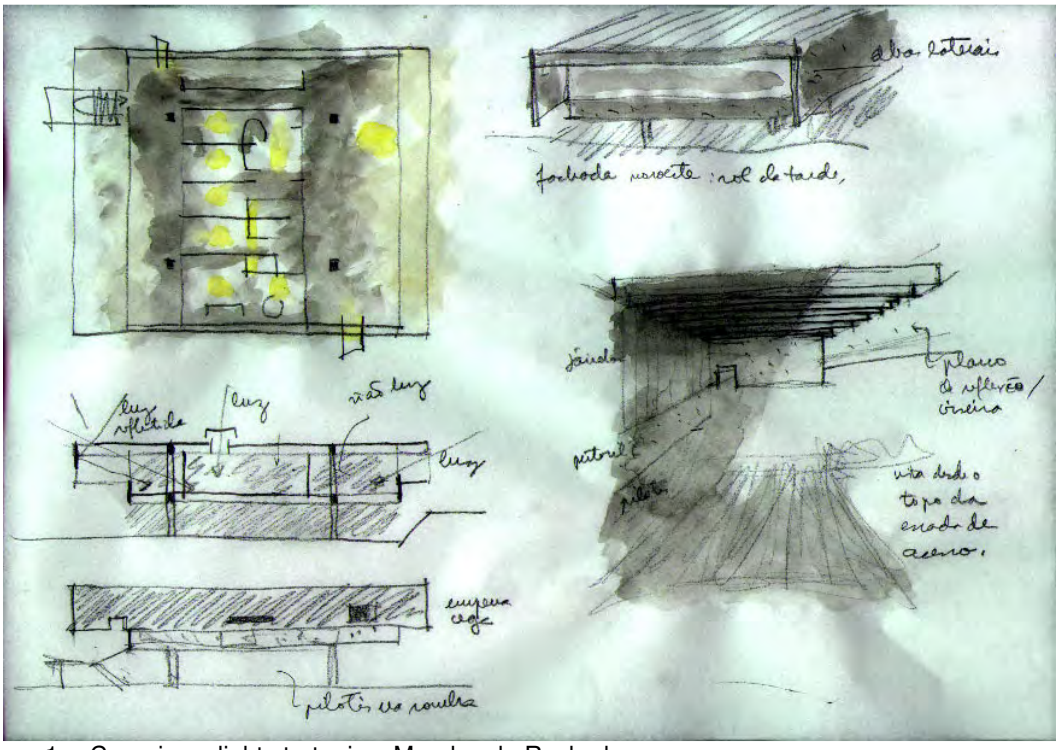
The sleeping rooms of the Mendes da Rocha house open to the internal veranda/ family room and are also illuminated by skylights above. In contrast with the general symmetry of the plan, these openings are almost randomly distributed, defining so carefully contrived bright spots at the house's core, in contrast with the prevailing penumbra. They create a paradoxical sensation of the centrally placed alcoves being the best naturally lit places of the house.

The traditional pisé technique of the Bandeirante house allows only small openings. The high ceilings and bare rooms insure a dim, cool atmosphere inside. Both the ancient and the modern houses display a tactile freshness of their interior spaces, which are quite pleasant most of the year, especially when weather is warm; not so in the relatively damp and windy winters. The window frames are quite elementary in the colonial house. Although more elaborate, the modern house windows are quite plain; they display an inventive apparatus more concerned with the mechanism than with the effective closeness of the joints - a solution that was better developed in the architect's following houses. The architect's own house schematic detailing of the openings may give some uneasiness, but perhaps the distant sound of the Bandeirantes myth was here providential: recalling the adventurous past of the pioneers it proposes a challenge to the present. So be it: in an experimental house, minor discomforts could be haughtily dismissed for the sake of great future achievements.

But despite its plain detailing and interior penumbra, Mendes da Rocha house does not seek tradition. Neither it is the result of a lack of constructive resources. It displays a carefully obtained non-light ambiance, purposely seek, and partially in contradiction with the fact that it is a tree-like structure. Being an elevated house, it paradoxically do not seek light but shadows and makes an effort to be seen as a box; like an artificial cave it has to rely on subterfuges to bring light to some carefully chosen internal places. Its

rough and matte surfaces and crepuscular interiors reflect another kind of sensibility, tuned to the post-war new building technologies and intensely Manichean political ambiance, with no room for conciliation. As so, they also enrich modern architecture, making clear that it does not live by light alone.

Illustrations



1. Croquis on light strategies, Mendes da Rocha house

2. Mendes da Rocha elevated box-like Brutalist house

3. Skylight inside a bedroom looking to the closed veranda

4. Butantan 17th century Bandeirist house

Notes

[i] More information on São Paulo Brutalist architecture on the author's research website, www.brutalistconnections.com. An abridged account of the use of the term Brutalism and São Paulo's contribution to the trend is to be published at Positions n.2, http://positionsonmodernism.org/index.html

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MODERN LIVING
Images of Modern Living

The transformation of the traditional way of life into the ideal of efficiency, hygiene, systematization and abstraction that was preached by the modern movement acquired special meaning when referring to the house. Women were specifically targeted as partners in the architect's endeavor of creating the proper atmosphere for such transformation, since the house was considered their domain. The means to advertise, promote or even criticize the modern proposal were manifold, from articles in popular journals to the cinema, and from photographic idealizations to professional literature.

The session devoted to the images of modern living deals with the different media used to portray modern architecture as the setting for a new way of life. In Cristian Suau and Moira Lascelles "Visionary Prefab in the Modern Age: Deconstructing Keaton's Films", the scepticism surrounding the idea of the standardized house is evident. By analyzing Buster Keaton's movies of the early twenties the authors describe how the idea of the do-it-yourself mail-ordered Sears home kits is challenged when the numerical order of the boxes is modified. Nevertheless, other aspects of the modern movement such as mobility are embraced in the movies, as they say: "Keaton anticipates the architecture in motion envisioning adaptable, light and compact spaces, with dwellers in transit. In Keaton's work, the ability to move, change or adapt are prerequisites for Modern living".

The efficient home was one of the main concerns in Lina Bo Bardi's understanding of modern living; nonetheless, a modern sense of taste was also a key ingredient in creating the right environment, as she advised women. Silvana Rubino's paper "How to lead a modern life, how to live in a modern house: the advices of Lina Bo Bardi" deals with the writing of the Italian/Brazilian architect targeted to housewives. She introduces Bo Bardi's texts with an account of the evolution of the principles of the scientific management of the home, from its inception during the late 1800's, to Grette Schütte-Lihotsky's famous Frankfurt Kitchen.

Photography became, as Iñaki Bergera poins out, "the mean used by architects, historians, critics, journalists or even politicians for propaganda and diffusion (...) the Modern Movement". In his paper "Shulman vs Kindel: a Critical Review of the Role of Photography in the Development of the Modern Movement", Bergera compares the distinct approaches both architectural photographers had in promoting a specific agenda for architecture. While Shulman's "High Modernity images portray a programmatic and representative cliché of the optimistic casual American lifestyle", Kindel's photography "is as sensitive to the phenomenological approach to local culture, tradition, history or place as the architecture and the city it seeks to capture".

Most home appliances were warmly welcomed into the houses of the postwar period; however, some represented important challenges to the cultural

establishment such as the television. Last but not least, Els de Vos in his work “Contradictions in the promotion of domestic comfort in cold-war era Flanders” deals with the reaction of the conservative groups in Belgium to the presence of such intruder to the house. Advices on the placement of the television in the living-room or the role of the mother in controlling the schedules to watch it were widely published in the journals of women’s organizations.

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Visionary Prefab in the Modern Age: Deconstructing Keaton's Films

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Keaton's Houses: Living Systems in Motion

"Nearly every American house I've lived in has long ago been demolished to make room for some other building. There is a delicious (though painful) paradox here: Americans long for stability, but all they get is stationary impermanence. No wonder then many of us long to become permanent nomads, snails with houses on our backs, Touareg tribesmen, and Gypsies". Poet Andrei Codrescu[1]

The limits of architecture flow between what is stationary and what is in motion. What happens to architecture when the foundation is removed? To investigate this question, it is useful to begin to look at the origins of prefabricated houses. Beside what the architectural scene has written about the failure of prefab systems, the fact is that these constructions have succeeded. Luckily architecture is not yet art but commodity.

Nowadays proceeding on the assumption that social change and a change of residence are closely correlated, post-modern sociologists aim to gain an understanding of societal trends such as *pluralization* and *flexibility*, and thus to draw recommendations about future housing requirements. Living in motion indicates that modes of housing are becoming visibly pluralized, moving away from canonical models towards a new type of *content-design* mobility. As classic models of nuclear families erode, new housing forms are emerging that offer new flexible ways of living.

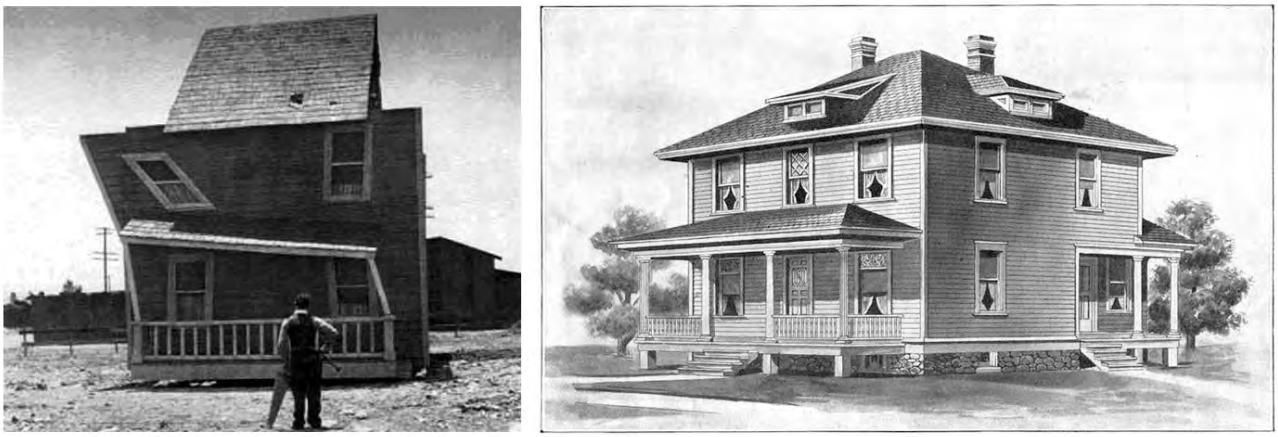

Figure 1. Keaton versus Sears Modern Home: While Sears factory was manufacturing and shipping catalogue houses like Modern Home 102 (right image); Keaton was building his *'customized version'* of a similar mail-order Modern Home in the film *One Week* (left image). Sources: http://www.archive.org/details/OneWeek and Sears Archives, http://www.searsarchives.com/homes

Buster Keaton was a visionary *architect*. As an organiser he was obsessed with the idea of capturing the modernity of domestic life mainly by the house as a kinetic lab. During the same period, Le Corbusier was carrying out preliminary sketches for the Maison Citrohan, a mass-produced house[2]. In order to illustrate this let us consider some examples. *One Week*, is a short-comedy film written, directed and performed by Keaton. Many special effects that are employed were filmed as they occurred and were not the result of model work.

The story involves a couple, Keaton and Seely, who receive a build-it-yourself house as a wedding gift. The house can supposedly be built in one week. A jealous party secretly re-numbers the packing boxes containing the house parts.

The movie recounts Keaton's struggle to assemble the house according to this new random arrangement. As if this weren't enough, Keaton finds he has built his house on the wrong site and has to move it. Wheels replace the original foundations and the house is moved like a caravan by car.

The movie reaches its climax when the house, now a mobile system, becomes stuck on railroad tracks on which a train is coming. The house won't budge and the train hits it producing a shower of debris. Keaton stares at the scene, places a 'For Sale' sign with the heap and walks off with Seely.

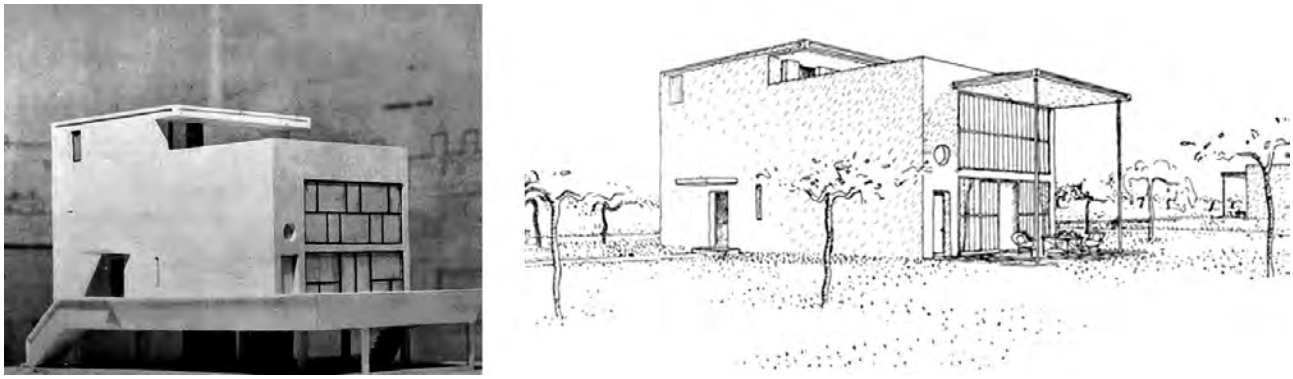

Figure 2. Maison Citrohan by Le Corbusier. Plaster model (left) and sketch (right), 1920-1922. Le Corbusier's initial vision of adopting mass-production techniques never developed to what he had hoped for. Unfortunately off-site housing fabrication is still associated with the idea of automated *shoe boxes*, allocated in trailer parks or the like. Source: http://www.usc.edu/dept/architecture

Nonetheless, how can we define the house we are confronted with in Buston Keaton's *One Week*? By investigating several of Keaton's silent films and comparing them with the housing production in the US around the same time, we are able to obtain some remarkable answers.

The house in *One Week* is similar in shape and sizing to the Sears Modern Home, prototype 102, which was published in the 1920's Catalogue called *Honor Bilt, Modern Home*. The film's script is structured according to the *Catalog Modern House*'s framework: mailing, shipping, delivering and rapid-building. The film critic Malcolm H. Oettinger, in his essay called *Low Comedy as a High Art* (1923) [3] described the *One Week* house, saying that *"(…) Buster has ordered a Sears-Roebuck [4] bungalow for his bride-to-be. The wicked rival mixes the numerals on the various parts, and the comedy ensues when Buster attempts to assemble the jazzed sections".*

The One Week housing model as collapsible design is classified according to their uses or capabilities: *Transporting, adaptation, combination, assembling and disassembling process; folding/unfolding, and carrying*. Therefore, the *One Week* house is a complete organism. Its initial generic housing pattern is modified, by altering the sequence of packing boxes containing the house parts. The *One Week* house is a sort of customised variation of the so-called *Catalog Modern House,* a prefab dwelling manufactured and shipped by Sears, Roebuck and Co.

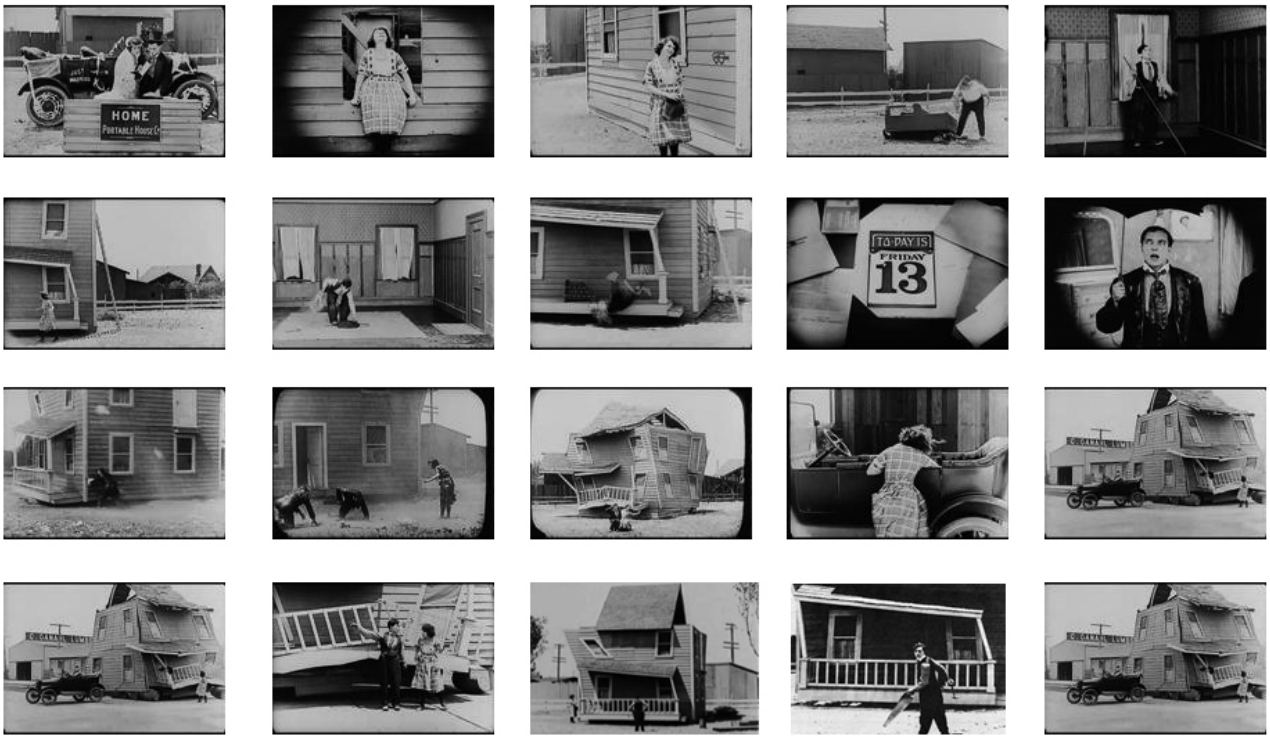

Figure 3. Filmic sequence: from house parts' delivery to train impact in *One Week* (1920) by B. Keaton. Source: http://www.archive.org/details/OneWeek

Modern Conveniences and Appliances: Towards Customised Prefab Home

If *One Week* was an investigation of the Sears Modern Home as a collapsible and mobile hardware, *The Haunted House* (1921) and *The Electric House* [5] (1922) were focused on mechanical appliances, simply innovative domestic devices, providing a great deal of comic business for Keaton.

The *Haunted House* is 21 minutes comedy film directed, written and starred by Keaton. One of the more memorable sequences of the film involves bank teller Buster spilling glue all over his counter, reminiscent of a scene in his first film The Butcher Boy (1917).

Keaton plays a young bank teller who isn't immune to a pretty girl begging him for an early withdrawal. Sighing, he goes to the safe's clock and turns the hand an hour ahead so the door will spring open. Behind the scenes, there is scheming afoot; the cashier is part of a ring of counterfeiters who have fixed up a mansion to appear haunted in order to throw off the police. At the bank, Keaton has some trouble with a bottle of glue that causes all the money he touches to stick to him. This is also trouble for a group of bank robbers who try to hold him up. To throw the cops off his scent once again, the cashier makes it appear that Buster is the robber, and he has to run away.

Keaton eventually makes his way over to the mansion, where the staircase proves to be his nemesis. Nevertheless, he manages to capture the counterfeiters, although he is knocked cold in the process. While he is unconscious, he has a dream: He is climbing the long steps to heaven where he faces Saint Peter. Keaton is refused admission, and the saint pulls a cord. The steps flatten out and Buster slides down until he reaches hell. Fortunately, he wakes up to find himself face to face with the girl, not the devil.

Their finest trick among the trap doors and secret passageways is a staircase that becomes a deployable flat ramp when a cord is pulled, causing anyone climbing it to slide to the bottom. Additional tricks occur in floors where they become spinning or collapsible surfaces.

Figure 4. Film poster (right) of The Haunted House (1921) by B. Keaton. The left image shows the famous sequence of Keaton ascending to heaven, and then descending to Hell. Source: http://www.archive.org

The Electric House represents a visionary conceptualisation of the house as a plug-in system, which performs as a sort of *software*. The idea of electrical innovation was naturally in the forefront of people's minds in the early years of the 20th century. The goal of the film was to keep the existing house framework but to electrify everything in the professor's house, both furniture and devices; For example an escalator type stairway, which could be reversed; one idea that later became practical in department stores in the form of the escalator. Here Keaton brings this device into domestic life.

In addition, the pool table, which racks its own balls, has become available to us. Conveyer belts are in evidence along with electric trains for bringing food and dishes to the dining table. Buster Keaton, of course, adds the enthusiasm to this Scandinavian *smorgasbord* of comedy delights.

Such as Keaton shows in *The Electric House*, Sears introduced the latest technology available to modern US dwellers in the early part of the twentieth century. Central heating[6], indoor plumbing, and electricity were all new developments in home design that Modern Homes incorporated. Indoor plumbing and homes wired for electricity were the first steps to modern kitchens and bathrooms. Sears Modern Homes program stayed abreast of any technology that could ease the lives of its homebuyers and gave them the option to design their homes with modern convenience in mind.

Ironically in *The Electrical House*, all new appliances fail. This failure is in turn used to generate comedy; the accident is the generator of inventions and each thoroughly envisions new needs in the Modern domestic life.

Sears Mail-Order Homes: Standardization and the Do-It-Yourself

Purchasing a house from a mail-order catalogue seems like a fantastic story made for comedy value but in fact it was a pioneered practice in the US in the 1920's. The entire process consisted of the following sequence: *catalog* or pattern book design, mail order, pre-cut timber fabrication (balloon frame) and shipping and delivery by rail, typically in two boxcars each.

The Sears prefab house has been chosen as a drive for discussion not only because it is a current topic of critique but also because it challenges the reductive notion of what architecture should be. According to Sears' archives, *"from 1908–1940, Sears, Roebuck and Co. sold about 70,000 - 75,000 homes through their mail-order Modern Homes program. Over that time Sears designed 447 different housing styles"*[7].

To buy a house in kit form saved about 40% on labour costs, quality custom design and favourable financing, and provided accuracy and efficiency of the machine-cutting timber. Apart from this, customers could choose a house to suit their individual tastes and budgets. Modern Home's customers had the choice to build their own dwellings. All these features are exaggerated but still remain in *One Week*, creating a random pattern based on the mixed-up sequence of parts.

Sears was not an innovative home designer. According to Colin Davies, *"Sears Roebuck never claimed to make any contribution to the progress of Modern Architecture"*[8]. The company was instead a follower of non-architect home designs, generic rather than monumental but with the ingenious advantage of modifiable and adaptable houses, both hardware and software, according to buyer's way of living[9].

Patching Balloon Frames

Rather than a frame-maker Sears was a patch-maker. Instead of introducing a new physical framework or becoming an innovator in home design or construction techniques, he was producing a conceptual system where the 'patches'[10] can be fabricated in any order and assembled together in any number of permutations. In the manufacturing sector, the

components are the patches. However, Sears's designs did offer distinct advantages over other construction methods.

The ability to mass-produce the materials used in Sears's homes narrowed manufacturing costs, which lowered purchase costs for customers. Not only did precut and fitted materials shrink construction time up to 40% but Sears's use of balloon framing, plasterboard, and shingles greatly eased fabrication for home-buyers:

A. Chassis. Essentially a balloon frame[11] is a wall and flooring modular system. Foundations and roofs vary in sizes. This system uses precut standard timber for framing. The walls are formed by vertical studs (50mm times 100mm) in cross section, spaced at 400mm in apart and nailed to horizontal plates top and bottom. In a two-storey house, the studs extend over the entire height, with a ribbon let into them on the inside, to bear the joists or beams of the upper floor. When the framing is completed, it is covered with siding, traditionally of overlapping timber clapboards nailed to the studs. The Balloon Frame systems did not require skilled carpenters, as previous constructive methods. Sears' balloon frames were built faster and generally only required one carpenter. Precut timber, fitted pieces, including the nails, and shipped by railroad directly to the customer made popular this frame-kit.

B. Plasterboard. Before drywall (US term for plasterboard), the most common wall-building techniques were plaster and lathe. Sears housing fabrication took advantage of the new material called drywall by shipping large quantities of this inexpensively manufactured product with the rest of the housing components. Drywall offered advantages of low price, eases of installation, and was added fire-safety protection.

C. Shingles. According to the Sears archives: *"It was during the Modern Homes program that large quantities of asphalt shingles became available. The alternative roofing materials available included, among others, tin and wood. Tin was noisy during storms, looked unattractive, and required a skilled roofer, while wood was highly flammable. Asphalt shingles, however, were cheap to manufacture and ship, as well as easy and inexpensive to install".* Asphalt is also a fireproof material.

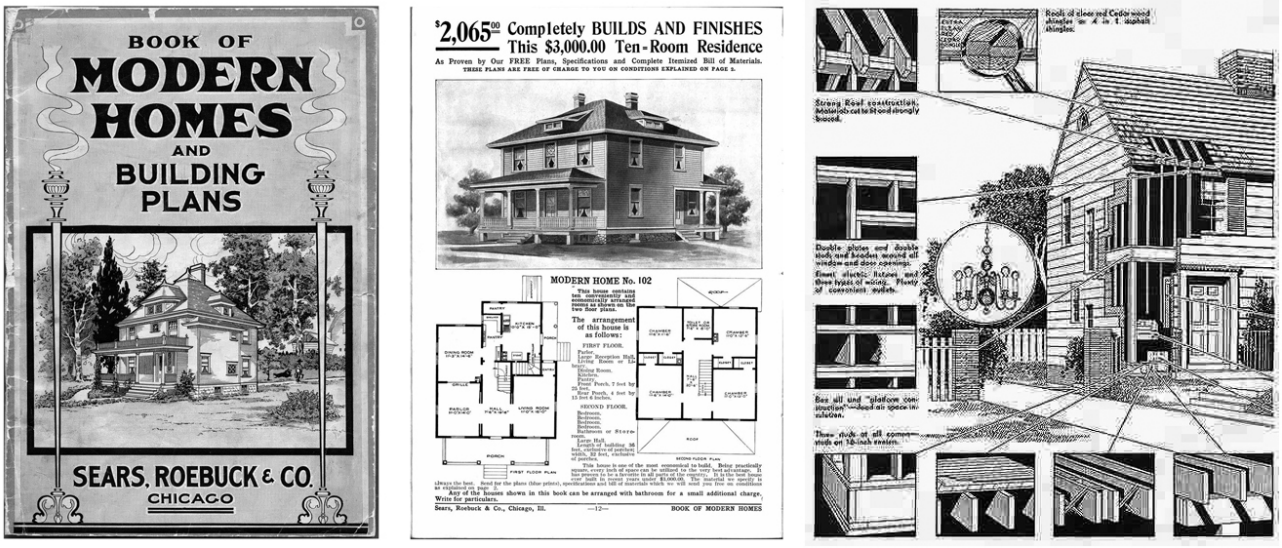

Figure 5. The Sears Modern Home: Catalogue (left), Type (mid) and Framing (left). Sears Archives: http://www.searsarchives.com/homes

Fabrication Out of Control

Process sets the stage for the outcome[12]*.*

Beyond the filmic features of Beaton's films, what are the Keaton houses? On one hand, they are simple mistakes, ungovernable places of domestic life. Nevertheless, from an architectural viewpoint Keaton's housing design introduces three design aspects: *Flexible plan, advances in construction technology and the role of the individual in the design process*. His houses are playful devices that express a non-conformist way against Modern every-day life within generic housing frames. They are mostly ruled by fortuitous circumstances.

On another hand, they are unique dwellings governed by the motto of breaking-the-mould condition in customisation. Through Keaton's montages, modular fabrication is no longer a result of mass production, repetition, and uniformity. Each house case envisions the idea of mass customization as a hybrid system. They are conceived as a new re-fabrication process that use manufacturing/automated production but with the ability to differentiate and personalise spaces and appliances for those that are generically constructed.

What are the lessons we learned from domestic customization within the context of American prefab homes? As legacy of Keaton's principles, we might continue our search by exploring two paradigmatic case studies: Firstly, the *FEMA trailers*, temporary mobile prefab dwellings built after WWII and still employed for emergence. Many FEMA trailers are installed on the private property of homeowners, usually on lawns and sometimes in driveways next to the house. Many trailer occupants consider their trailers actual homes, and have affectionately personalized their trailers with curtains, paintings, and houseplants. Secondly, we can critically reflect on media shows such as *"Extreme Makeover: Home Edition".* Instead of the satire of Keaton's movies, each episode shows a family that has faced some sort of recent or ongoing hardship. The show's producers coordinate with a local construction contractor, which then coordinates with various companies in the building trades for a makeover of the family's home. That includes interior, exterior and landscaping, which is performed in seven days while the family is on vacation (all paid for by the show's producers), which is documented in the episode. If the house is beyond repair, they replace it entirely. The show's producers and crew film set and perform the makeover but do not pay for it. The materials and labor are donated. Many skilled and unskilled volunteers assist in the rapid construction of the house. Local home builders and community volunteers begin basic work (electrical, plumbing, roofing, and, if the house is demolished, framing a new one) while the design team begins designing the creative aspects of the house. Once the basic work is completed, the design team then will add the finishing touches.

In fact, it is the postmodern version of *"One Week",* no surprise that Sears and Disney are their main sponsors. The result is, however, a wonderful detached house, customized to the specific requirements of the family and, of course, designed with a *"theme".*

In opposition to the traditional aesthetic of the Modern Avant-garde, Keaton's houses are always living machines for failure. Here, in a classical sense, only the accident generates the invention.

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http://www.archive.org/details/OneWeek
http://www.archive.org/details/TheElectricHouse
http://www.searsarchives.com/homes

Notes

[1] Siegal, J. *Mobile: The Art of Portable Architecture*, Foreword by Andrei Codrescu. 2002, Princeton Architectural Press, New York, p. 10

[2] During the same period, Le Corbusier was carrying out preliminary sketches for the Maison Citrohan, a mass-produced house. The French term *Maisons en Séries* use by Le Corbusier does not imply the Anglo-Saxon notion of factory or off-site production. It is an even definition of industrial fabrication, which can tolerate on-site fabrication and components. The shape is basically a non-ornamental cube. Nevertheless, the reinforced concrete frame is constructed on-site and bearing walls are filled with local materials. We can deduce that this standardized prototype was a result of the romantic idea of industrial fabrication. This purist object was not an invention but a traditional reproduction.

[3] Oettinger, M. ***Low Comedy as a High Art*** (1923) Picture-Play Magazine. Accessed in 02/05/2010 http://www.geocities.com/~oldbrit/bkppint2.htm

[4] ***Sears Catalogue Homes.*** People had learned to trust Sears for other products bought mail-order, and thus, sight unseen. This laid important groundwork for supplying a home, possibly the largest single purchase a typical family would ever make. In 1908, the company began offering entire houses as kits, marketed as Sears Modern Homes, and by the time the program ended in 1940, over 100,000 had been sold. Source: http://en.wikipedia.org/wiki/Sears,_Roebuck_and_Company#Sears_catalog_homes

[5] ***The Electric House*** (1922). Director: Buster Keaton. Cast: Buster Keaton; Joe Roberts; Virginia Fox; Joe Keaton; Myra Keaton; and Louise Keaton. Originally this film started shooting in 1921, but an accident on the set forced all the previously shot footage to be abandoned and the film entirely reshot on a newly designed set in 1922. The Electric House starts with Buster's graduation ceremony as the first of his comic misfortunes, including a mix-up of diplomas so Buster receives a diploma in electrical engineering. This leads to a job opportunity: electrifying the family house of the girl he's sweet on. A great chance, so Buster studies hard and soon installs a useful and impressive set of electric appliances.

[6] Central heating not only improved the livability of homes with little insulation but it also improved fire safety, always a worry in an era where open flames threatened houses and whole cities, in the case of the Chicago Fire. Accessed in 04.04.2010, http://www.searsarchives.com/homes

[7] Nevertheless, no official tally exists of the number of Sears mail-order houses that still survive today. It is reported that more than 100,000 houses were sold between 1908 and 1940 through Sears's Modern Homes program. The keen interest evoked in current homebuyers, architectural historians, and enthusiasts of American culture indicate that thousands of these houses survive in varying degrees of condition and original appearance. Accessed in 04.04.2010, http://www.searsarchives.com/homes

[8] Davies, C. *The Prefabricated Home*, 2005, London, Reaktion Book Ltd., p53

[9] Individuals could even design their own homes and submit the blueprints to Sears, which would then ship off the appropriate pre-cut and fitted materials, putting the home owner in full creative control. Accessed in 04.04.2010, http://www.searsarchives.com/homes

[10] Framing is a system where several parts are aggregated into a whole. Patching it is a non-linear system. It consists of elements that are made in different locations and then assembled to form the whole. It is based on less segregation and ore integration.

[11] Balloon frame was invented in 1833 in Chigago, US.

[12] Kieran, S. & Timberlake, J. *Refabricating Architecture*, 2004, New York, RR Donnelley. P 107

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HOW TO LIVE A MODERN LIFE, HOW TO LIVE IN A MODERN HOUSE: THE ADVICES OF LINA BO BARDI

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In 1958, the *Enciclopédia da Mulher* (Women's Encyclopedia) presented an entry under the title "A casa. Sua organização e arranjo" (The house, its organization and arrangement) apparently integrated to the Brazilian translation of the originally French book. But if we take a look at this piece, it contrasts with the rest of the volume. This article was written by the Italian architect Lina Bo Bardi who lived in Sao Paulo, Brazil since 1947. Her piece of writing offered, in the form of a prescription, a handbook of instructions, a continuity of concerns that she had already manifested in her editorial work in Italy before migrating to Brazil. The piece is also a meeting point of inquietude of other Brazilian architects, meanwhile it is inscribed in a different lineage: the tradition of feminine advice, the idea of the house as women's sanctuary.

This kind of writing, written by women for women, could even avoid or hide the accent of feminine handbooking but, in the case of Lina's piece we have a little jewel of exaltation of modernity, even if this term occults gender attributes.

THE ANTECEDENTS

The ancient handbook *O Lar Doméstico: Conselhos Práticos sobre a Boa Direção de uma Casa* (*The domestic home: practical advice about the good management of a house*)was written by a woman, Vera Cleser and published in Sao Paulo in 1898. If we consider that in 1913 the book had its 4th edition, we can evaluate not only the expansion of a public of female readers but the importance of this kind of domestic direction. This paper argues that it was an adaptation to urban and modern life, this kind of writing can be read as part of a civilization process in the terms of Norbert Elias.

This type of article was not a Brazilian experience. In the United States Mary Petersen published in 1915 her *Principles of Domestic Engineering* and in 1912 Christine Frederick – an earlier mom and housewife – assembled so successfully the pieces she had written for the *Ladies Home Journal* in a book, *The New Housekeeping* that it was followed by a new one, *Household Engineering: Scientific Management in the Home*, published in 1915. In the former she started to argue that a new science of work could be applied to households; in the latter she deliberately followed the principles of scientific management professed by Lillian Gilbreth to the women who worked at home. The general idea of those principles was a succession of activities in the proper order, but in the core of this proposal there was a kitchen: a small kitchen planned only for cooking. Smaller than the prior ones, it would demand less

movement and should be built of washable materials. Frederick's book was not addressed to poor women, who came from the same class of domestic servants, but to the same middle-class to which she belonged.[i]

The field or architecture in Europe soon identified this small and clean kitchen as a trademark of the scientific home care -- in a context when the modern movement proposed a new house like a machine and a new way of inhabiting it. This *Neue Wohnung* - new dwelling - was presented as the new family pattern of the new republican era of the 20th century. The target was the housewife, collaborator of the modern architect – Bruno Taut used to say that the architect projects and the housewife conducts – to whom a creative role was attributed. It is not par chance that a text of Marie-Elizabeth Lüders, an active member of the women's organization *Bund Deutscher Frauen* claimed that the house should be designed from the inside to the outside: "first the kitchen, then the façade".[ii] Anyway, the notion of *scientific management* was fordist and American (we must remember that Antonio Gramsci considered both the same idea, replacing fordism for americanism) and the image of a housewife free form the burden of the duties became in the USA a cult that united the left and the right wings.

By the end of the twenties in Germany, the publicizing of the idea of a new home management, associated to the work of architects such as Taut, resulted in a new proposal, the house for a minimum existence (*Die Wohnung für das Existezminimum*). The culmination of these movements was the well-known design of the Frankfurt Kitchen by the Austrian architect Grette Schütte-Lihotsky, exhibited in the *Die neue Wohnung und ihs Innesausbau* in 1925, and soon incorporated in several residential projects built in this town by Ernst May. The Frankfurt Kitchen is a *Kochküche*, a kitchen for cooking, quite small, a place that carried a modernity aura conferred by the electricity. The volume *Der neuer Haushalt*, published by Erna Meyer in 1926 had sold 40.000 copies until 1932 and incorporated the ideas of Catherine Frederick, adapting them to the German need to turn the housewife a professional worker. These reciprocal influences played a kind of mirror game: in 1934 the book *Modern Housing*, by Caherine Bauer, saluted the kitchen of Schütte-Lihotsky as a great achievement of the new architecture.[iii]

New achievements that re-elaborated former ideas: the mechanized home had been anticipated in 1841 by Catharine Beecher in her *Treatise of Domestic Economy.* She showed the designs for a cottage full of equipment, a new domestic ambiance which seemed to be a necessity to the new role of women in the industrial society. On the one hand, Beecher accepted a conventional definition of the domestic realm as a feminine sphere; on the other hand, she presented herself as a defender of a domestic feminism when she evoked the capacity of the women to self-sacrifice, a necessary attribute to guide the household. In *The American Woman's Home*, of 1869, a book written with her sister Harriet Beecher Stowe, she presented a modern longitudinal kitchen, a working-station with piped water, heating and air circulation.[iv]

So, when Lina Bo Bardi presented her encyclopedia entry, she was in a strong dialogue with two traditions: the articles written by professional women to other women, and the architectural debate about the modern dwelling. To these, we

would add another issue, present in her text as well: taste. As the house could be seen as a machine but should be also a place for encounters, it would never be a neutral, genderless, ageless and classless equipment. Dwelling in modern times, experiencing modernity supposed the control, the domain or social codes and the possibility of conferring some style to everyday life. If the transmission of those silent rules was carried out mainly through education, the *traits de savoir-vivre*, as some published in France by the beginning of 20th Century player a central role in the codification of the interior house, as well as the (good) manners of behaving inside it.

Lina did not step this crossroad when she arrived in Brazil. It was part of her former career.

LINA BO, THE MODERN EDITOR

Soon after graduating in Architecture in Rome, Lina Bo started her professional actuation in Milan working with the architect, designer and editor Giò Ponti. In some journals and magazines – in a range from the less specialized to the recognized *Domus* – she wrote many articles (some of them with Carlo Pagani) concerning the dwelling and home decorating. “La casa piccola” (the small house), “La casa alla periferia” (the suburban house) and “Sistematizazione d’interni” (the interior decoration) are some of her pieces destined to teach how to conceive and assemble a modern and simple house, free from any excess inherited from ancient times. Nevertheless, the most radical writing she did not sign but published as the editor of the weekly journal *A*, which she founded together with Bruno Zevi was: “Come può essere il uomo libero si la donna è schiava?” (How can men be free if the women is a slave?), arguing that meanwhile the modern civilization tended to free women, by throwing them into the social, civil and political life of the nation, it would be crucial to turn the domestic tasks easier. This was, the article pointed, a matter of method, to make the house efficient. Curiously, the next article in the magazine, “La cucina dell’avenire” (the kitchen of the future) presented a kitchen designed in the USA, as distinct from the Italian kitchen as Cinderella’s carriage from the pumpkin.

The entry we discuss here, “A casa” is about two main subjects: the mechanization and rationalization of interior space in order to allow one to live in an easy space, to simplify the burden of daily tasks with a little help from the new machines, the household appliances – in a moment when the Brazilian industry could not yet produce them – like in Italy, she showed the American kitchen. But this “future kitchen” was installed in her own house, in the “Casa the vidro” (Glass House) and showing her daily space as an example she recalls the issue published in *A*. Nevertheless, as opposed to Lillian Gilbreth and other household fordist and taylorist women that were not concerned with the aesthetic aspects of the house – at least not directly worried – Lina was an artist architect, married to an art dealer, child of a painter. So, the second issue was related to taste, the taste in the internal management and assemblage, the furniture and objects – in the text one can find several mentions to “good taste”, “bad taste” “awful taste”. In other word, Lina approached the modern architecture taboo: the decoration, the decorative arts.

Any social scientist knows that taste is always a distinctive tool. It is the taste as a *habitus* that makes one elect an industrial object or a delicate popular craft item. So, Lina, once again turned to a recidivous theme of her double role of editor and architect. In the Italian journal *A/Cultura della Vita* she proposed a kind of a game: "Which one would you choose". The reader – specially the woman reader – was supposed to choose among glasses, clocks and cutlery. The choice of very garnished items – craft or industrial ones – and copies of antiques was severely censured with jocose and ironic terms that disqualified the reader election, while the modern choice was prized with compliments: the reader was then in the right and good path. The same amusing game was taken again in the *Diário de Notícias*, a page that Lina Bardi both wrote and edited in 1958 when she left São Paulo to spend some months in Salvador, Bahia. "Which one would you choose", she repeated, driving the reader to pay attention to the difference between a sculpture of a modern *baiano* artist (in this example, Mario Cravo) and an ancient Greek one. If the poor lector chose the last one, he or she would gain the straight answer: there's no use, it belongs to the Louvre Museum, along with a warning: never chose a copy!

The house proposed by Bardi was not and should not be a sanctuary. She conceived an idea of habitat in a biological sense – close, one should note, to a certain ambient determinism that is implicit in *The Athens Chart*, for example – to which she claimed that some poetry could be added. Some poetic gaze released from sentimentalism, without "equivocated" affective values. As a modern architect, she was conjoined with Le Corbusier, who in 1925 turned back against the decorative arts, and cursed the term decoration with all his verve. In her approach – even if one has in mind the difference of style and diction between the pamphlet writings of the early Le Corbusier and the entry of a women encyclopedia – Lina was tuned up with the mainstream vision of the modern movement: the need to interrogate the relation between the old and the new, the lowbrow and the highbrow, the workmanship and the industrial production. She was in dialogue with Le Corbusier and with Lucio Costa as well.

Lina's modern house was her home, equipped with the furniture she designed together with Giancarlo Palanti in the Studio Palma, São Paulo, a manufacture that they founded in 1948 with the goal of producing Brazilian furniture that one could buy at popular stores. Furniture adapted to Brazilian climate and certainly to the modern houses as well, with no deference either to solid wood or to "noble" materials. In the images one can observe the perfect modern woman: Lina herself looking through the window of her glass house, even when she hid part of her face[v]. In contrast to her very authorial text, the images might reveal an intention to be a kind of anonymous ergonometric measure, a living modulor. Lina, at the same time proud of her position and keeping her image half in the shade defended some principles of the modern architecture as a whole, emitting judgments in all scales of the house, for instance of the objects: and if one could not afford a pottery item by Picasso should buy a popular clay vase in popular fairs, the plain pots that simple families used to have to keep grass.

After all, chinaware animals were a sign of bad taste, even awful taste – other people's taste! Her point of view was the one of a producer, a designer, but the addressed her text to a consumer woman and, coherent with common press

written to women, that tried to educate them in how to consume, how to experience modernity, how to live in a modern space. Lina wore pants, presenting herself distant to the north-American perfect housewife that wore *godet* skirts and pinafore, the conservative icons of suburban women of the fifties. The images and the captures of them showed another woman, far from the tiring domestic tasks, liberated and able to engage in more interesting ones.

At this point of the research we do not know how Lina`s article was received either by the housewives or the Brazilian feminists. 1958 was somehow a turning point to Lina Bardi`s trajectory, for she moved to Bahia and her carrier experienced a shift. And the next decade would mean a lot of new challenges for Brazilian women, cities and citizens.

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[i] This middle-class – to which I belong". Ver Banta, Martha. *Taylored Lives. Narrative productions in the age os Taylor, Veblen and Ford*. Chicago & London, The University of Chicago Press, 1993, p. 240.

[ii] Bullock, Nicholas. 1988. 'First the Kitchen - then the Facade'. *Journal of Design History* Vol. 1 (No. 3/4):16, p. 177.

[iii] . Idem, p.188.

[iv] Hayden, Dolores. *The grand domestic revolution*. Cambridge & London, The MIT Press, 1982.

[v] The same body posture of Charlotte Perriand in the well-known photograph of the *chaise-longue* in 1929. I explored this corporal aspect of the images of both Lina and Charlotte in two papers: "Corpo, Imagem, Objeto: A cadeira LC9 e Charlotte Perriand" in *Joelho # 1. Mulheres na Arquitectura*, Coimbra, Portugal, Coimbra Editora, 2010, and in "Corpos, cadeiras, colares: Lina bo Bardi e Charlotte Perriand" (accepted by *Pagu*, a feminist Brazilian journal).

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SHULMAN VS KINDEL: A CRITICAL REVIEW OF THE ROLE OF PHOTOGRAPHY IN THE DEVELOPMENT OF THE MODERN MOVEMENT

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> A photograph is the beginning of a story, not the end.
> A photograph makes visible, does not reproduce.
> A photograph is defined by what we don't see.
> A photograph is just a possibility.
> A photograph of a house is not a house.
> To comprehend is to complicate.
> *Jordi Bernardó*

Architectural photography is not just another branch of the discipline. Since the invention of the daguerreotype in 1839, architecture probably became the primer essence of this art and technique. On the one hand, the aim of the practice in its early beginnings focused in the architectural object as well as in the city –the new 'natural' landscape for modernity– since they were static and thus allowed the long time exposures required to capture the image. On the other, from the mid 19th Century, the dominant taxonomic perspective used photography as the right tool to achieve the documentary eagerness. The French *Mission Héliographique* of 1851 was, in this sense, paradigmatic. Recording truth was pursued, rather than beauty.

Later on, in the early 20th Century, photographers also changed the way of looking through their lenses. The work of Eugène Atget in 1900's Paris was premonitory, and Alfred Stieglitz and Edward Steichen took skyscrapers as the icons of the new American Metropolis. The balance between the trueness of the architectural reality and the subjective impression the viewer had of the building finally relayed upon the intention of the photographer: it's not a matter of having the technique but of constructing a visual aesthetic. The 'mechanical eye', as Walter Benjamin pointed out, was also meant to look for the artistic aura. By adding individuals into the images, Paul Strand for instance introduced a new dialog between the building itself and its scale and volumetric expression. In the same way, the New York of the 1930's became just the pretext to 'read' the complexity of the city in the work of Berenice Abbot.

Nevertheless, and pushed by the strong impact of the *New Objetivity* in central Europe, architectural photography in the 1920's and 1930's was very much devoted to a sort of constructive abstraction linked to the imaginary and precision of the industrial atmosphere. This is, let's say it in advance, the dichotomy that a critical review of the role of photography in the construction of the iconic vision of the Modern Movement has to face: the dialectic between the object itself as a

visual construct and its advocacy as portrait of a new modern way of social inhabiting. It is not a matter of distinguishing photography as art or as a professional undertaking. The significant change came from the use of the images: Photography was *the* mean used by architects, historians, critics, journalists or even politicians for propaganda and diffusion of any particular architectural expression and, among them, the Modern Movement.

Le Corbusier knew from the start that photography was intended to be his great ally. He in fact took around 500 photographs with his Cupido 80 during his trip to the Orient. He grasped much earlier than McLuhan that the medium was the message, a message that was a manifesto for that 'new spirit'. In each cover of magazines or pamphlets, photographs and their collages were carefully assembled and displayed. The Russian constructivists and the ideologists of the Bauhaus understood it as well: the extensive use of photography implied also a new theoretical reappraisal on the way of looking and the normal conventions of imagemaking were abandoned. The new handy cameras allowed, by the use of new oblique perspectives and framings, the creation of an original visual gender focused on an insight display of purity, light and formal composition. The new architecture implied tilting the camera up and downwards in order to change the way buildings were looked up and the way the city was perceived from the building.

And this is how it began: by the publication of a few selected images in the first magazines or style books of the MoMo, a building by those master architects was raised to the category of icon, trusting its values in the narrative of the visual content of its photographs. A fruitful empathy –or rather a convenient marriage– had arisen between architects and photographers. Arranged and selected by the more propagandistic architects like LC, Moholy-Nagy, Walter Gropius or Josep Lluís Sert and the official chroniclers Sigfried Giedion, Alfred Roth or Nikolaus Pevsner, the portraits of the paradigmatic modern architecture started to travel internationally: a new style was born, as Henry-Russell Hitchcock and Philip Johnson pointed out in 1932. The postcard-like pictures of the modern buildings –mostly façade external views– started to act like collection stickers for the diffusion of architecture.

However, along with these exemplary projects, the imagery brought up in the first postwar Europe included shady factories and grey social housing units, which stood out, in the United States, from the impressive urban landscape of the skyscrapers and the pleasant modern houses located in idyllic natural settings. The epicenter then moved to America: the early pictures of Julius Shulman (1910-2009) –particularly the ones of the Lovell Health House by Richard Neutra used by the architect to illustrate his books *Wie Baut Amerika* (1927) and *Amerika* (1930)– and the arrival of the avant-garde architects to the schools of architecture in Boston and Chicago, together with the original work developed by the distinctive American architect Frank Lloyd Wright, ended up fixing the US as the real spotlight of Modern Architecture. New York was 'the' metropolis, but California was the land for buoyant dreams, opportunities and prosperity due to the presence of industry –both aeronautic and cinematographic– and oilfields.

The recent death of Julius Shulman (1910-2009) has exalted even more his figure as the most significant one among the photographers of modern architecture, probably followed by Ezra Stoller[1]. It is out of the scope of this paper to tackle Shulman's work and personality[2]. "He has defined the way we look at modernism", "his photographs are the most beautiful fairy tales in the history of modernism", "he framed our vision of modern architecture" and statements like these could condense his legacy. Ever since he shot Neutra's Kun Residence with his Eastman Vest Pocket Camera and met him by chance in 1936, he worked for renowned modern architects like the Eames, Wright or Koenig. Celebrated pictures like the ones of the Kaufmann House in Palm Springs by Richard Neutra (1947) or the widely published picture of the Case Study House No. 22 by Pierre Koenig (1960) are a template of idealized modernity.

Published in 2005, the book *Modernism Rediscovered*[3] brought back the modern pieces photographed by the 'perceptive eye' of Shulman in the 1950's and 1960's. Indeed, the book allows us to revisit not only those best-known images but also many other significant projects –up to 300– that were not so much circulated by the media. It is noteworthy the fact that Shulman had 6000 photographic assignments from 1936 to 1986. Then, the book becomes, so to speak, a tribute to the memory of that significant period of Modern Architecture in the US. Leaving aside the first magnificent impression we get after having a look at the book, some thoughts may come across.

More than the buildings themselves, these High Modernity images portray a programmatic and representative cliché of the optimistic casual American lifestyle. Compared to the abstract and rigid images of the first European avant-garde –or the first photographs taken of the work of Neutra by the not so well known photographer Arthur Luckhaus[4]– Shulman's shots are full of colored life. These photographs, besides of being made with rigor and technical quality, were meant to let the viewer enjoy architecture by demanding an emotional response. The consistency of Ansel Adams' landscapes is the equivalent to Shulman's modern buildings. Shulman's pictures are debtors of the technical perfection pursued –depth of field, sharpen detailing, quality paper for printing, etc.– by the f/64 group founded in 1932 by his peasants Ansel Adams and Edward Weston.

Shulman's images were literally constructed under a scenographic point of view, defining a landscape surrounded by continuous open spaces blurring the transition from the interior to the natural exteriors. Considering photography as an appropriation of realities, Shulman himself was aware of the constructiveness of his photographs, a set of gymnastic statements: translate, transform, transfigure and transcend. Near to the procedure of the 19th Century pictorialism, this process puts the emphasis in 'making' photographs instead of simply 'taking' them. Actually, Shulman did not use to shot many pictures on each assignment. He found the way to summarize the whole essence of the house in one single scenography that collects everything that had to be said. As if they were a still life composition, Shulman's philosophy is not concerned with Cartier-Bresson's decisive moment –maybe only as regards lighting–, because the moment is explicitly arranged by the photographer. He decides where, when and how things should happen.

Modern homes were therefore transformed into stages for the representation of the masks' dance of happy families attached to the conventional roles of parents and kids surrounded by machines –cars, appliances and toys– that guaranteed the efficacy of modern living. Among many others, the archetypical everyday scene could be exemplified in one of the images of the Case Study House No. 21, playing the role of the man getting home from work and a cheerful woman seated down waiting for his husband. In fact, John Entenza's Case Study House Program was the crystallization of the optimistic belief in a rational and economic way of designing modern industrial houses in Los Angeles[5] during the postwar period and Shulman was the visual reporter of that dynamic architectural exploration.

For Shulman, therefore, Modern Architecture was a repertoire of fantasy iconographic pieces and stages, a sort of aesthetically condensed space. It is notorious that both the architects and the photographer believed in what they were designing and portraying. Taking into account what the crisis of the MoMo was about to signify in the coming years, can we still look with good eyes at those invented and static representations? In Shulman's photographs, do we really believe that those actors –rigidly located in the stage crossing complicity sights among them– play the paradigm of the modern living? On this regard, the shots taken by the Magnun photographer René Burri –closer to the documentary and reportage photography–of some of Le Corbusier's masterpieces are quite inspiring to support this suspicion. On the one hand, his shots of a decaying Villa Savoye in 1959 illustrate the failure of the paradigmatic machine of living, and, on the other, some of the pictures taken inside the apartments at the *Cité radieuse* in Marseille that same year show that the emancipated use of some of the residents is distant from the desired atmosphere idealized by the architect.

Opposite to the rigid and distant reality of Shulman, the Modern Movement entrenched outside the United States and Central Europe –that 'other' Modernity– showed us photographically some more contaminated settings, more realistic on the other hand, portraying without ambiguity an imperfect social and urban reality, complex and hybrid, as architecture itself. The brilliant 50's were as splendid –especially if we look at Shulman's images– as corrupted if considering the imminent collapse of the International Style. That 'other' photography, so to speak, is as sensitive to the phenomenological approach to local culture, tradition, history or place as the architecture and the city it seeks to capture. The work of the Spanish photographer Kindel (1905-1990), for example, throws important information for analysis and evaluation.

Spain had its own avant-garde adventure before the Civil War; the photographs by Margaret de Michaelis for Josep Lluís Sert's *AC* magazine would be the testimony of that interrupted modern aspiration[6]. After the poor and autarchic decade of the 1940's, throughout the 50's Spanish modern architecture found its own way and expression, as well as the international recognition. Gómez, Ferris, Müller, Plasencia, Pando and, above all, Francesc Catalá-Roca and Joaquín del Palacio –Kindel– were the photographers who visually recounted that achievement. The book *Arquitectura española contemporánea* (1961) became the first attempt to record what this prodigious decade was all about, publishing the icons of Spanish Modern Architecture[7] in the format of a photographic album.

While Catalá-Roca[8] can be compared to what Shulman represented in LA, since he was the official photographer of the few buildings –like the SEAT automobile factories– that emulated the advanced steel-and-glass technological construction, Kindel shots were mostly abstract images full of poetry. The architecture he depicted showed its best level upon the modern redefinition of the undying abstraction of the traditional Spanish vernacular architecture, its light, textures and powerful wide landscapes: the city as paradigm of modern living vs. the modern redefinition of the uniqueness of Spanish identity. The result brings us back to the imaginary of a sort of a picturesque figurative costumbrism, a neorrealism of a minimalist aesthetic. Paradigmatically, the illustrated report Kindel made of the Colonization villages in Spain represents a completely different approach to what the narrative of photography owes to the idiosyncrasy of Modern Architecture as a global issue. Contemporary to the Case Study House Program depicted by Shulman in LA, the camera of Kindel focuses on the real identity of the distinctiveness of Spanish architecture.

There was indeed an attempt to match a sort of Spanish International Style. However, at the time the SEAT factories shined in Barcelona, Eugene Smith was bringing to light the ultimate truth of the country on his “Spanish Village” report for *Life Magazine*. Smith, like Shulman, wanted to construct a stereotyped performance. Meanwhile, the picture Kindel took in the new Vegaviana Village in 1958 shortens this other way of seeing. There is not formal accuracy –the horizon line is tilted and the composition is not balanced in terms of fore and background relationship– and the characters are not playing a role: they were just into the setting. However, nothing distracts the viewer from the powerful geometrical abstraction and the quality of the textures of that utopian rural architecture. In the Caño Roto district in Madrid (1959) Kindel also takes another imprint, in this case close to a surreal Dali-esque atmosphere around the objects and kids in the playground.

The authenticity of Abbott’s reading of New York is recovered with Kindel: there is not intermediation between architecture and its photography. As opposed to the icon and propaganda, there was another kind of architectural photography that got rid, without complexes, of its complacent and protected welfare to display a different and intricate placing of Modernity. Compared to Shulman’s committed mercantilism, Kindel has nothing to sell: this architecture is given for free. It is not a matter of adding elements to the image, but of discarding what does not contribute to ascetically reveal the essence of architecture: a scene composed by means of formal purity and abstraction. As Fernández del Amo, architect of Vegaviana, said, “the photography of Kindel, like the abstract art, reveals the plastic object itself, its essential aesthetic expression regardless its representation. It is not the photographic, but photography”[9].

Compared to Shulman, Kindel is not as concerned about formal and technical issues, for instance, the perspective control or the depth of field. Yet, the soul of the space is genuinely captured, beyond simply documentation, for both the building as an object or when it is lived inside. When looking at the images of the apartment designed by Alejandro de la Sota in Madrid (1952) we find the same

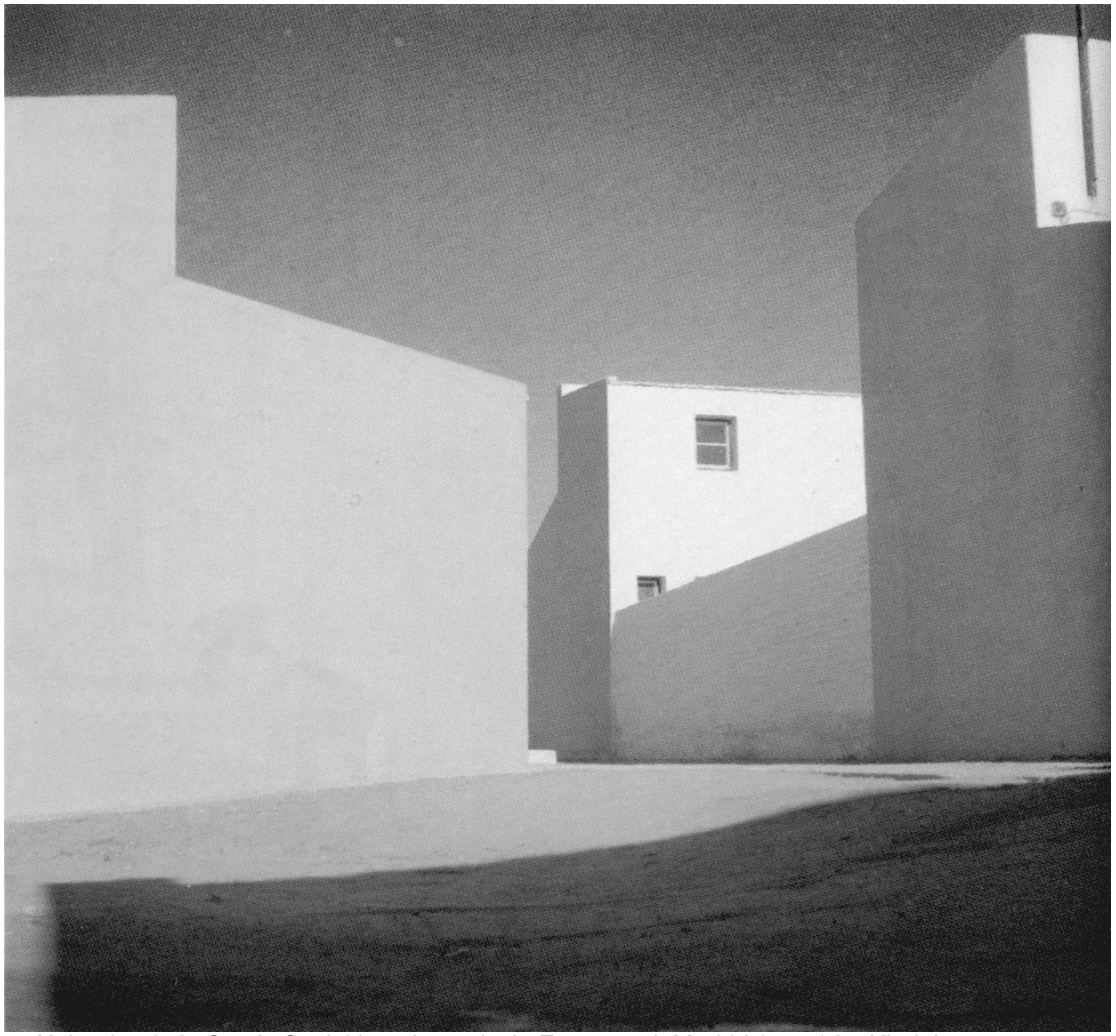
austere abstraction and purity. We do not need to arrange a setting to sell a particular everydayness because abstraction is not an option, it is the consequence of an underlying condition. We could then say that it is not photography, but art.

Susan Sontag pointed out in her essay *On Photography*[10] the separation of photography as art and as document. When the object of photography is architecture, the building becomes a fact, a fact that has to be recounted. In opposition to Shulman's constructed view, Ed Ruscha's *Some Los Angeles Apartments* (1965) was a series of systematic shots aimed to arrange a collection of unexciting architectural objects considered as 'facts'. From the first decades of the 20th Century to the collapse of the Modern Movement in the 1960's, architectural photography had walked through this ambivalent understanding of the target as fact or document, as media propaganda or as an excuse to jump into an artistic consideration. This agenda, as we have seen, is determined by the different definitions of modern architecture worldwide, by the dichotomy of the modern portray displayed by Shulman or by the photographers who captured the B side, so to speak, of Modern Architecture.

The discourse about the role of architectural photography in the conformation of the international historiography of the Modern Movement is therefore an issue in need of a constant critical revision. This is especially important when we realize that its power was, and still is today, a potential danger for architecture itself, as well as when we observe that photography, under its independence and own idiosyncrasy, is able to add to this dialogue a sharper and compromised reading of the advantages and disadvantages of the way of living that modernity. "Photography, by means of its instant flash, makes clear the plastic phenomenon of the inert matter that awaits as mendicant whom observes it with sensibility", asserts again Fernández del Amo. Photographs do not translate, they quote, says Berger[11]. Photographers are witnesses, not narrators: they are present but far-off. Recalling Bernard Rudofsky, we could also have claimed for photography without photographers.

1. Pierre Koening's Case Study House # 21 in Los Angeles (1956), by Julius Shulman.
© Julius Shulman / Getty research Institute.

2. Rick Faber and Raul Garduno's Franks Residence in Los Angeles (1968), by Julius Shulman.
© Julius Shulman / Getty research Institute.



3 .Alejandro de la Sota's Social housing units in Fuencarral, Madrid (1955) by Kindel.
© Fundación Alejandro de la Sota.

4. Jose Luis Fernández del Amo's Social colonization village in Vegaviana, Cáceres, (1954) by Kindel.
© Joaquín del Palacio – Kindel.

Notes

[1] Ezra Stoller (1915-2004) developed a 50 years architectural photography career, working for leading architects like Mies, Wright, Rudolph, Saarinen, Bunshaft or Pei.

[2] Cfr. Shulman, J., 1998, *Architecture and its Photography*, Taschen, Köln.

[3] Serraino, P. and Shulman, J., 2005, *Modernism Rediscovered*, Taschen, Köln.

[4] Cfr. Alcolea, R.A., 2009, *Picnic de pioneros. Arquitectura, fotografía y el mito de la industria*, Ediciones Generales de la Construcción, Valencia. On Luckhaus, Shulman says: "He did a lot of pioneering photography… very good commercial pictures… but they weren't 'art-like'". Shulman, J., 2000, *Photographing Architecture and Interiors*, Balcony Press, Los Angeles.

[5] For a complete illustrated report of the modernization of Los Angles see Heimann, J. (ed), 2009, *Los Angeles, Portrait of a City*, Taschen, Köln.

[6] Cfr. Mendelson, J., “Creating a Public for Modern Architecture: Sert’s Use of Images from GATPAC to The Heart of the City” in Munford, E., and Sarkis, H., 2008, Josep Lluís Sert : The Architect of Urban Design, Yale University and Harvard University GSD, Cambridge.

[7] Flores, C., 1961, *Arquitectura española contemporánea*, Aguilar, Bilbao.

[8] He was also the photographer of José Antonio Coderch, the renowned agent of the Mediterranean modern architeture. Cfr. Catalá Roca, F., 2000, Francesc Catalá-Roca, una nueva Mirada, Fundación Juan March, Barcelona.

[9] Fernández del Amo, R., 1980, ”El arte en la fotografía de Kindel”, in Zarza, R. (ed), 2007, *Kindel. Fotografía de Arquitectura*, Fundación COAM, Madrid, p.30.

[10] Sontag, S., 1977, *On Photography*, Anchor Books, New York.

[11] Berger, J., “Apariencias”, in Berger, J. and Mohr. J., 1997, *Otra manera de contar*, Mestizo, Murcia, p. 96.

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CONTRADICTIONS IN THE PROMOTION OF DOMESTIC COMFORT IN COLD-WAR ERA FLANDERS

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In the postwar age the Belgian welfare state established itself just like elsewhere in Western-Europe. From the middle of the 1960s onwards the standard of living increased swiftly in all layers of society. Domestic comfort, such as a well-equipped kitchen and bathroom, became available for the masses. Also the number of televisions increased tremendously. An average of 61% of the Belgian families obtained one in 1970. While most European countries invested in social housing, the Belgian state provided premiums and low-interest loans to allow many people to build or buy an own dwelling. For the first time a lot of worker's families were able to obtain their own house, which they could furnish to their liking. As such, the need for information about the new tendencies in home economics, domestic comfort and interior design was large.[1]

Several Flemish socio-cultural (women) organizations and some commercial magazines educated and informed people about home culture and domestic appliances, including the Socialist Visionary Women, the *League of Large Families* and three organizations of Christian persuasion: the *Association of Farming Women*, the *Christian Worker Women's Guilds* and the *Christian Bourgeois and Middle Class Women*. They 'educated' their members according to their ideological model of domesticity through journals, contests, lectures, show houses and courses. Some had a special service, such as the Home Service of the Association of Farming Women, which was staffed by home economists or teachers who occasionally worked together with external architects who gave a lecture or advise for their manuals.

Predictably, those organizations enthusiastically embraced domestic appliances, central heating and bathrooms with running water. However, some other new technologies, such as the television, were looked at with vigilance. On the one hand, the organizations were delighted about the "wonder of television", as it brought the broader world (even the first moon landing) into the living room.[2] The Flemish television was credited with important educational benefits, as it contributed to the development and distribution of the Dutch (Flemish) language, an important aspect in

a region that stood up for the emancipation of its own tongue. Secondly, the imagination would be exercised, knowledge improved, insights deepened and inner life developed. Finally, it brought a pleasant, cheap and, according to some voices, also "healthy" entertainment "in a world, in which increasingly few people find pleasure in their work."[3] On the other hand, there were also a lot of reserves. Household appliances, central heating and modern bathrooms unmistakably improved the hygienic, the working and the living conditions of the members. The merit of the television was not that obvious, however. Some home economists, policy makers and architects even complained that people had more televisions than bathrooms, and wondered if this was an indication of the hygienic situation in Belgium.[4]

All organizations were also tremendously concerned about the television's 'dangers', especially on young children and men. It was believed that the television could destroy the eyes and overburden the nerves. Furthermore, the homework would get into a corner. The father could get obsessed by the television, especially during the 'Tours de France'. The television stars would get more 'intimacy' than his own wife.[5] The chores at home would have been handed over and, moreover, his family and friends would be neglected. The mother could apparently not get addicted to the television, as she was repeatedly ascribed a warning and supervising role. The well-being of the children and the man was taken to be as her responsibility. She had to prevent them from watching too much television and was insisted upon to draw up a planning for the upcoming week.

In the gendering of the television an explanation can be found. The tube was gendered female, as the following quote illustrates: "Nowadays, this lady of our times has obtained civil rights at our places too. She gains access at all homes and receives there, according to anyone's taste, an own place, sometimes hired in antique cupboards, sometimes – in fact almost always - in center stage."[6] As such, father and children could get addicted to this glorious "lady" who was a center of interest, while for mother 'she' was rather a rival. Possibly, this also explains why only one article paid attention to (housekeeping) women watching television. Only the Home Culture Service of the Association of Farming Women advised to place the box in a serving hatch between the kitchen and dining room so that "mother" at work could easily include a program.[7]

The service came up with a quite sophisticated solution to "the problem of the day", namely by giving the TV an appropriate place.[8] Most organizations kept on struggling with it.

The positioning advice balanced between a following of the theater principles, which guaranteed optimal audio-visual comfort, and a slowing down of the dominance of a playing TV in the living room. Recommendations about the height for TV viewing, the suitable distance between spectators and the TV and an appropriate lighting

belonged to the former category, measurements to split the spectators from the non-spectators to the latter. Almost all organizations advised a separate room to watch television: preferably a TV-room by American model (the den), but also the former 'best room' to receive higher ranked visitors, could serve for that purpose. When a separate room was lacking, the television could be placed in a corner or along a wall of the living room. However, a pontifical position was absolutely not done, because as such, the box would completely dominate social life, so it was believed. Neither was it suitable that the visual lines of the spectators were cut by the running lines of the passing inmates in the living room, as this disturbed comfortably watching television.

All organizations, as well as (interior) architects at that time, preferred a cupboard to house the TV behind doors when not in use. At night, the "big eye" was very visible, while during the day, the "ugly, convex, mirroring glass" was kept away.[9] For example, the Association of Farming women promoted a niche in which a TV-niche was recessed into the mantelshelf of the fireplace which could be closed by shutters.

The preference to hide the irregular shaped TV in a tight cupboard was in line with the modernist ideology that prescribed – against its own rhetoric about transparency and constructive truth - a strict, geometric order, purity and tight lines. It went hand in hand with a fear for the social dominance of the TV. That fear mainly lived amongst the cultural middle to upper classes which the architects and organizations' staff belonged to. Professors, engineers, etcetera kept the television as long as possible outside the home. A professor for example narrated:

> " [A colleague] had a television, but he was ashamed about it. He had bought one, but didn't pass that on. In those times, a professor wasn't expected to watch television. He had better things to do, they found." [10]

While the lower classes were proud on their TV and placed it centrally in the room, the cultural upper class looked down on the 'lower class culture'.

Introduction of 'retro' or 'primitive' elements

Oddly enough, although the intermediaries promoted innovative domestic technologies, including central heating, from about the 1960s they increasingly promoted the fireplace, the most commonly spread method of heating until the 19th century. How can we understand this evolution?

The commercial women's magazine *Woman's World* explained it as follows:

> "we want to see a "visible fire", we want to enjoy a fire with observable flames that brings along coziness".[11]

Its sister magazine *Libelle* clarified it furthermore:

> "In a time of increasing speed, efficiency and robots, in a time of utmost comfort, we fall back on the 'old-fashioned charm of the patinated piece of furniture and the whimsical shadows of the fire."[12]

The fireplace was thus associated with an (imaginable) "cozy", "old-fashioned past" that was not too much disturbed by technology. It protected the home from the outside world, as the magazine of the Christian Workers' Guilds explains:

> "pragmatically, central heating is perfect; equal division of temperature, no dust, no maintenance and the whole house is heated. However, fire can be much more. It is the center of family life. Around the fireplace, the family feels united. Nothing has a more calming effect than watching to the fanciful play of the flames. […] Man feels at ease and protected against the cold world outside the home."[13]

Besides the heart of the home or protection against the "cold world", the fireplace was an important symbol, especially for the catholic organizations, because the mantelpiece carried the crucifix.

Also for other reasons they set value on the fireside. Since 1949 the magazine of the Association of Farming Women was called *At the fireside*, although a stove or heater was the most important heating apparatus in the farmer's home.[14] And the mantelpiece of the 150th show house of the Association of Farming Women was decorated with the maxim "the own fireplace has the value of gold" (home is where the heart is) (c. fig. 3). The saying remembered not only to the first foundation fire, but in particular to the importance of home ownership.

Indeed, home ownership and the family, both symbolized by the fireside, are cornerstones of the Belgian society in which the Christian Democrats reigned supreme. The party believed that a family house with garden in the country would bring along "moral uplifting, social peace and happiness", whereas tenement blocks and houses in dead-end alleys would be hotbeds of crime and immorality.

Also amongst the cultural upper classes who were housed in very qualitative architecture, the fireplace was an indispensable element. Many architects such as Paul Schellekens or Marc Dessauvage, provided a special cozy corner, often submerged or separated from the rest of the home, to watch television and to enjoy the fireside. Interior architect Adri Hazebroek found it important to bring in a "warm element" in the "total coolness of the modern architecture."[15] The possibility to withdraw from the outside world with the whole family was an essential aspect of their architecture. Only the socialists didn't pay much attention to the fireplace as it had no special meaning for them.

Rivalry between the fireside and television

The television and the fireplace competed with each' other as both were located centrally in the living room. Both were associated with family life, coziness and warmth and the two 'worked' only part-time, mostly at night, when all members of the family were united in the sitting area. The location of the two was problematic, as the two claimed centrality.

Despite the similarities, there were some important differences. Even when the fireside did not burn, it was the "altar" of domesticity, religion and family life, at least according to the home culture education of the (Christian) intermediaries. It connected the Christian inhabitants symbolically with God. But also according to the tradition, it was an important connection with the outside world. For example, the children had to place the 6th of December their shoe in front of the fireside. Black Peter, one of Saint Nicholas' (comparable with Santa-Claus) attendants, entered at night the house through the chimney in order to give the well-behaved children toys and sweets.

Also the television brought, when playing, the outside world into the living room. However, that 'window' on the world did not carry the (vertical) spiritual world into the home, but the 'horizontal world' of entertainment and the news of the day. On the one hand it connected the home with the public sphere; on the other hand it reinforced the domestic atmosphere, because, although the fireside symbolized the unity of the family, in reality the television kept the family members together and kept the fathers out of the pub.[16]

The TV shifted the boundary between the public and the private sphere, which are connected as two communicating vessels as both spheres evolved together with the industrialization during the nineteenth century.[17] Because the TV bridged the private and the public, it was perceived as dangerous and attractive at the same time. Exactly its duality, the homely and un-homely, the parochial and the worldly, the public and private character, made of the television such a vexed question. The television had a leveling effect between the urban and rural areas, as it introduced the same images and programs into the homes in both areas. As such, the television contributed to the urbanization of the countryside. Whereas in the fifties, movie theaters and other public events were far away for country men, the television changed that situation. The same movies and soaps could be watched anywhere.

The fireside on the other hand reinforced unambiguously the domestic and the hearth of the home. It remembered an imagined/invented rural and archaic past. In the popular houses with a farmer's look (also called fermettes) a fireplace formed an essential element of its interior.[18] Together with a cartwheel on the façade, a saddleback and shuttered windows it contributed to the charm, coziness and romanticism of those 'rural houses'.

But also in modern (sub)urban houses, the fireside carried in a certain ‘pre-modern’ rurality. It acted as an element of literal, but mainly metaphorical warmth, because the fireside became an additional apparatus to the central heating system. Its pre-modern image outshined its warming capacities.

Finally, the fireside can also be seen as a crucial element of cold war living. While interwar modernism was dominated by functionalism, rationalization and standardization, post-war modernism was much more characterized by domesticity, coziness, sheltering, warmth, rurality and family life.

goed wonen

onze televisie

We praten vandaag niet over tv vanuit het standpunt « gebruik », maar we bekijken even het apparaat zelf, als « meubel in huis ».

Nu reeds veel méér dan bij de aanvang is de tv een mooier meubelstukje geworden : een kleinere vorm, meer aanpassingsmogelijkheden van de kleur aan ons interieur, sierlijker lijn, enz.

In het begin kwam het toestel zomaar onze woonkamer binnengevallen als een lompe, vierkante bak, waar niet eens plaats voor was. Daarom werd er dan een tafeltje, meestal rolbaar, bijgeleverd en we zagen het ding ongebruikt staan in de soms veel te kleine woonkamer, ja zelfs in de keuken, en vaak dan nog overtrokken met een deftig overkleed in lelijke stof.

Tijdens het gebruik was 't nog erger. In sommige gevallen was de weg er zo door versperd, dat iedereen maar moest kijken en braafjes op zijn plaats blijven zitten. Maar ja, de vreugde van het kijken was zo groot dat al de rest maar moest wijken.

Daar zijn we nu overheen. Stilaan komen we ertoe dat naar tv kan gekeken worden door wie wil, maar dat, wie ander werk heeft, daar ook gerust kan mee doorgaan in diezelfde woonkamer.

***

— Er worden steeds méér oplossingen gevonden voor inbouw, zodat bij het niet gebruiken, het meubel niet zichtbaar is.

Als we onze tv een beste plaats willen geven bedenken wij het volgende. Om te kijken, zetten we hem op een plaats in een hoek van de woonkamer. Ideaal ware het tegen een zachtverlichte achterwand, en wel zó dat iedereen kan kijken op een afstand van ± 7 maal de straal van het scherm, d.i. ongeveer 2 à 3 meter. Men voorziet dan in de woonkamer in de andere wanden of hoeken voldoende stopkontakten om er bijgevoegde goed afgeschermde verlichting te kunnen nemen voor hen die geen tv wensen te kijken.

En we zetten ons in gemakkel zetels, zodat wij dubbel werd do lichamelijk uitrusten terwijl o geest de beelden opvangt.

Is nu het kijken gedaan, dan wo het toestel weggeborgen.

Enkele mogelijkheden :

— In ingebouwde kastwand, stevige uittrekplank met mogeli heid van draaien in alle richting

— In een kast tussen keuken woonkamer, b.v. doorgeefkast, ven het doorgeefgedeelte, op draaiplank, zodat de huisvrouw, misschien alleen thuis is en tijd haar werk even wil kijken, of de de keuken etenden, toch vanuit keuken kunnen volgen, terwijl rustig kijken steeds in de woon mer gebeurt.

— In een gewoon, ruim kastm bel met schuifdeur en met mogeli heid om het toestel enigszins sch te plaatsen.

— In een ingebouwde nis bo kast, of andere insprong, in de ning, zodat het tv-meubel g ruimte inneemt in de kamer.

***

U ziet, mogelijkheden genoe We moeten er echter over na ken, om dan met de eigen midd het beste te kunnen kiezen.

Bekijk maar even de foto's, geven u zeker gedachten.

M. Van Cleem

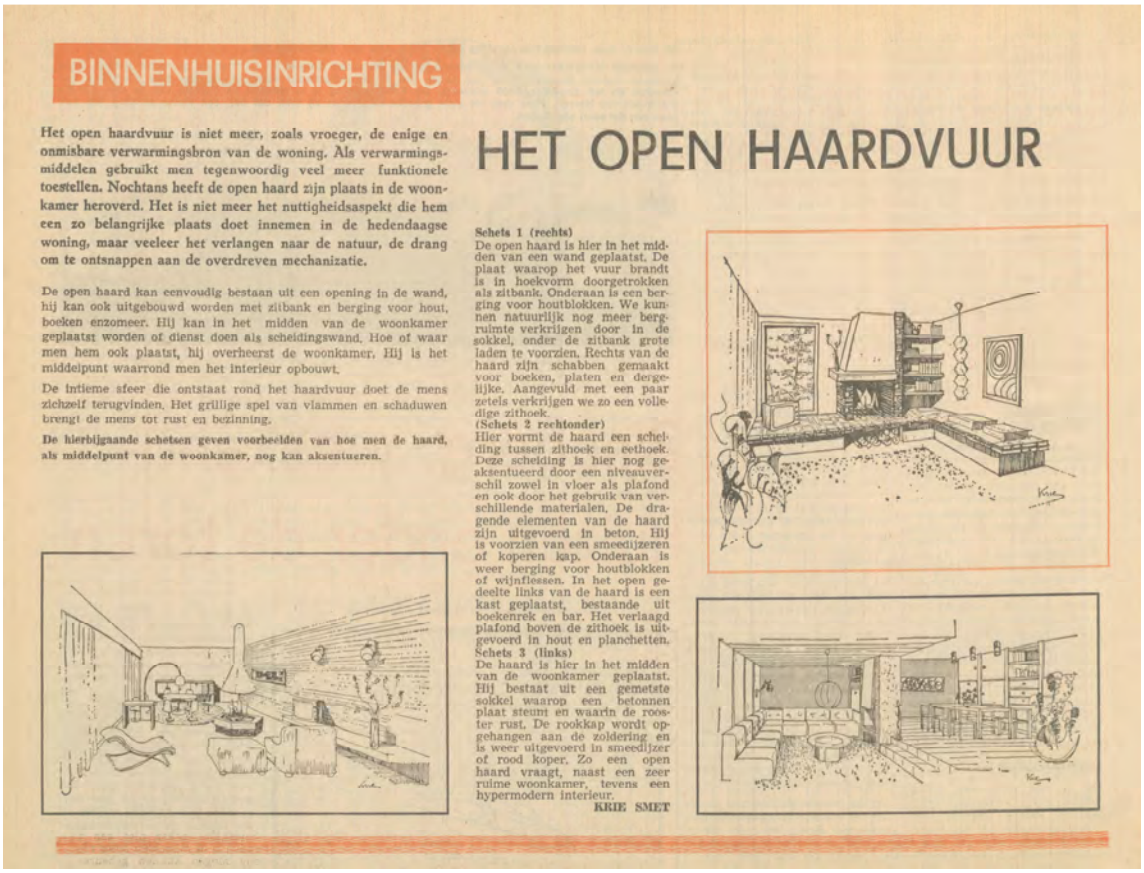
Figure 1: Television in the serving hatch. (VAN CLEEMPUT, “Onze televisie”, *De Boer*, 12)

Figure 2: Mantelshelf with shutters (© photo: Els De Vos)

Eigen Haard is
Goud Waard

Figure 3: The mantelshelf of the 150th show house which was decorated with a maxim.

(© photo collection of the Association of Farming Women, Kadoc Archive)



BINNENHUISINRICHTING

HET OPEN HAARDVUUR

Het open haardvuur is niet meer, zoals vroeger, de enige en onmisbare verwarmingsbron van de woning. Als verwarmingsmiddelen gebruikt men tegenwoordig veel meer funktionele toestellen. Nochtans heeft de open haard zijn plaats in de woonkamer heroverd. Het is niet meer het nuttigheidsaspekt die hem een zo belangrijke plaats doet innemen in de hedendaagse woning, maar veeleer het verlangen naar de natuur, de drang om te ontsnappen aan de overdreven mechanizatie.

De open haard kan eenvoudig bestaan uit een opening in de wand, hij kan ook uitgebouwd worden met zitbank en berging voor hout, boeken enzomeer. Hij kan in het midden van de woonkamer geplaatst worden of dienst doen als scheidingswand. Hoe of waar men hem ook plaatst, hij overheerst de woonkamer. Hij is het middelpunt waarrond men het interieur opbouwt.

De intieme sfeer die ontstaat rond het haardvuur doet de mens zichzelf terugvinden. Het grillige spel van vlammen en schaduwen brengt de mens tot rust en bezinning.

De hierbijgaande schetsen geven voorbeelden van hoe men de haard, als middelpunt van de woonkamer, nog kan aksentueren.

Schets 1 (rechts)
De open haard is hier in het midden van een wand geplaatst. De plaat waarop het vuur brandt is in hoekvorm doorgetrokken als zitbank. Onderaan is een berging voor houtblokken. We kunnen natuurlijk nog meer bergruimte verkrijgen door in de sokkel, onder de zitbank grote laden te voorzien. Rechts van de haard zijn schabben gemaakt voor boeken, platen en dergelijke. Aangevuld met een paar zetels verkrijgen we zo een volledige zithoek.

(Schets 2 rechtonder)
Hier vormt de haard een scheiding tussen zithoek en eethoek. Deze scheiding is hier nog geaksentueerd door een niveauverschil zowel in vloer als plafond en ook door het gebruik van verschillende materialen. De dragende elementen van de haard zijn uitgevoerd in beton. Hij is voorzien van een smeedijzeren of koperen kap. Onderaan is weer berging voor houtblokken of wijnflessen. In het open gedeelte links van de haard is een kast geplaatst, bestaande uit boekenrek en bar. Het verlaagd plafond boven de zithoek is uitgevoerd in hout en planchetten.

Schets 3 (links)
De haard is hier in het midden van de woonkamer geplaatst. Hij bestaat uit een gemetste sokkel waarop een betonnen plaat steunt en waarin de roosler rust. De rookkap wordt opgehangen aan de zoldering en is weer uitgevoerd in smeedijzer of rood koper. Zo een open haard vraagt, naast een zeer ruime woonkamer, tevens een hypermodern interieur.

KRIE SMET

Figure 1: Problematic location of the fireside and television
(Krie Smet, “Binnenhuisinrichting”, *Raak*, Okt. 1974, 4)

Notes

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[2] PIGMANS, “Televisie …”, *Vb*, (aug. 1962), 42; MIETTE, “TV”, *SdV*, (1962) 11, 23; “Meer mens”, *BdH*, (1976) 14.
[3] PAULY, “Wat te doen?”, *BdH*, (okt. 1970) 10, 12-13.
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[8] LUCAS, “De televisie in onze woonkamer”, *LE*, (1960) 2 (febr.), 57-58.
[9] “Suggesties”, *LE*, (1967) (Jun.), 266-267.
[10] Interview Vereecke.
[11] LE BRUN, "Gezellige avonden", *RdV*, (1960) 800, 52-53.
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[15] Interview Adri Hazebroek.
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[17] SILVERSTONE, *Television and everyday life*, London, New York: Routledge (1994), 50-51.
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MODERN LIVING
Modernity and Tradition

The track on Modernity and Tradition has four participants: Manuel Calzada Pérez from Spain, Tania Calovi Pereira from Brasil, Miguel Jaime García from Spain as well and María Teresa Feraboli from Italy.

Titles of Papers are the following: Urbanizing the rural, New villages in contemporary Spain or how to research into city form outside the city. Manuel Calzada Pérez. University of Seville.

Max Bill´s Housing Design: A Synthesis of the Arts through Functional Beauty. Tania Calovi Pereira. Federal University of Rio Grande do Sul.

Living in the Landscape, Eric Lyons and his Span houses. Miguel Jaime García. IE University Segovia. Modernity of living and the farmhouse. Maria Teresa Feraboli. Politecnico di Milano. Urbanising the rural, New villages in contemporary Spain or how to research into city from outside the city. By Manuel Calzada Pérez. Manuel Calzada discusses on his Paper the National Institute of Inland Colonization (INC) history and creation on Franco´s Spain, He focus on Architectural Service of the INC created on 1941 and its design efforts to propose new urban models for rural Spain.

Tania Calovi analyzes Max Bill´s Studio House in Zurich-Höngg. Bill was one of best known students at the Bauhaus. Architect, sculptor, writer and teacher. She compares the Studio House with Le Corbusier´s Villa Stein and finds interesting similarities.

Finally Maria Teresa Feraboli speaking on Modernity in Italian farm houses discusses the farm house projects done on the thirties by individual designers like Gaetano Ciocca, Cesare Chiodi and some others.

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URBANISING THE RURAL: NEW VILLAGES IN CONTEMPORARY SPAIN OR HOW TO RESEARCH URBAN FORM OUTSIDE THE CITY

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At the Sixth São Paulo Biennial in 1961, the jury presided over by Oscar Niemeyer awarded the Gold Medal for Architecture to José Luis Fernández del Amo for the villages he designed for the *Instituto Nacional de Colonización* (INC, National Institute for Inland Colonisation). For the first time since the Spanish Civil War, a work of urban planning produced in Spain had been internationally recognised. After the years of autarky, attempts at integration into modernity -an the USA sphere- by the Franco Regime began to bear fruit.

Renewed and traditional values were interwoven within a discourse which was not free from confusion but which managed to integrate itself within the wider framework of the earliest revisions of the Modern Movement. In Spain this revision took place in the 1950´s and had a very distinct, and in some ways contrary, character. In effect, what began to be challenged outside Spain - the modern orthodoxy of the 20s´and 30s´, that began to incorporate the old concepts of tradition and everyday man - was precisely what was looked after by some Spanish architects who thought that traditional values should only be a gate to modernity. Still, the Sao Paulo Biennial prize is a confirmation that the Spanish route did not lie outside the global processes. It was precisely its lack of modern orthodoxy, its permeability to traditional values, which - once the initial confusion was overcome and it was in the hands of capable and responsible architects - generated an original and valuable contribution within the new world order arising after the Second World War.

A new world order

After the Second World War, with the exception of the Soviet Union, the United States became the dominant, almost absolute, power. These two powers developed a mutual hostility which led to the Cold War, to nuclear rearmament and to local military conflicts with dramatic consequences. The fight to extend an imperialism which was not only economic, but also cultural and social, became described on the American side as the *Pax Americana*, a form of peace founded on cultural products and values.

The desire of the United States to intervene in the cultural processes of countries belonging to its zone of influence provided an international stimulus for the Modern Movement, purified of politically undesirable content and focussed on purely formal matters. As Ockman (1993: 18) argues:

“Form followed form” (...) As with the American painting of these years, successfully proselytized by the ex-Marxist art critic Clement Greenberg, an abstract aesthetic sublimated disturbing contents. (…) It now penetrates all corners of the world, including the newly decolonized “Third World” countries

aspiring to Western living standards, at times hybridizing local vernaculars. "Form was king".

The strategy of abstraction to "make disturbing contents socially acceptable" was especially significant in the Spanish case. International isolation, academic training and the imperial rhetoric of the regime had not permitted an intellectual climate of critical reflection. The backwardness of Spain on all fronts, cultural and economic, was evident and shameful, and the necessity for assimilation with other Western European countries had become an unavoidable objective. It is worth adding to this lack of intellectual support the urgency for reconstruction which required a strategy based on action, and not reflection. As M. A. Baldellou (1998) has accurately pointed out,

With extraordinarily limited theoretical instruments... but with a very intense desire to formalize, the architects of that first and second postwar generation (...) launched themselves on a new "crusade" to recover a position on the international scene by scaring away the most recent phantoms, and by including themselves within a historical and modern discourse.

Ockman's perspective from the United States, and Baldellou's from Spain, are two sides of the same coin. The recovery was made from the beginning of the the nineteen fifties at the heart of the Modern Movement itself, from various marginalised traditions and criticism of its most orthodox line. It served to enable Spanish modernity, which was problematic and had a foot in both camps, to get caught up in a largely neglected debate. And, in this case, by means of an experiment with a marked ideological character: it served the transformation of the rural environment.

The National Institute for Inland Colonisation (INC)

The Decree of 18 October 1939 founded the *Instituto Nacional de Colonización*, whose objective was to become the main instrument of agrarian policy. The INC developed extensive irrigable regions in an experiment which encompassed the land, urbanism and architecture through the construction of reservoirs, irrigation channels or villages and the levelling and preparation of land for cultivation. In October 1941, the Architectural Service of the INC was created, under the direction of José Tamés Alarcón. This body was composed of a small number of architects dedicated to the design not only of the layout of the villages, but also the houses, institutional or religious buildings, and even elements of street furniture.

The work of the Service had a markedly architectural character. The modesty of the objective allowed them to focus their design efforts on the layout and to freely test different models. The absence of problems on a genuinely urban scale - the size of the villages did not usually exceed 250 houses and generally it was about between 50 and 150 - meant that the architects of the National Institute for Inland Colonisation could focus their efforts on designing and building from strongly architectural criteria.

The experience and the inclination towards certain criteria formed a set of rules which, while leaving a wide degree of freedom, help us to understand the urban model proposed. This set of rules was introduced through the circulars of the Institute and was directed towards the unification of planning, programmes, institutional infrastructure, territorial establishment, the

organisation of public spaces, and even a basic zonification. The theme of institutional infrastructure was one of the criteria which was fixed in most detail in circular 246. Each village had to have as a minimum: a church, parish premises and a house for the priest; an administration building, a school, commercial premises with their own accommodation; a house for the doctor with consulting rooms attached; and finally, premises for artisans - a carpenter's shop and a blacksmith. The existence of a square delimited by official and institutional buildings was taken for granted. Additionally, a minimal level of zonification was indicated, differentiating the civic centre, the green zone, the residential zone and outbuildings for communual agricultural use. The Head of the Architecture Section himself, José Tamés, issued a series of recommendations which had wide effects even though they were not mandatory. Among these he emphasised the desirability of separating animal and pedestrian traffic while he encouraged "meticulous examination of the popular architecture of the region" to extract from it the basic compositional rules (Tamés, 1988: p.9).

However, despite this series of guidelines on the design of the villages, some architects conducted a search for modernisation whose creativity exceeded and even on occasions contradicted those criteria. In the process a gradual evolution was permitted, in which the contributions of the most advanced or the most restless were gradually accepted and incorporated by the Service. This was joined on occasions by limited collaborations with outstanding contemporary artists and painstaking architectural design, which we can but note here. Innovations strictly on the level of urbanism were carried out on three principal, intimately related fronts: the general structure, the road system and the type of superblock.

The general structure

The layout of the villages had a strongly architectural aspect. Their reduced size, the predilection for the small in scale, the importance of the creation of links between the main buildings could provide a partial answer for this fact. Hence, on the basis of a main road network generally established by the access road into the village maintaining a more or less relaxed orthogonality, mechanisms to control the urban form were established to create a discreet impression of rurality. The rupture of perspectives, the massive and concentrated composition of the whole, the location of individual buildings as a response to the land, the recreation of irregular spaces through asymmetries, twists and turns, ruptures, and false irregularities, were some of the elements considered when it came to selecting the layout. The village of *Torre de la Reina* (Seville), designed by Tamés himself, was a paradigmatic example, serving as a model to be imitated in subsequent projects.

But soon a more geometric line was imposed, which established a profoundly architectural control on an overall scale. This gave rise to a wide range of possibilities for manipulation. The compositional clarity and cleanness provided examples of layout which were strictly orthogonal such as the typical village for the Montijo region of 1945 (Villanueva, A. and Leal, J., 1990: 144), which demonstrated the early inclination of the Institute towards these models. The purely orthogonal schemes were soon exceeded in spectacle and inventiveness by other options such as the fan in the style of Ebenezer Howard at *Esquivel* (Seville), by Alejandro de la Sota, or the ring at *Miraelrío* (Jaén) by Fernández del Amo, based on Richard Kauffman's Israeli moshav at Nahadel, but with the

refinement of the public buildings grouped along an institutional diameter. It also practiced with games of geometry which modified any guideline for general sequences of recesses and more vibrant rhythms. The case of *Gévora* (Badajoz) by Carlos Arniches utilised the expressive possibilities of the spine of a fish within the composition of the whole. Other options approached geometrical requirements by means of topographic adaptation attributed to the garden cities. Owing to the flatness of the majority of the settlements, this practice had little effect, although examples such as *San Ignacio del Viar* (Sevilla) by Aníbal González Gómez even followed Sitte-Unwin in such details as the construction of unexpected passageways or the general layout. Of greatest interest for their innovation are the designs by Fernández del Amo for *Vegaviana* and *Cañada del Agra*, where as will be seen below, the decomposition of the superblock radically explores the compositional freedom of the urban elements.

The road system

The road system constitutes the principal instrument defining the layout of the majority of the villages. The existence of one or more axes, orthogonal or oblique, together with the perimeter roads, was enough to be able to define the other elements by default. The theme of the main street culminating at the church and creating an orthogonal layout was repeatedly present. The model was borrowed from the urbanism of the period in general, to the extent that, in many cases, a model of a city avenue or boulevard was used which was deeply erroneous and disproportionate, inappropriate for the smaller scale of the village. Another singular type of street was the perimeter road which closed off the village and usually defined it, in its layout or in the main facade of the village, in the style of a very modest parkway, incorporating a triple or quadruple row of trees and intervening pavements.

Of special importance is the reflection on separated traffic, which was present in the urban theory of the time and which had in the newly constructed villages a wide field for experimentation. Examples range from those cases in which separation is produced only at the level of the superblock, to those more ambitious designs which affect the urban structure as a whole. This separation of traffic usually involved a dimension more fitted to pedestrian streets, with greater flexibility of layout, with openings, recesses in the facades and the closing of perspectives. Through the tool of modern design the intention was to rediscover the style of a profoundly traditional street, which “becomes a little social club in which women gossip in chairs next to their front doors and men pass each other the wine bottle commenting on the incidents of the day” (Villanueva, A. and Leal, J., 1990: 42).

The rest of this residential road system obeyed important economic criteria. The streets for the carts, which suffer the greatest wear and tear, were designed according to strictly rational criteria and almost without concessions to ornateness or decoration (Herrero, 1948: 20). The minimum width to allow two carts to pass, the final opening to permit the carts to turn - marked by a fountain or drinking trough - and the curvature of the access to the yards allowing the angle of turn of the cart to be accommodated, were some of the recurrent elements of this type of road system.

The superblock

The average village block originated in the aggregation of plots which were the product of the study on the minimum housing unit, the conclusions of which led to a cross section width of some eleven metres and a cross section depth of some thirty. From this plot the block was almost immediately defined through the aggregation of houses - from six to twelve - and through adaptation to the road traffic system, mixed or separated. The design of the block as a piece of architecture was the subject of careful attention by the INC in order to strengthen the criteria of picturesqueness.

But the model underwent profound alterations, such as the adoption of the type of Radburn block - already advocated by Herrero as part of the Spanish popular tradition - and its subsequent adaptation. At *Esquivel*, for example, the studied final culmination recalls its origin, despite the fact that the cul-de-sac does not terminate but rather links with the next superblock, and the pedestrian traffic remains within the superblock, not outside.

The most elaborate example of this development is in the formation of superblocks which on occasions could be unique and define, by themselves, the whole village. *Sacramento* (Sevilla) by Fernando de Terán is one particularly impeccable and worthy example, with four vehicular lines of penetration which terminate in cul-de-sacs which, in their turn, connect to their own pedestrian squares and finally to the village main square. One of the advantages of the superblock is the possibility of freeing up the layout/block/alignment relationship. This is the case at *Cañada del Agra*, by Fernández del Amo, where the rupture of such order allows a greater flexibility in the location of houses, of rhythmic recesses sharply exploited in the creation of the village's elevations, of the visual relationships governed by the incorporation of green space within residential space, etc.

Conclusion

The present paper has travelled through the history and activities of the INC. Throughout, it has shown how underneath the traditional appearance of Francoist propaganda was hidden a systematic, and on occasions brilliant, attempt to modernise villages. The research on models of settlement opened up a wide range of possibilities which, combined with high quality of architectural design, constitutes a heritage which at the beginning of this new century is starting to be appreciated. Still, the present of these villages sometimes show little respect for their architecture and urbanism and offer a lesson not to be forgotten: their luck depends not on its modernity or even quality, but on the general trends of speculation and territorial transformation. To protect this heritage is also to struggle against such powerful lords, and we shall not forget that if that struggle is worth it, it is not because of its modern forms, but because what their authors tried to find under those modern forms was a new, better, rural world.

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MAX BILL'S HOUSING DESIGN: A SYNTHESIS OF THE ARTS THROUGH FUNCTIONAL BEAUTY

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Introduction

The modern integration between art and architecture, as embodied in Bauhaus pedagogy, has been a ceaseless topic of debate and contention. Proposals for achieving this integration have often been generalizations applied to the various theories and directions the school championed over the years, though achieving results has been frustrated by the choice of formalistic interpretations. The most significant contributions include an overlooked niche of works realized by former Bauhaus students. Among these is the pivotal case of Max Bill's art and architecture whose first important project was the *Studio House in Zurich-Höngg* (1932-33), a project which anticipated the formulation of his theory on *Beauty from Function and as Function* (1948).[i]

Synthesis of the Rational and the Organic in the *Studio House in Zurich-Höngg*

Max Bill's *Studio House in Zurich-Höngg* can be characterized by the synthesis of the concepts of flatness and depth associated with the machine aesthetic and a particular and calculated a-rhythmical depth which indicates a more random aesthetic. The *Studio House* incorporates the early influences Max Bill had so far absorbed, such as his synthesis of the Bauhaus years, his participation in the *Abstraction-Création* group from 1932 on, and the early influence of Le Corbusier.[ii]

Among Bill's artworks that precede the *Studio House* and display the characteristic superposition of flatness and depth is *Well Relief* (1931-1932, Fig 01). This is essentially a homogeneous undulated surface which acquires the quality of a relief in the way the curved and angled cuts propose a diagonal orientation and produce a sensation of movement. It also plays with regularity and arbitrariness through the eccentric circular cut that accentuates the arbitrary. Corrugated iron, an ignoble material taken from an endless production stream, is made into an object through two subtle acts: the cut of the form skewed from the corrugation and the circle within it, both of which express an a-rhythmic quality.

This play of regularity and arbitrariness is analogous in Bill's *Studio House,* which was designed soon after the several artworks initiated by the success of *Well Relief*. This is clear when one compares the two opposing façades (Figs 02, 03). It is also expressed in the plan of the second floor which reveals the architect's strategy of depth proposed by an L-shaped form around the void of the gallery-studio, which pushes one's perception toward the inside, and another L-shaped form defining the terrace which pulls toward the outside (Fig 04).

Beyond artistic associations, the *Studio House* also bears similarities with the plan of the *Villa Stein* (1927-1928) by Le Corbusier, which also adopted the compositional strategy of L-shaped forms linking internal spaces and outside areas, but it is between these building's façades that one can see more clear relationships. The flat and introspective aspect of the front north façade of the *Studio House* contrasts with the outward looking and sculptural order of the south rear façade where balconies protrude from the house. *Villa Stein's* entrance façade is also oriented inward and is flat, hiding all the monumentality of the internal grand entrance. The rear façade is more outwardly oriented, and thus sculptural.

The similarities between these buildings imply a clear interest of Bill's in the domestic architecture of Le Corbusier. It's commonly accepted that Le Corbusier's journey to the East in 1911 was fundamental to many of the innovative ideas he adopted in his buildings, especially his visits to Mount Athos, the Parthenon, Pompeii and Hadrian's Villa at Tivoli. And perhaps as significant were the notes he gathered on domestic architecture, especially those regarding Turkey.

The details of the Le Corbusier's visit to Mount Athos are described in *Recollections of Athos*,[iii] which records his eighteen days in this place. The sketches in *Journey to the East* tell us that Le Corbusier had been impressed especially by the plans of these monasteries which he drew as having L-shaped formats: the monk's cell and a loggia around a courtyard. The sketch[iv] of these spaces is from the monastery he closely studied, the Carthusian Monastery of Ema, near Florence, which he described as a joyous interpretation of a dwelling.[v] Ivan Žaknic[vi] indicated that the Monastery became a fundamental reference to the ideal cell of his *Esprit Nouveau* pavilion and *Immeuble Villas* (Villa Stein), among others. Max Bill would later adopt this same format in his *Studio House in Zurich-Höngg*.

Bill[vii] also undertook a study trip to Italy in 1926 after attending a lecture given by Le Corbusier at the school of Applied Arts the previous year. He had also studied Le Corbusier's travel sketches in *Vers une Architecture*, originally published in 1923, and came to recognize that Le Corbusier's experiences, "endowed him with a second sight."[viii] On his trip of 1926 Bill visited Genoa, Rome, Naples, Capri, Florence, Venice and Milan, and painted the watercolor *Fiesole*.[ix] In this image of a hilltop town near Florence he shows his sensibility in the planes and

principal shapes of the architecture that emerge in the landscape. In this early period before the direct influence of the Bauhaus, he was not interested in picturesque depictions, but was looking for a 'natural' order among the rhythmical and free distribution of buildings in the mountains.

In the summer of 1928, having already begun his studies at the Bauhaus,[x] Bill would travel again to Italy and visit the Paestum. He[xi] described his visit to the basilica and the Temple of Neptune: "What mostly surprised me about them was their solidity – not only their geometrical outlines, but their massiveness and the use of materials." He further expressed disappointment for the monumentality of the building[xii]: "Such large-scale dimensions as well as the enclosed nature of the masses were completely new and strange experiences for me. It seemed to me a waste of materials, beautiful in itself and imposing, but quite pointless."

Bill recognized that the basis for the monumental form was more aesthetic than rational, denoting a commitment first of all to a rational and functional perception of this historical architecture, as opposed to the artistic and poetic perception of Le Corbusier[xiii] who, when he visited the Parthenon and other ancient buildings, emphasized the 'poetic emotion' of the plan, walls and light in each space, while not denying the functionality.[xiv]

Bill sometimes tended to be reductive in his understanding of aesthetics in architecture because his goal was the building itself, while Corbusier was typically additive because he intended that a building should give rise to other references. Thus, at this early stage in Bill's career his notion of aesthetics was already weighted towards the functional aspect of painting, sculpture and clearly, architecture.

In *Studio House*, despite its simplicity and scale as compared to *Villa Stein*, there are no concessions to curves or diagonals, such as in the latter's 'pictorial' walls, or to non-functional protuberances, such as *Villa Stein's* exaltation of industrial form through the shaping of walls according to the necessities of bathroom fixtures or curved stairs. Also, one doesn't see in *Studio House* the adoption of literal historical archetypes as aesthetical resources, such as the four pilotis that flank the entrance of *Villa Stein* which were inspired by the atrium of the 'Casa del Noce' and depicted in Le Corbusier's sketches from Pompeii.

If Le Corbusier brought a poetic perception to his architecture and based them on so many diverse references which, in the thirties included his own Purist paintings, industrial forms (*object-types*) and historical archetypes, one can draw a parallel with Bill in that he brought to his architecture a similarly wide range of artistic pursuits and he was also interested in historical sites and artifacts. To focus on this last example, Bill[xv] stated that he was attracted to historical objects when he perceived that use and symbol were still thoroughly integrated. If this definition refers to objects it nonetheless shows that Bill found value where the symbolic was closely associated with functionality, and this elucidates a

fundamental difference between Bill and Le Corbusier. We see that in many interior forms adopted in *Villa Stein*, as in many of Le Corbusier's projects, the 'functional' form became the symbolic and gave rise to their own symbols, and thus occluded their origins. A utilitarian element such as a residential stair is transformed in *Villa Stein* into an icon of the industrial world, shaped in a curved form that resembles the stairs used in factories or ships. Walls are bowed or are set diagonally in the service of an aesthetic intended to provoke effect, emotion or drama in the experience of space.

If one looks again at the more prominent façade of the *Studio House* it can be seen that any instances of sculptural arrangement were contained within the larger goal of realizing functional precepts. Elements that appear at first to be purely artistic gestures such as the *Studio House's* small balcony in the living room and the larger protruding terrace, which respectively resemble the strategy adopted in the small balcony of the *Villa Stein* library and the *terrasse-jardin* projection next to the guest bedroom, make no concession to formal associations. In *Villa Stein*, the tiny size of the balcony located next to the library clearly allows just one occupant, thus bearing a private, almost secret character in combination with the nature of a library, but no truly programmatic function. It prevents any social interaction and is located in the north façade avoiding even the sun. However, the small balcony establishes a symmetry on the façade by marking the service entrance beneath it. In contrast, the small balcony of the *Studio House* is more spacious in length and has a social character which extends the purview of the adjoining living room. It also allows light and sun to penetrate the entire living room due to its southern orientation. As another example, the *terrasse-jardin* of the *Villa Stein*, located next to the guest bedroom has a sculpted exterior wall that follows the contour of the adjacent bathtub. At what expense is this gesture made that puts the intimation of a private act on display? In contrast the balcony of the *Studio House* seamlessly projects the gathering space into the landscape, and the gesture is unencumbered and clean. In conclusion, one sees in Bill's *Studio House* that even his more dramatic spaces have, "a beauty that emerges from function and remains as a function."
A great conceptual difference between these architects seems to be that Le Corbusier believed architecture belonged to the domain of art, as he explained in 1925 in his text *L'Art Décoratif d'Aujourd'hui* [16], while Bill applied his concepts regarding function to what he considered to be the distinct domains of art and architecture.

Le Corbusier[17] also felt that art was necessary for man, that the emotional satisfaction provided by art was different from that of utilitarian need, and ultimately that the disciplines of art and architecture should satisfy the same needs which are located in the realm of emotion. "To provoke elevated sensations is the prerogative of proportion, which is sensed as mathematic; it is afforded most particularly by architecture, painting, and sculpture."[18] If Le Corbusier conceived the space of art and architecture as belonging to the domain of emotion, Bill's theory of functions[19] separated the role of each media.

"I have a general theory of functions which define different categories between painting, sculpture, etc…The function of a painting is to be an object of contemplation which extends its influence in space, while a house is destined to inhabitation, to live and to work." If it seems too arid for an artist to conceive architecture in such terms, I believe that there was a lucid intention to strongly separate himself from fashionable discourses and stylistic tendencies, and to bring design back to the necessary, the intelligible, and a more vital point of departure. In his text *From Functionalism to Function* (1979)[20] he explained that his approach in design was different from Functionalism. "Under the term function we understand the relationship of various factors to each other. Applied to the area of our environment this means primarily the relationship between people and their environment and the relationship of these environmental factors to each other."[21] Thus the issue of design shouldn't be considered to be isolated or emphasizing emotion alone, rather he[22] affirmed: "Ethics and aesthetics are functionally connected and are therefore no longer independent of each other today. Indeed they have almost become a synonym that only provides a standard with which each new design can and should be judged or condemned, but which also stand at the start of every design process as the basis for the control of all functions." The harmony Bill was looking to achieve in the design of his art, objects and spaces was not necessarily devoid of lyricism, but intended to restore the significance of function. Le Corbusier's inclusion of architecture in the domain of art was what created the ambiguity with regard to the issue of functionality in his projects, and, as postulated by Stanislaus von Moos[23], was perhaps what defines the weak or the strong parts of his theory.

Conclusion

The space of reconciliation between the flat front façade and the volumetric rear façade is found in the interior of the *Studio House in Zurich-Höngg*, and can be perceived in the rhythmical experience of light projected onto planes as one progresses through the space. This is seen in moving from the studio's void, which offers an internally focused and concealing experience where light enters softly through a window and skylight, to the small volume of the balcony, and finally to the large volume of the terrace. The flatness of the front façade is expanded through light inside the house while the volumetric strength of the rear façade is reinforced by the natural light outdoors. This functional beauty is also present in the geometrical organization of spaces and the equality of proportions among the common areas.

Bill said he was an artist that saw himself as an architect, while Le Corbusier felt he was an architect who always wanted to be a painter. Perhaps this was a philosophical or personal distinction that would uniquely characterize their architecture. We don't see Bill bringing the literal forms of his paintings or the exaltation of industrial products to his *Studio House in Zurich-Höngg*. Instead one sees a selective eye that learns through concepts, from history and artworks, and an architect who is concerned with demonstrating the beauty of the useful itself.

Illustrations

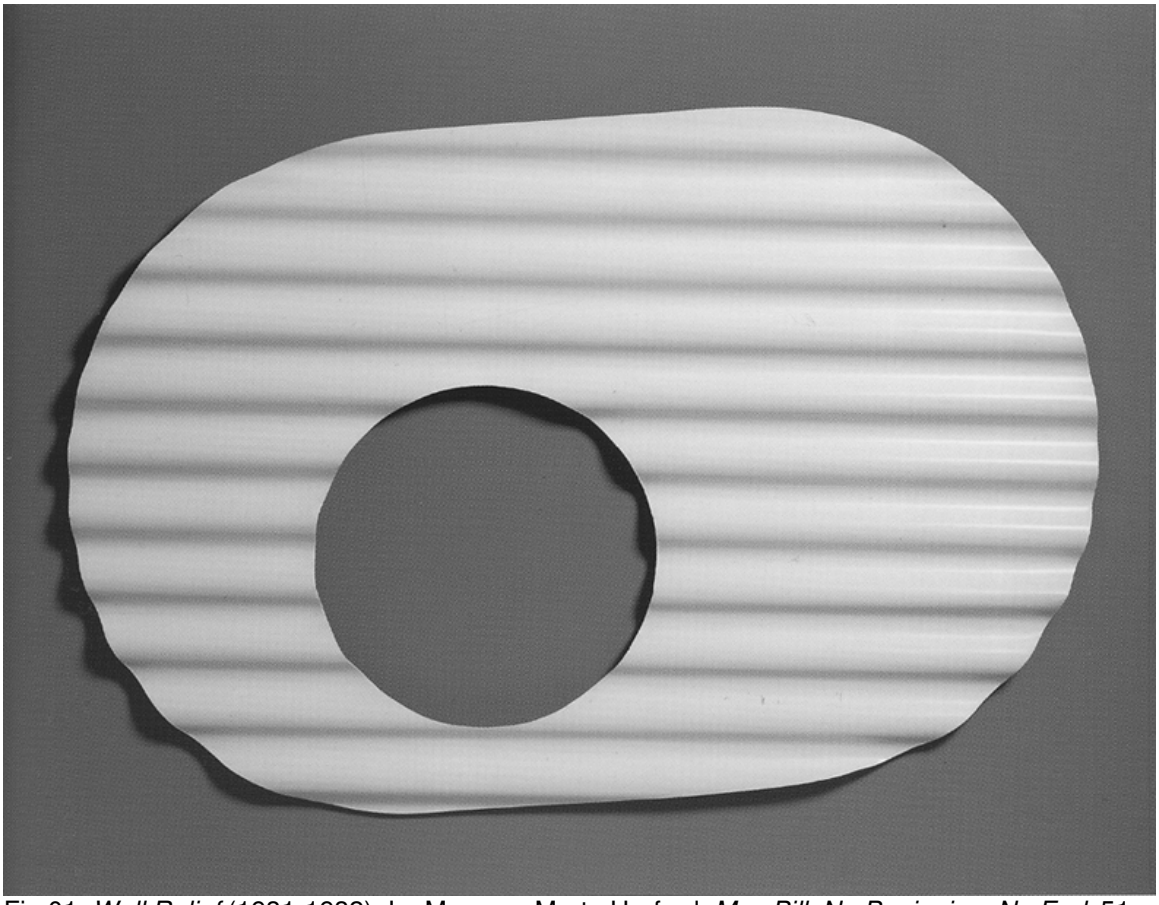

Fig 01: *Well Relief* (1931-1932). In: Museum Marta Herford*, Max Bill: No Beginning, No End*, 51.

Fig 02: *Studio* House-Zurich-*Höngg*, entrance façade. Gimmi, K., 2G 29/30 *Max Bill. Architect*, 61

Fig 03: Studio House- Zurich-*Höngg*, rear façade. Gimmi, K., 2G 29/30 *Max Bill. Architect*, 62

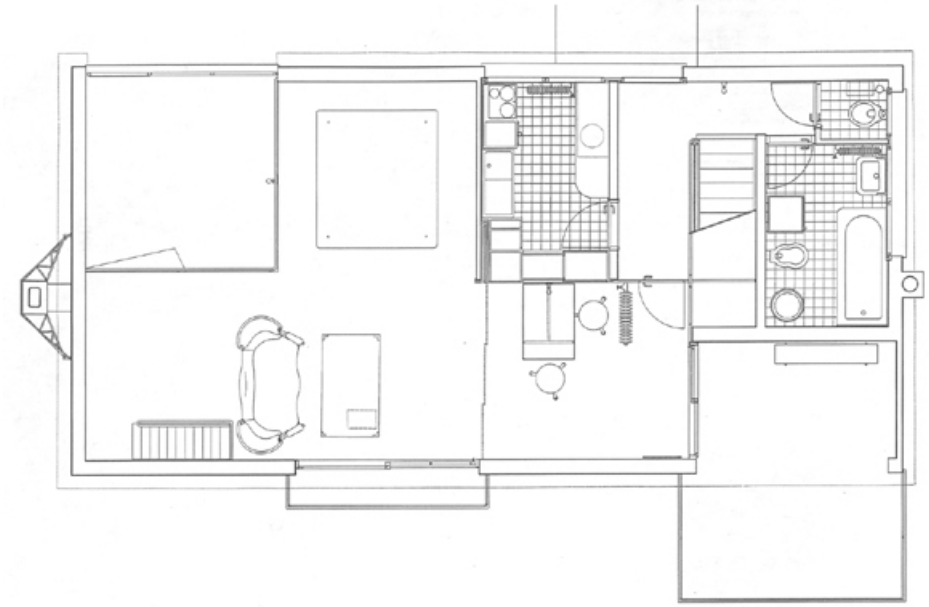

Fig.04: Studio House- Zurich-*Höngg*, Second Floor. Ru□egg, A. *Das Atelierhaus Max Bill 1932/33*.

Notes

[i] This is the title of a lecture that was given at the yearly meeting in Basel when Bill addressed the plenary session. It was first published as "Schönheit aus Funktion und als Funktion" in *Werk*, vol. 36, no. 8, 1949, p. 272-274. See an explanation of this lecture in: Spitz, R., *Hfg Ulm. The View behind the Foreground. The Political History of the Ulm School of Design 1953-1968,* Stuttgart: Edition Axel Menges, 2002, 64-65.

[ii] Thomas, A. et al., "Max Bill: The Early Years an Interview," *in*: *The Journal of Decorative and Propaganda Arts*, 1993, 101.

[iii] Žaknic, I. (ed.), *Journey to the East*. Le Corbusier (Charles-Edouard Jeanneret), Cambridge: The MIT Press, 2007, 173.

[iv] Ibid., 244-245

[v] Ibid.

[vi] Ibid., 28

[vii] Thomas, A. et al., op. cit., 101-102.

[viii] Bill, M. "My Connections with Greek Architecture," (Preface by Max Bill), *in* Roland Martin, *Living Architecture: Greek,* New York: Grosset and Dunlap, 1967, 4.

[ix] The painting also appeared under the name Near Florence (Fiesole), *in* Museum Marta Herford, *Max Bill: No Beginning, No End: A Retrospective Marking the Centenary of the Artist, Designer, Architect, Typographer and Theoretician*, Herford: Scheidegger and Spiess, 2008, 34.

[x] Bill enrolled in April of 1927 at the Bauhaus in Dessau and stayed there until 1928/1929. Museum Marta Herford, op. cit., 189.

[xi] Ibid., 4.

[xii] Max Bill, "My Connections with Greek Architecture", op. cit., 4-5.

[xiii] Le Corbusier, *Towards a New Architecture*, New York: Dover Publications, 1986, 183-223.

[xiv] In fact, Le Corbusier's concern with functionality is seen early in the design of the *Domino* House (1914) which was an early attempt to systematize the functionality of a building. In his *Precisions*, he argued that techniques lay at the very basis of poetry, and pointed out the advantages of the 'new freedoms' in space achieved by the independent structure, free plan, free façade, etc. Thus there was a technological basis sustaining his poetical expressions where space was arranged within a new spirit, just as dimension, circulation, composition and proportion were open to lyricism. Le Corbusier, "Techniques are the Very Basis of Poetry. They Open a New Cycle in Architecture," and "The Plan of the Modern House," *in*: *Precisions on the Present State of Architecture and City Planning,* Cambridge: MIT Press, 1991, 35-132.

[xv] Bill commented on his collection of ancient works of art by saying that, "They are mostly objects and idols from the origins of culture, from a time when the meaning of an object was not obscured by questionable consumer products, when the use and the symbol were still closely associated and when the magic of form was evidently sensed even though it cannot be explained…" Bill, M. "die magie der gestalteten gegenstände (The Magic of Designed Objects), *in* Max Bill, *Du,* op. cit., 22.

[16] He explained his hierarchy of significance this way: "First of all the Sistine Chapel, that is to say works truly etched with passion. Afterwards machines for sitting in, for filing, for lighting, type-machines, the problem of purification, of simplification, of precision, before the problem of poetry." Le Corbusier, *The Decorative Art of Today*, Cambridge: The MIT Press, 1987, 76.

[17] The issue that architecture remained, in the eyes of Le Corbusier, as within domain of art was also indicated in: Von Moos, S. and Sobiesky, M., "Le Corbusier and Loos," in *Assemblage*, No. 4, Oct., 1987, 35.

[18] Le Corbusier, *The Decorative Art of Today*, 86.

[19] Albera, F., "Max Bill, interview with François Albera," *Art Press,* no. 12, June/July, 1974, 25.

[20] Gimmi, K. et al (ed.), op. cit., 272-274.

[21] Ibid., 273.

[22] Ibid.

[23] Von Moos, S. and Sobiesky, M., 35.

MODERNITY OF LIVING AND THE FARMHOUSE

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The farmhouse is really a neglected sensor of technical, theoretical, political and social Italian urban architectural development between the Twenties in the Twentieth century and the “great rebuilding” of the Fifties. There is actually a substantial continuity between the reform hypothesis of rural houses evident in prominent rationalist cultural sectors and the reflections of modern planners of the second world war who reorganized the entire country. However the constructive experimentation that distinguished some dwellings during the fascist regime is missing, fuelled also by limits placed by the autarky on materials that could be used. On a wider scale, studies on low-earning workers houses, as in the “farmers, workers and low-level employees unions” allow for fast building systems based on the economy and standardization of building sites. “ The workers house in general” - according to Engineer Ciocca's views, designer of a prefabricated cement country house - is fertile terrain for prefabricated building material development already seen in European rationalism.

After around half a century, architecture, urban planning, environmental engineering, agricultural and social sciences meet in an attempt to define a possible Italian-style “ferme radieuse” adding to the rebirth of ninteenth century hygienism were the effects of ethics from rationalist standards which were already applied to city council flat development, up until adhering to the politico-social reasoning of the post Second World War. The Po valley still has the traces of building that in the Thirties characterized the reform of agricultural areas with reclamation and establishment of drainage systems for the land. From Alessandria to Cuneo, Milan to Cremona and from Pavia to Piacenza there are plenty of examples of new country houses built thanks to the initiative of companies and owners of farmland or individual planners, all gathered together with the common goal of improving agricultural workers living conditions through the convenience of modern architecture. “Local rural dwellings [compared with] city dwellings that are aesthetically pleasing, comfortable, spacious and everything else that facilitates comfortable living” are deemed noteably inferior first by the engineers then by the architects, then during specific national and international conventions, and so on until reaching a wider audience thanks to the main architectual journals and magazines.[1] “Quadrante”, is a magazine that supports Italian rationalism, promotes Ciocca's innovative project and vividly describes rural houses. “Rural building development is regressive” - wrote the engineer in 1935 - “Since then the majority of farmers live in the same decadent houses of thirty years ago. […] every farming family has two rooms. They all sleep in the upper room, with all the beds beside each other. […]. Washing and all other ablutions have to take place outside in a courtyard usually belonging to many families and their respective animals. There is no sense of decorum or ownership; family closeness is impossible”.[2] Engineer Chiodi thinks much the same. He organizes the redevelopment and planning of rural housing and farms owned by the Maggiore Hospital in Milan, which is motivated due to the political regime that wishes to limit the urbanization of the agricultural populace. Giuseppe Pagano, however, sees in farm building a model of home mainly anonymous and timeless, where "nothing is

useless, nothing is superfluous, everything is born of necessity." The farmhouse is therefore an expression of the new civilization dwelling as a "working tool" whose aesthetic is defined by its own features. One example is also his home for the colonies in East Africa, based on the maximum efficiency and flexibility allowed by the standard board panels manufactured on site, assembled with cast concrete. Born for the colonies, but also designed to "solve the national problems of rural house, and craft workers, it can be expanded according to the needs of the household. It unites the low-income workers as claimed by engineer Ciocca and, as the farmhouse he designed, foreshadows the industrialization of the building site.

From the pages of the magazine “Casabella” Pagano invites architects to achieve the principle of "honesty in building" proper of the rural building and without indulging in vernacular characterization, and presents the projects by Gino Levi Montalcini, since they represent the needs of production and of agricultural property in Piedmont and are composed of essential volumes .

There are conventions and building tenders where only engineers take part, so much so that Pagano, of the magazine “Casabella” invites architects to think about rustic architecture. He realizes that the rural dwelling is anonymous and anachronistic devoid of decor, where “nothing is useless, nothing is superfluous, everything is born of necessity”[3]. The country house is therefore, “a work tool” where the aesthetic value is defined by its function, a factor that captures a new style of common living. Therefore the architects have to adhere to this “genuine architecture” principle according to needs without indulging in vulgar features. Pagano published some of his Turin friend Gino Levi Montalcini's unfinished projects that reflected his thoughts on this subject. These houses actually reflect this Piedmont farm's production requirements constisting of essential spaces devoid of all decor, where the production buildings are distinct from the residential. Even if the planners have not always agreed on the aesthetic component of rustic architecture, they are however united when it comes to distinguishing work spaces from living spaces for hygiene reason and mainly in order to apply the rationalist ethic standard to the farmhouse. According to the experts, only the correct sizing and function of the interior and the introduction of hygienic amenities can guarantee farm workers physical and moral well-being just as much as city workers. The former has motivated a study of rural housing and the worker's dwelling but for a bucolic-style council flat in the city for the disadvantaged. In the industrial areas of Milan especially there is a large influx of seasonal agricultural workers and this in turn is an affective shift in housing typology. Scattered neighborhoods for workers are created in the hinterland with fruit and vegetable gardens to help sustain the family, while in the countryside terraced houses are built near old farmsteads or small multifloors.[4] Several proposals follow to establish a Body exclusively dedicated to rural building development parallel to the "Council House", including that sponsored by Gio Ponti in 1943, premise of a reorganization of the country that, after the war, would start from rural areas but never happened. Fully completed and a reference point for rural housing in Milan in the years of reconstruction is, however, the plan by Chiodi for the farms of Maggiore Hospital, including the demolition of old delapidated houses and the building of new ones to improve the social conditions and well-being of farm workers, he also planned the fixing of paths and production buildings, as well as the building of communal services bridging the gap between country and city. In 1937, the Maggiore Hospital's rural construction encompassed 9.260 hectares and one of the biggest estates, such as Monticelli di Bertonico (around 240 hectares), with at least 200 inhabitants. Two school classes, an infant school, a greengrocers, a farm recreational club and a Maternity and Infancy Clinic to help women in child-birth were set up.[5] The

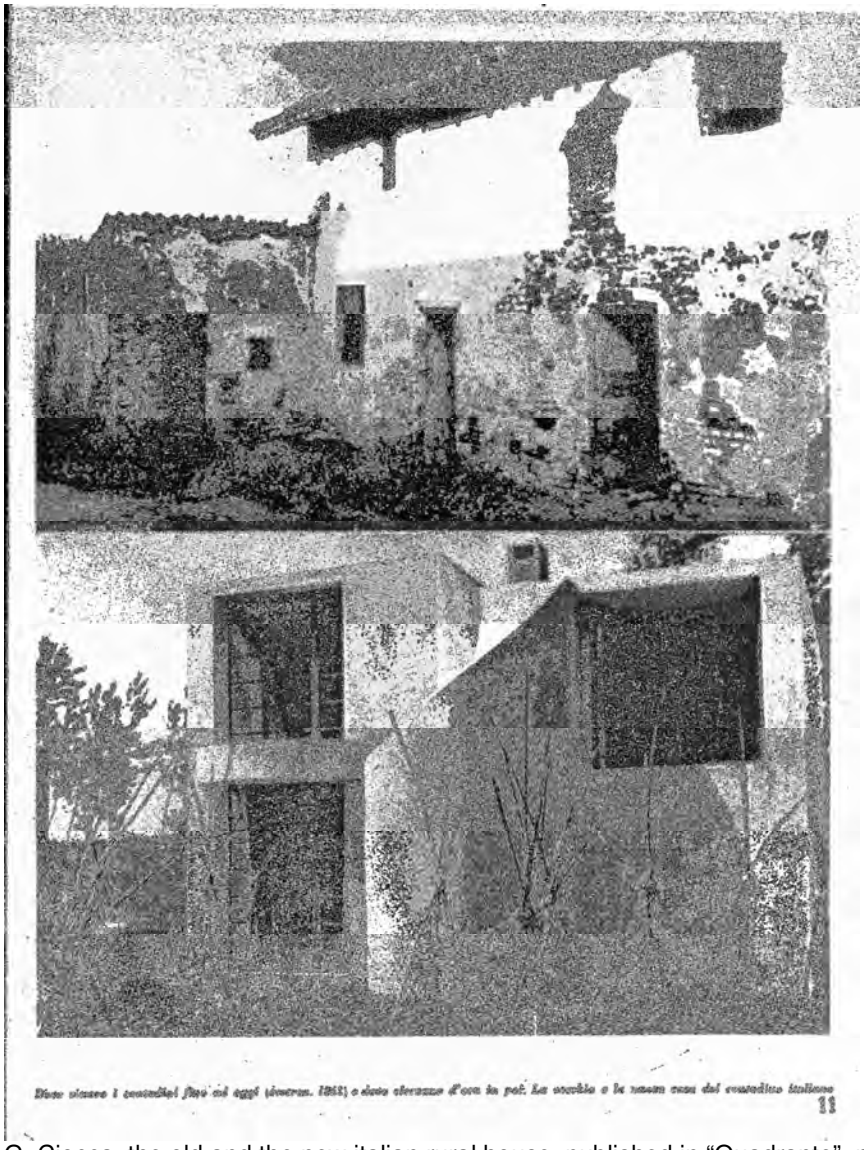
most important conquest was in the construction of small two-floor houses that increased from two to four rooms, including kitchen, living-room, double bedrooms which can be built in series and located near the old farm buildings. The lower Lombardy Po valley is characterized by large farms, with closed-courtyard amenities where there are workers' dwellings on one or both sides beside stables and tool sheds. The engineer freed up the residential side of the original property and organized the single wooden dwellings facing a common courtyard with rutic buildings including a wood room, chicken coop, pigsty and latrines. The external look of the new houses is simple and rigorous, not unlike those facing them: double-pitched curved-tile roof, brick walls with string course band up to the first floor and a plastered wainscotting. In a later version the "casa Chiodi" has internally fitted bathrooms. This will remain an important post-war rural Milan development.

In 1937 Asnago and Vender in Torrevecchia Pia carried out the same line of thought and Chiodi perfected it to its most technical, followed by the architects Bottoni and Pucci in Valera Fratta between 1943 and 1945, in the respective provinces of Pavia and Lodi. The agricultural workers' dwellings designed by Asnago and Vender unite to form a harmonious whole of buildings connected to the main farm. They are built on the edge of the estate, following the traditional courtyard plan of the Po valley farmstead, and they include a farmyard replete with buildings common amenities such as they oven and washhouses. The habitation itself comprises four rooms on two floors as in the "Chiodi house", but now there is a proper bathroom and shower, Turkish toilet and sink, tangible signs of modernisation. The structural simplicity of the farmhouses lies in the frame that is replicable *ad infinitum* but is still replete with all the traditional functions, from the portico to the double roof, incorporated in an abstract drawing of the surfaces. In "Casabella" magazine, Pagano underlines " the character of research into the implied principle of building in series".[6] This is a principle that is reintroduced in the houses of Bottoni and Pucci in Valera Fratta on a conceptual level: these are completely plastered and marked by the abstract design of the doorways and conclude with a single-pitched tile roof. They are grouped together in two-storey terraces like the "Chiodi houses", but they are situated away from the gardens and buildings, connected by two communal gardens so as to more closely resemble city dwellings. Even the interiors are urban-style with the kitchen relegated to a small corner looking onto a large living room, while the first-floor rooms have been optimised with two double bedrooms and a single, plus a small bathroom with shower.[7]

The most marked modernisation of the rural house pursued by Chiodi, Asnago and Vender, Bottoni and Pucci is however still associated with traditional building systems from the supporting walls to the brick and cement attics. The single isolated rural house model, prefabricated in cement by Ciocca in Garlasco, near Pavia, in 1935 heralds new more innovative developments, therefore they are less acceptable. Ciocca's habitation is a *machine à habiter*, very similar to Le Corbusier's proposal of "reorganisation agraire" : it has a lifetime similar to a car, it can be reproduced in series but above all, it is indifferent to the agricultural technical and social traditions in its midst. It is moreover suited for any worker, and is a cube-like two-floor structure, closed on three sides to optimise the building's natural insulation and heating and is open on its main side with big window doors. On the ground floor there is a kitchen-living-room, laundry room and bedroom; upstairs there are two bedrooms and bathroom, connected by a spiral staircase that looks like a cylinder outside the building. Here there is a broom-cupboard and will bring you up to the roof garden, designed as an "accessible terrace that can be cultivated "[8]. The spine wall that vertically the interior is actually a wall equipped with a "machine-kitchen", with a heating system, fireplace, ventilation grill, work-top, wash-rooms and fitted wardrobes on

the ground floor, as well as other wardrobes, sinks, toilet and shower upstairs. Ciocca's rural house is made up of “around six thousand elements partly prepared on-site and partly in the workshops” by skilled trained workers and it gives life to all the principle of European rationalism. Maybe for this reason, it wouldn't be approved by the fascist regime. The ambiguity of the architectural policy of the ‘20s, in fact, are reflected on the fate of rural housing where the connection with the lifestyles and the shapes built by tradition is felt more than in urban areas. The lack of farmers education, moreover, causes a slow and sometimes scant acceptance of the language and comfort brought about by modernization, misunderstanding that lasted until the 1950s.The model of house that is mainly used is then closer to the consolidated image of rural housing, of which it also tends to preserve the character of matter. In the Lombard case the reference point is, then, is the "Chiodi house" that, updated and provided with private indoor bathrooms, will be widely adopted even after the war. The aggressively international modernity of the "Ciocca house" and the more temperate of Asnago and Vender and of Bottoni therefore remain isolated cases, devoid of any deep consequences on the building of agricultural land. Moreover, the house "Ciocca”, as the home for East Africa by Pagano, shows a marked character of experimentation in the sign of building industrialization and of the unification and prefabrication of components, character that is even more difficult to understand in a rural context. Consequently, while the home by Pagano is designed to last over time and as such adheres to the traditional Italian living culture, that by Ciocca rejects this assumption too, becoming a direct link with part of the coeval European researches and with the Italian Studies after World War II addressed to the development of prefabricated housing, temporary and mobile.The innovation and research that have characterized the farm housing building sector in the ‘30s, in fact, are progressively neglected, until the crystallization of any initiative in carrying out the legislative directions and public bodies actions.

Illustrations



G. Ciocca, the old and the new italian rural house, published in “Quadrante”, n. 26, giugno 1935.

C. Chiodi, rural houses “Chiodi” for the Maggiore Hospital in Milan. Copyright Maggiore Hospital Photograph’s Archive.

P. Bottoni, M. Pucci, rural houses for “Nestlè Corporate”” in Valera Fratta. Copyright Bottoni Archive by Dept. Progettazione dell’Architettura, Politecnico di Milano.

Asnago e Vender, rural houses in “Farmhouse Castello” in Torrevecchia Pia. Copyright Asnago e Vender Archive, Milan.

Notes

[1]Albani G. (ed), 1927, “La questione dei fabbricati rurali”, *Atti del Sindacato provinciale fascista degli Ingegneri di Milano*, 2 (2), 65.
[2] Ciocca, G. (ed.), 1935, “(Servizi a Mussolini). Progetto di casa rurale”, Quadrante, 26 (6), 6-27; Ciocca’s archive is located by ‘Archivio del ‘900, MART.
[3] Pagano, G. (ed.), 1935, “Case rurali”, Casabella, 86 (2), 9-15.
[4] The difference in choice of building type depends on the agricultural area it is built on, whether it is on low-lying or high Milan areas.
[5] Chiodi, C. (ed.), 1937, *Le nuove case coloniche dei poderi dell’Ospedale Maggiore di Milano*, Grafiche Cordani, Milan, 38 and Archivio Storico dell’Ospedale Maggiore di Milano, Parte moderna, Case e Poderi, Bertonico, b. 82/2-3.
[6] Pagano, G. (ed.), 1940, *Case coloniche nella pianura lombarda*, Costruzioni-Casabella, 146 (2), 25-27 and Zucchi, Cadeo, Lattuada (eds), 1999, *Asnago e Vender. L'astrazione quotidiana, architetture e progetti 1925-1970*, Skira, Milano; Archivio Asnago e Vender, Milan.
[7] Archivio Piero Bottoni, Dept.Progettazione dell’Architettura, Politecnico di Milano, op. 211.
[8] Ciocca, G. (ed.), 1935,cit., 6.

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LIVING IN THE LANDSCAPE
Eric Lyons and his Span houses

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Eric Lyons (1912-1980) and his Span houses have remained almost unknown until very recently[1]. There is no mention of them in any of the canonical histories of modern architecture. Nevertheless, in *Architectural Review* the British architectural critic Ian Nairn wrote in 1961:

"Very slowly, and with no thanks to most of speculative builders, design is improving. More trees are left, houses units are clearer and crisper, and –just occasionally- are grouped in patterns which may produce a sense of place. The proportion is still small, perhaps ten per cent., but it cannot be ignored. It is due to three things: to the pioneer efforts of one architect, Eric Lyons, and his clients, Span; to the slow change for the better in public taste (…) and, not least, to the devoted long-term work of planning offices all over the country in persuading committees to persuade builders to provide something better".[2]

Lack of recognition has accompany architecture during the 20th century: in fact, that is one of the main characteristics of modernity in architecture. So much so that Kenneth Frampton's ends his Critical History[3] deploring that, even that there were excellent models, nothing has been done to prevent the "apocalyptical perspective" of an urban expansion that is equivalent to the destruction of the rain forests.[4]

Span housing is one of those excellent models dramatically ignored.

Facts.

Eric Lyons built 78 dwelling complexes in England between 1948 and 1984. He and his team designed and built 2.134 houses that have been awarded 11 prizes from the Ministry of Housing, City Councils and the RIBA, and, which is even more important, houses in which tenants are proud to live in still nowadays.

They are mostly terrace houses, formed by two stories units grouped around common gardens creating a precise "identity of place" (Lyons).

The Span ideas:

The *new environment*[5] is the result of intertwining aspects of housing that had been only juxtaposed until then. In the first place, the architect and the developer must collaborate, if not be the same person. In the case of Span, Lyons took the designer's job and Geoffrey Townsend, his colleague at the Regent Street Polytechnic in London became the developer of the company named Span Developments LTD.

The second aspect re-combined by Span were gardens. Span houses face the common green spaces and not the roads, and big windows on the two facades of the house allow the simultaneous perception of the rear private garden and the front common spaces. This way, gardens became an active part of the houses. On third place, the assemblages of the blocks are not determined by the streets but the other way round: form always involves hierarchy, and sense of community and nature deserve a predominant position in the development: "By facing the houses onto a pedestrian-only green the landscape became the social as well as the spatial focus of the estate". [6]

An explicit, almost militant commitment to Modern Movement is another characteristic of Span. "Nothing Pseudo- no fake rustic" was one of its slogans. Against traditional British reticence to aesthetic innovation, Span considered abstracts forms in architecture the best way of introducing art in everyday life: "They believed that there was a market for the well-designed houses in carefully designed landscapes for the sort of people who recognised good design when they saw it –and they were right".[7]

Influences.

The old tradition of courtyard buildings are behind Span, of course. Nevertheless, original aspects of it are starting the design right from the urban planning stages and going "down to the last detail"[8]. In Span developments today the community owes and takes care of the common gardens, not like in the unfortunate case of Howard's Garden City of Lectworth in 1902. Garden City Movement should be considered as a romantic precedent of Span, taking into account that romanticism and modernism refer to two different creative universes in art and architecture[9].

Radburn, in New Jersey (1929), and Sunnyside Gardens in Queens, New York (1924-1927), both by Stein and Wright, showed already the benefits of separating cars and pedestrian in housing: they were "the final reversal of the conventional distinction between front and back"[10]. The speculative builders of 18th and 19th centuries were another source of inspiration for Span; the only thing is that in Bath's crescents and in the squares of Bloomsbury in London the houses only had views over spaces that Span transformed in lively extensions of the proprieties themselves.

Another outstanding precedent of Span is the work of Elizabeth Denby. This architect curate some exhibitions, wrote books and design buildings in England that incarnated the principles of Modern Movement. Her *The small House Exhibition* at the RIBA in 1939, showed the row houses of Bromma, Stockholm,

designed by Paul Hedpvist in 1932, about the same area of Span, in which used to lived at the time Albin Hanson, the Swedish Prime Minister who introduced the concept of "Folkhemmet" (the people's house) in Social Democracy. Denby, also wrote the book *Europe Re-Housed* (1938) in which the Scandinavian way of life was presented to the English public profusely illustrated.

The promotion of modern living

Eric Lyons did not just design architecture, he promoted modernism in a wider sense. He had a busy public life, published critical articles, trained his clients to live in his developments and did advertising campaigns that besides selling the houses promoted modern living.

He was a member at the RIBA Council from 1959 to 1980; also was its president for two years and the first Chair of the Association of Consultant Architects. As a critic, he published "Building a Community" in *Architectural Design* in 1960[11], in which he was guest editor and selected a bunch of contemporary examples of grouped-housing that backed up his own ideas. By the way, among this works is the Atelier 5's Siedlung in Berne, the same one Frampton cites at the end of his already cited history as an example of the disregarded good housing. Mies's Lafayette Park in Detroit; Utzon's court houses at Elsinore and others pretended to demonstrate that in housing
"(…) the problem is twofold: first the design of individual units, variable, perhaps expandable, but above all compatible with the way we live; second, the design of the assembly of these units to create a humane environment in which the individual can somehow be *involved*"[12].

Another way Lyons promoted modernity was engaging his clients in the management of the estates. An article in 1965 said that "in Span estates residents are doing more than buying a home –they are buying a new kind of life"[13]. In the case of Fieldend, in Twickenham, London (1959), the new owner received an eleven pages document which set out certain obligations that included things like "not in any manner whatsoever alter the external appearance or colour of the house"[14].

In the first period of Span Developments the new buyers where trained in Lyons' offices to organize the management teams. Again, there is a difference between the utopian regulations of Garden Cities and Span's: the regulations of Span were intended as "restraints for the people, not on them"[15].

Advertising as a weapon

Span Developments ads sold products but also communicated ideas. They insisted that "Span represents more than an attractive housing scheme or even a community -it represents a life style":

Advertising was directed at "the younger professional man, company administrator or business executive seeking a home to reflect his good taste

and judgement" –and who earned "£ 1.000 a year or more";[16] "people who worked in advertising, broadcasting and television, journalism and law. School teachers, surgeons, executives, architects, surveyors"[17]; and the T8 was a "town house" built for people "who like entertaining, good talk, Sundays that dawdle between *The Observer* and *The Sunday Times*, and better than average food"[18].

This should not be considered social engineering, as some critics have done. What Span was trying to do was to open an inexistent market sector in the property business. In the turn of the century the middle classes, and parts of the lower ones, were attracted to the false romantic ideal of the semi-detached houses in the suburbs; what Clough Williams-Ellis called "the Octopus": the force of the uncontrolled free market[19]. The same escape attitude that inspired Garden Cities created vast zones of shapeless sprawls in the beautiful British countryside.

Lyons was not an utopian. He was a committed architect and a entrepreneur, a type of professional still rare and indispensable. What he did was to fight back market excesses with its own weapons. He produced an alternative to the interwar suburban semi and, to do so, he had to find a new kind of client, someone different from the "imbecile" (Sharp)[20] trapped by the semi dream. Selling Span meant attacking the romantic fraud of the semi in favour of communal life and natural environment.

Living in the landscape

Lyons' ideal of integral wellbeing infused Span with a special character. He was much more than an ecologist: he was an artist of the "total environment". Span confirmed that the best way for being ethic in architecture is to be fully aesthetic: "it is a work against subtopia: refusing consistently to perpetuate the indifferent housing of previous decades"[21]. Form, identity and character were, and still are, the tools against the forces that converted a huge portion of the architecture of the 20th century into simple commodity.

Very few modern housing kept such a good quality when applied systematically. Span has been proved as an excellent standardized housing system. The appreciation of green as much as brick and mortar in architecture is being vindicated now by CABE, the government's advisor in architecture in the UK[22], an agency that is convinced that design can improve life.

"Total environment" improved the life of thousands of people through design, and still works. "Wall to wall landscape", was the landscape strategy that integrated nature in the design process of Span. Ivor Cunningham (1928-2007), Lyons's partner since 1955 and the inventor of this strategy, made the best definition of the spirit of Span:

"The home landscape at its best is a holistic approach to a living environment (…) A concept which provides the psychological needs for security, a place for

the imagination to roam free and the instrument for keeping in touch with the natural world's rhythms of growth, change and decay"[23].

There is much more symbolic content in Span than in plain ecological sustainability, which still is, in the long run, mainly related to productivity and not to satisfaction[24]. Span housing is addressed to a human being much more complex and spiritually richer than the unidirectional *homo economicus*. As the Historical Avant-Garde asserted a century ago, artists, like Lyons and Cunningham, respect nature more than gardeners do. If we want to be among the species that inhabit Planet Earth in the future we'd better start trusting people like Eric Lyons and Ivor Cunningham where ever they are.

Notes

[1] It was in 2006 that the RIBA made a modest exhibition on the work of Eric Lyons. For the occasion it was published the book Simms, B. (ed), 2006, *Eric Lyons and Span*, RIBA Publishing, London. Simms had previously written her Master thesis in 2001, *Landscape conservation of Span Estates*, Architectural Association, London (unpublished). There is the booklet of 80 pages Strike, J., 2005, *The Spirit of Span Housing,* Strike Print, Eindhoven. The rest of the information about Span is in the press of the time and/or in private archives.

[2] Ian Nairn, 1961, "Spec-Built", in *Architectural Review*, Nº 769, March, 163

[3] Kenneth Frampton, 1981, *Modern Architecture: A Critical History*, Thames and Hudson, London. In this indispensable book Lyons or Span are not mention either.

[4] See the epilogue in Frampton, 1981.

[5] This phrase was in the promotional pamphlet 1960, *span-living with new ideas*, in Strike, J., 2005, 6

[6] Cunningham, I., "A Span Site Revisited. Corner Green, Blackheath, London", 1982, *Landscape Design*, February, in Simms, B., 2006, 104

[7] Shirley Flack, "Paradise Found", *The mail on Sunday*, 15 December, 1985, in Strike, J., 2005, 6

[8] *span-living with new ideas*, 1960, in Strike, 2005, 54.

[9] See the chapter "El protorracionalismo: un antecedente ajeno", in Jaime, M., 2000.

[10] Alan Parker, "Models for suburban Living", in Simms, B., 2006, 31.

[11] Lyons, E., 1960, "Building a Community", *Architectural Design*, September, 344-355

[12] Lyons, E., 1960, 344

[13] Michael Pearson, "Top Estate for Top People", *Good Housekeeping* LXXXVIII/2, August 1965, 56-60 in Simms, B., 2006, 104

[14] An example of current Span rules of communal life can be found in http://www.weymede.co.uk/covenants.htm#Guidelines, (last accessed 16/03/2010)

[15] Interview with Eric Lyons, *The Times*, 21 July 1975, in Simms, 2006, 101

[16] Undated Parleys Sales Brochure, Richmond Local History Centre, Ref LC10,008. in Simms, B., 2006, 104. Simms says: "The exact wording is '£ 1.000 a year or more is earned by as many as 85% of our purchasers'. Simms, B., 2006, 104

[17] *span-living with new ideas*, 1960, (Private Collection) in Simms, B., 2006, IDEM

[18] *The Span T8 House*, undated Span Promotional Literature (Private Collection) in Simms, 2006, IDEM

[19] Clough Williams-Ellis, 1928, *England and the Octopus*, Geoffrey Bless, London, in Simms, B., 2006, 24

[20] Thomas Sharp, quoted in 2005, Robert Cowan, *Dictionary of Urbanism*, Streetwise Press, 348 in Alan Powers, "Model for Suburban Living", in Simms, B., 2006, 23-33

[21] *Span-living with new ideas*, 1960, in Strike, J., 2005, 11.

[22] *Commission for Architecture and the Built Environment*. The *Building for Life* list of 20 criteria for good housing design of CABE seems to have been extracted from Span complexes. Check the list in http://www.buildingforlife.org/criteria

[23] Ivor Cunningham, Landscape for Housing, *Built Environment* 21, 1 November 1995, in Simms, B., 2006, 103

[24] From productivity to satisfaction is the main change promoted by E. F. Schumacher, the economist that in the 1970's proposed that "Small is beautiful".

CIVIC AND SOCIAL INFRASTRUCTURE
Urban Scales: Between Public Dimension and Urban Realities

In the beginning, early modern architecture put an emphasis on minimal dwellings as a structural problem in urban planning. Attention to civic and social issues was mainly focused on the ideological values, and as part of the civilizing project that permeated the actions of the more radical transformations of architectural culture.

The new social programs were claimed as part of modern architecture and its realization was conducted primarily from the scientific approach to human needs, including functional and compositional models into the scale of the building. Schools, sports facilities and public buildings were opportunities for testing the new developing constructive and technological criteria, the setting of standards and formal requirements in the usual codes of the modern language. During a brief period of time, public infrastructures were perceived as unique buildings in the urban fabric consisting of repetitions of minimum housing prototypes. The relationship between the size of the buildings and open spaces was probably the main aspect developed in this initial stage. But before long, the ideas of architecture were put into perspective within the dimension of the urban plan. As expressed by Sert: “only in the field of town planning will modern architecture find true expression and a wide field for discovery of new solutions”1. The topics related to public architecture were thus oriented to the formation of “civic centers” and recreation was recognized as a fundamental fact within the city, while some other issues remained neglected.

The recognition of the monumental value that these issues could bring into the future urban organism placed them into another dimension; that is, amongst values of community and social representation. In that sense, the new dimension involved a sequential change of scales, which broadened the horizon of architectural works, according to their size and importance in the city. This meant a new relationship between the architect and the public, which sought to establish certain approximation parameters in form and building types through different approaches towards the urban fabric and the configuration of significant urban spaces.

The considerations around the scale of the architectural work varied significantly in its extension towards the city as a whole. Infrastructures were thus established as vital parts of the urban organism, and expanded in diversity and impact –e.g. transport, power, shopping and recreational facilities- capable to perform a new role in the city, segregating functions by zoning, but at the same time attempting an integration of the structure of urban space through the significance of form. That is, binding relationships between parts which, paradoxically, had been separated by their functional content.

In this session, a series of case studies will be presented; they reveal different approximations to the changes of scale to which modern architecture was put

through by the dialectics between architectural ideology and urban reality. Some of them show how modern architecture took over the challenge of the public condition this dialectic implied, as is clearly exemplified in the complex multifunctional buildings that stand as civic centers in an emerging Latin American city such as Caracas, or as the post office buildings as representation of a modernizing State, as well as other public landmarks in the contexts of colonial urbanization. Others demonstrate a lack of recognition of the status of reality that some urban activities involved, such as the massive forms of the sports facilities in a contradictory relation with the functional city; and, finally, the cemetery, the place where all the attempts to relate architecture and the city found its dead end.

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1 Sert, Josep Luis and C.I.A.M. Can our Cities Survive? An ABC of urban problems, their analysis, their solutions. Cambridge, The Harvard University Press. London: Humphey Milford, Oxford University Press, 1944. P. 236.

The Partaking of Modern Architecture With the City of the Past: The Case of the Centro Simón Bolívar

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"Something new and enormous in its consequences is coming,
A new world emerges…"
Cipriano J. Domínguez. 1

A building, the center of a city

One of the most glorious moments of the modern city and of modern architecture of the past century, is the planning and construction of the Centro Simón Bolívar in Caracas (1948-1954). The reason is simple: it is the story of a single building that was intended –and therefore designed and built– to perform as the new social and civic center of a capital city.

Compared to its immediate American precedent –and inspiration- the also multifunctional Rockefeller Center in New York City (1933), we see that while the Centro Simón Bolívar becomes the focus of all city views in the metropolitan area and it´s impossible to escape perceiving its monumental presence at the end of the Avenida Bolívar, the Rockefeller Center, with its different buildings standing in a traditional manner in their lots according to the city´s grid between 6th and 5th avenues (1, 10, 30, 50 Rockefeller Plaza or those on the Avenue of the Americas), is only noticed when it is approached. On the other hand, its subsequent American example, the 1956-60 Brasilia's modern city center, the Praça dos Três Poderes, beautiful and monumental as it is, compared to the imbricate tissue that the Centro Simón Bolívar fabricated to interact with the traditional historic city, remains as a contemplative monumental and sculptural esplanade, single-out from the rest of the city. 2 Therefore, the importance of revisiting this major work of Venezuelan Social and Civic Infrastructure.

Rooted in the heart of Caracas, among the tight *cuadras* of the Colonial Historic Center, the Centro Simón Bolívar had to land in the middle of one line of blocks in order to fabricate and enhance the monumental east-west urban axis of the new avenue. It is, after the completion of El Silencio´s neighborhood, the most

important example of an architectural project following to the letter a wise, thorough and secure Urban Design Master Plan (the Plan Rotival, 1939) in all of Venezuela´s history. The new project´s urban aspirations: its monumentality, its duality (the 30 stories high towers, the split urban spaces, the twin lower bodies), and the long parable described to soften from west to east the great leap taken from the domestic scale of El Silencio´s perimetral blocks to the never-seen-before-in-the-city heights of the two steel structure skyscrapers, were all pre-existing ideas to the architectural project.

The second grand epic of this seven-year-long story is how the architect who received the commission, Cipriano J. Domínguez, transformed the Plan Rotival´s established guidelines into an urban architectural project that valiantly wielded all the dreams of the Modernity of his time… and also his own personal dreams.

The other Twin towers

The city of Caracas entered the Twentieth-century pretty much as a forgotten city, for long time abandoned by the national government. As late as the 1930s it remained almost untouched, with its old colonial grid and a few scattered Nineteenth-century urban interventions, due to a long dictatorship that since 1908 practically moved its administration to the neighboring city of Maracay. In 1936, at the end of that period, a Direction of Urbanism was created, because

> "Caracas cannot longer postpone its vital need of being urbanized according to a vast program that can solve efficiently the regular functioning of the public services for the population and that can foresee its future as a great modern city".4

This office started to work in a Plan Regulador for Caracas, which was officially unveiled in 1939, and was intended to fill the planning gap with the city´s increased population growth and urban development.

The Plan Regulador consisted basically in the invention of a new of a heart for the city. It was basically composed by a monumental avenue with several urban episodes along a single axis, that would drastically cut across the traditional grid. For its conception, the government hired a company of noted French urbanists, Prost, Lambert, Rotival & Wegnestein, that would work with the local architectural experts, among them, architect Dominguez and also the Venezuelan modern master Carlos Raúl Villanueva. From these urbanists came primarily the idea of creating a new monumental Civic Center, which ended up being the actual housing complex of El Silencio by Villanueva, around the Plaza O´Leary, the

actual Avenida Bolívar´s first phase to the west, and secondly the idea of the Centro Simón Bolívar´s project, likewise the Plan´s second phase.

Of all three French experts, it was the visionary Maurice E. H. Rotival, a "Ponts et Chausées" engineer and an expert in Urbanism "with a chilling sense of smell" -as recalled one of his colleagues in the Direction of Urbanism-, the responsible in taking the leadership in the discussions of the general *parti* and guidelines of the Urban Design Master Plan for the new Avenida Bolívar -then called the Main Avenue-. The project tried to incorporate in Twentieth-century Caracas the Nineteenth-century urbanism it never had. It was Rotival who envisioned "a wider approach of the Caracas situation at the time, trying to understand which role the project was to play in the city". 5

The plan was to solve "the traffic problem by the creation of avenues capable of absorbing the great vehicles mass", create a "central avenue that, through its proportions and its buildings facades, would give the city a monumental character", and "build monumental plazas, *paseos* and parks where public movement could be organized during great festivities". 6 New governmental buildings like a new Capitol, a new Town Hall, Ministries, markets, schools and a Memorial for Simon Bolivar on top of the hill of El Calvario (the axis´s west end) were also a major feature in the plan.

The vision was very plastic, with a great, formal, Beauxartian approach to the city, the Main Avenue resembling a Caribbean Champs Elysées, aligned with palm trees and porticoes. In 1945, the works in El Silencio where about to conclude, and the decision was taken to continue the avenue three more blocks to the east. At the beginning of 1946, the Governor of Caracas created the Managing Commission of the Avenida Bolívar, and Maurice Rotival was called again to return to the country to join it. This time he decided along with the Managing Commission to take a leap forward and modernize the concept of the avenue´s design, introducing subterranean passages and underground parking areas, street intersections in two levels, a complete traffic distributor scheme, underground retail, and pedestrian walkways and a monumental five-level plaza equipped with a central bus station, with the aim that the whole complex would become one day "a great urban forum". 4 This change of mind in Rotival was known as the "Foro Bolivar". The idea in itself was that, with the North-South streets running under the avenue buildings, it could be possible to loosen and free all the traffic of the center of the city. Of course, the proposal at the beginning was blamed as utopian, but it was finally approved by the Governor on the first day of January, 1947.

Like El Silencio, the Centro Simón Bolívar became a major urban renovation. Dozens of antique blocks were expropriated and tored down to achieve its completion… a gigantic urbanistic operation. The avenue was to have eight car lanes and two main built sections: first, three double set of blocks to the west of a lower scale relating to that of the blocks of El Silencio, that were called to become the main commercial center of the city and which would gradually increase in height, and secondly, the higher-scaled buildings´ blocks, that were originally residential, and became finally the office building towers.

Rotival was a man of ambitious urban thinking. After his vision came the urban design plan, and right from there, the architectural project of the Centro Simón Bolívar. "He wanted to make a symbol for the city, and he achieved it", said architect Gustavo Ferrero Tamayo, a member of the Managing Commission of the Avenida Bolívar, "Maurice knew it from the beginning while he was doing his drawings, and passed them to Cipriano Domínguez saying: ´This is the symbol for Caracas". 7

Cipriano Domínguez was then commissioned to orchestrate the architectural project. When asked at the time if he felt he was capable of undertaking such an ambitious commission, he is said to have answered: "Well, I don´t know… Maybe yes!". 8 Now he and his team were to respond to a newly created institution, the Compañía Anónima Obras de la Avenida Bolívar C.A., who was to manage the works… but also they were to deal with the wills and caprices of the head of the State at the time, General Marcos Pérez Jiménez, the undeniable conducting force behind the Centro Simón Bolívar.

Construction started on October, 1948. Domínguez made "with art and with dignity" all the studies to convert the Urban Design Master Plan into modern architecture. There was not an opportunity to do a Preliminary Project: it all went right from the Master Plan to the project and then to its actual construction, fast track. It is impossible to deny that political pride was on stake. Pérez Jiménez wanted a representative building to gain prestige, and he wanted it fast. He was, also, obsessed with height, raising arbitrarily the towers to 30 floors in a visit to the architect´s atelier, so they could reach the one thousand meters height bound.

The results was the legendary set of 1,000 pencil-drawings, depicting every detail of the 400,000 square meter development, completely finished after one decade of intense works, in 1958. Three parking basements, a central 80-bus station, a major underground four-channel passage that links the avenue with El Silencio, plus three underground north-south streets and, finally, two long blocks,

the Bloque Norte and the Bloque Sur, topped with the monumental twin towers -very often called at the time the "Caracas Rockefeller Center"-, completed the complex. All done in the personal architectural tropical modern language favorite of Dominguez, who is usually related to Lucio Costa´s Ministry of Education and Health (1937-43). Cipriano Dominguez, a graduate from Paris´ Ecole Speciale de´Architecture and a francophile, was himself a great admiror of Le Corbusier, often quoting him and remembering what he wrote in *Vers une Architecture*: "I am architect and an urban planner: I do plans. My temper inclines me to the pleasures of discovery. Mouvement, development, the very joy of living are my passion… I do the plans of a contemporary city". 9

The Centro Simón Bolívar, in spite of its severe actual decay, was a success in every sense, from its original concept to even its actual use and abuse, sixty years later. It became the image of Caracas and the formal symbol of the city´s modernity, although the city has grown four times since its construction. A bronze plaque in the building commemorates the date when Caracas arrived to one million people, matching the Centro Simón Bolívar´s opening.

Now that Caracas has arrived to four million and a half people, the Centro Simón Bolívar is facing a new threat: it will soon undergo a major restoration… but nobody can guarantee that it will be done respectfully, according to its original project. Our claim is that this major Midcentury Latin American Social and Civic Infrastructure deserves a sound and scientific restoration project that will return its architecture to its once brilliant reality, fostering its late entrance and fair recognition in the history of modern architecture.

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Post Offices in Argentina. Examples of Outstanding Modern Architecture.

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The main purpose of this paper is to use Post and Telecommunication Buildings as case-studies to explain issues regarding this kind of public architecture, its contribution to the development of the modern city and to present some strategies for their conservation.

The issue

"*El monumental edificio a levantarse en este lugar, será una obra maestra, orgullo de la arquitectura moderna*"[1]

In Argentina, during the first Peronism (1945-1955), the *Dirección de Arquitectura de la Secretaría Nacional de Comunicaciones* gathered together since 1940 an important group of young architects that took care of the projects for the Post and Telecommunication Buildings and general services facilities, in many cities throughout the country.

A special interest in the communication field is clearly expressed during the Peronist government: in January 1949 the *Dirección General de Correos* was transformed into a *Secretaría* and later, in May, into a *Ministerio*, with a higher management hierarchy. By the publication of the first *Plan Quinquenal* in 1948, an important amount of projects of different scales had been launched, among them there are eighty outstanding examples.

These projects show the interest in the post and telephonical services to express Modernity and Efficiency. The formal aspects were directly associated with Le Corbusier's concepts and urban-architectural types, that had been circulating since the '30s (with many projects and few realizations). This kind of architecture already had an South American paradigm in the *Río de Janeiro Ministério da Educação e Saúde* (1936).

At that time, most Postal District heatquarters were also accommodating Public Telephone Offices and the national broadcast infrastructure. Some of those projects were immediately built, most of them finished during the '50s, and others opened even after the end of Peronism, between 1956 and 1960.[2]

Most *parties* followed a structure with an urban facade and an area for support and technical facilities in the ground floor, functionally and morphologically differentiated. The main body expressed a volumetrical contrast between the suspended block (differently proportioned each time) accommodating repetitive functions (offices, support boxes, residencies for members of the board) and a lower volume *(embasement)* with particular activities. This complex followed generically the existing urban block, keaping profiles but not particular situations like bevels.

In the interior, the *embasement* sometimes was elevated half a level from the walk side (Mendoza, Córdoba, Mar del Plata) and according to Le Corbusier´s *Plan libre* concept, contained big public halls. The space and the crystal skims were just interrupted by the modular *pilotis* rhythm and some virtually organized sectors.
The facade emerged directly from the *embasement* along with the structural system, organizing at one time the other important linguistic element: the *brisse-soleil*. According to Corbusier´s repertoire*,* an important reinforced concrete grid displayed in each orientation worked as a solar control device.

There was almost always a gap between the upper block and the *embasement*, a step back enriching the plastic aspect of the complex. At some point or even at the top floor, curved elements were incorporated in order to produce a contrast with the strict geometrical lines of the other elements. Even more, those elements were covered with Venetian glazed tiles, forming in some cases high-valued plastic compositions, and stressing the connection with the reference.

Smaller cases followed the same architectural guidelines, with some variants in the *parti* when the plot was in a corner or in the middle of a block. Architects paid attention to the importance of the city where the building was to be built, and other characteristics related to the environment and the landscape. As a result, materials were sometimes changed, windows were more accurately insulated, less glass surfaces were installed in colder regions, stone tiles covered walls in mountain ones, or a gesture was introduced in tourist areas.[3]

Almost every building had an interesting spatial *parti*, double-hight halls, wide glass surfaces and a strict *pilotis* modulation. Internal *patios* with glass walls were also included. An elevated entrance with stairs was frequent, the position of *pilotis* always stressed the distance between the structure and the walls, the location of the Chef's apartment at the top floor with its *toit jardin* was usual as well.[4]

The case of Post Offices clearly shows that Peronism deliberately and programmatically adopted Modern Architectural forms and expressions in order to represent Public Services. Under the Welfare State conception, the Post Service was a key point to express the efforts to modernize the country.

Modern Architecture *versus* Official Architecture: An interpretation matter

"Mucho costó –y cuesta- lograr que la arquitectura oficial fuera moderna"[5]

This was the headline of a 1958´s article in *Nuestra Arquitectura* Magazine that introduced several recently opened Post buildings.[6] The few contemporary specialized publications that stated on the matter, carefully described technical and functional aspects of the buildings, with lots of photos and plans, but did not make any aesthetic or value judgement.[7]

This is one of the main differences between the Architectural specialized press and the official position coming out from the *Ministerio de Comunicaciones.* Public agents were always stressing the Modernity of these buildings in their speeches.[8]
By its side, traditional historiography while trying to build up an Argentinean modern architecture canonical paradigm[9], could not find a conciliating relationship with the State. With this, an undervaluation of the official production between 1930 and 1955 was made, and many very important projects were left out.

Historiography understood this kind of architecture produced during the '60s from an ideological point of view. As a result, there was an under appreciation of the programmatic architectural value of Post Offices.

During Peronism, Professional Bodies stated against public plans. After that long period, they tried to reinforce their independent *status,* so it is understandable that the value of this architecture and the public modern architecture produced in Public Offices were refused.[10]

The duty of the *Dirección de Arquitectura de Correos y Telecomunicaciones'* architects was presented by Francisco Bullrich as an exceptional act, when He said: "*…merece citarse la labor llevada a cabo por la dirección de Arquitectura de Correos y Telecomunicaciones, tanto por el standard técnico y figurativo /…/ como por lo que supone como labor de conjunto*".[11]

But besides the fact that Bullrich understood it as an almost heroic fight made by this group of architects, its value is also explained by the "accident" theory. This production was moving independently from the State, throght a system gap: *"…de allí que esfuerzos como los de esta Dirección de Arquitectura, lograran progresar en un rincón apartado de la burocracia estatal".*[12]

The Italian architect Gian Ludovico Peani expressed the same point of view when He assumed the official references to classicist monumentalism, reinforcing the canonical paradigm: "*Fra i pochi lavori pubblici che sfuggirono ai diversi volti del monumentalismo ufficiale, si distinguono quelli dell'ufficio architettura delle Poste e Telegrafi, oggi disciolto…*"[13]

Some other local architectural magazines had already given a support to this view. *Nuestra Arquitectura* underlined the youth and lack of experience of the architects involved in the *Dirección,* that sometimes had not even finished their studies and were nevertheless assigned to the projects. For example, the editor of the magazine claimed *"…diseñaron lo que habían aprendido en las aulas, sin pensar*

en la tradición de los edificios oficiales".[14] Ironically, up to him, these architects had been put in charge of some "*minimal Post Offices projects*", and it was just the usual public urgency to have them approved.

The arguments expressed by the editor can not be accepted in a serious magazine. By assigning "*public urgencies*" the responsibility to have the modern elements approved in many projects for six years (1948-1955), He was not taking into account an important fact. Some of the projects had being started even six year later than the first ones, so if a change in the trend had to be made; it would have had plenty of time.[15]

Other fact unconsidered by the critic was that many "*auteur"* projects commissioned by the *Ministerio*, were also performing a modern repertoire. Between them, the headquarters of *Teléfonos del Estado* in Capital Federal (1951-64) by *Estudio SEPRA* stood out. Later, they were wining the Competition with their project for the City Hall in Córdoba.

The depreciation of this official architecture kept its room in Argentina for several decades. Only when historiography broke down the canonical paradigm in the '80s, this situation started to be changed.[16]

Nowadays, these buildings represent a very important element in the chain of history of the Argentinean architecture. These projects take part of the cultural material history and have become pieces of heritage to be preserved. These urban elements are considered builders of a modern image, and they are linked to a comprehensive project of modernization.

But, despite having fulfilled their functions and played an important role as urban landmarks, Post Offices are now in danger. The main problem is that they have been virtually abandoned due to the privatization of the service (since 1992) and new needs have been introduced by contemporary markets. Nowadays their integrity is threatened by invasive occupations, the reduction of the surfaces in former primary functions and a substantial material destruction.[17]

Because of this the *Comisión Nacional de Museos y Monumentos* is working on a proposal to create a protecting Act on all the buildings. The Act is not considering each building as an isolated monument in a traditional way, but gathering them all together to protect them as a highly valuable collection of Argentinean pieces of built history.[18]

The declaration of heritage based on: the chronological unit, the institutional belonging and the tipológico-formal correspondence, which present the modern Post office buildings, implies advancing on the individualities depending on the weighting of a disintegrated set, assuming a modality that is not contemplated explicitly in our legislation.

By making a catalogue with all the relevant examples, showing their multiplicity and diversity, it is expected to systematize every caracteristic aspect, in order to base their valoration.[19]

Public Modern Architecture in the City: Towards a New Monumentalism

"Lograr /…/ la reorganización del tejido urbano con la 'manzana vertical'…"[20]

With Post Offices being built in the upcountry, a new architectural type with few previous realizations, even in Le Corbusier's career, was being introduced around the beginnings of the '50s. [21]

In Brazil, instead, this joint of upper block and *embasement* was already a modern architecture characteristic and had become a strong reference. As R. Segre once explained, besides the *Ministério* building, many other projects were taken as models all across South America. [22]

Independently, a new urbanity inspired in the CIAM's urban principles was producing changes in Argentina from different public spheres, apart from the first Post Offices projects.

We are talking about the *Estudio del Plan de Buenos Aires (EPBA)*, created in 1948 under the direction of Jorge Ferrari Hardoy in Buenos Aire City Hall. Their purposes were to go thought the ten-year-old Corbusier's Plan for the city and to define strategies to introduce the urban plan into the first *Plan Quinquenal.* To sump up, it was a place where Modern Urbanism was being produced.

We underline an EPBA well-known project: the *Urbanización de Bajo Belgrano*, a *Ville Radieuse* fragment, following the CIAM´s principles of down-breaking the traditional city by incorporating the "vertical block". The projects made by the "unexperienced young architects" is assumed to be connected to that urbanity ideology but located on an unavoidable traditional urban fabric.

Their proposals were not just into the architectural scale but also committed implicitly with a new urban environmental idea. In consolidated areas, a new block-breaking independent volume was raised to define a new pattern. This pattern could be repeated as many times as necessary according to fabric renovation process, which was a lot after lot infilling.[23] The proposed scale was higher than the existing one but still harmonious with it due to some adjustment steps.

Besides its originality, these *artefactos* would present a clear and formal system that would modify the logic of traditional matrix, introducing again the regularity that the city had lost in the early decades of XX century. Geometric clarity and rigor, plus the scale difference and the slenderness of the upper block in the larger cases, granted these buildings a high value of iconicity.

In big cities, dynamic commercial areas were chosen to locate the buildings, instead of quieter civic areas. On the other hand, in smaller ones, not having that option, they were located near the main square or other public buildings. Regarding the volumetric connection with the existing city, it is evident that the dissociation was the main topic. [24]

Both, the introduction of isolated pieces and their will of being reproduced have clearly created a new monumentality in our cities. A functional grid next to an independent circulation system, a complex lower - upper volume morphology, a contradictory articulating – dissociating *embasement* and modern repertoire compositions, have worked together to create a new monumentality and to introduce the concept of an ideal harmonical city, of which these buildings still represent unfinished fragments.

Illustrations

COLLADO_1.jpg – Post Offices Córdoba. General View. Photo: Arch. Julio Arroyo.

COLLADO_2.jpg - Post Offices Mendoza, Detail Facade. Photo: Arch. Claudia Montoro.

COLLADO_3.jpg - Post Offices Santa Fe. General View. Photo: Arch. Julio Arroyo.

COLLADO_4.jpg - Post Offices Santa Fe; Detail Entrance Hall. Photo: Arch. Martina Acosta.

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Notes:

[1] (*"The monumental building to be raised in this place, will be a Master Piece, a Modern Architecture pride..."),* from the Vº *Distrito* Manager Speech, at the opening of the Santa Fe headquarter, *El Litoral*, Santa Fe, 15th April 1955, 2.

[2] Some of the most significant buildings: *Correo Central* in Mendoza (1948/1951) by Agustín Bianchi and Eudaldo Vidal; in Córdoba (1950/55) by Julio Heguilar Rocca and Héctor Quesada; in Mar del Plata (1950/58) by H. González Laguingue, Francisco Rossi and J. C. Malter Terrada; in San Juan (1953/57) by Bianchi, Vidal y Rossi; in Santa Fe (1954/59) by José M. Spencer and Walter Finkbeiner; in Corrientes (1955/59), by Spencer and Raúl Villamil; in Posadas (1956/59) by Spencer; in Neuquén and Santa Rosa de La Pampa (¿-1959). As significant services centres: *Movimiento* Building (1956), in Retiro, by Augusto Gaido, Rossi and Gallardo and *Estación de Comunicaciones de Pacheco* (1957). "Edificio Movimiento", *Nuestra Arquitectura* 328/329, Buenos Aires, November - December 1956, 43 - 55. "Siete obras para la Dirección de Correos", 1958, *Nuestra Arquitectura* 345 (8), Buenos Aires, 25 – 37.

[3] In smaller cities there standout: Esperanza, Ceres and Venado Tuerto, in Santa Fe; San Martín, Berisso and Azul in Buenos Aires; General Alvear, Villa Atuel and San Rafael in Mendoza; Puerto San Julián in Santa Cruz; Río Cuarto in Córdoba; referencing the same Institution by following unique architectural patterns.

[4] "Siete obras …", cit., 33 - 35.

[5] (*"It was hard -and it is hard- to transform official architecture into Modern Architecture"),* in *Nuestra Arquitectura* 345 (8), Buenos Aires, 25.

[6] "Siete obras …", cit., 25.

[7] "El edificio de Correos y Telecomunicaciones de Mendoza", 1952, *Revista de Arquitectura* 364 (1), Buenos Aires, 22 - 29; "Edificio Movimiento…", cit., 43 - 55; "Otra obra para el Correo en Santa Fe", 1958, *Nuestra Arquitectura* 345 (8), Buenos Aires, 12.

[8] At the San Rafael, Mendoza opening act, the General Manager said "…*las comunicaciones son nervio vital de las naciones modernas y especialmente en lo que se refiere a la construcción de locales para oficinas de CyT. Un exponente de esa atención es este magnífico edificio, que es fruto de la mente de un buen arquitecto" ("... communication is a vital nerve in modern nations, especially regarding the C&T offices. This building expresses that view, with a brilliant architectural production"*), *El Litoral*, Santa Fe, 24th March 1953, 1.

[9] Scalvini, M. L. y Sandri, M. G., 1984, *L' immagine storiografica dell' architettura contemporanea da Platz a Giedion,* Officina Edizioni, Roma, 13 - 23.

[10] Ballent, A., 1983, "La condición profesional en la década del 50", *Materiales* 3, Buenos Aires, 31 - 41.

[11] (*"... the work of the Dirección de Arquitectura de Correos y Telecomunicaciones´ architects was remarkable because of its technical and formal standards/.../as well as for being a team production..."). *Bullrich, F., 1963, *Arquitectura Argentina Contemporánea. Panorama de la arquitectura argentina 1950-63*, Nueva Visión, Buenos Aires, 41. In his selection of works He includes the Post Offices in Santa Fe, Mar del Plata and Corrientes.

[12] (*"…from there, the Dirección de Arquitectura efforts grew up in a hidden burocracy corner").* Bullrich, F., 1986, "Arquitectura moderna en la Argentina", *Summa* 230 (8), Buenos Aires, 34.

[13] (*"...from the very few public realizations that avoided official monumentalism, the now dissolved Office of Post and Telegraph has produced some of the most outstanding ones").* Peani, G. L., 1964, "L´Architettura Moderna in Argentina", *Casabella Continuità* 285 (1), 24.

[14] (*"...they design what they have learnt at university, not thinking of the public building tradition.")* "Siete obras …", cit., 25.

[15] *"El apuro por cumplir planes fue, en pocos meses, el factor principal para que se aceptase un estilo propio para la repartición que veía con asombro los nuevos trabajos /…/ las autoridades no tuvieron otro remedio que aceptar el equipo, el estilo y la escuela."* ("It was the rush to fulfill the plans in few months, the main reason to accept those projects/.../authorities had no choice than accepting the team, the style and the school") In "Siete obras …", cit., 25.

[16] Petrina, A. and Larrañaga, M., 1987, "Arquitectura de masas en la Argentina.1945-1955", *Anales del Instituto de Arte Americano* 25, Buenos Aires, 107-115; Sonderéguer, P., 1989, *Arquitectura y*

Modernidad en la Argentina, CESCA, Buenos Aires; Ballent, A., 2005, *Las huellas de la política,* UNQui, Buenos Aires.

[17] Nowadays, 50 years had passed since most of these buildings were opened, so they are protected by the 1063/82 Act. It bans the modification of this kind of public buildings without a *Comisión Nacional de Monumentos'* authorization. Nevertheless, this Act does not allow the CNM to invest sources in their restoration.

[18] The author of this text is the CNM Delegate in Santa Fe and works on this project since 2009.

[19] In order to do this, there is a designed methodology taken as its bases a previous work made on the national *Correo Argentino* buildings by Arch. Jorge Tartarini, "Patrimonio Histórico del Correo Argentino", 1995; unpublished production.

[20] (*"To achieve / … / a new organization of the urban fabric, through the 'vertical block'..."*). Taken from the purposes of *Urbanización de Bajo Belgrano*, contemporary project to the first Post Offices. "Urbanización del Bajo Belgrano", 1953, *Revista de Arquitectura* I - II, Buenos Aires, 21.

[21] Unité d´Habitation in Marseille, designed in 1947, opened in 1952; among other previous Le Corbusier block-typology projects, there are the Armée du Salut Headquarter, Paris (1931), the Centrozoyuz, Moscow (1928) and the Swiss Pavilion, Cité Universitaire, Paris (1930).

[22] Segre, R., 2005, "A sede do Ministério da Educação: Ícone Urbano da Modernidade Carioca (1935-1945)", *ArqTexto* 6, digital magazine, Universidade Feredal do Rio Grande do Sul.

[23] For the three main cases (Mendoza, Santa Fe and Córdoba), 70x700ms plot were used. In Mendoza and Santa Fe, an independent existing urban block, diferentiated from the traditional ones was used. In Cordoba, this resource was resigned because of an exceptionally located plot; in this case, the building was located between two main avenues sharing one edge with an existing fabric.

[24] Only in San Juan there was a total coincidence between the building and the existing block. In this case a facade was used to extend the monumental civic axis created in the 1944 hearthquake reconstruction plan. In other words, the building is located in a *ex-novo* urban fabric. In Posadas' Post Office, the building is in a quarter of the block, next to the *Instituto de Previsión,* by architects Soto and Rivarola. Their continuing lines produce a fine connection. See: "Instituto de Previsión Social", 1967, *Summa* 8 (4), 39 – 47.

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ORTHODOXY AND FREEDOM: INFRASTRUCTURAL BUILDINGS IN ANGOLA AND MOZAMBIQUE FROM THE THIRD QUARTER OF THE TWENTIETH CENTURY.

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From the late 1930's to the mid 1950's the design freedom of Portuguese architects was limited, both in State and Church commissions, to a formal repertoire of monumental and nationalist content. Strengthened by the *Estado Novo* dictatorial regime it comprised an eclectic mixture of both popular and erudite elements taken from heterogeneous stylistic sources. The neo-baroque building of the Bank of Angola (1947), by Vasco de Morais Palmeiro (1987-1968), strategically located by the Luanda's waterfront, or the *Português Suave* Cathedral of Our Lady of Fátima (1956), by Raul Lino (1879-1974), erected on the main Nampula's avenue, in Mozambique, are examples of this monumental architecture, that is widely spread across the Portuguese colonial empire.

The founding of the Urbanization Bureau of the Ministry of Colonies in 1944, later renamed Ministry of Overseas, centralised in Lisbon the design of large-scale urbanization plans and of infrastructural buildings of governmental or religious nature. The *General Urbanization Plan* for Nova Lisboa / Huambo (1946), Sá da Bandeira / Lubango (1949) or Malange (1951), in Angola, are examples of the Bureau's urban design, that make reference to the English garden-city or the French formal urbanism models; António Enes High School (1956), in Lourenço Marques / Maputo, or Pero de Anaia High School (1956), in Beira, both in Mozambique, are examples of the Bureau's architectonic design, displaying a mixed modernist and nationalist architectonic language of monumental expression.

The 1st Congress of the Portuguese Architects Union, held in 1948, signals the arrival of a new generation of professionals that rejected the assumption of a national style and proclaimed the universal validity of the architectural principles and urban planning methods of the Modern Movement. Some of the attendants at this meeting, who were disappointed with the lack of private commissions and who were sometimes subject to persecution by the political police, soon immigrated to the former colonies, mainly to Angola and Mozambique, where the undergoing process of the development of vast territories required qualified technicians from the European motherland. As one of these newly graduated architects states, in a 1952 letter to the Portuguese magazine *Arquitectura*:

I graduated recently, full of enthusiasm, but the perspectives I find are very different from what I have dreamt of: the architectural offices have little or no work at all, most young architects don't have even the smallest commission and there is a general pessimism. The idea of emigrating begins to take shape, spreading itself around; some of my colleagues have already put it into practice. I'm also facing it, although with sorrow.[1]

In Africa these young architects took up employment in the technical bureaus of the local governments and in the municipal authorities of the major cities while, at the same time, they designed in their private offices, commissions for housing and infrastructural buildings that the increasing population growth and the booming economy required. Their architectural practice was informed by the methods of the Modern Movement: industrialized building systems, standardized materials, programmatic optimization and scientific climatic consideration – providing local institutions as well as private entrepreneurs with the ability to produce large scale construction in the newly planned, as well as in the long-time established, urban fabrics.
Their architecture was characteristic of the International Style, as defined by Henry-Russell Hitchcock and Philip Johnson. The theoretical and formal basis of their designs was based on Le Corbusier's thinking and practice, namely on his research on mechanisms to control direct sunlight on the surface of the *pan de verre* – from the Clarté Building in Geneva (1928-1932), through the Barcelona and Algeria proposals, to the final implementation of the horizontal *brise-soleil* on the North façade of the Ministry of Education, in Rio de Janeiro (1936-1945). The latter work must have had an archetypal quality for the high rise buildings that punctuated the pre-independence major cities of Angola and Mozambique. Its main features were described by Clive Entwistle in a 1946 letter to Le Corbusier:

Je saisis cette opportunité pour vous remercier de la parte de tous les jeunes d'ici, de votre dernier don à l'architecture: le brise-soleil, élément splendide, clef des combinaisons infinies. Maintenant, l'architecture est prête à prendre sa place dans la vie. Vous lui avez donné un squelette (ossature indépendant), ses organes vitaux (les services communs du logis); une peau fraîche luisante (le pan de verre); vous l'avez mise debout sur ses jambes (les pilotis); posé un joli chapeau sur sa tête (les arabesques du toit-jardin). Et maintenant vous lui donnez des vêtements magnifiques s'adaptant aux divers climats![2]

The universal knowledge of the architecture of Lucio Costa, Affonso Reidy, Carlos Leão, Jorge Moreira, Ernani Vasconcellos, Oscar Niemeyer (co-authors of the Ministry of Education), Atílio Correia Lima, Marcelo and Milton Roberto – the expression of the environmental contextualization of the Modern Movement vocabulary on the Brasilian tropical climate, architectonic tradition and landscape morphology –, was promoted by the MoMA's *Brazil Builds* exhibition and catalogue (1943). Some forms of specific buildings (such as Pampulha's chapel parabolic arches), and some particular features of the Brazilian modern architecture had a major role on the Portuguese colonies architectonic production, such as in the

appearance of elaborated grids of standardized concrete modules on the outer façades to allow cross ventilation of the interior spaces, the flow of organic and oblique forms as sculptural exceptions to mainly orthogonal layouts and the intensive reuse of Portuguese traditional materials like the ceramic tiles. The appearance of other formal motifs that originate in the Latin America's modern architecture, as for instance the thin concrete-shell structures of Felix Candela or the brick undulating surfaces of Eladio Dieste, can be explained by the post-war worldwide diffusion of this type of architecture.
Angola and Mozambique became, from the early 1950's on, a fertile ground for the free spread of the new architecture and, at the same time, for the orthodox establishment of its formal, functional and constructive axioms. This phenomenon is best exemplified by the analysis of some selected infrastructural buildings, its design being nurtured on complex functional, spatial, constructive and technical requirements.

The Quinaxixe Municipal Market (1950-1952), in Luanda, Angola, was planned by Vasco Vieira da Costa (1911-1982), a Portuguese former intern at Le Corbusier's office.
The form of the lot and of the square in front of the market was already defined on the *General Urbanization Plan* (1950), designed by João António de Aguiar (1906-1974), chief architect of the Urbanization Bureau of the Ministry of Colonies. At the time it was built it filled the full length of the northern façade of the *Largo dos Lusíadas*, a rectangular square midway up one of the major avenues structuring the eastward expansion of the city of Luanda.
The market area of the building was contained in a double height rectangular box, its depth doubling the width of the facing square, supported by *pilotis*, hollowed out by two patios and made accessible by staircases and a ramp that started at the street footpath level. The *toit-terrace* was punctuated by porticos and sculptural volumes that concluded the *promenade architecturale* developed through the building. The four different façades were animated by overhanging volumes, excavated *fenêtres en longueur* and occasional openings. The interior space was protected from direct sunlight by vertical *brise-soleil* and the cross-ventilation, essential in Luanda's humid climate, was made possible by the permanently open windows and by the internal patios' wide openings and hollow concrete grids.
One of the earliest and best examples of the post-war Portuguese colonial architecture it was demolished in August 2008.

The Beira Railway Station (1958-1966) was designed for the second largest city of Mozambique by a team of locally established architects consisting of Paulo de Melo Sampaio (1926-1968), João Garizo do Carmo (1917-1974) and Francisco José de Castro (1923).
The terminus station of the railroad to the African inland, it connected the former English colony of Southern Rhodesia (nowadays Republic of Zimbabwe), with one of the busiest harbours of the oriental coast of Africa. It was placed facing the city´s centre to the south, separated from the latter by a strip of sea, the Chiveve, and surrounded by the harbour´s facilities on the western side, and by the orthogonal

expansion grid of the 1947 Urban Plan by José Luís Porto (1883-1965) and Ribeiro Alegre, on the eastern side.
Its complex architectural composition is based on the asymmetric articulation of three autonomous zones, in a spatial progression initiated on the southern facing square: entering an atrium with bar, restaurant and shops, covered by a large parabolic vault; passing under a rectangular box suspended on *pilotis* eight stories high (formed by superimposed smaller horizontal boxes containing the railway company's offices, with a vertical prism holding the main staircase and the elevator shafts attached to it); arriving at the platforms at the back, covered by overhanging concrete slabs and lined by a long strip of warehouses, in a constant rhythm of thin concrete vaults. Occasionally revealing formal and constructive influences of the contemporary modern Brazilian architecture, the station's external surfaces are characterized by the vertical rhythm of the adjustable aluminium *brise-soleil* that protect the *pan de verre* of the main façade and by the polychromatic ceramic tile cladding displaying abstract mural patterns.

The Niassa District Government Building was erected in the early 60's at Vila Cabral (present day Lichinga), a hinterland city of Mozambique's northwest plateau, according to a design by the Lourenço Marques (now Maputo), established architects João José Tinoco (1924-1983) and his wife Maria Carlota Quintanilha (1923).
The city had been designed in 1932 by a land surveyor. Looking like a centralized and finite Renaissance Ideal City, the blocks of his octagonal urban framework were occupied by free-standing low rise constructions surrounded by greenery. The Government Building's layout, deriving from the functional organization and the geometry of the site, is composed of two volumes at different angles, isolated in the middle of the urban site, connected at 1st floor by an irregularly shaped passage that articulates them formally. The bigger volume, a three storey high rectangular prism, holds the administrative offices and public spaces while the smaller one, with two levels connected by an autonomous entrance in the form of a spiral stair, contains the governor's and inspector's offices and the solemn session's room. Set perpendicularly to one of the radii that underlies the city's design, the smaller volume opens all of its internal spaces to a segmented loggia of representational function, facing the opposing Lichinga's octagonal central square. Part of the first building and all of the second were originally sustained by *pilotis* and are covered by oblique flat roofs. The *pan de verre* of the exterior façades and part of the main loggia are protected by *brise-soleil* made of dense grids of modular concrete elements, showing a coherent fidelity to Le Corbusier's principles in its Brazilian modern architecture counterpart.

The Flamingo Cinema in Lobito, Angola's second largest city, was built in the early sixties according to a plan by the city's municipal architect Francisco Castro Rodrigues (1920), with structural calculations by the railway engineer Bernardino Machado.

Following the directives of the Municipal Urban Plan, designed by the same architect, it was located in a narrow strip of land between the mangrove and the sea, an area intended for the new urban centre of the city. Nowadays it stands at the southern end of the concrete city's seaside waterfront.
The cinema is bounded on three sides by an organically shaped brick wall defining an approximately rectangular open air precinct and, on the fourth side, by a representational wall of wavy and polygonal forms covered by polychromatic *marmorite* cladding and topped by thin concrete roof slabs of both flat and triangular forms. The main entrance to the enclosure is set in this wall, facing a car park that fronts onto the sea.
Inside the compound several wide span cantilevered concrete beams are suspended through steel cables from two rows of concrete pillars. These structures support wooden grids riveted by aluminium sheet roof surfaces (missing today), that covered the entrance foyer, the audience seating area for 1,200 spectators and the autonomous prismatic box containing the projection room – the latter two being set in front of a free-standing concrete stage and cinemascope screen.

The four examples shown above are a small part of a much larger inventory of International Style infrastructural buildings from the third quarter of the twentieth century, spread across the former Portuguese African colonies of Angola and Mozambique. Their iconic quality as modern landmark achievements characterizes the utopian desire for permanence of the colonial societies that erected them. Providing the instruments for all types of functional and constructive demands required by these developing economies, the architecture of the Modern Movement ultimately came to dominance, shaping the heterogeneous urban landscapes with a contemporaneous physiognomy that still can be found locally.
The building of a tropical modern landscape process has no parallel with the simultaneous architectonic production inside the smaller boundaries of the European space of Portugal – too close to the centre of the fascist regime and, at the same time, too limited by the established social framework and the historical density of the pre-existing urban fabrics.

Illustrations

Quinaxixe Market (Image taken from Costa X. (dir) and Landrove, S., *Arquitectura do Movimento Moderno. Registo DOCOMOMO Ibérico. 1925-1965*, AAP / Fundação Mies van der Rohe / DOCOMOMO Ibérico, Barcelona, 331)

Beira Railway Station (Image taken from Ferreira, A., *Obras Públicas em Moçambique: inventário da produção arquitectónica executada entre 1933 e 1961*, Edições Universitárias Lusófonas, Lisboa, 337)

Niassa District Government Building (Image taken from Veloso, A. M., Fernandes, J. M. and Janeiro, M. L., 2008, *João José Tinoco: Arquitecturas em África*, Livros Horizonte, Lisboa, 49)

Flamingo Cinema (Image taken from Fernandes, J. M., 2002, *Geração Africana. Arquitectura e cidades em Angola e Moçambique, 1925-1975*, Livros Horizonte, Lisboa, 45)

Notes

[1] Albuquerque, A., 1998, *Arquitectura moderna em Moçambique: inquérito à produção arquitectónica em Moçambique nos últimos vinte e cinco anos do império colonial português 1949-1974*. [s.n.], Coimbra, 37.

[2] Boesiger, W. (ed), *Le Corbusier: Oeuvre complète de 1938-1946*, Les Éditions d'Architecture, Zurich, 113.

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A MACHINE FOR PLAYING: RIVER PLATE STADIUM IN BUENOS AIRES, 1938-1978

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"*Hours before the match all kind of people flow into the tribunes from all neighborhoods of the city. Crowded trains, buses, streetcars and automobiles, sometimes collectively rented, transport a population that by the rest of the week resigns to sedentary tasks and urban rules. That day belongs to the goodness of ebony. The green field stands out from the circle of tribunes which forms a vibrant living ring. It is the same bullring, the same disposition of Roman circus, the same crowd which eagerly expects the mystery of its brutal purification. The horizon outlines in the sky; the high walls surrounding the stadium rise above all perspective. There is no city, there is no world*."[1]

Argentinian writer Ezequiel Martínez Estrada wrote those lines in 1940. His description of a football match conveys a dualistic, possibly contradictory figure: mass leisure events were self-sufficient experiences; mass leisure events totally depended on the city to exist. It acknowledges a new urban phenomenon that emerged between 1930 and 1950 in Latin-American metropolis: the modern football stadium.

Introduced by British sailors and railway workers, football practice was organized in professional leagues by the end of the twenties. Several teams were eventually able to engage themselves in the construction of new football stadiums that had in common the increasing size, redefining them as large scale urban compounds. Designed by Juan Antonio Scasso, Centenario Stadium was inaugurated in Montevideo for the first World Cup in 1930; in Buenos Aires, the new River Plate stadium opened in 1938, Boca Juniors famous "Bombonera" in 1940, followed by Huracán in 1949, Racing in 1950 and Vélez Sarfield in 1952. Brazilian Maracanã dates from 1950; in the same year Vilanova Artigas designed São Paulo's Morumbi.

How did mass leisure programs help to rebuild modern cities and enlarge the idea of modern architecture? Athens Charter's widespread statement on the four functions – housing, work, recreation and traffic – suggested a sort of ideal balance between them. In fact, the third point – recreation - has been historically neglected as a matter of architectural investigation. Despite V CIAM's efforts to discuss "*logis et loisirs*" at Paris in 1937, recreational facilities had never been the subject of the same close examination and systematic enquiry that was devoted to housing. Nevertheless, football stadiums are citadel-like pieces that can actually mobilize an amount of public which bares the population of a small or even medium size city. Maracanã seats 88.992 spectators and River Plate stadium was designed to evacuate 65.645 persons in twenty minutes, and both implied the reconstruction of about ten urban blocks.

In 1901, when River Plate was founded, football fields were vacant plots of land on the borders of the city. River's first field was in the South Dock, at the mouth of Riachuelo River, a water course that separates the south of Buenos Aires from the province. The

club moved into the city in 1915, settling at the block limited by Pinzón, Gaboto, A. del Valle and Pedro de Mendoza Streets in La Boca, where in 1920 it would be acclaimed Argentinean champion before an audience of 5000 assistants. The stands of those former fields used to be built of a metallic structure and wooden seats called “tablones”, which could be easily dismantled and carried from one place to another.[2] Precarious constructions were related to hired plots, but also to unfavorable urban conditions. As Boca Juniors, River was installed in a coastal area inhabited by the poor, vulnerable to floods and strong wings from the southeast.

During the twenties, football would shift from the so called “brown amateurism”, with its shady practices of money on players’ boots, to professionalism. In 1931 a River-Boca match could bring together around 50.000 assistants. Huge demographic increase and economic welfare had allowed an emergent urban working class to enjoy weekly free time, and football game became a mass spectacle. Those were the new conditions which triggered the construction of the large concrete stadiums in the next decade.[3] Although typologically prefigured by the Roman arena, the new stadiums pointed to a quite fresh urban situation, considering their scattered distribution over the city space. In 1934 River Plate acquired 84.300 square meters of cheap land in Belgrano neighborhood, at the north of the city. Partially over the area of an old racetrack, the site was as close to the capital limits as the former field in the south, and also in a coastal area vulnerable to floods. But it was four times distant from the center of the city.

Gorelik stressed the close relationship between football clubs and Buenos Aires’s particular process of suburbanization. Unlike most of Latin American cities, Buenos Aires expansion was not left to the informal process of growing which usually generated the typical distinction between “legal” and “illegal” city. In 1887 the districts of Flores and Belgrano were annexed to the capital city, increasing the municipal area from 15 to 70 square miles. It was followed by a public planning strategy that foresaw a regular, formal limit to the enlarged city with the design of the “Boulevard de Circunvalación” (actually constructed in 1937 as the beltway road General Paz), and the extension of the characteristic Spanish homogeneous square-based grid over that land, waiting for a fulfillment that would only come about in the next decades.[4] Gorelik considers the progressive occupation of this territory as the main urban phenomenon of Buenos Aires. “While the profession of urban planning stayed focused on its debates about the center”, he explains, “the suburb became - vertiginously but unnoticed - the great social and urban laboratory, which give birth to the creation of the *barrio*”.[5] The football clubs would be among the main institutions of those “*barrios*” where the new city was being shaped.

In 1935, River Plate launched a design competition for the new site in Belgrano. Architects José Aslan (1909-1981) and Héctor Ezcurra (1909-1980), assisted by the agronomist engineers José Raúl Neira and Martin Ezcurra, proposed a stadium with an elliptical shape that was considered by the jury a quite economical and beautiful solution, although lacking the required solar orientation. Among two other teams, they were asked to prepare a second design, incorporating an adjacent lot of 68.980 square meters that had been given to the club by the Municipality. As Ezcurra would later remember, this part of the site was closer to the lines of Railway Belgrano, beyond which extended a wasteland facing the river “with nothing but swamps, willows, and poplars, where today there is the University City”.[6]

Aslan and Ezcurra eventually obtained the first prize with a remarkably modern design, considering its functionalist and objective approach as well as its innovative solution at the distributive and technical level. The enlargement of the area allowed them to rotate the stadium, placing it at the angle of Centenario and Quesada (today Udaondo Avenue, the limit with Nuñez neighborhood) and releasing the east side for open air auxiliary courts. That scheme fixed the longitudinal axis of the stadium's playing field perpendicularly to Centenario Avenue, the main urban access to the area, which became the structuring basis for the composition, and solved the solar issue with the field oriented northward. The stadium's elliptical frame was defined by four separate curved tribunes placed side by side, conceived of as autonomous elements, although part of a structurally homogeneous whole.

Aslan and Ezcurra expected to produce a functional architecture that emerged directly from the program and the constitutive elements of construction. "The exterior of the stadium is the image of its constructive structure" – they wrote - "and therefore modern, sober, truthful, without prejudices of stylistic reminiscences which have no pertinence in those new architectural problems."[7] They understood that those "new architectural problems" had to do with an economy of the big number: the 26.000 cubic meters of reinforced concrete and 2.700 tons of iron estimated to build three of the four tribunes before 1938, the direct foundation eight meters in depth, and the need to move an audience of 129.052 spectators. Total capacity, which surpasses today's average, had been calculated according to the competition brief, which required 0.35 square meters for each seated spectator and 0.50 frontal meters for each standing spectator, and taking into account parameters recently used for European stadiums, as Wembley (London, 1923) or the new Olympiastadium that Berlin was building to host the 1936 Olympic Games.

"Never great contingents were attracted from Boca, Chacarita, Flores, Floresta to the far north of the city", declared the authors, anticipating Martínez Estrada's description of a football Sunday afternoon in 1940. "Admission is spaced and constant. Exit is sudden and like an avalanche".[8] The circulation issue had to be figured out as a mechanical problem; people could be swallowed like pills, but had to be delivered back to the city as a continuous and abrupt flow, so each tribune had one public access and twelve mouths of evacuation operating simultaneously.

Aslan and Ezcurra professed a pragmatic modernism, which searched for rational, systematic solutions, but admitted inflections if provoked by programmatic singularities. The typical section of the tribunes was characterized by two rings of tiers supported by a system of porticos disposed at regular intervals, with the upper stands partially cantilevered. That allowed inserting other subprograms - sports facilities, gymnasium, and social dependences - below the stands. In order to make space for volley and basket ball playing fields, the supports on the south and west tribunes were pushed outside, giving those sectors a different exterior shape. As each tribune could move simultaneously two publics, the necessity of independent circulation routes generated external staircases of distinct types, which were annexed to the façades. It was not idealistic rationalism, but negotiated modernism.

Buenos Aires's aerial map of 1940 shows the stadium as a large scale urban piece inside a barely structured stripe of land between the river and the city. The part of the old racetrack at the other side of Centenario Avenue still remained vacant and adjacent

to that were slums and landfills over vulnerable to floods terrains called Bajo Belgrano (Belgrano lowlands).

In 1948, former members of the Argentinean Austral group, Antoni Bonet, Jorge Ferrary Hardoy and Jorge Vivanco had joined EPBA, the Office for the Buenos Aires Plan, and were in charge of an urban study for that area.[9] The Bajo Belgrano Urbanization plan intended to renew that suburban zone inserting there an exemplary modern residential neighborhood for 50.000 habitants. Prepared according to CIAM's precepts, the plan implied the suppression of the traditional Spanish block and the shaping of a new urban pattern in which housing was organized as a series of 20 parallel slabs arranged on the green background. Members of the Austral group called "vertical blocks" those 180 meters long slabs designed to shelter 2300 people.[10]

The striking modern proposal for Bajo Belgrano presented the contiguous stadium exactly as it was then, still lacking the fourth tribune, which would not be completed until 1958. Bonet and his colleagues recognized River Plate stadium, a preexistent structure, as a constitutive part of the "future city" they were designing, and they hoped could replace the traditional one.

It could be an *ad hoc* attitude, which had incorporated the stadium because it was too large to be dismissed. But it was a didactical plan. It should serve as a model for further private financed housing states. Design was not the casual juxtaposition of distinct functional sectors; both the stadium and the vertical blocks were compromised with the formation of a new urban scale, on the base of unitary elements of larger size. As in Corbusian *unité d'habitation*, the relative independence between building and urban alignments was pursued in order to obtain ideal and homogeneous solar conditions. The plan shows a displacement between building geometrical structuring order and the road system, but also coordination between the slabs and a highly formalized pedestrian network, which was not a common feature in modern tradition. Pedestrian paths connected the slabs and had a public role, performing as commercial structures. The northward oriented stadium, as a previous element, acts as a sort of generating piece for that geometrically ordered network of supporting programs to housing.

Open space was a key component on the formulation of the modern movement's city, but also one that had been schematically reduced to the homogeneous green carpet idea. Bajo Belgrano represents a further path of understanding, in which open space has a program that articulates local and metropolitan dimensions, through an architectural system that interlocks housing supporting equipments and massive leisure equipment related to the city.

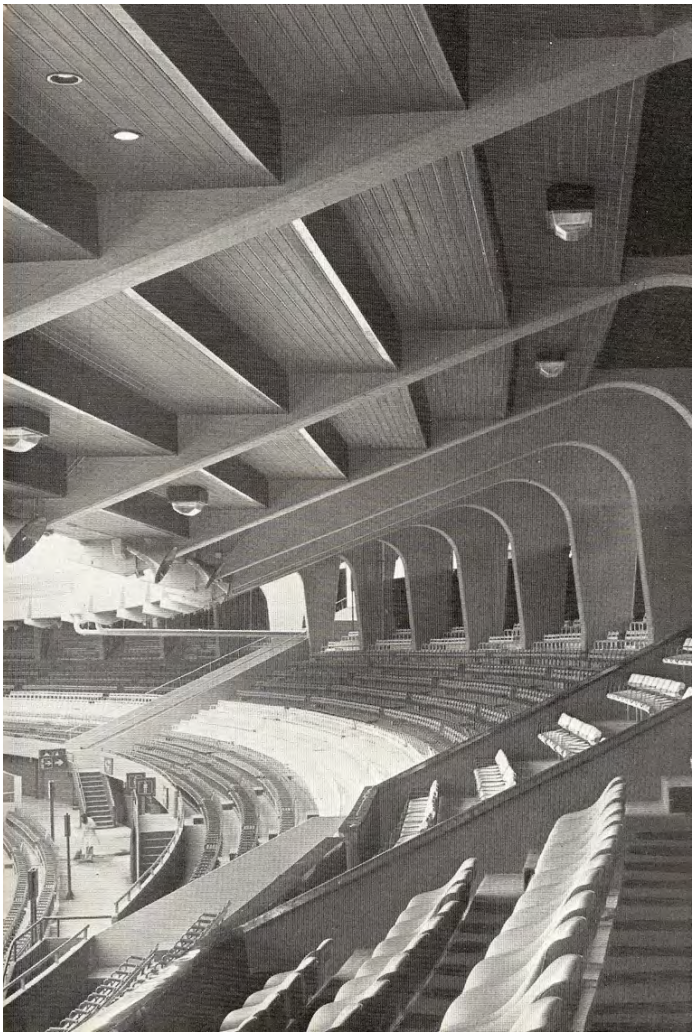
Bajo Belgrano's modern idea of city was unfortunately never accomplished. EPBA was closed in 1949 and the already initiated foundations of the vertical blocks lay somewhere nearby the stadium. River Plate's equally straightforward but less ideal modernity was accepted, suggesting that in the forties the football stadium, not the modern housing, played the forefront role in the suburbs.[11]

Illustrations

1. River Plate Stadium, 1937. Source: Aslan and Ezcurra Associated.

2. River Plate Stadium, 1938. Source: Aslan and Ezcurra Associated.

3. Bajo Belgrano Urbanization,1948. Source: *Revista de Arquitectura* 369, 1-75.



4. River Plate Stadium, San Martin Tribune. Source: Aslan and Ezcurra Associated.

Notes

[1] Martínez Estrada, E., 1947, *La cabeza de Goliat. Microscopia de Buenos Aires*, Emecé, Buenos Aires.
[2] Marmol, F., 2008, *Buenos Aires Antiguo. Fútbol 1900-1940*, Ediciones del Viajero, Buenos Aires.
[3] Idem.
[4] Gorelik, A., 2004, *La grilla y el parque. Espacio público y cultura urbana en Buenos Aires*, Universidad Nacional de Quilmes, Bernal.
[5] Gorelik, A., 2003, "A Metropolis in the Pampas: Buenos Aires 1890-1940", *in* J. Lejeune (ed), *Cruelty & utopia. Cities and landscape of Latin America*, CIVA - Princeton Architectural Press, New York, 146-159.
[6] Ezcurra, H., 1978, "River Plate 1938-1978: vigencia de un diseño", *Summa* 125, 90-92.
[7] Aslan, J.; Ezcurra, H., 1935, "Algunas consideraciones generales sobre el anteproyecto premiado en primer puesto." Archives of Aslan and Ezcurra Associated Architects.
[8] Idem.
[9] For a full discussion on EPBA see: Liernur, F. and Pschepiurca, P., 2008, *La red austral. Obras y proyectos de Le Corbusier y sus discipulos en la Argentina (1924-1965)*, Universidad Nacional de Quilmes, Bernal.
[10] EPBA, 1953, "Urbanización del Bajo Belgrano. Un barrio para 50.000 habitantes", *Revista de Arquitectura* 369, 1-75.
[11] Research supported by CNPq. I am thankful to Architect Marta Aslan for providing information on the project and material from Aslan and Escurra archives.

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DEATH AND MODERNISM: AN INCONVENIENT ISSUE

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Does it follow that the house has nothing in common with art and is architecture not to be included in the arts? Only a very small part of architecture belongs to art: the tomb and the monument. Everything else that fulfils a function is to be excluded from the domain of art.
Adolf Loos
'Architektur'*, Der Sturm, 15th* December 1910

In modern terms, cemeteries were an inconvenient issue. In its utilitarian crave, the segregation of functions foreseen in the Athens Charter banished remembrance —and therefore, funerary space— from the urban realm. The scientific and formal search for a better living had no equivalent regarding death. But before the quest for modernism became institutionalized under the patronage of CIAM, some cemeteries were planned following the new design principles, while interweaving closely with contemporary urban proposals.

Ernst May's design for the Hauptfriedhof's extension —Frankfurt's main cemetery— is one of the few examples in which the modern creed was consequently applied to funerary purposes. Together with new schools, a sport stadium, a central market and other urban scale facilities, the cemetery extension was part of a broader program to transform Frankfurt into the Neue Sachlichkeit's showcase. Its layout draws on the same schemes as the residential Siedlungen May planed to extend the city, following the garden-city principles he was familiar with after his stay at Raymond Unwin's office in London[1]. Moreover, tombstones and inscriptions were standardised to favour mass production, while the new formal code of modernism could become widespread, also in the traditionally conservative field of commemoration. A closer look at this project designed in 1928 illustrates how early modernism dealt with death and its representation, before the 1929 crash —together with the 2nd CIAM conference— called for reduction and simplification, and Le Corbusier's publication of the Athens Charter reduced urban complexity to four elementary functions.

A brief comparison of Frankfurt's cemetery extension with other contemporary cemeteries by Bruno Taut, Jože Plečnik and Willem Marinus Dudok in Magdeburg, Ljubljana and Hilversum shows how different architectural movements of the time shared similar principles, revealing the role the garden-city played in the early 1920's as a model for both funerary settings and urban planning.

Along with the residential architecture for which May is best known, 'das neue Frankfurt' displayed a similar concern about all those urban scale facilities included

in the city's extension plan. Ernst May commissioned the erection of the central market (Martin Elsaesser, 1926-1928), the mental hospital (Martin Elsaesser and Max Bromme, 1929-1930), the power station (Adolf Meyer, 1928-1929), the customs administration headquarters (Hebebrand, 1927), as well as churches, schools, parks, gardens and public baths[2]. Cemeteries were also involved in the ambitious task to turn the city into a modern metropolis.

Growing population demanded new places of burial. After Ernst May became Frankfurt's Building Supervisor in 1925, many decissions regarding funerary space were made. It was then that the Jewish community commissioned *Regierungsbaumeister* Fritz Nathan its new graveyard, on an independent plot within the Hauptfriedhof's area. Carried out between 1928 and 1929 –almost simultaneously with Ernst May's Hauptfriedhof's extension- the New Jewish Cemetery housed its own mortuary, funerary hall and administration in two dark clinker brick buildings flanking an open court. A straight path stretched from this modernist structure, dividing the grid of evergreen hedges that outline the white gravel burial plots.

As part of Frankfurt's extension plan, the Master plan for the Nidda Valley reserved a large area for the Westhausen Friedhof, the future metropolitan cemetery of the west, placed between the Praunheim and Westhausen siedlungen. Although there is no evidence that Ernst May designed the premises –since it was inaugurated in the 1950's- he did have the chance to enlarge the Hauptfriedhof in downtown Frankfurt.

The city's main cemetery was actually a cluster of plots which had been developed at different stages since its opening in 1828. Its later extension, dating from 1905, had provided the whole with an axial layout that collided with the intricate contours of the plot, failing to provide the area with a clear-cut structure[3].

Only a long stretch of land at the north-east corner of the site remained free of tombs when Ernst May designed the last addition to the Hauptfriedhof[4]. Parting from the same principles he set for all building activities under his command, he planed the cemetery extension as a *Siedlung* of the dead, a rational realm where modernism could be applied on all design scales.

Like Römerstadt and other settlements he planed before 1929, the cemetery extension was designed as a *Trabant* or satellite garden-suburb. It was thus a self-contained area only linked to the whole through a round bower. Its autonomy was underscored by a dense tree boundary, the same way Römerstadt and Bornheimerhang outlined their contours through retaining walls or the Rotenbusch and Heimat Siedlungen used higher buildings along its border. Like Raymond Unwin stated in his book *Town Planing in Practice. An Introduction to the Art of Designing Cities and Suburbs*[5], garden-cities should have visible boundaries, like medieval towns had their walls as crucial elements of their visual identity.

A set of platforms stepped down the gentle slope to the north, underscoring topography much in the same way housing rows did in many of the settlements of the Niddatal master plan. In order to underline the independence of the cemetery

addition, these terraced platforms rotate 45º from the overall grid, establishing a geometry of their own. This shifted hatch is underlined by double rows of trees planted along the edge of each terrace, flanking the paths that lead to the grave fields[6]. Like Ernst May did with his housing rows, the beginning and end of each alley was highlighted through a group of higher trees that screened off the view, avoiding an endless, tiresome perspective.

Thus, the cellular extension of the cemetery was intended as an independent enclave within the whole, its southern boundary consisting of a radial section in order to match the new geometry with the pathway system of the existing burial plots. Ernst May recalled again Ebenezer Howard's diagram for the garden-city, the same way he did while designing the radial scheme for Bornheimer Hang Siedlung[7].

Although not strictly necessary, a funeral hall was planed at the center of the radial section. This non-confessional, temple-like construction topped the horizontal profile of the cemetery extension with the same intention May employed the outstanding volume of the church in the new neighbourhoods: as a visual and social accent much in the spirit of the Stadtkrone Bruno Taut had foreseen as crown of every community.

To ensure the modern looks of the Hauptfriedhof's extension, Ernst May delivered a set of new regulations for the tombs in his *Begräbnissordnung*. As he had done with the Frankfurter Grundrisse and the Frankfurter Normen (the Frankfurt plans and standards indicating how every element of a house ought to be designed), the cemetery rules established a strong control over form, size and material of tombs and funerary monuments, so they could be made with industrial methods, lending the cemetery a coherent, contemporary appearance. Further, the city's building administration made an inventory of the stone stock of all tombstone manufacturers in the Frankfurt area, in order to discard all those materials not suitable for the new aesthetics[8]. At the same time, the Building Counselling Department –together with the art classes of Joseph Hartwig and Richard Scheibe at the Städtische Kunstschule- developed different tomb and mausoleum prototypes with simple, abstract forms that would meet mass-production requirements, while endowing the funerary premises with the abstract imprint of modernism. Even a new typography was to be used for all memorial inscriptions, so no detail would escape from the new Frankfurt's objective and efficient flair[9].

But how modern were actually May's cemetery and the new Frankfurt program? A number of graveyards designed in the 1920's show how similar principles were used both for urban planning and cemetery design by architects who did not subscribe to this orthodox version of modernism.

One of the most radical members of the expressionist movement, Bruno Taut, designed in 1922 a cemetery for the city of Magdeburg, where he had been appointed Stadtbaurat (Municipal Building Advisor) the year before[10]. The Südost Bestattungsanlage, as it was called, was made up of grave fields enclosed by dense tree rows outlining the pathways, much in the fashion his terraced housing flanked the streets in his Reform Siedlung in Magdeburg. A group of expressionist

buildings housing the crematorium, mortuary, administration facilities together with a large funeral hall topped the site with a crystal-like glass roof, materialising the city crown ideal Bruno Taut had described in his book *Die Stadtkrone*. In spite of the radically different architectural language of both cemeteries, his own project description might as well portray Mays proposal: "Paths follow the terrain. Dominant height covered densely with trees. Existing quarry –on the funeral hall's axis- transformed into an urn garden- Large funeral hall with glass roof merges with the site. Good views onto the Elbe river plains"[11].

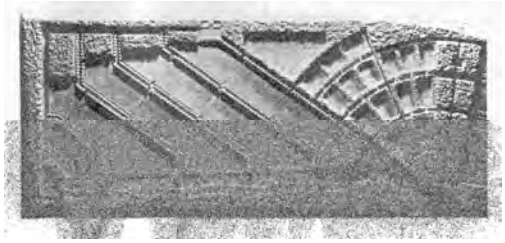
With a similar comprehensive approach to urban and funerary matters, Joze Plecnik planed Ljubljana's northern extension together with the Zale cemetery[12]. Drawing heavily from Howard's garden-city diagram, the northern neighbourhood of the Slovenian capital gravitated along a radial avenue that spanned between two cemeteries. On one end, the Nauje memorial paid tribute to outstanding Slovenes on the grounds of the former cemetery around the church of Saint Christopher. On the other end, the municipal cemetery of Zale should have put an end to this main avenue with the classical gate to the so-called 'garden of all saints'[13]. Both the city and the Zale cemetery had a radial layout, with low density housing among greenery in the urban area becoming mortuary chapels with their own gardens in the sacred realm. Only the classical forms and the hand-made construction methods defer from May's proposal.

A closer approach to the Frankfurt program is that of Willem Marinus Dudok in Hilversum. From his somewhat mediating position between the modernist ideals of *de 8* and *Opbouw* groups and the more conservative attitude of Grandpré Moliere and the Delft School, he too designed the new cemetery as part of an overall project to transform this Dutch town into a *Gesamtkunstwerk*. The Noorderbegraafplaats or northern cemetery is the green core of the plan to extend the city beyond the railway line in the north-eastern section of Hilversum[14]. Like the surrounding residential units, it is designed as a garden-city following a regular grid, thus avoiding the picturesque features of the examples mentioned previously. A rotating pattern imbues both the cemetery and the new neighbourhood with a centred dynamic, much in the trail of the de Stijl works like the Schroeder House by Gerrit Rietveld or the spatial compositions Theo van Doesburg and Cornelis van Eesteren made for the L'Effort Moderne art gallery. In a somewhat iterative procedure, the cemetery asserts its sacred nature by performing as a green core of the neighbourhood which was not to be trespassed. Once inside, the grave fields rotate around a central lawn which insists in this idea of an inviolable center[15]. The white prismatic volumes of the keeper's house and the funerary hall pay tribute to the same modernist trends followed by Ernst May, but Hilversum's cemetery project lacks the mass production intentions of the Frankfurt proposal.

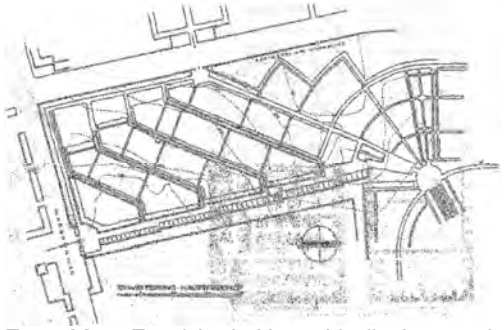
Thus, in the 1920's the garden-city model lay behind a broad spectrum of urban proposals ranging from conservative classicisms like that of Plecnik to radical modernisms like that of May, also including the expressionist approach of Taut and the neoplasticist influence of Dudok. While this consensus lasted in the European debate, urban patterns continued to provide with valuable models for cemetery design. A year after May's cemetery was finished, Frankfurt hosted the 2nd CIAM Congress devoted to the minimal dwelling. Together with the Stock Market Crash

of 1929, it led to a radical simplification of forms and means in Ernst May's design policy, aiming at cost reduction. Further, the rationalist discourse introduced by the CIAM conferences in urbanism erased the space of commemoration from the urban realm. Designed as a machine to live in, the functional city paid no attention to funerary space. It was not until the modern paradigms were revised to introduce all those issues that appeal to man's soul –that is, that part of architecture that belongs to the domain of art, according to Loos- that cemeteries ceased to be regarded as an inconvenient issue within the modern metropolis.

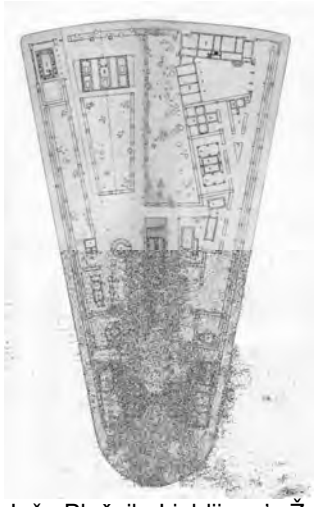
Illustrations



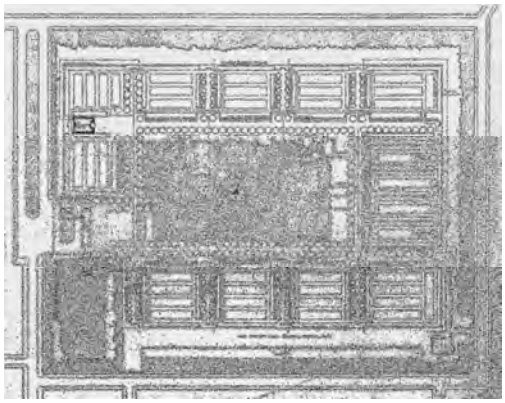
Ernst May: Frankfurt's Hauptfriedhof extension modell
1928, "Die Erweiterung des neuen Hauptfriedhofes" *Das neue Frankfurt* 6



Ernst May: Frankfurt's Hauptfriedhof extension plan
1928, "Die Erweiterung des neuen Hauptfriedhofes" *Das neue Frankfurt* 6



Jože Plečnik: Ljublijana's Žale cemetery plan
Arhitehturni Muzej, Ljublijana (Slovenia)



Willem Marinus Dudok: Hilversum's Noorderbegraafplaats plan
Streekarchief voor het Gooi en de Vechstreek, Hilversum (The Netherlands)

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1 Ernst May worked at Raymond Unwin's office between 1910 and 1912, being involved in the design of the garden-suburbs of Letchworth and Hampstead. Significantly, he asked Unwin to write the article 'Die neue Stadt' (The new city) for the first issue of his magazine *Das neue Frankfurt*.
2 Heike Risse (1984): *Frühe Moderne in Frankfurt am Main 1920-1933*, Societäts Verlag, Frankfurt
3 Bettina Erche (1999): *Der Frankfurter Hauptfriedhof*, Denkmalamt, Frankfurt
4 Ernst May (1928): „Die Erweiterung des neuen Hauptfriedhofes', *Das neue Frankfurt*, nº 6, p. 101
5 Raymond Unwin (1909): *Town Planning in Practice. An Introduction to the Art of Designing Cities and Suburbs*, London; checked in the Spanish translation (1984): *La práctica del urbanismo. Una introducción al arte de proyectar ciudades y barrios*, Editorial Gustavo Gili, Barcelona, p. 118
6 Frankfurt City Minutes, 11.09.1928, p.3
7 Howard's radial scheme can be traced in many urban proposals of the time, such as the Törten Siedlung in Dessau by Walter Gropius or the Prozorovoskaia garden-village near Moscow, by V. Semenov.
8 Adolf Meyer (1928): ‚Die neue Friedhofsordnung', *Das neue Frankfurt*, nº 6, p. 99
9 See (1928) *Das neue Frankfurt*, nº 6, p. 106-107
10 Joachim Kolb (1996): *Bruno Taut als Stadtbaurat in Magdeburg und das farbige Bauen*, Grin Verlag für Akademische Texte, Norederstedt, p.7
11 *Der Neubau*, Berlin 1924, p, 87, quoted in A. Nippa (ed.): *Bruno Taut, Eine Dokumentation, Projekte-Texte-Mitarbeiter* (1995), Stadtplanungsamt, Magdeburg, p. 70
12 A. Hrausky, J. Kozelj, D. Prelovsek (1997): *Plecnik's Ljubljana. An Architectural Guide*, Dessa, Ljubljana, p. 206
13 See D. Prelovsek (1997): *Joze Plecnik 1872-1957*, Yale University Press, New Haven, Connecticut, p. 305
14 See Dudok's report for the city council sent the November 22nd, 1927 kept in Noorderbegraafplaats Correspondence, box I (1925-1932), Streekarchief voor het Gooi en de Vechstreek, Hilversum
15 Herman van Bergeijk (1995): *Willem Marinus Dudok, architect-stedebouwkundige 1884-1974*, V+K Publishing, Naarden, p. 305

CIVIC AND SOCIAL INFRASTRUCTURE
Civic Collection of Buildings in a World of Constant Change

In this group, five works have been presented. These are devoted to the study of civic edifications for public use in five different countries.

Laura Greco, from Universidad de Calabria, presents the appealing case of Italian Autogrills made during the fifties and the sixties. At this time, Italian road system was boosted by public investment resulting in a touristic increase on Italian highways. The fusion among modernity and handicraft, a frequent aspect in solid Italian architectural tradition, is particularly expressed in this group of original structures studied by Greco.

Christine Phillips and Hanna Lewis, from Melourne University, submit an interesting work on public pools as modern civic spaces in Australia. This kind of recreational structures were commonly built in various countries within policies of liberalization and civic wellbeing. This initiative is not shared, as can be seen in some latin cultures, where such constructions were not adopted as instruments serving public policies but were constructed as to serve private interests.

André Augusto de Almeida Alves of Universidad del Estado de Maringá, summarizes state's policy followed during the Paulista hinterland for the development of educational structures. These were achieved by the most outstanding masters of Brasilian modernity under a series of schemes regardless of which individual virtuosity of each case is shown.

In contrast with the last, Ana Vaz Milherio, of Instituto Universitario de Lisboa, draws the process of establishment of the same architecture fore education as a result of norms implanted by Portuguese Colonial Planning Office in African colonies. This process is of important account considering the study of metropolitan presence in overseas colonies. Similar analysis must be soon undertaken with other colonial systems, such as Dutch, French or English in dominated territories. The Caribbean case is still a blank page.

Grazyna Hryncewicz-Lamber, of Wroclaw University of Technology, focuses on the case of three Polish schools which have been subjects of studies for their adaptation to new security and operative standards, unavoidable aspect in the future of these structures.

This group of works present a coherent perspective in the typological aspects of the cases as well as in the similar fate that these distinguished examples have suffered in their short history as architectural pieces that represent each one of the cultures united in this table. If true that the educational character of the Brazilian, Portuguese and Polish cases answer to three different approaches proper to institutional and public structures that give them origin, they are not far from the situation of Australian pools in their occasion of being public structures harassed by the change of their appliance and the difficulties

in their adaptation to new technological standards. Italian roadsides have a more ubiquitous character due to their strong presence in Italian landscape and their memorable image in autrostrade open land.

The fact is that these buildings, samples of different architectural policies produced in and for the most new and modern societies of their time, evidence today their remoteness from the complex collective values of today.

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STATE PLANNING, MODERN ARCHITECTURE, SOCIETY AND THE CONSTRUCTION OF PAULISTA HINTERLAND INFRASTRUCTURE: THE PRODUCTION OF PUBLIC SCHOOL BUILDINGS BY IPESP AND THE DEBATE ON PROJECTS OF MODERN BRAZIL, 1956 – 1962

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The period between the end of World War II and the 1960s is the best known chapter of modern Brazilian architecture. Events such as the inauguration of the Ministry of Education and Public Health (1936-1945) in Rio de Janeiro, designed by Brazilian modern architects consulting with Le Corbusier, the Brazil Builds exhibition held at MoMA (1942), and publications such as the catalog of that exhibition and the book *Modern Architecture in Brazil* (1956) prefaced by Giedion, spread Brazilian architectural production abroad. The inauguration of Brasília (1960) which was attended by leading critics of international architecture, is the apex of this process.

Simultaneously with the construction of Brasilia, "synthesis-target" of President Juscelino Kubitschek's Targets Plan (1956-1961), Governor of São Paulo State Carvalho Pinto's Action Plan (1959-1963) uses IPESP (Institute of Social Security of São Paulo State) to promote the production of around 350 modern buildings for various public uses throughout the Paulista hinterland.

This paper aims to deepen the understanding of its production, exploring aspects of these initiatives of state planning and modern architecture.

State and modern Brazilian architecture

The process of Brazilian modernization reaches a turning point in the Revolution of 1930. The Great Depression (1929) shows that the policies based on the "law of comparative advantage" that gave the nation the role of exporter of primary products and importer of manufactured goods, are not viable. From this time the state intervenes in the economy, aiming at industrialization. The agricultural sector, whose political and economic influence lasts for a long time, is not abandoned. In fact, Brazilian modernization is marked by the conciliation and compromise between the agricultural sector and the urban-industrial bourgeoisie. This framework, together with the central role of the Keynesian model after World War II and specifically in the CEPAL (Economic Commission for Latin America and the Caribbean), results in the "national-developmentist project". This implies the convergence of classes and State action in favor of industrialization to overcome underdevelopment. In the cultural field, such a project culminates in a feeling of self-esteem and optimism that suggests the image of the construction of a civilization of the tropics.

At a time when intellectuals introduce a more comprehensive analysis of the national reality and think the modern Brazil, Lucio Costa launches in "Reasons for the new architecture" (1936) the explanatory matrix that searches the roots of a Brazilian modern architectural expression in the local colonial architecture. Throughout the 1950s Lucio Costa publishes "The architect and society" (1952) as well as other texts that bet on industrial bourgeoisie as promoter of development, and inclusion of the masses as an inexorable process.

Thus the connection between State and modern Brazilian architecture is established. The resulting historiography of this pioneering theory defines the stages of heroism, affirmation and recognition of modern Brazilian architecture, marked respectively by the Ministry of Education and Public Health (1936-1945), the Pampulha (1942-1944) and Brasilia (1960) projects.

State planning, modern architecture and society: Targets Plan and Action Plan

The framework of Brazilian modernization is however fraught with conflicts and contradictions. Benevides (1981) sees in JK period an "unstable equilibrium" that briefly replaced the "chronic instability" of national life since the Revolution of 1930. Benevides also states that JK "was a great politician in the mold of what has come to be called 'conservative modernization'", ie, a modernization that combines transformation and no essential change. While the national-developmentist project preached the inclusion of the masses and income distribution, inflation decreased workers' income. Furthermore, the Targets Plan prioritized investments in energy, transport and basic industries, ignoring health and education, science and technology, housing, land policies. The completion and coordination of inarticulate industries and markets is a widely recognized legacy of the JK period.

Carvalho Pinto and its Action Plan shows another side of this scenario. Carvalho Pinto was originally from PDC (Christian Democrats) and had relationships with politicians inspired by the programs of development with social justice of the Catholic Church. Plinio de Arruda Sampaio, who coordinated the Action Plan, had held leadership role in the JUC (Catholic University Youth), as well as several young architects who participated in its conception. These architects, in turn, worked in SAGMACS (Society of Graphical and Mechanographical Analysis Applied to the Social Complexes), a planning center created in Sao Paulo in the turning of the 1950s by the Dominican Father Louis-Joseph Lebret, founder of the *Économie et Humanisme*. The Action Plan reconciles "investments to promote development" and "investments to improve the conditions of Man," targeting "an integral and harmonious conception of economic and social development".

In addition to participating in the planning team, Paulista architects worked in its implementation. The Department of Sao Paulo of the Institute of Architects of Brazil pleaded for the creation of the architect's career within the state public service, and discussed the conditions through which IPESP was contracting architectural designs in the private sector. This lead to divergent positions among its members. On the one hand, members of the planning team as Francisco Whitaker Ferreira advocated the strengthening of state planning agencies, on the other hand, private architects as the also leftist Vilanova Artigas even bet on the

failure of these same agencies. In fact, Artigas saw in IPESP building activity the opportunity to convey the contribution of (a specific) modern Brazilian architecture for the nation and acted to make it true. A compromise solution is finally adopted, despite the large asymmetry between the conquest of space by the private architects and the emptiness of a speech in favor of state planning agencies (Alves, 2008a).

Modern architectures and the production of IPESP

The explanatory matrix of Lucio Costa, focused on the role of the State as promoter of modernization, gives prominence to the architecture produced in Rio de Janeiro, the capital until 1960. Before that date, in Sao Paulo, modern architecture would have been spread through the private sector in a process supposedly subsidiary, even marginal to that of Rio de Janeiro.

After 1960 the framework of economic and institutional crisis results in the collapse of this social model, marked by the military coup of 1964. In this scenario, a specific type of Brutalism -conceived by Artigas- gives prominent role to the architecture of São Paulo. Artigas was a member of the PCB (Brazilian Communist Party) and sought an alternative to socialist realism defended by the party's political program. At the same time, he sought an architecture that represented the developing nation, in terms of its productive infrastructure and its ideological superstructure (Buzzar, 1997).

The production of IPESP plays a central role in Artigas' approach to the hegemonic project. Even in a period of radicalization and escalation of State terror practiced by the military regime, Artigas reiterated this modernizing project publishing "On schools" (1970), where this production is considered the culmination of a research on spaces for education, "all conditioned on a national development project".

In his first project, the Gymnasium of Itanhaém (1959), Artigas launched an innovative school project that eliminated the barriers between indoors and urban space, based on single, wide ribbed reinforced concrete slabs often drilled envisaging zenithal lighting, where the integral formation of the child and the collective dimension of social existence and production of knowledge are always emphasized (Alves, 2008b). Remarkable is the inclusion of art panels by Francisco Brennand in the Gymnasium of Itanhaém and by Mario Gruber at the Gymnasium of Guarulhos (1960), this one also designed by Artigas.

Several architects graduated at the first two Paulista schools of architecture from 1951 on gather round Artigas. Paulo Mendes da Rocha is one of them, and describes how it forms a "real information exchange working group", noting that the resulting buildings, "their importance in these municipalities as presence of modernity, conveys with the school information that matters a lot to the development of our country".

Some of these architects are among the first contracted by IPESP, and designed rather conventional buildings in their debuts. Others, like João Walter Toscano, Abrahão Sanovicz and Julio Katinsky, explored the relationship between modernity and tradition typical of Brazilian architecture. They combine V

coverings as that of Niemeyer´s Pampulha Yacht Club with muxarabis, colonial shutters and roofs.

The Gymnasium of Itanhaém reverberates in these architects, who spread Artigas' innovative school project in the most remote locations, imprinting in each case their personal contribution. Rocha cites the early Gymnasium of Eldorado Paulista (1959), designed by the young architect Pedro Paulo Saraiva and built with prefabricated prestressed concrete, just as the latter Gymnasium of Utinga, designed by Artigas (1962)[1]. Luis Forte Neto and Jose Maria Gandolfi exploit the spatially rich differences of levels under the prismatic volumes of Artigas, experiencing concrete vaults; Sanovicz gets inspiration on the multifaceted pillars and the different textures of exposed concrete in the FAU building (1962) designed by Artigas. Rocha takes the possibilities of reinforced concrete to the limit, with respect to the audacity of its structures and its almost exclusive use as a construction material.

The success of Artigas' conceptions can be measured in the fact that the gymnasiums of Itanhaém and Guarulhos will be defined as models of Paulista school building architecture. This occurs even in recent works whose extensive surveys show a range of proposals that is obscured by the hegemonic project.
This is visible in the attitude of historians facing the CECE (Executive Board of the School Convention), led by architect Hélio Duarte, who worked in São Paulo state capital in the early 1950s. Artigas' school architecture is defined as the antithesis of the functional architecture of CECE, which houses the different school activities in proper individualized volumes and spaces. Authors such as Silva (2006) opposes Artigas' schools, which should "form a man who would be a major vector of social change", to Duarte's schools, defined just as "an elementary equipment for the operation of urban-industrial society", dismissing the idea of the architect and educators as Anísio Teixeira, towards a school which should unite communities (Alves, 2008a). The CECE uses SAGMACS' survey data and methodologies in its work.

Together with Artigas among the first architects contracted by IPESP, was a group of very active professionals, who were attentive to the American postwar scene. Salvador Candia and Miguel Forte crossed the U.S. from California to New York by car, visiting Taliesin West, in the late 1940s. Along with Plinio Croce and Roberto Aflalo, Jacob Ruchti, and young architects Carlos Millan and Galiano Ciampaglia, Candia founds in 1952 the modern furniture shop Branco & Preto.
The school building designs by Millan and Ciampaglia included details in brick and wood conceived in a modern way. While emphasizing the skills of local workers, they avoid the pitfalls arising from the difficulty of obtaining industrialized building materials in distant locations.. Their designs, as many others made for IPESP, are organized in two pavilions, as proposed by Neutra in *Architecture of Social Concern in regions of mild climate* (1948), which had wide circulation in Brazil. The classrooms of one of them, such as those designed by Eduardo Kneese de Mello and Joaquim Guedes, had doors opening for gardens destined for outdoor activities.

Candia uses the same materials and construction techniques, but approaching the architecture of traditional Paulista coffee plantations. This romantic attitude is abandoned when Candia designs one of the largest buildings of IPESP, dedicated

to the training of teachers in the pioneer area of Marília. This change is also noticeable in designs by Croce and Aflalo, who did more work for IPESP than their colleagues. It is also clear in the production of Oswaldo Bratke, that Camargo (2000) connects to the pragmatic philosophy of John Dewey, who was Anísio Teixeira's supervisor in New York. The only school designed by Bratke is characterized by the simple use of brick and wood structures mentioned above, although it has considerable size and is located in Campinas, the second largest city in São Paulo state. His designs for the core of the University City and for the Forum of Amparo are characterized by a greater monumentality and the use of more sophisticated materials. Yet the School of Mining and Metallurgy of USP and especially the Uberlandia station of the Mogiana Railways Company refer, in turn, to a more industrial architecture.

Finally, the young architect Joaquim Guedes has a significant role in this production. Guedes was a SAGMACS' trainee when he was a student, worked in IPESP as inspector and was the member of IAB/SP who drafted the minutes of the meeting that authorized the architects' institute to negotiate with IPESP conditions of employment of the architects of the private sector. Guedes maintained a partnership with Milan in the second half of the 1950s, and both were related to the Paulista Dominican friars. He also was among the first architects contracted by IPESP, working out with João Caetano de Mello Filho and Helio Penteado a distinctly organic design to an elementary school in the rural area of Itapira. Guedes was the greatest polemicist of his generation. His criticisms were often not understood, especially when people qualified him as an outsider in the (hegemonic) modern Brazilian architecture. On the contrary, Guedes early establishes a connection between the nascent Paulista brutalism and Aalto's organic architecture in the designs for the Forum of Itapira (1960) and two other school buildings, all of them for IPESP, which he will develop throughout his practice, as an alternative to Brazilian modern project[2].

Illustrations

Fig. 1: V. Artigas, Gimnasium of Itanhaém (1959), Itanhaém. Photo: J. Moscardi (1960)

Fig. 2: L. Forte Neto, Gimnasium of Vila Arens (1961), Jundiai. Photo: A. Alves (2006)

Fig. 3: S. Candia, Institute of Education Monsignor Bicudo (1961), Marília. Photo: A. Alves (2006)

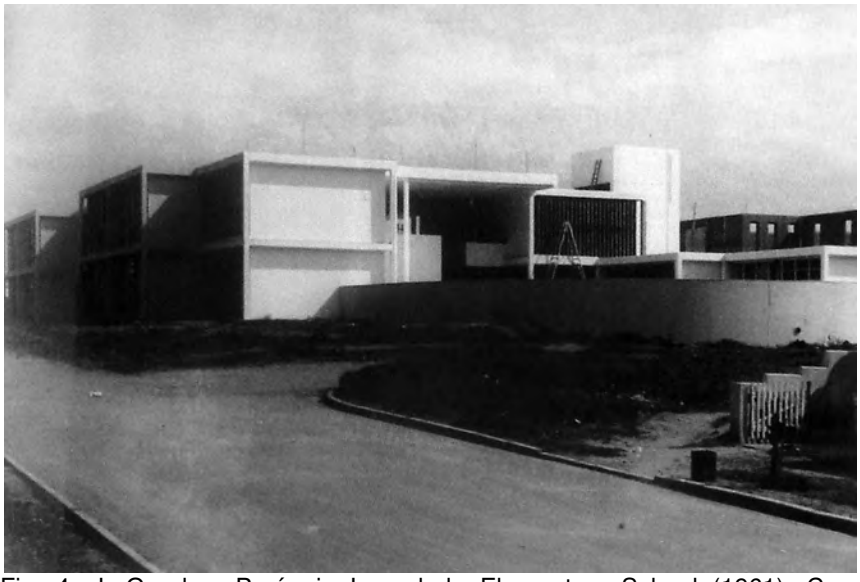

Fig. 4: J. Guedes, Paróquia Imaculada Elementary School (1961), Campinas. Photo: IPESP Archive

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Notes

[1] This building was built with exposed reinforced concrete structure.

[2] This research is supported by CNPq - National Council for Scientific and Technological Development.

EDUCATION BUILDINGS IN THE TROPICS: THE WORK OF THE COLONIAL PLANNING OFFICE IN THE FORMER PORTUGUESE AFRICA

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The Estado Novo (the "New State" authoritarian regime) was definitively cemented with the Portuguese Constitution of 1933, following the appointment of António Oliveira Salazar (1889-1970) as President of the Council of Ministers the year before. Throughout the regime's existence, up until the democratic revolution of April 1974, significant changes were to be made in the education system. In particular, the reforms of 1938 and 1958 resulted in the construction of new vocational and grammar school buildings. These plans chronologically coincide with investment programmes for new schools in the Portuguese colonies, which at the time included parts of Africa, India, East Timor and Macau. The aim was to establish an educational network outside Portugal and create the conditions considered indispensable for the creation of local elites. As schools were seen as centres for the dissemination of Portuguese culture, the stylistic configuration of these buildings took on a symbolic and representative role communicated initially by means of a nationalistic design language during the 1930s that progressively evolved in the direction of more modernist ideals in the 1960s.

As it was considered fundamental for the building of a regime ideology, education in Portugal was reformed in 1936 so as to "favour moral education in the service of the Family and the State" (MONIZ, 2007: 138). That same year, the Mocidade Portuguesa (Portuguese Youth) movement was formed, which was to play an important role in Portuguese schools, benefiting from operational autonomy and its own facilities. These reforms were preceded by the creation of the Junta das Construções para o Ensino Técnico e Secundário (Technical and Secondary Education Building Board, JCETS) in 1934, an official body based in Lisbon and specifically devoted to school construction in Portugal. Addressing the lack of school facilities in Portugal, this office remained active until 1969 under the responsibility of the Ministry of Public Works (MARQUES, 2003: 66-69). In 1938 JCETS launched its first work programme that included new constructions as well as the modernisation of existing buildings. Most of the thirteen grammar schools built in Portugal between 1938 and 1958 were designed by a small group of architects who integrated its team of specialists. [1]

An architectural template was established representing the monumental and historicist aesthetics of the Estado Novo. As a result, these grammar schools were characterised by stylistic unity and led to an initial phase of replication in similar facilities built in the colonies.

José Costa Silva, one of the team's most influential architects, was commissioned to design the new Salvador Correia Grammar School[2] for 560 pupils in Luanda, Angola. He began working on it in 1936, after an initial design developed by Sá Menezes in the Angolan capital had been turned down. The earlier design featured a group of pavilions, a solution that had no tradition in the Portugal itself, where the single building model of the first grammar schools in the 19th century still prevailed. It was also based on an Art deco style that was popular in the Portuguese colonies before World War II.

This was the first time JCETS had to design a project for the tropics. It followed functional organisation principles identical to those for grammar school buildings in Portugal, featuring an axis-based composition and closed patios. The symbolic evocation of the "Motherland" was justified by the State's recognition of the exceptional importance of the school facility as an "intellectual centre for the whole colony" (JCETS, undated: 2). A figurative orientation inspired by regional Portuguese architecture was stamped on the façades of the building, also justified by the climactic conditions.[3] The pioneering aspect was that it predated design projects in Portugal itself in proposing a nationalistic idiom.

In his second school in the colonies, the Salazar National Grammar School[4] in Lourenço Marques (now Maputo, Mozambique, 1939-1944), Costa Silva revealed a greater understanding of designing for tropical climates, taking more modern solutions into consideration, like opting for concrete and flat roofs "with the aesthetic effect of the construction in mind […] where one exhibits modern-day technology […] in all its exuberance" (SILVA, [1944]: 20). By apparently neutralising the "regionalist" stamp of the Angolan design, he paradoxically illustrated the stylistic flexibility amongst this generation of architects working for the Estado Novo. The building was organised on the basis of a central symmetrical axis, from which patios and distribution galleries opened. This became a frequent feature of similar projects.

The regulating principles for buildings in the colonies gradually gained in independence in relation to the programmes in Portugal. This situation was clarified by the creation of the Gabinete de Urbanização Colonial (Colonial Planning Office, GUC)[5] in 1944, which reported to the Ministry of the Colonies (MILHEIRO; DIAS, 2009: 82). The GUC was based in Lisbon and worked exclusively for the colonies, being responsible for public building projects and having the objective of "studying and monitoring the development of the urban settlements in the colonies" (Diário do Govêrno [legal gazette], 1944: 1167).
This was part of the "progressive" policy implemented by the Salazar government after World War II in its attempts to pre-empt possible independence movements and anticipated international criticism of the living conditions in the Portuguese colonies.

The grammar and vocational school design work carried out by the GUC, which changed its name to Gabinete de Urbanização do Ultramar (Overseas Planning Office, GUU) following a legislative amendment in 1951, was intensified in the late 1950s. This development coincided with an expansion in public education in the colonies in response to repeated demands from the local communities for

an “educational network where the children born here could enrol” (Notícias da Huíla, 07/03/1941: 1), just like in Portugal.
The GUU consolidated a rational approach to execution of the projects. In 1956 the *Standards for Grammar and Vocational School buildings in the Overseas Provinces*[6] were published. They covered grammar schools and the diverse forms of vocational education, including elementary technical schools (preparatory schools), industrial schools, schools of commerce (where housekeeping courses were also taught) and industrial and commercial schools (the latter three belonging to preparatory education).[7]

The aim of the document was to establish “basic programmes” based on the JCETS experiences. Programmes submitted by the General Governments of Angola and Mozambique were also considered. One should highlight the fact that the Standards “omitted all aesthetic provisions”, a fundamental aspect in assessing the level of official interference in the stylistic matters. The “importance of the buildings in question and their natural contribution to the aspect of the urban nuclei they serve” (Normas, 1956: 3) was emphasised, highlighting the role they played in terms of colonial town planning.

The Standards also reflected the population growth in the colonies, particularly in Angola and Mozambique, as a result of the migration incentivation policies of the 1940s. Consequently, the architectural plans came with mechanisms that allowed for extensions or facilitated the introduction of a wider range of courses. Nevertheless, pupil capacity was limited to 1,000 for all schools.

Technological principles dominated the Standards, reflecting a progressivist outlook and favouring a spatial organisation resulting from the diverse teaching programme elements that were isolated in nuclei. The main concerns in the tropics were sun exposure and transversal ventilation. The construction provisions favoured a module-based system “allowing one to take economic advantage of repetition” (Standards, 1956: 46) of certain elements and the use of reinforced concrete structures. The building materials were standardised.

Only a small group of the GUU architects were responsible for the designs. From the younger generation trained after 1949 were Eurico Pinto Lopes, who graduated that same year from the Escola de Belas Artes in Porto, Luís Possolo and Schiappa de Campos, who graduated from the Lisbon equivalent in 1953 and 1954 respectively. The latter two had the advantage of a having taken a course in *Tropical Architecture in Dry and Humid Zones* at the Architectural Association in London, where experts such as Maxwell Fry and Jane Drew and the German specialist Otto Koenigsberger taught. João Aguiar and Lucínio Cruz, who monitored the work of the younger colleagues, were already influential figures responsible for the monumental language identical to that used in public buildings in Portugal. When they were not part of the design team, they acted as members of the Revision Committees set up to analyse the quality of the internally produced school designs.

It was the façades of the GUU schools that best transmitted an official “idiomatic narrative”. In the Dona Guiomar de Lencastre Girl’s Grammar School in Luanda,[8] the monumentalisation of the main entrance took the form of a portico

spanning three floors of galleries. The design brief, however, focuses on technological aspects, reflecting a modern culture. Such arguments are repeated in the sixteen projects analysed between 1956 and 1960, which represent the school building output of the office.[9] The rational design plan was also based on a double-patio configuration. This was later to be replaced by dynamic structures in a H layout connected by galleries. This design was reproduced in Benguela, documenting the dissemination of standard building types in the diverse provinces.

Other examples, such as the elementary technical schools for the Mozambican towns of Nampula and Inhambane, reflected efforts to establish programmatic typologies and replicated the perfected designs for a similar school in Silva Porto, Angola shortly before. Designed for 360-pupil capacity, it reflected a strategic territorial occupation plan based on future "possibilities of […] population growth", given its regional location (CAMPOS; CRUZ, 1956: 2).

These schools were designed without a preordained site using a modular structure in which the distribution followed a predefined plan. The various school functions (administration, management, teaching, recreation) were organised in blocks of up to three floors linked by circulation galleries. If they were co-education schools, the genders were separated. Recreation was an important element, given the climate. In smaller-sized schools the ground floor galleries served as indoor leisure areas, while "for outdoor recreation the whole area of the plot [was] reserved for the school, which should have appropriate tree coverage" (CAMPOS; CRUZ, 1956: 10). In the preliminary design for the Malange Technical School in Angola the plans proposed that "the vegetation not only [serve] as a study element but also to render the environment more agreeable" ([CAMPOS], 1955: 6). In some cases, open, free-standing roofed structures were proposed. Outdoor sports fields for physical education were also included. Depending on the importance of each school, the building of gymnasiums that could also serve as festivity halls was considered. The tiled roofs were adapted to the high levels of rainfall.

The design team was completed by the remaining engineering specialists, given that the designs were sent from Lisbon with all information required for execution, with the exception, in most cases, of information on the foundations. However, regional differences were accounted for as far as construction techniques were concerned. In the 800 pupil Gil Eanes Grammar School in Mindelo, Cape Verde, reinforced concrete was discarded in favour of the traditional stone masonry techniques of the islands as the "local labour [was] used to such building processes, [having] little training […] in executing structural formwork and reinforcements" (CRUZ; ESCUDEIRO, 1960: 3). However, while this solution would influence the "architectural expression, […] one [would] seek […] to give a modern stamp" to the building (LOPES, 1960: 5). Errors were corrected as work projects progressed. In Macau, the intervention on the Infante Dom Henrique Grammar School, was an "opportunity to revise the elevations" and maximise environmental performance through the introduction of "solar protection elements" not initially included in the plans (AGUIAR, 1956: 2).

The production of various designs by the GUU for one school was a rare occurrence, but this was the case for the School of Commerce in Lobito, Angola. Between 1958 and 1960 two different functional and aesthetic solutions were put forward for the same building on the same site. One subtle difference was the replacement of the traditional elevation designations in the first design by Schiappa and Lucínio Cruz (front, back, right side and left side) by an "updated" non-hierarchised terminology in the Possolo design (North, South, East and West). In terms of the plan itself, the static order was replaced by a more dynamic "constructivist" arrangement of the horizontal bodies. In the elevations, the monumental rhetoric gave way to expressive abstraction that reflected the construction logic of concrete: a stylistic turning point, albeit a timid one.

The colonial wars (1961-1974, Angola; 1963-1974, Guiné; and 1964-1974, Mozambique) led to a reduction in the GUU's output. The requests for new projects had by then moved to the local Ministry of Public Works offices. Lisbon reverted to a strategic plan, progressively abandoning its execution. A new surge in work by architects based in the colonies definitively opened school buildings to the modernist idiom, a development that also heralded the birth of new nations.

Illustrations

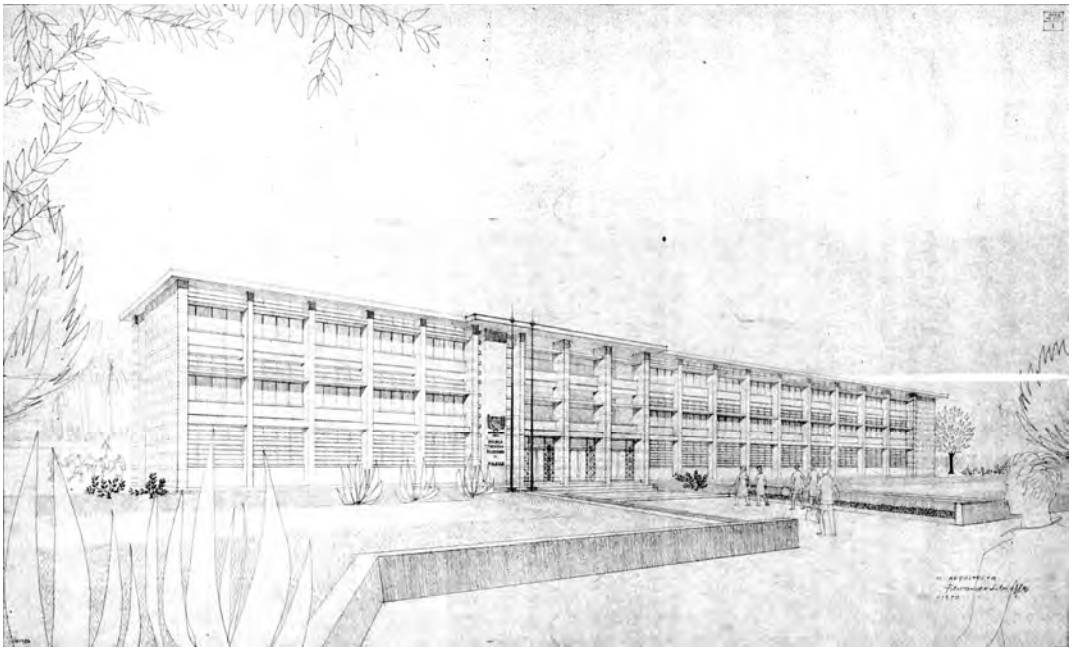

Table 1. Grammar and Vocational Schools Designed by Central Offices in Lisbon for the Portuguese Colonies, 1936-1960

School	Office	Project ID	Town/city	Year	Arch. Design	Level of education	Capacity (no. pupils)	Built/ unbuilt	Sex (male/female)
Schools in Angola									
Salvador Correia Grammar			Luanda	1934	Sá Menezes	Grammar		Unbuilt	
Salvador Correia National Grammar/Luanda Grammar	JCETS		Luanda	1936/45	José Costa Silva	Grammar	560	Built	m+f/m
Diogo Cão National Grammar			Sá da Bandeira	1939		Grammar		Built	
Diogo Cão National Grammar extension	GUC	Work 144	Sá da Bandeira	1949	João Aguiar/Eurico Pinto Lopes	Grammar	550	Built	
Artur de Paiva Arts and Crafts School			Sá da Bandeira	1944	Vasco Pereira de Lacerda Marques	Arts and Crafts		Built	
Dona Guiomar de Lencastre Girls Grammar	GUU	Work 455	Luanda	1954/56	Lucínio Cruz/Eurico Pinto Lopes	Grammar	720	Built	f
Preliminary design Malange Elementary Technical School	GUU	Work 478	Malange	1955	Fernando Schiappa de Campos	Elementary Technical	360		m+f
Nova Lisboa Grammar		Work 546	Nova Lisboa	1957	Fernando Schiappa de Campos	Grammar	720		m+f
Lobito School of Commerce	GUU	Work 482	Lobito	1958	Fernando Schiappa/Lucínio Cruz	Commerce	500	Unbuilt	m+f
Lobito School of Commerce	DGOPC-DSUH	Work 482 A	Lobito	1960	Luis Possolo	Commerce	500	Built	m+f
Silva Porto Elementary Technical School	GUU	Work 487	Silva Porto	1956	Fernando Schiappa/Lucínio Cruz	Elementary Technical	360		
Schools in Mozambique									
Salazar National Grammar	JCETS		Maputo	1939/44	José Costa Silva	Grammar	880/910	Built	m+f
Sá da Bandeira Technical School		Proc. 53122	Maputo	1941		Technical		Built?	m+f
Nampula Elementary Technical School	GUU	Work 504	Nampula	1956	Fernando Schiappa/Lucínio Cruz	Elementary Technical	360		
Inhambane Elementary Technical School	GUU	Work 505	Inhambane	1956	Fernando Schiappa/Lucínio Cruz		360		
António Enes Grammar	GUU	Work 509	Maputo	1956	Lucínio Cruz/Eurico Pinto Lopes	Grammar	640	Built	m+f
Freire de Andrade Industrial and Commercial School	GUU	Work 510	Beira	1956	E. P. Lopes/Fernando Schiappa/Lucínio Cruz	Industrial/ Commercial	1000		m+f
Quelimane Industrial and Commercial School	DGOPC-DSUH	Work 488	Quelimane	1958	Fernando Schiappa de Campos	Industrial/ Commercial	516		
Pedro Ariaia Grammar	GUU	Work 511	Beira	1956	Lucínio Cruz/Eurico Pinto Lopes	Grammar	720	Built	m+f
Schools in Guinea									
Preliminary design Guinea Grammar	DGOPC-DSUH	Work 602	Bissau	1959	Eurico Pinto Lopes	Grammar	648	Built	m+f
Schools in Cape Verde									
Gil Eanes Grammar	DGOPC-DSUH	Work 612	Mindelo	1960	Eurico Pinto Lopes	Grammar	800	Built	m+f
Schools in Macau									
Infante Dom Henrique Grammar	GUU	Work 535	Macau	1956	João Aguiar (interim director)	Grammar		Demolished	m+f

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Notes

[1] José Costa Silva, José Sobral Blanco, António José Pedroso and Francisco Assis.
[2] The future Agostinho Neto University.
[3] Window and door spans inspired in traditional Alentejan architecture: "lattice work in ceramics or sculpted in cement" (JCETS, undated: 5). The heavy rainfall resulted in steeply inclined roofs.
[4] Now the Josina Machel Secondary School.
[5] Portuguese names: Gabinete de Urbanização Colonial (GUC, 1944-1951); Gabinete de Urbanização do Ultramar (GUU, 1951-1957). The reform of 1957 created the Planning and Housing Services Directorate (DSUH) which reported to the Directorate General for Public Works and Communications (DGOPC). The office was closed in 1974.
[6] In Portuguese: Normas para as instalações dos Liceus e Escolas do Ensino Profissional nas Províncias Ultramarinas
[7] The document was signed by João António Aguiar, director of the GUU, the civil engineer Eurico Gonçalves Machado for the MOP and Fernando Schiappa de Campos, a member of the architectural team.
[8] Now the Njinga Mbande Secondary School
[9] See Table I. The total number of projects attributed to the GUU is as yet uncertain. Research on the office's exact total output is currently in progress.

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THE AUTOGRILLS. A MODERN HABITAT ON ITALIAN POST-WAR MOTORWAY SYSTEM

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The Autogrills appeared in Italy during the 1950s and 1960s, with the development of the national motorway system. These buildings – originally created as confectionery shops and then transformed into restaurants – have soon become known with the neologism coined by Mario Pavesi, the owner of one of the largest restaurant chains in the country.
The circumstances under which the Autogrills developed are peculiar to the Italian context and strongly influenced their architectural and construction features. In Italy, the modern motorway system was developed in the post-World War II period. The Autostrada del Sole, built from 1955 to 1964, is the major route crossing the country from north to south (from Milan to Naples) intersecting the main transversal roads. The project of Autostrada del Sole represented a considerable driving event for technological innovation and economic boost in a country that, in those years, was still characterized by an underdeveloped socioeconomic, as well as technical and productive structure.

The history of Autogrills is linked to the development of this motorway. The major companies of the confectionery industry (Alemagna, Motta, Pavesi) invested in the organized catering sector promoting motorway advertising strategies and new styles of life and consumption linked to the creation of the motorway. This socioeconomic transformation was prompted by far-sighted entrepreneurs such as Mario Pavesi, who attributed a key role to the new architectural patterns created by designers such as Angelo Bianchetti, Melchiorre Bega, and Pier Luigi Nervi. Autogrills rose around the most industrially and economically developed urban areas of central and northern Italy and soon became one of the most modern places where the new market of industrial and cosmopolitan products could be fed. The originality of architectural solutions and the surprising technological modernity of these buildings enhance this habitat.

At the same time, the development of new architectural solutions takes inspiration from international examples, mainly from the U.S.A., such as the U.S. food chain Howard Johnson. Some similarities between the American and the Italian models emerge. In both cases, the strong advertising character of the buildings is evident and, from the architectural point of view, the bridge building solution is adopted. However, the differences between the two models are decisive to outline the features of the Italian model. The large-scale bridge building responds to different designing needs in the two models. In the USA, the architectural dimension is directly related to the large scale of the infrastructure and the territories crossed by the motorways. In the Italian case, the figurative architectural impressiveness of the bridge building stood out as an icon of modernity in stark contrast to the surrounding rural landscape. A second aspect makes the two models different. The adoption of modern techniques is a decisive hallmark for the development of the Italian identity in motorway architecture. It is worth highlighting that Angelo Bianchetti and Melchiorre Bega, respectively the designers of Pavesi and Motta food chains, belong to the cultural background of 1930s Milan, characterized by the

Triennale and the Fiera Campionaria, where modern architecture principles and techniques were experimented and promoted, although in an exhibition and advertising environment. Such cultural background is fundamental for the development of Autogrills in the post-war period. On the contrary, in the U.S.A., the familiarity with modern technologies was not a hindrance to widespread use of traditional materials and techniques coherent with a conventional architecture that was the expression of the values of the U.S. middle class[1]. The architectural solution of Howard Johnson's restaurants, pivoting on a few key elements (orange roof and white tower) and on the overall colonial aspect of the building, is indicative of the American orientation. Bridge-building restaurants, proposed by the Oasis chain at the beginning of the 1960s, are an innovative experience in the U.S. architectural design theme. Therefore, in the American context the two expressions – the colonial architecture of Howard Johnson's restaurants and the modern one of the Oasis buildings – coexist establishing a variety of representations of the catering building, fairly far from the emphasis placed on modern style characterizing Italian Autogrills.

Three major brands share the motorway catering market in Italy: Alemagna, Motta and Pavesi. The latter two brands left a mark in the architectural and building evolution of motorway restaurants. Autogrills, formerly located on motorway sides as totem-buildings, are subsequently re-designed as bridge-building stretching over the roadways servicing two opposite areas. The first series of buildings was characterized by a small-size rectangular or circular pavilion over which large advertising billboards were mounted[2]. The Pavesi Autogrills in Novara (1949), Lainate and Ronco Scrivia (1958), and Varazze (1959), all designed by the Milanese architect Angelo Bianchetti, belong to this typology.
In 1959, in Fiorenzuola D'Arda, the first bridge-Autogrill in Europe was built. The project was designed by Angelo Bianchetti and commissioned by Mario Pavesi. Bianchetti and Pavesi during a trip to the U.S.A. remained fascinated by the restaurants of the Oasis chain[3]. Bridge-restaurants built in the U.S.A. are seven. The first of them was developed in 1957, in Oklahoma, along the Will Rogers Turnpike, then other six in 1959 along the Northern Illinois and, finally, the Abraham Lincoln Oasis Restaurant in 1967.
In Italy, after the bridge-Autogrill in Fiorenzuola, other bridge-buildings, almost all belonging to the Pavesi chain, were built over a period of twelve years. They are located around Rome, Milan and Bologna and along the most traveled routes of industrialized northern Italy: in Novara and Sebino (1962), Frascati (1963), Montepulciano (1967), and the two Mottagrill in Cantagallo (1960) and Limena (1967), both designed by architect Melchiorre Bega, of Bolognese origin but moved to Milan.

The sizes of these new Autogrills had a considerable impact on their building features. The bridge-restaurants became a catering machine providing services to a large number of customers with constant and homogeneous supply of products over the area. As a consequence, the control of the functions of the building, a clear layout and the adoption of ad-hoc spatial and building solutions became a priority in the design of such habitat in order to rapidly manage large users flows with low maintenance costs. Their basic functional layout includes public spaces and servicing areas. The building consists of two side blocks and a bridge section hosting the catering facilities and two basements. Space arrangement is one of the key elements of the building design. On the one side, customers flows must be managed so as not to interfere with restaurant activities, on the other side, customers following pre-established paths throughout the entire building are encouraged to buy the products on display.
The bridge theme is a new engineering element encouraging smart building solutions focused on the architectural enhancement of modern techniques. Steel construction used for floors and the curtain walls overlooking the motorway are present in three major works:

the Pavesi Autogrills in Fiorenzuola d'Arda and Montepulciano by Angelo Bianchetti and the Mottagrill in Cantagallo by Melchiorre Bega[4]. Such architectural solution is adopted in a period in which the expressive value and the construction potential of curtain walls began to be extensively experimented in Italy. This experimental research starts in a mainly traditional technical and productive context where modern steel solutions were rarely adopted and in few architectural examples.

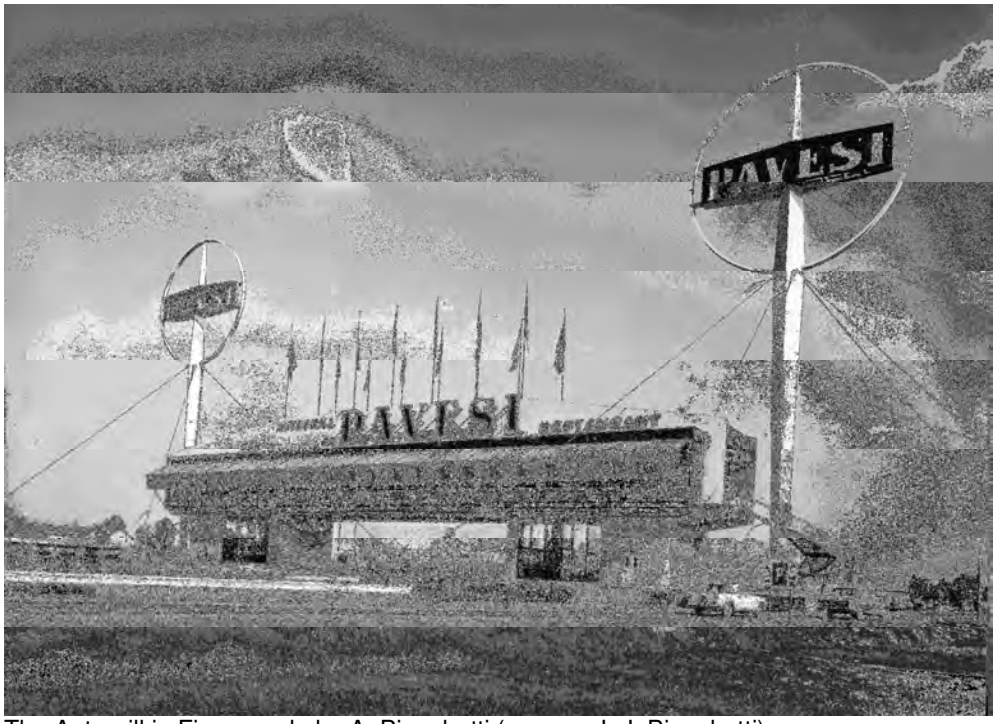
The comparison with the American model is important also in this case. The deep difference of the construction and productive context and the social and cultural matrix between the two models are of paramount importance. The greater familiarity with production standardization and industrialization criteria and the higher specialization of technicians and manufacturers in the field of metal construction deeply affected the U.S. bridge series, as testified by the Oasis restaurant along the Northern Illinois Toll Highway, made between 1965 and 1967 and designed by David Haid, a disciple of Mies van der Rohe. In this case, modularity and regularity of spans and components, of sections and types of junctions of structural elements, stand out as clear parameters of the rationalization of the building process. In the Italian experience, the partial or integral prefabrication of structural elements and curtain walls, eased by the adoption of metal elements, delineates the features of the evolution of construction techniques which however continued to maintain some substantially non-industrial criteria of production.
In particular, a traditional, handicraft matrix is found in Angelo Bianchetti's project for Pavesi Autogrills. In these examples, the designer conjugates the essential lines of metal uprights of curtain walls and the purity of cylindrical volumes in the pavilions with the richness of colors and materials of finishings, furniture and furnishings (decorative floor tiles, wooden ceilings, monumental lamps and hoods). Bar and cafeteria counters are often designed by Bianchetti himself. Although maintaining their autonomous expressiveness, these elements merge with "an environment of great expressive coherence, with solutions found case by case, through architecture without any need for aesthetic integration other than the avant-garde collage […] derived from the experimentations of modern architecture between the two wars"[5]. Similarly, Melchiorre Bega, with the same spontaneity, juxtaposes the curtain walls of the bridge building of Cantagallo Mottagrill and the brick walls of the two side bodies and devotes special care to interior details, revealing his background as a designer and manufacturer of furniture and furnishings. These traditional construction features, associated with significant modern and industrialized techniques are the hallmark of the originality of the Italian approach in an architectural typology generally based on universal and utilitarian techniques and solutions.

Such features of originality influenced the use and management over time of the buildings developed in the 1950s and 1960s. The functional upgrading of these buildings and the need to re-design their size and layout to respond to the evolution of the catering market marked the transformation and caused the decline of these architectural types, in particular of bridge-buildings. In spite of the adoption of single-span bridges and modular construction solutions and techniques, adaptation was complex and often difficult, at the cost of altering the original architecture. Some buildings have been demolished. Others, such as the Mottagrill in Cantagallo, which had been damaged by a severe fire, have been almost entirely refurbished. In many other cases, additional bodies have been developed around the original nucleus (side pavilions and bridge buildings), thereby compromising the principles of plasticity and comprehensive architecture promoted in the original solutions by Bega and Bianchetti with the circular layout (side pavilions) or the detailed design of building sides (mainly in the bridge-Autogrills). Installation of new technical equipment and safety systems also required upgrading works on these buildings. In some

cases (Lainate pavilion building) the lights of the advertising arches have been removed, as well as the characteristic orange curtains of the Pavesi Autogrill. In other cases (Cantagallo Mottagrill) the horizontal blade sunscreen was removed due to maintenance problems. Handcrafted furniture, furnishings and finishings of the first Autogrills (floors, ceilings, hoods and monumental lamps) were progressively replaced or combined with solutions requiring cheaper and quicker maintenance. The emphasis placed on the architecture of the modern habitat along Italian motorways in the 1950s, today is silenced by the rhythm and speed at which these spaces are utilized. Notwithstanding, Autogrills, having witnessed times of economic boost and social transformation in Italy, still today reveal the modernity and innovation of their design along or across motorways that have become the heart of the rites of post-modern society and increasingly busier.

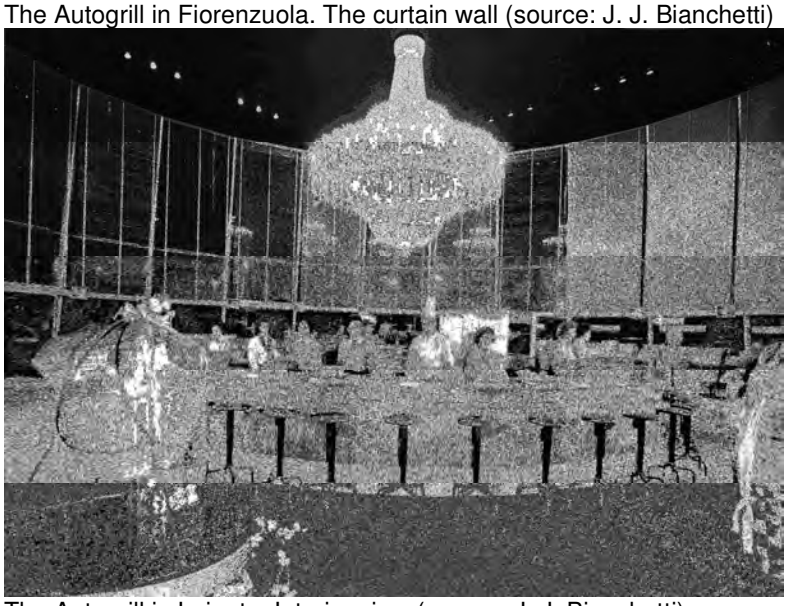
Illustrations

The Autogrill in Lainate by A. Bianchetti (source: J. J. Bianchetti)



The Autogrill in Fiorenzuola by A. Bianchetti (source: J. J. Bianchetti)

The Autogrill in Fiorenzuola. The curtain wall (source: J. J. Bianchetti)



The Autogrill in Lainate. Interior view (source: J. J. Bianchetti)

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Notes

[1] See Liebs H. C., 1985, *Main street to miracle mile. American roadside architecture*, Little Browne, Boston.
[2] See Greco L., 2007, "L'architettura pubblicitaria autostradale. Il caso del punto Pavesi a Lainate di Angelo Bianchetti*"*, *L'Industria delle costruzioni*, 394, 104-107.
[3] Bianchetti wrote about this trip in 1960, describing the functional features of the visited buildings and in some cases the employed construction techniques. In the same article Bianchetti illustrated the state of the art of motorway catering buildings in Europe with special reference to Germany, which – although being in the forefront as for motorway system – was less efficient in the field of motorway restaurants. See Angelo, Bianchetti A., 1960, "Le oasi sull'autostrada", *Quattroruote*, 1.
[4] See Greco L., 2008, "La costruzione metallica nell'architettura dei punti ristoro autostradali del dopoguerra in Italia", *in Proceedings 2° Convegno Nazionale di Storia dell'Ingegneria*, Cuzzolin Editore, Naples, 691-699.
[5] Quotation by Monica L.,1997, "L'architettura degli autogrill", *in* VV.AA. *L'Italia dei Pavesini. Cinquanta anni di pubblicità e comunicazione Pavesi*, Archivio Storico Barilla, Parma, 215.

OUR OLD SCHOOL – THE FUNCTION/LOCATION PROBLEMS OF LATE MODERN SCHOOL BUILDINGS IN POLAND

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The modernist paradigm in architecture and its urban design solutions changed the relative standing of school architecture. The school became the centre of an urban development, and the community, while new architectural solutions emerged, some highly unusual and innovative. Not all of these architectures proved flexible enough to survive the changing needs of society.

Wroclaw school architecture until the 1960s against an overview of European trends

Consideration of the moral and physical development of the child, the introduction of compulsory education, and rapid population growth characterized the educational landscape in the 19th century.
The corridor-type school design was introduced in primary schools, with the new functional additions of libraries, gyms and specialized classrooms of a *working school*[i]. The majority of schools from before WWII follow this spatial organization.

At the beginning of the *century of the child*[ii] concern arose as to the healthiness of educational facilities. The Open School movement saw new pedagogical ideas begin to permeate society, encouraging architects to develop experimental typologies. Notable school designs of the period are the open-air school in Suresnes (1935, Eugene Badouin, Marcel Lods) and the schools of New Frankfurt, which realized the idea of natural double-sided lighting and ventilation as early as the 1920s[iii]. By the late 1930s the *image* of a European school was modern in terms of architectural syntax, if not necessarily layout. Pioneering design continued throughout Europe following the war. Arne Jacobsen's Munkegaard School, the schools of Hertfordshire County Council, A. Roth and T. Schmid's schools in Switzerland, Hans Scharoun's school in Luenen and Hemann Hertzberger's Montessori school in Delft exemplified the child-oriented design: ancillary spaces accompanied the square classroom, catering for new approaches in pedagogy, the buildings well matched to the child in scale.

Another type of school building originated in the functionalist idiom, its pre-war predecessors being the Hiversum schools by Willem M. Dudok and Villejuif by Andre Lurçat, conspicuously modern, urban and with classrooms stacked in two to three storeys along hallways naturally lit. This tendency towards technical excellence was clearly visible in buildings which were also strong artistic statements, such as A. and P. Smithsons' Hunstanton school and Paul Schneider-Esleben's Rolandstrasse, Dusseldorf.[iv]

Prior to WWII Wroclaw had several modern schools, with functionalist design and stern brick architecture[v]. Under totalitarian regimes, however, its school design

regressed to the 19th-century typology with a more vernacular stylistic. Such was Wroclaw's architecture from 1933 to 1956 as the city experienced both Nazi and Stalinist rule.[vi].

School design in Poland at the beginning of the 1960s

After 1956 a brief period of architectural experimentation altered the Polish architectural landscape. From 1956 until approximately 1966 numerous, diverse school buildings were erected, though the period ended with the enforcement of design standardization (1963). The programmatic discussion in Poland centred on the shape and lighting of the classroom, educational experiments forbidden. Despite this, an abundance of innovative layouts emerged. Among those of the early 1960s there are noteworthy pavilion schools in Wroclaw (Blacharska St, M. Dziekonski, 1956-66 Krainskiego - Purkyniego St., W.Czerechowski, A. J. Tarnawscy,), Gdynia (1960, A. Kuhnel), Tychy New Town (1961, district E2, H. Losowska, Z. Jaroszynski), Szczecin – Glebokie (1960,. M. Janowski). Interesting sculptural volumes were proposed for schools located in Warsaw - Bielany (1959-61, J. Baumiller, J. Zdanowicz), Krakow (1959-63, Wroblewskiego St., Z. Gadek, H. Stawicki; 1958-60, Szlichtowskiego St., J. Golab). Silesia witnessed grand designs using finger typology in Katowice (1962 ,S. Kwasniewicz); a spacious atrium school was built in Gdynia (1961, Wladyslawa IV St., R. Polujan). Although a remarkable heritage, no discussion at national level as to its evaluation was ever begun. All of the case study schools were designed within a period of comparative freedom in Polish architectural design, two being *millennium schools*.

The politics of the *millennium* and school architecture

The early 1960s in Poland saw preparations for the celebration of the 1000th anniversary of the Polish state, linked with the christening of the country in 966. One slogan for the festivities was *1,000 schools for the millennium.* The idea was a political one, the communist state aiming to diminish the role of the Catholic Church's celebrations. Though the fundraising effort was somewhat engineered (state-owned factories and institutions transferred funds as well as individuals), it met with social acclaim and above 1,400 schools were completed thanks to the collection. The pressure of spatial needs led to an immense increase in standardization; once enforced, all communist bloc countries suffered a similar impoverishment of architecture, this taking root in the early 1960s. Towards the end of the decade 85% of Polish schools were built using typified designs, while in East Germany 2,500 schools were built to standardized designs between 1960s and 1980s.[vii]

The school at No. 57 Podwale Street (1955-60) and the problem of disruptive tissue

The corner of Kollataja and Podwale Streets was to be developed by the alignment of two schools along Kollataja Street as a part of the first postwar housing scheme, in the Stalinist idiom of Academism. In 1955 the style seemed outdated and the building design inadequate for a contemporary school.[viii]

Nevertheless, for social and political reasons the first part of the school ensemble was built according to the plan by arch. M. Bros; the second phase was abandoned and a new architect appointed to design a more uncompromising, novel educational facility, which also happened to be the first *millennium school* in the city. Jadwiga Grabowska-Hawrylak, this architect, introduced a totally modern scheme to the tiny

land piece remaining. The architectural solution was to divide the building into three distinctive pavilions: the entrance, containing common rooms and a parent waiting area; the classroom block; and the sports pavilion. The building appears at once gently withdrawn from the street, with a generous entrance plaza, and inviting, thanks to its long ramp. The spatial organization of the school won the authoress professional acclaim, the design widely referenced. The architecture was modestly underlined by use of more contemporary materials, such as Marblit glass panels below the windows (a curtain wall substitute), pebbled plaster surfaces for the building base and terrazzo to highlight the structural elements of elevations.

The buildings' integrity is threatened today by misuse of some rooms; a sports facility lacking by current standards; inaccessibility to those with disabilities; and the unsatisfactory condition of building elements. The location of the school is referred to as *disruptive urban tissue* in the planning guidelines, which enforce a strategy of removing primary schools from the Old Town and exchange of such tissue within the 19th-century city centre.[ix]

The primary schools at No. 36/38 Grochowa Street, the high school at No. 13 and new spatial demands

The schools at Grochowa Street were the pride of a new urban development begun in 1960, Gajowice District. The design of the two connected primary schools was entrusted to Jadwiga Grabowska-Hawrylak (1962-64), the design for the high school (lyceum) to the chief designer of the urban district, Igor Tawryczewski (1963-64), the realization winning ministerial awards.

The primary schools are a pair of three-winged, two-storey structures, linked by a double sports facility. The most striking feature of the schools was the architecture of their facades. An even rhythm of slender pillars light in colour was counteracted by the dark stripes of the windows, wrapping around the schools' volume. Both schools were laid out around courtyards. The schools now support pupils with disabilities, therefore an extension has been added linking the fronts to enable introduction of a lift and ancillary functions. The addition itself, though not notable, was unobtrusive enough (2000-2, L. Idzik); it is the thermal insulation and painting of the facades that has gradually altered the appearance. The central problem for these schools is the lack of a comprehensive preservation programme, while the new function has reduced the number of schoolchildren using them.

The lyceum on the same street is a concise structure of a single volume, arranged around a courtyard and inner atrium serving as the assembly hall. In 1963 the individual architectural design of this school required the issue of a special ministerial permit.[x] The two-storey building has a distinctive horizontal division between the ground and upper floor with vertical articulation; it received a sculptural outer staircase, but was denied all of the surface finishings suggested in the design. While the school looks as it did in the 1960s, the structure is in a terrible state and needs thorough refurbishment; faced with this and demand for more space for school activities, the city educational authorities proposed demolition instead.

The school at 20 Gornickiego Street (1958-61) and the problem of obsolescence and functional misuse

This school, designed by Z. Pretczynski, is located in an urban block cleared during

WWII, in otherwise dense urban fabric. The school lines a quiet street with an entrance pavilion also housing common space, the main body of classrooms drawn deeper into the green. The building was nicknamed *the school without corridors* for its unique spatial layout.

It has two-sided square classrooms accessed via perpendicular hallways from the front pavilion, and four staircases, each serving only two classrooms on a floor. The recreational areas are located on a separate level between the ground- and second-floor classrooms. The space between the front pavilion and slender elongated classroom slab forms a series of small courts with ponds and greenery, the sports field located behind the school. The gym was designed as a separate building connected to the school by a covered walkway. The landscaping encompasses an open auditorium space with a concrete screen facing the street and a small house for teachers.

Following completion, a corridor was built linking the gym with the school and the original use of the first-floor recreational area abandoned; part of the first floor currently serves as a library, part as a gym. In view of the demand for a larger school the local authorities have proposed demolition and launched a contest for a new complex. This has triggered a protest among art historians and architects and led to a change in the contest brief: the school was to be extended instead. The brief provided for twice the number of classrooms and an extensive sports facility, while the design had to enable future pupils with disabilities to enter every room. Given this, preserving the building intact was out of the question. The winning design (R2, L. Rubik Architects) proposed a fully-glazed communication tract along the existing classroom slab and continuation of the resulting shape in the new wing. The existing dilapidated gym, landscaping and one-storey corridor (its height insufficient under current regulations) are to make way for the extension. Elements containing asbestos are to be removed, the building structure reinforced, thermal insulation added, windows changed and ventilation shafts introduced. Put simply, the school will undergo a complete makeover to suit the building code and the needs of the owner.

A summary of preservation problems affecting modern schools with examples of current design solutions.

Modernist schools face various threats to their preservation and, sometimes, their existence. The recurring problem is required energy efficiency, while it often transpires that modern buildings contain harmful substances, such as asbestos.

The restoration of Rolandstrasse Primary School in Düsseldorf (1961, Paul Schneider-Esleben; 2006, Legner, van Ooyen) presents an approach purely technical, one contrasting with prevailing preservation strategies aimed at sustaining and exposing the existing structure, though effective in terms of minimizing visual impact. The external shell of exposed concrete was covered with a layer of thermal insulation with precast glass-fibre concrete suspended elements, carefully matched to the original proportions.[xi]

Most modern schools appear devoid of access and fittings for those with disabilities. While this is manageable for pavilion schools, it begins to pose greater problems for buildings with more floors. Along with accessibility there is the problem of safety: contemporary standards in fireproofing and building statics may entail changes to existing structure. There are also serious problems linked with school building use.

Many of the schools have spatial solutions not facilitating current teaching methods. The need for programmatic changes in the use of school buildings often leads to a lack of maintenance, threat of abandonment and decay of structures.

The extension of Munkegaard School (1950, Arne Jacobsen; 2009, Dorte Mandrup Architects) is one very fortunate example of a design intervention within a listed modern masterpiece.[xii] This design involves expansion underground with minimum changes within the existing volume.

Least manageable is an improper location or changes in demand for school facilities in a neighbourhood. Regrettably this materializes along with the threat of demolition of more extensive modernist urban interventions in city centres, such as the modernist urban infill in Wroclaw, and involves planning considerations. The only possible method for preservation of buildings endangered in such a way is their being listed as architectural monuments. To this end, architects from several Polish cities have begun drawing up lists of postwar modern heritage; to date they have met with the reluctance of the authorities and the public.

Illustrations

Fig 1. School on Podwale St., Wroclaw, photo: M. Lamber, insert after: *Architektura* 7/8, 1964 p. 306

Fig 2. V Lyceum on Grochowa St., model photo: Z. Staniewski, court. ABMW, 2010 photo: M. Lamber

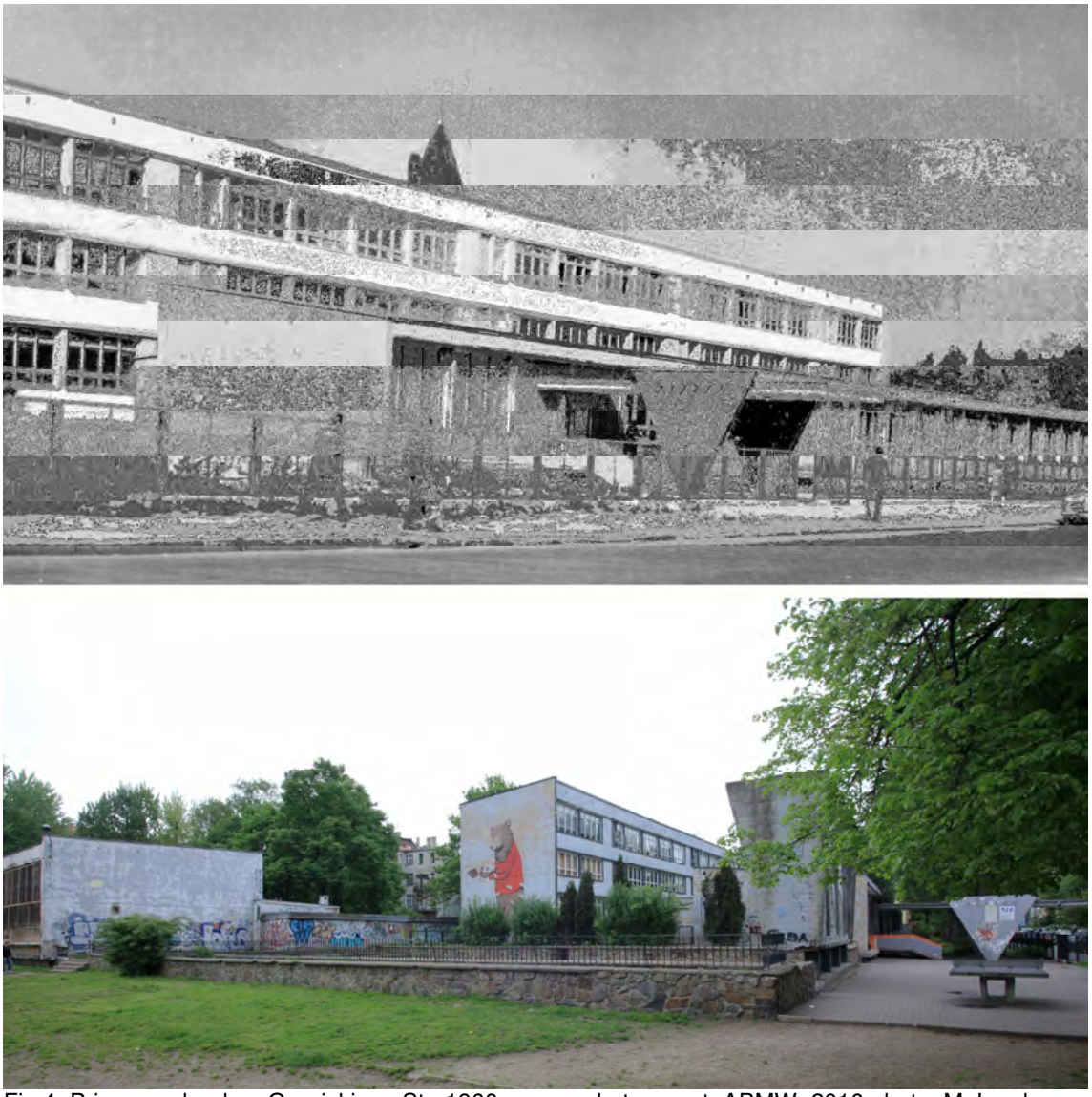

Fig 4. Primary school on Gornickiego St., 1960s anon. photo, court. ABMW, 2010 photo: M. Lamber

Notes

[i] John Dewey's pedagogy
[ii] Ellen Key, 1900
[iii] Schneider R.: „Szkolnictwo w Niemczech – edukacja, budownictwo szkolne i spoleczenstwo (proba syntezy)" *in:* Zwierz M. (ed.): *Wroclawskie szkoly. Historia i architektura.,* Muzeum Architektury we Wroclawiu, Wroclaw, 2004, 214-220
[iv] *Detail*, 6/1962, 629-638 [on-line] http://www.detail.de/0177 (2010.02.02)
[v] Stortkuhl B.: „Budownictwo szkolne we Wroclawiu w latach 1918 – 1933" *in:* Zwierz M. (ed.):op. cit., 221-228
[vi] In 1945 Wroclaw became Polish.
[vii] Szafer T.P.: „Nowa architektura polska. Diariusz lat 1966-1970*"*, Arkady, Warsaw, 1972, 61-73; Scholz M.: "Standardized School Building in the German Democratic Republic" [in:] *Detail Konzept. Review of Architecture. 49 serie 2009-9 Schulen Modernisieren*, 900-901
[viii] Ciechanowski K.: "Evaluation of the design of a 15- classroom school at Kollataja St. (…)", annex to minutes of the City Commission for Urban Design and Architecture, 21 April 1955, typescript, ABMW, folder 80P
[ix] Ossowicz T. et al.: „Studium uwarunkowań i kierunkow zagospodarowania przestrzennego Wroclawia*",* Wroclaw 2006, (text vol. 2, p. 9, drawing no. 6)

[x] Annex to a schematic design description by I. Tawryczewski, typescript, ABMW, folder 825 P (no pagination)

[xi] Legner K.: "Rolandstrasse Primary School in Düsseldorf. The Rehabilitation of a Historic Building" *in: Detail Konzept. Review of Architecture 49. Serie 2009-9 Schulen Modernisieren*, 902-913

[xii] Information from Dorte Mandrup architects office, also in Prudon T.H.M.: *Preservation of Modern Architecture*, Wiley, 2008, 349-356; Wedebrunn O.: Denmark. "Watchdog action saves threatened masterpiece" *in: Docomomo Journal* N° 31, September 2004, p.15

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THE MODERN POOL AS A NEW CIVIC SPACE

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Public pools presented unique design challenges and opportunities to modern architects through their structural design, planning and environmental servicing. Many innovative responses were realised worldwide, with leading examples coming from Australia due to its national investment in swimming as a sport and the advantages of climate.
Yet, as we seek to demonstrate, many public pools also constructed a new kind of public and civic place. This impetus for the provision of public amenities for recreation, sport and leisure in urban contexts grew out of nineteenth century reform ideals, and was later consolidated through the agendas of modernist urban charters such as CIAM and other governmental initiatives. We demonstrate that the public swimming pool is therefore a particularly potent indicator of modernity. It reflects modern attitudes towards the benefits of: accessible and classless recreation in line with socialist ideologies and concerns for the welfare of the poor; exposure to natural elements inspired by the natural hygiene movement; the changing politics of the collective and individual body along with shifts in attitude towards gender and social behaviours conducted in public spaces.

In the five examples chosen (of which many more could be discussed) a shift in approach to the designing of recreation places can be traced from the early functionalist styled buildings that aspired to create a new kind of civic forum, to the later wave of more architecturally innovative pools, that reflected a desire for more relaxed social spaces and family-focused leisure. This freedom is translated into the architecture of these pools of the 1960s that, in different ways, express a newfound naturalism and organic looseness through planning, form and textured materials that is indicative of larger trends in modernism of the period. Also touched on are the conditions under which the pools were commissioned and the political and community aspirations they signified – which in some cases served as ‘useful monuments’.

The First Wave of Public Modern Pools

As the health benefits of swimming and bathing became widely accepted from the late eighteenth century onwards in Europe, many precedents to the modern pool were developed including sea and freshwater baths, health spas and clubs, and open-air leisure pools or ‘lidos’. Whether for sport or leisure, by the 1930s in Europe, America and Australia, swimming became a means for attaining and displaying the desirable image of the healthy body, and this promotion of naturalism and the body beautiful was complicit in the development of modernism. It is interesting to note, for example, that Le Corbusier designed a swimming pool project with a wave machine in 1935.[1] The fashion for outdoor lido construction also reached its zenith in Britain in the 1920s and ‘30s, with an ambitious program promised by the London County Council to make London a ‘city of lidos’. By 1951 there were indeed some 60 open-air leisure pools and baths in the

greater London area alone. These lidos sought to provide communities with up-to-date public facilities offering fitness, leisure and social activities to all social classes. Janet Smith comments: 'No self-respecting municipality would have been without one.'[2]
The Jubilee Pool designed by Captain Frank Latham in 1935 is a quintessential example of one of the many hundreds of outdoor lidos constructed across Britain during these early decades. The building of the pool was a key project in the town's sea front improvement scheme,[3] and its 'naturalistic' heart-shaped perimeter form – said to be inspired by 'seeing a gull alight on the sea' – grew out of a response that echoed the irregular coastal setting.[4] In contrast, other contemporary lidos such as the Tinside Pool (1935) in Plymouth, also located on the water's edge, are perfectly formed semi-circular pools. The irregular form of Penzance, along with it's vast size and cool seawater creates a microcosm of the sea, yet a more controlled environment safe from the changing tides, seemingly dangerous sea creatures and rocky conditions.

In other details the Jubilee Pool's streamlined art deco styling was typical of the period, with a stone and wrought iron palisade fence and entry gates spelling out 'Bathing Pool' in a curved ribbon of iron sans serif letters, and roughcast white rendered walls contrasting with sky-blue details. The original facilities included the large sea pool, a shallow children's corner pool located under the town's War Memorial, and 97 concrete changing cubicles for both sexes situated on either side of the pool.[5] The high wall provided protection from the elements, but also formed a public place to promenade, sunbake and take in the sweeping views of the surrounding countryside.[6]

Reflecting shifting social values, after the pool's opening, local newspapers reported heated debates surrounding the appropriateness of Sunday opening.[7] But despite these protests, the pool became a major success for the town, providing an important social hub for the community; a place for people to learn to swim but also to socialise, relax and a "meeting place for the youngsters."[8] When one of the authors visited in 2009, an elderly and long-time swimmer reminisced about socialising at the pool in the 1950s: "The girls used to come and parade in their best dresses and walk around the pool and the boys would wolf whistle… in fact, the lifeguards spent more time turfing the boys and girls out of the cubicles and worrying about antics that were carrying on than they did about the swimmers."[9] Many aquatic activities have been held at the pool over the years including diving competitions, swimming competitions along with water polo events that are still held today and continue to attract large crowds.[10]

The 1930s also marked the first wave of modern public pool building in Australia. Up until this time, despite the long known health benefits of swimming and bathing, less advantage was taken of natural water sites than might be expected and formalised baths and pools were slow to arrive. By the early decades of the twentieth century rapid changes in social behaviours, attitudes to the body, and a nascent surf culture all contributed to the growth of swimming as a sport as well as a leisure pursuit in Australia.

There are a number of factors that contributed to the desire to replace and augment existing swimming sites that had been fashioned out of natural water locations. Swimming proficiency became increasingly regarded as a desirable skill for all to master for reasons of health, fitness and safety. By the 1920s learn-to-swim programs began, albeit slowly and with precarious government support.[11] Also, with the formation of standardised international rules for swimming, diving and water polo, and their inclusion in the Paris Olympic Games of 1924, swimming came of age as an international sport

and Australia was quick to embrace it. Many existing natural swimming sites were no longer adequate training venues for swimming competitions that were fast gaining popularity and status. Encouragement into swimming participation reflected the increasing emphasis on the modern idea of 'family togetherness' outside the home in the 1920s and '30s. This furthered the demand for appropriate safe and healthy bathing and swimming facilities, and assisted in shifting attitudes surrounding public decorum and the segregation of patrons. Highly codified conventions and modesties were eroded, as mixed bathing became the norm and female swimmers gained prominence. However public pools were still subject to tightly governed rules surrounding dress and behaviour codes and so on, in contrast to a developing beach and surf culture, where behaviours were already becoming less regulated and scrutinised.

From the 1930s onwards advancements in reinforced concrete technologies allowed for more ambitious structures for spectators and divers, more reliable waterproofing materials, and developments in filtration and chlorination services all ensured better pool environments. A growing number of pool buildings were professionally designed by specialist architects and engineers, with technical and design know-how accumulating in national and international journals. The construction of an Olympic standard artificial pool was however a major undertaking for any community to finance and manage. Although typically a municipal concern in Australia, their realisation was dependent on collaborative efforts between local community groups, municipal and state governments. When built they were regarded with great pride as a local asset that gave a much-needed focus for leisure time activities. Although some segregation policies were maintained until relatively recent decades, in the main, the pool was projected as a new kind of public place; accessible and attractive to a large cross-section of the community, and promoted as a popular means of encouraging 'better behaved' communities through recreation.[12]

To take the city of Sydney as one case, a number of municipal Olympic pools were constructed in the decade: Enfield (1933); Bankstown (1933); Granville (1936); and the North Sydney Pool (1936), all designed by the architectural firm of Rudder & Grout. The North Sydney Pool was to become one of the most iconic pools in Australia, not only because of its spectacular harbour location under the shadow of the Sydney Harbour Bridge and Luna Park, but also because of its use in the Empire Games competitions of 1938 and 1958. The design features polychromatic brickwork with horizontal banding, simple classical archways and arcading, elaborate glazed tiling, and glass and stucco decorations of parrots, frogs, scallop shells and other marine motifs. The filtration system seen to be one of the most advanced in the world.[13] As the number of pool-visitors who could actually swim remained low in early decades, facilities for spectators such as sun-baking platforms, changing boxes and promenades were important elements.

Three Innovative Pools after 1955

After 1938 there was a hiatus in pool-building in Australia with the effects of the Depression and war efforts hampering resources until the 1950s, when attention was again focused on their provision. The building of an award-winning Olympic Pool for the Olympic Games in Melbourne in 1956 gave an additional boost to the popularity of swimming.[14] Following the Games, the most inventive design of a civic public pool was the Centenary Pool in Brisbane Queensland, designed by James Birrell and completed in 1959. The initiative to construct a pool as a 'useful monument' for this occasion

confirmed the popularity of swimming by this time. Unlike the Olympic Pool complex in Melbourne, which was dedicated to sporting excellence, the Centenary Pool was always intended to create an accessible public and social place. As a reflection of the ambitious civic aims of the pool, the opening speech by the then Governor of Queensland was reminiscent of nineteenth century statements on public improvements and civility:
'It is only in the immediate past five years that our City has found time and fortune to continue to construct the really civilizing elements of our environment … The Centenary Pool project is loaded with artistic content, not only of our faith in the future, but to embody and courageously express our first hundred years of development. It could not have been realised without resources of the City's vast administration, and every aspect of this has been crystallised in this complex of building.'[15]

If the imperatives of civic improvements were spoken in nineteenth terms, the language of the architecture was certainly not. The freeform shapes of the main elements and their organic planning is said to have been inspired by the plastic expressionism of architect Oscar Niemeyer and the sculptor Hans Arp. The design encouraged a relaxed and festive air as an alternative to the regimented composition and atmosphere of many modern pools. This daring aesthetic was, for the Governor and others, an example of the state's 'faith in our destiny'. Rhetoric aside, the loose composition emphasised the spaces in-between the built elements as potential places of active communal engagement and encounter. A sophisticated two-story restaurant and kiosk occupied a conspicuous place, and further enhanced opportunities for people-watching. While a curvilinear bathhouse on the site's perimeter added another communal amenity. The palette of materials including off-form and rendered concrete, and brickwork with un-raked mortar joints was characteristic of Birrell's work elsewhere at the time. Ceramic tiling is a dominant feature of all modern pools, but here the tiling layouts gave another opportunity for fluid, abstract patterning. While the builders were local, it was mentioned as a point of cosmopolitan pride that materials were brought in from all over the world – tiles from England, Italy and Japan, diving equipment from England, asbestos from South Africa, and drinking fountains from Sweden. The 'modern tropical' landscaping added to the air of playful leisure and performed a civic role, with comparison made to an eighteenth century English 'Arcadian glade'. The dynamic ramp entrance to the complex also alluded to picturesque devices of affording views through movement.

A decade later than the Centenary Pool, the design of the Harold Holt Pool Swim Centre in Melbourne also explored the dynamism of the entrance ramp. Built in 1969, it is one of Melbourne's first buildings of a brutalist style. Borland and Jackson's design explores an expressiveness rendered in off-form concrete left unpainted. The structure, services and circulation elements, including ramps, mezzanine and walkways are emphasised as highly expressive elements in the whole composition. The planning schema signalled Borland's interest in trapezoidal geometries and chamfered forms. Parts of the building are highly transparent so as to expose the activities taking place inside, thus enticing visitors to enter the naturally lit interior. The expressed pedestrian ramps and stairs further enhance this sense of physical activity. In contrast, the change-rooms are private, dark and more cavernous.[16]

The Holt Centre was also innovative in its brief and planning through the integration of indoor and outdoor pools for different users, which reflected the conscious move more towards family-centred recreation: the presence of mothers and children out in public is catered for through the design and program of the pool, through ease of access, surveillance and the scale of children's amenities.[17] The accommodation of a modest

café, and 'dry areas' catering to family spectators, was also new at this time. Jackson has suggested that these planning and brief innovations were instigated as much by the architects as by the local government brief.[18]

There are many other innovative examples of public swimming pools that could be examined in a longer paper, but the final pool we wish to highlight as being of great design influence is the public swimming pool at Leça da Palmeira (1961-66) design by Alvaro Siza Viera. This pool is a beautiful exemplar of the more relaxed and experimental attitude to the provision of social civic spaces that evolves in the 1960s and '70s. A newfound organic looseness is evident in the approach to siting, planning, form and textured materials. Located on the Atlantic coast at Leca da Palmeira, a largely industrial town not far from the centre of Matosinhos where Siza grew up,[19] it is not surprising how well this project integrates into the existing terrain, as it was an area he knew well. Integration with the site is highlighted through a deliberate transition from the urban context to the rocky ocean terrain: this notion of transition from the artificial to the natural is well explored in other modern architectural precedents by the likes of Corbusier, Neimeyer and Wright.[20] Here through the design's subtlety and strength, the pool asserts a new kind of civic presence; both in tension and harmony with the coastal setting, rather than totally asserting the artificial over the natural as was typically the case in earlier modern civic recreational buildings.

The pool's conception grew out of a larger plan for the entire coast north of the harbour that also included the commission for Siza's Boa Nova Restaurant in 1958. Like many coastal pools, it was the treacherous nature of the ocean and changing tides that gave the impetus to provide a safe place for people to swim. Inscribed in a site where the existing rocks formed a natural pool of water where lobsters were fished, the artificial pool both protects from the dangerous waters, but also embraces the sea. Due to hygiene standards the facility could not be a truly tidal pool as originally conceived, so Siza sought to exploit the natural conditions by integrating the rectangular 20m x 33.3m filtered and chlorinated pool, and separate children's pools, as closely as possible into the rocky contours.[21] Twelve changing cubicles are housed in a long low rectangular building positioned below street level that again follow the natural contours of the site; a water pump and filtering room for purifying the sea water; and a café and semi covered courtyard area face the sea. Entrance to the pool is gained via a ramp, and other ramps and pathways steer the user around the facilities while affording glimpses of the sky and ocean, and reinforce the impression of human vitality and the possibilities of casual encounter. Aside from being one of Siza's important early works, the pool has also become integral to the community of Leca da Palmeria being a favourite place for many locals to come and swim and relax – with restaurant plans still on the drawing board.[22]

The Fate of the Modern Public Pool

Despite their ubiquity in many countries, modern outdoor public pools have faced a rapid decline since the 1980s, with threats to their survival emanating from many fronts. By the 1970s in Britain and Australia there was a marked shift in government funding towards indoor mixed-use facilities that might combine a gym, pools, childcare and other community recreation facilities.[23] Declining numbers of users have been reported across a number of public surveys (although with conflicting evidence), with private and new leisure facilities gaining in popularity over the older seasonal pools. Many pools of concrete construction have worn badly with increasing need for costly maintenance and structural repairs. Until recently few have been heritage protected, and with no funds for

repairs and declining numbers, countless facilities have been forced to close. The loss of favour of older outdoor pools in Australia has also in part been attributed to changing attitudes to sustainability and sun-exposure: while Northern European modernism may have been driven by a desire to enhance the body beautiful through maximising exposure to the sun, postmodern public architecture (at least in the Antipodes) has been required to accommodate quite a different relationship to the elements.[24]

Of the case studies focused on in this paper, most have faced such threats. With over 200 of Britain's outdoor lidos now closed, the Jubilee Pool, Penzance was also nearly forced to close in the late 1980s. After campaigning by heritage and community organisations, the battle to remain open was won in the short term but the future remains uncertain. Similarly, the fate of the Centenary Pool in Brisbane was not secure, with demolition recommended because of the anticipated costs of renovation to meet contemporary standards of amenity. However work was recently completed and the pool has thankfully been retained and is now heritage protected. The Harold Holt Pool has been the subject of a vigorous fight involving the local community, architects and conservation experts against unsympathetic renovation plans which have since been tempered.

Where once the building of a community seasonal pool was applauded as symbolic of municipal and civic progress through investment in safe and healthy outdoor pursuits, by the 1990s many municipal government pools in Australia and elsewhere have been increasingly disparaged as decaying outmoded, unpopular and unsustainable structures. This perceived change in value from 'asset' to 'liability' has however not gone uncontested, with grass-roots campaigns being more vigorously pursued than any other issue of public infrastructure provision in recent years in Australia. Their role as physical and social assets that build social engagement in communities appears to have been underestimated. Also it seems that the tide may now be turning for the outdoor modern pool, with those remaining becoming more fondly regarded and protected by the general public as poignant and sensual reminders of a unique kind of modern public place.

Illustrations

Figure 1: C Phillips, Photomontage Jubilee Pool, Penzance UK (1933)

Figure 2: Centenary Pool Brisbane Australia (1959), State Library of Queensland.

Figure 3: Harold Holt Memorial Pool, Melbourne Australia (1969), Courtesy Jackson Architects

Figure 4 : C Phillips, Photomontage Piscina de Leça da Palmeira, Portugal (1961-68)

Notes

1 Brady, D., 1985, *Le Corbusier: An Annotated Bibliography*, Garland Publishing, New York, 269.
2 Smith, J., 2005, *Liquid Assets: The Lidos and Open Air Swimming Pools of Britain*, English Heritage, London, 10.
[3] This scheme was initiated by Ald. WH Julyan (a former Major of the town) to improve the sea front area. See Hicks, Prof., "Penzance Jubilee Bathing Pool: Official Opening Ceremony, Culmination of Sea Front Improvement", in *Cornishman and Cornish Telegraph*, 5 June, 1935, 3.
4 Latham's design was well considered, making most of the existing the Battery Rocks as a foundation which made the cost of the pool very cheap at only 14,000 pounds and significantly cheaper than the cost of similar lidos built in the UK during this time. The Margate Lido in Cliftonville (1927) designed by Mr Palmer is of a similar size and location and cost 60,000 pounds. Similarly the Sea Bathing Lake at Southport (1928) designed by cost 65,000 pounds. The Bathing Pool, New Brighton (1934) designed by Lt Sgt G Wilkinson cost 103,240 pounds. See Smith, J., 2005, *Liquid Assets: The Lidos and Open Air Swimming Pools of Britain*, English Heritage, London, 70, 72, 86. See also Hick, P. 1935, "Penzance Jubilee Bathing Pool: Official Opening Ceremony, Culmination of Sea Front Improvement," in *Cornishman and Cornish Telegraph,* 5 June, 5.
5 The Sea Bathing Lake in Southport design by AE Jackson in 1928 for example, also had stepped terraces around the pool and with neo classical colonnaded pavilions to its edge. The Saltdean Lido in Brighton designed by RWH Jones in 1938 also had streamlined forms, sans serif lettering and blue and white painted rendered surfaces as did the Tooting Bec Lido in London designed by HJ Marten in 1931.
6 Originally, diving and springboards were installed but later removed due to safety issues. An old time local diving champion from the pool, Peter Marks, had recalled to me how he had on one occasion in the 1950s hit his head on the bottom of the pool after diving from the diving board. See Interview with Swimmers from the Jubilee Pool by Christine Phillips on 3 July, 2009.
7 See "Correspondence: Sunday Bathing", in *Cornishman and Cornish Telegraph*, Wednesday 19 June, 1935, 2; "Correspondence: Penzance Bathing Pool", in *Cornishman and Cornish Telegraph*, p.5, "Other Seaside Resorts", in *Cornishman and Cornish Telegraph*, Thursday 4 July, 1935, 10.
8 Interview with swimmers from the Jubilee Pool by Christine Phillips on 3 July, 2009.
9 Interview with swimmers from the Jubilee Pool by Christine Phillips on 3 July, 2009.
10 Water polo "originated in England in 1876 when 'aquatic handball' was played for the first time in Bournemouth." See Smith, *Liquid Assets*, 94.
11 Swimming education for all was not universally adopted as a municipal concern until the 1960s.
12 As it still is today with the no school, no pool government program. See "Changing Visions of Baths and Bathers: desegregating ocean baths in Wollongong, Kiama and Gerringong", Marie-Louise McDermott, UTS in *Sporting Traditions*, vol 22, no 1, November 2005, 1-19.
13 Historical Services Department, Stanton Library, *The Wonder Pool, North Sydney*, Stanton Library, 1996,14.
14 The competition-winning scheme was designed by the architectural team of John and Phyllis Murphy, Kevin Borland and Peter McIntyre and the engineer on the project was Bill Irwin. Upon winning the competition, in 1953 Robin Boyd (who was one of the competition judges) foreshadowed that the project would "carry the modern architectural revolution in Australia out of the field of small buildings commissioned by progressive individuals into the realm of big business and construction." He continued: "This is a modern building in every sense of the word."
15 *Centenary Pool*, 1959. Brisbane City Council, opening report. The Centenary Pool in Brisbane was opened by the Governor of Queensland, Sir Henry Abel Smith, 25 Nov, 1959.
16 See Haman, C., 2006, "Harold Holt Memorial Swimming Centre", in *Architecture from the Heart*, RMIT Publishing, Melbourne, 167. The outdoor pools are enclosed and protected by grassy banks, cypress and date palms, with a dramatic diving tower completing the northern end of the complex that is no longer used.
17 See "Baths" in *Architecture in Australia*, October, 1969, 813-817.
18 Interview with Daryl Jackson by Helen Stitt on 22 June, 2009.
19 Siza was born in Matosinhos in 25 June 1933.
20 Siza does not use architectural references in a postmodern 'collage' manner, but rather in a subtle and considered way: "References are important, but they cannot be used without meaning or context." See Levene, R.C., Curtis, W., Siza, A., 1995-1999, *Alvaro Siza, 1995-1999*, El Croquis Editorial: Madrid, 1999, 27.

21 Testa, P. 1996, *Alvaro Siza*, Birkhauser Verlag, Basel, 82.
22 A local architect, Nuno Xavier, who met the co-author at the pool, said it had been an important place for locals to learn to swim in a safe environment, but still within in the setting of the beach environment.
23 Smith, *Liquid Assets*, 23.
24 'Modern architecture was unproblematically understood as a kind of medical equipment, a mechanism for protecting and enhancing the body.' Colomina, B., 1997. "The Medical Body in Modern Architecture", *Daidalos*, no 64, June 1997, 61.

CIVIC AND SOCIAL INFRASTRUCTURE
Conservation and Design Issues

The session includes five papers that cover a wide geo-political mixture and a chronological frame largely related to post WWII architectural history. Besides the paper presented by Lucy Maulsby “Urban Networks: Fascist Party Headquarters in Milano, 1932-1943”, whose aim is to show the relevance of the public works policy under the Fascist regime as motor of town design and development, all the other papers concentrate on civic buildings real- ized in the third quarter of the twentieth century under major socio-political changes.

The speakers have considered the two aspects suggested by the call for papers almost literally. The selected case studies are fully eligible as banners of a modern cultural identity, whose propelling forces are connected to the urgency of giving shape to a public need, either in political representation, or responding to a quest for leisure or for a religious demand. What makes these cases particularly relevant is the specificity of the renovation they have gone through. Each of the propositions offers a critique of the status of the debate on conservation, there- fore allowing the process of sharpening the focus of the practice of design when the priority is the heritage as a value. This is particularly so in the case of two case studies –one on the Cultura Artística theatre in São Paulo and the other on the Embassy of Chile in Argentina– in which the differences of conservation practices manifest themselves at many levels of decision – forms, functions, technologies. Two papers deal with very specific building types: the open-air theatres in Angola and the modern churches. Paradoxically enough they are examples of an attitude of resistance that could be explored as the manifestation of the real difference in practice between the orthodox and the other traditions.

Session Papers:
Urban networks: fascist party headquarters in milan, 1932-43 Lucy M. Maulsby
Civic and social infrastructure: conservation trough modern architecture intervention Embassy of Chile in Argentina (1966-2009) Elisa Amelia Gil Serrano, Hugo Mondragón López
When the requiem is a church: the posthumous modern temples of Riola and Firminy Ana Carolina Pellegrini
Modern architecture in africa: open-air movie theatres Ana Magalhães
An architectural dilemma: conservation or reconstructiion of the “cultura artística” theatre in São Paulo Paulo Bruna

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URBAN NETWORKS: FASCIST PARTY HEADQUARTERS IN MILAN, 1932-43

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During the nearly twenty years of fascist rule, Benito Mussolini's government devoted considerable time and expense to large and small-scale architectural and urban endeavors in its effort to fashion a new Italy. The construction of new town halls, train stations, post offices, recreational facilities, fascist party headquarters and so forth went hand in hand with new urban plans that were intended to radically transform Italian cities and communicate fascist values of order and hierarchy. Parades through city streets, rallies, banners and other temporary additions to the urban landscape provided a more ephemeral but no less potent reminder of fascism's presence. Scholars have investigated much of this history, but little attention has been given to the efforts of the National Fascist Party to create urban networks through the construction of party headquarters or *case del fascio*. Focusing on headquarters constructed in Milan during the twenty-year period of fascist rule, I argue that these buildings are significant not only for understanding how fascism sought to infiltrate everyday life but also for assessing fascism's relationship to the modern city.

In 1921, when Mussolini formally constituted the PNF (Partito Nazionale Fascista, i.e. Fascist National Party) he required party leaders to establish fixed headquarters as a base for their operations in the community. Large urban centers such as Milan had a regional party headquarters located in the city center as well as smaller neighborhood centers dispersed throughout its territory. The first neighborhood headquarters were located in rented rooms and their primary purpose was to bring order to Mussolini's base of support—usually army veterans and students—and to generate enthusiasm for Mussolini's political movement. In July of 1922, the Sciesa Group, whose membership drew from the middle residents of the city center, inaugurated its new headquarters. The rented suite of rooms held large and small meeting rooms for lectures and other events, an office for the group secretary, a gymnasium, showers, and a library. The group decorated the large hall with portrait busts of Mussolini but did little to the exterior of the building to indicate its political purpose. Nevertheless, its location along the venerable Via Senato and facing a small square anticipated the party's interest in the strategic placement of such buildings. A year later, the installation of the regional party headquarters in a dignified palazzo along the prominent Corso Venezia signaled the start of the PNF's effort to position of headquarters in order to enhance the party's public stature, to reinforce links with established

centers of power, to articulate hierarchies within the organization, and to reconfigure the symbolic order of the city.

As the Fascist Party gained power and prestige, officials sought larger and more prominent buildings in which to house their operations. New construction showed a growing understanding of the public role of these buildings and a growing consensus about how that might be expressed as a series of architectural and urban choices. Designed by Stefano Balzarro and the engineer Giovanni Magnaghi, the Cantore Group headquarters of 1932 and related vocational school provides a vivid example of the party's approach to this building type in this period. Surmounted by an eagle and framed by two giant stone fasces, the symbol of the Fascist Party, the entrance pavilion dominates the square and functioned as a platform from which party leaders could address crowds gathered in the *piazza*. Indicative of the building's success as a backdrop, Mussolini stood here to address local party members and supporters as part of the festivities surrounding the tenth anniversary of the March on Rome in 1932. No longer a neutral presence in the landscape, party buildings functioned as carefully constructed settings for fascism's choreographed urban rituals and as permanent reminders of the party's authority.

By 1934 the Fascist Party had established an extensive organizational network that linked the various communities in greater Milan to the regional office in the city center and, from there, to the party's administrative center in Rome. In this period, the regional headquarters occupied a refashioned neoclassical palazzo in Piazza Belgioioso, an elegant square located a short distance from the town hall. The position of the building communicated fascism's political success and intimate relationship with traditional centers of local power. Dotting the landscape, twenty-eight neighborhood outposts served residential districts defined by the PNF and functioned as the primary point of contact between the party and ordinary citizens. Each outpost held offices for party officials, meeting halls, a martyrial chapel dedicated to those who gave their lives to the fascist movement, as well as health, educational, cultural and recreational facilities calibrated to meet the needs of the community. Party leaders hoped that by providing such services they would undermine traditional centers of civic life, maintain order, and create new fascist citizens. To connect these buildings in the public imagination, rallies and demonstrations included regional and neighborhood headquarters and Mussolini and other officials made ritual stops at party headquarters during visits to the Lombard capital.

In the second half of the 1930s, newly constructed *case del fascio* began to adopt a shared set of architectural and urban features. A consequence of new leadership in the party, competitions for this building type, and a number of completed examples, this visual consistency helped to reinforce associations between these buildings. The Crespi Party Headquarters designed by a group of recent graduates from the architecturally progressive Milan Polytechnic—Gianni Angelini, Giuseppe Calderara and Tito Bassanesi Varisco—between 1937 and

1939 provides a representative example of this building type in the late 1930s. As in this example, a prominent balcony or speaking platform, was often paired with a tower or other vertical element to insure that the building would be a readily identifiable architectural feature of the community. To augment the visibility of the party headquarters and to remake the city to accord with fascism's vision of urban life, local groups purchased sites on squares, major thoroughfares, and intersections whenever possible. In this case, the headquarters stood on a corner lot along the broad Corso Sempione, a main artery that led out of the city center from the Sempione Park. The area was a focus of speculative development in the interwar period and the building's location, elegant stone facing, and studied use of forms associated with the modern movement reflected not only the aesthetic preferences of the groups' leaders but also their desire to attract the support of middle class residents in the district. At the street level, designers employed various devices to suggest continuity with the fabric of the city. For the Crespi Party Headquarters, the architects introduced a broad set of stairs rising from the street level to a wall of glass doors and into a light filled atrium. This entrance sequence represented a less evocative treatment of the entrance as a transparent screen introduced by Giuseppe Terrangni in his Casa del Fascio in nearby Como; begun in 1932 and completed in 1936. Symbols of the fascist party, sculptural elements, and bold text further denoted such buildings' political function. In this example, a low-relief sculpture was planned for the tower but never carried out. Other party headquarters dispersed throughout the city used a similar, although not identical set of formal devises.

Additional examples show how these architectural strategies could be adjusted to serve the different needs, budgets, and tastes of individual groups, while remaining easily identifiably symbols of fascist authority. In contrast to the previous example, the Fabio Filzi Group headquarters, designed by Eugenio Faludi from 1936 to 1938, served a largely working class population and included a privately run move theater, which was intended to help offset the cost. Elements of the project, such as the brick facing, low profile, and industrially styled windows, evoke the industrial landscape on the edge of Milan. Faludi designed the headquarters to take full advantage of its location at the intersection of the two principal streets in the quarter. The architect placed the most symbolically important aspects of the project, a wide bas-relief travertine panel that extends nearly the full height of the building by Leone Lodi and the balcony sheltering the main entrance to the party headquarters, on either side of the corner. Visible to all of those reaching the station along Via Tonale or entering the city along Via Seveso, the bas-relief celebrates the achievements of fascism, confers a sense of weight and importance to the otherwise lean brick and glass façade, and gives the horizontal fenestration a strong vertical counterpoint, akin to the traditional role of the tower. Inscribed with the *fasces*—the symbol of the fascist party, the balcony functioned as a ceremonial space from which party officials and radio broadcasts would have conveyed the latest directives from Mussolini.

In the flurry of construction activity that characterized the party's activities in the late 1930s, Mario Bacciocchi designed a new headquarters for the Mussolini Group on a corner site along the tree lined Via Ceresio, the major artery leading from central Milan to the Monumental Cemetery. The forty-meter solid brick tower in the form of abstracted fasces—requested by Mussolini during the final stages of construction—anchors the northern edge of the site in the working-class quarter. Rather than include a balcony, Bacciocchi created a low platform that ran nearly the full length of the building to serve as a speaking podium and as a place to display the group's pennants, important symbols of the group's solidarity carried in parades and rallies. In 1938 as Italy prepared to enter the Second World War as an ally of Nazi Germany, members of the Mussolini Group petitioned party officials to add an air-raid siren to the tower of their headquarters, suggesting that party centers could be adapted to serve as part of the city's defense infrastructure. In climate of increased political tension, the towers and balconies from which officials had a privileged view of the streetscape augmented the tenor of these buildings as instruments of surveillance and control.

In July of 1943 in the aftermath of the collapse of Mussolini's fascist regime, Italians took to the streets in celebration and made public their rejection of nearly twenty years of fascist rule. Ordinary citizens, former fascists, and members of the resistance participated in parades and demonstrations through which they sought to repose the public spaces of the city. The buildings most closely associated with the fascist regime and the symbols they held served as focus for anti-fascist activities. For example, in Milan crowds raided the recently completed headquarters of Mussolini's mouthpiece, the newspaper *Il Popolo d'Italia*. Young men cheered for photographers as they gathered around a bust of the former dictator pulled from the fascist controlled youth center located on via Conservatorio. Locals ripped the fasces off of the Montegani Group headquarters and left it broken and lying in the gutter. As has often been noted by scholars, the most arresting example of Italians' effort to use the public space of the city to announce the demise of the regime was display of the corpses of Mussolini, his mistress, and other fascist officials in Piazzale Loreto in Milan on April 29, 1945. The spontaneous nature and public spectacle of this process of reclaiming the city served as a visceral means of rejecting nearly twenty years of fascist rule and signaling the start of a new era.

After the close of the Second World War and the establishment of the Italian Republic, the state commandeered all party owned property and adapted these buildings to serve new purposes. Some buildings owned by the PNF passed into government hands before the close of the war. For example, in 1932 the party sold its regional headquarters on via Nirone, renamed via Fascio during the interwar period, to the municipal government, which used it to house the city run welfare program. In the post war period, many party headquarters, particularly those whose histories predated fascism, were reabsorbed with little notice into the urban fabric. However, the vast majority of these buildings in Milan, and

elsewhere, were transformed into military or police headquarters. The buildings thus maintained their original function as centers of command and control but were allied with new political ideals. To signal this shift, decorative programs were removed or modified to neutralize their original political content. In the case of the Filzi Group headquarters, now a base for the Italian police only some references to the discredited regime have been obscured. Officials covered the text—likely a quote from Mussolini—at the base of the tripartite sculptural relief. However, the fasces carried by three marching male figures on the lowest register and the fasces displayed on the adjacent balcony remain clearly visible. Arguably, the addition of the Italian and European Union flags and a small sign announcing the building's new identity did little to challenge the building's iconographic and formal ties to the fascist era.

Fascist Party headquarters served as one of the principal means through which the PNF insinuated itself into the urban fabric with the aim of shaping the character, habits and mentality of Italian citizens. Through the strategic placement of *case del fascio*, officials imposed a new network of political, educational, cultural and, particularly in the late 1930s, para-military activity on the city. Its organizational structure communicated a clear hierarchy oriented to a central authority, its activities recognized the social and economic differences found in a large urban area, and its aesthetic expression sought to find a middle ground between tradition and innovation. To the extent that these buildings drew from a formal vocabulary that was tied to the rituals of fascism much of their potency has been lost. Nevertheless as much as this imagery is fascist it is also Italian and the continued association between former party headquarters and state authority raises a number of questions about Italy's ongoing effort to come to terms with its fascist history. With the notable exception of Giuseppe Terrragni's Casa del Fascio in Como, fascist party buildings have been given a marginal position in the context of post World War II histories of Italian modernism, despite the involvement of many younger practitioners who would play a defining role in architectural practice in the post-war period. More recently scholars, government agencies, and so forth have shown an interest in these buildings suggesting a shift in Italy's engagement with its fascist past as well as a new approach to assessing architectural modernism within the context of fascist politics.

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CONSERVATION TROUGH MODERN ARCHITECTURE INTERVENTION
Embassy of Chile in Argentina (1966-2009)

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Modern heritage is not protected in Chile. Most of Chilean modern "monuments" stands without any official decree protecting it from being modified or quite demolished. This is a consequence of having state-controlled organisms in charge of the protection and defense of architectural heritage. These bodies use almost exclusively the building's age as main criteria for its appraisal.[i]
From this point of view it seems difficult that buildings that are only between forty and ninety years old may catch the attention of heritage preservation government officials. However, this negative situation that in the majority of cases has led to the systematic violation of constructions that constitute valuable records of the status of disciplinary and cultural discussion of modern architecture, has resulted in a positive achievement. The following case couldn't paradoxically have crystallized the way it did, if the building had been officially protected, neither could DoCoMoMo-Chile group have played a leading role in its management.

A sculpture in a park

For multiple reasons the original building of the Chilean Embassy in Argentina, designed by a trio of modern architects —Echeñique, Cruz and Burchard—[ii] is a singular piece of Chilean modern architecture outside national boundaries.
Its singularity is due to various factors. To begin with, its location is remarkable. The Embassy was built in the midst of the Palermo Parks, traced at the beginning of the 20th century by French-Argentine landscape architect Carlos Thays in Buenos Aires city center. The lot was donated to Chile by the Argentinean State with the specific aim to build the new embassy.[iii]
The fact that the project was erected through a competition process carried out in 1966 is also very singular. Only teams of architects of both countries were invited and the jury was also bilateral.[iv]

The building stands out from its physical surroundings not only by being isolated in the middle of Republic of Chile Park, which lies within the aforementioned Palermo Parks as if it was a sculpture in the park,[v] but also because it was constructed on the top of a small hill that was, and still is, the only geographic feature of the landscape.

Yet another of the building's singularities lies in the complexity of its program. The competition brief stated that four basic functions should articulate in one

single compound: 1. Foreign Affaire Office; 2. Protocol Halls; 3. Service facilities; 4. The Ambassador's residence. From this point of view, the project was considered a multi-program condenser.

As a solution the winning team proposed three-storey curved blocks superimposed to each other, articulated with assigned different functions. The first level hosts the chancellery's office. The second superimposed to the previous one, houses the complete set of protocol halls and service facilities. The third level, which marks the top of the building, is the area of the Ambassador's residence, completely independent from the office spaces.

The prolongation of these three strips over the portion of the ground left unused, gives way to a series of terraced gardens that followed the topography of the small hill, the Embassy was built on. The hill's slope is accentuated by the horizontality of the decks. The protocol halls and the Ambassador's residence open up towards this terraced system of gardens, which merge themselves with the surrounding park, and configure a visual field of deep spatial characteristics that stand-out as one of the building's greatest assets.

As a matter of fact this building represents an exception within the rational tendency dominant in Chile between 1930 and 1970. Its organic forms lie closer to some of Wright's, Niemeyer's, and Aalto's artifacts than to German, Dutch or North American ones. It's possible that this "freedom of shape" is due to the fact that exceptionally the team of Chilean architects didn't have to deal with the rigid structural conditions that a seismic country as Chile requires.

A cultural centre within a modern building to commemorate the bicentennial

Celebrating the two hundred years of Chilean republican life the plan arose to add a cultural centre to the Embassy in Buenos Aires.

The idea was the brainchild of Chilean Ambassador Luis Maira. It consisted of a program destined to promote young artists from both countries. The building brief included to intervene on the original Embassy edifice.

Ambassador Maira thought to request the consultancy of modern architecture experts with the purpose of having them design a methodology to guarantee that the modification of the building preserved and intensified its architectural values. Elisa Gil Serrano, member of the DoCoMoMo-Chile group and student of the UC M.A. in architecture, came into the scene at that point. She was in the middle of writing her master's thesis on the original building.

The conditions were very much propitious. In November 2008 Hugo Mondragon, director of UC M.A. in architecture (the institution hosting the headquarters of the DoCoMoMo-Chile), called up professionals, academics, and students to participate in a seminar-workshop for the "Preliminary design for a Cultural Centre in the Embassy of Chile in Argentina" under the rubric of "Strategies for the Intervention of Modern Heritage".[vi]

Considering the architectonic singularity of the existing building, the organizers established that all proposals, based on a competition process, should take into account the tension between patrimonial values and functional values. One major factor was that the intervention would be carried out on a “modern monument” that would continue to function during the execution of the new works.

It was established that the intervention should be an extension of the existing building. Therefore any proposal should consider the construction of spatial, volumetric, structural, material, functional and visual connections between the new addition and the existing complex, without renouncing to its functional or expressive autonomy. It was also established that the intervention should maintain the visual depth that the protocol halls and the ambassador's residence have over the República de Chile Park.

Finally, in structural and constructive terms, it was recommended to introduce a light supporting structure that could be easily assembled, and, for usage and security reasons, a controlled connection between the cultural centre and the Embassy's stair-shaped gardens was required.

Three proposals

A commission made up of politicians, technicians and academics selected three proposals out of the twenty-four submitted plans. The Embassy of Chile in Argentina and the Ministry of Public Works (MOP) invited the authors to a second phase to further develop their ideas.

The proposal of the group made up by architects Carolina Del Campo, Nicole Labbé and Antonia Moreno was the most balanced one in terms of attention to the project's different dimensions. It preserved the geometric curved design; it maintained the residence's view over the park; it also carefully articulated the proposed volume's rooftop with the terraces of the existing building; finally it achieved a generous spatial quality offering some powerful spaces and dynamic corridors.

This proposal suggested a well-configured access and a strategically placed advertisement. Its access, half a storey under the park's level, allowed to go down to a well-dimensioned auditorium and to climb up to the exhibition gallery without exceeding the existing building’s height. A mezzanine located on top of the exhibition gallery developed a discreet and well-achieved articulation between the cultural centre and the terrace system of the Embassy.

Facing the park, the building's corridor system was dynamic and didn't functionally interfere with the main spaces' usage. The exhibition gallery and its multiple spaces were generous in size and proposed a strong spatiality introducing high ceiling.

In general, the proposal paid great attention to the existing artifact, improving the terrace system by incorporating a stair-like garden. It also improved the

relationship between the complex and the park by extending the cultural centre's activities through a transparent facade.

The group made up of Teodoro Fernández, Philippe Blanc and Sebastián Hernández, presented a very well achieved plan in composition terms that operated within the organic logic of the original design. The proposal considered a generous exhibition gallery with a suggesting sunlit system - zenithal sunlight sifted by a water film- well controlled, yet dramatic.

This proposal remarkably enriched the terrace system of the existing building by incorporating a new element –the water tank– that through reflection doubled the images of the sky and tree-crowns.

This project proposed an intensification of the masonry wall that acts as a façade against the park. This operation emphasized the stony character of the existing basement, which represented the logic of a building situated in a park on top of a "small mountain". The logic of the original location (building on top of a hill, like a fortress) was reinforced by a system of terraced gardens that fortified but at the same time articulated the relation between the building and the park.

The interior space of the multi-purpose hall held the right scale and built, with the proposed natural light system, a convincing spatial character for the exhibition gallery.

The proposal of the group made up of Sebastián Irarrázaval and Francisca Rivera, conceived the cultural centre as a unique, simple and austere piece, that didn't run against the existing buildings as protagonist, but neither did it have pretensions of a timid mimesis afraid of appearing. It followed the original designs, it didn't contradict the geometric logic of the existing building, it incorporated a new project dimension that built a strong relation of the building vis a vis the park.

The green roof proposed linked itself to the existing terrace system, but it introduced an intermediate scale between the domestic scale of the residence's gardens and the park's public scale.

The idea of prefabricated construction, if not completely solved in details, had acquired a sense of respectfulness if one observed the rationality of the proposed forms and resulted of great value if one considered that the project had to be developed while the building remained in full function.
In February 2009, the three invited teams shared their strategies in greater depth and detail for a jury composed of politicians, academics and technical experts. The jury selected the proposal led by architect Sebastián Irarrázaval as the winner.

As if it were part of the original

The winning project complied with various elements of formal neutrality; it wasn’t aggressive to the existing complex; it didn’t interrupt the view over the

República de Chile Park from the protocol rooms or the Ambassador's residence. It also worked through the program of assigned functionality with great simplicity, and the proposal of semi-prefabricated construction and absence of detail, allowed it to adjust to the restrictive budget constraints imposed for the construction, whilst reducing the impact of the process over the daily lives in the existing compound.

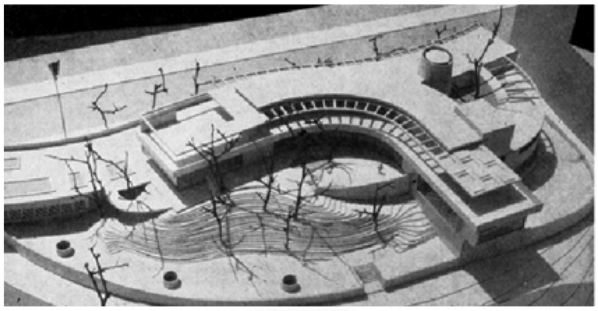
This exercise has proven to be fruitful. The city of Buenos Aires gained a new cultural facility that enlarges its already vast network of cultural spaces, and the abandoned República de Chile Park, received for the Embassy a façade that it never had before. In a unique, nationwide exercise, the modern architectural heritage in Chile and the DoCoMoMo-Chile group gained in experience and public visibility.

Although there are many aspects that are possibly perfectible, as much in the process as in the results, the bottom line is positive: a valuable, but little known building saw a new light; the issue of modern heritage was brought up to the disciplinary and cultural debate; the recently finished work of architect Irarrázaval has found space in recent literature.

Finally, Ambassador Maira, who led the project since the beginning, was satisfied with the result and has thanked the DoCOMoMo-Chile group in various occasions. In his speech, at the inauguration of the new cultural centre in the presence of the President Michelle Bachelet, he said: "For its harmony and formal continuity with the rest of the compound, this new building looks like it was conceived with the original project, designed by architects Cruz, Echeñique and Burchard in 1966…", words that were meant to illustrate to the audience that the original architectonic values had been preserved.

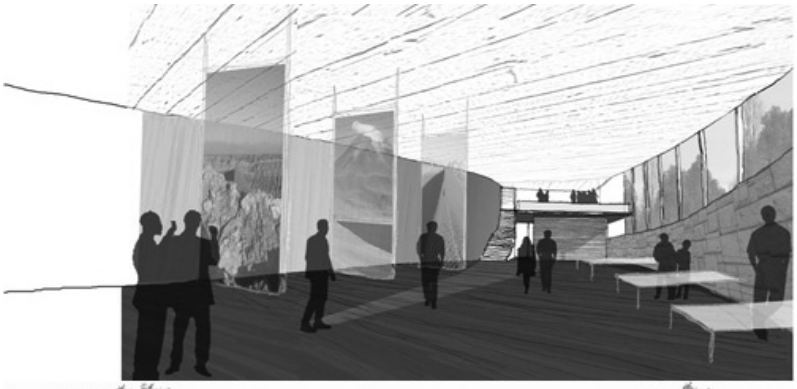
Maybe, the laws and decrees of heritage conservation are of little use after all, if organizations like DoCoMoMo cannot count on the knowledge, willpower, and aesthetic sensitivity of company executives or illustrious politicians, such as Ambassador Maira. Perhaps there lays our mission, to educate and raise awareness to the importance of preserving these buildings.

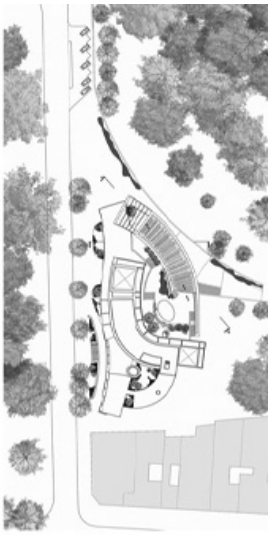
Illustrations



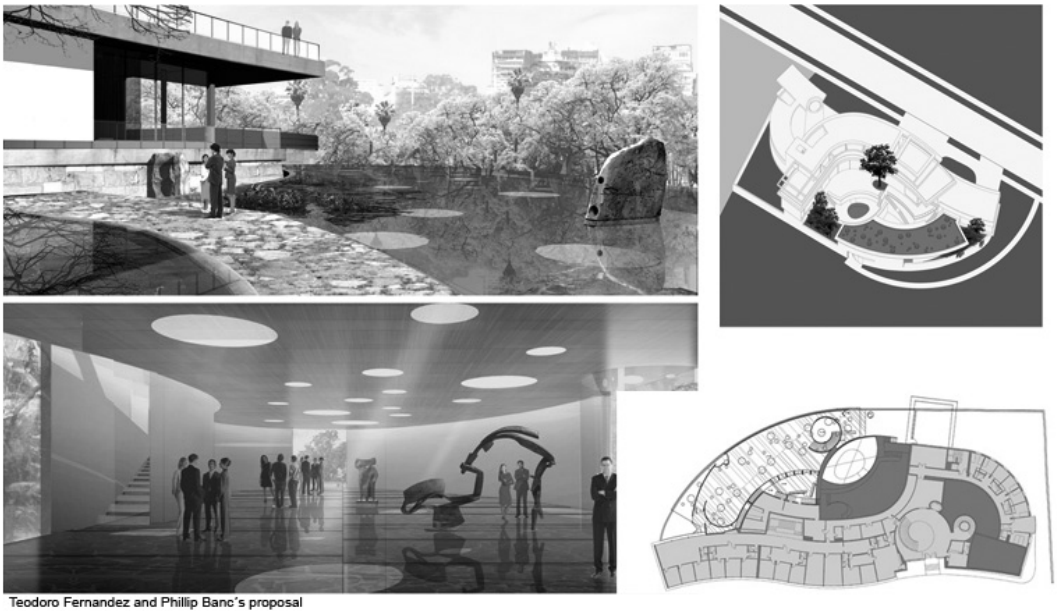
Embassy´s front facade, ubication, 1966 contest model and in pink the intervention area

google earth and AUCA n° 6

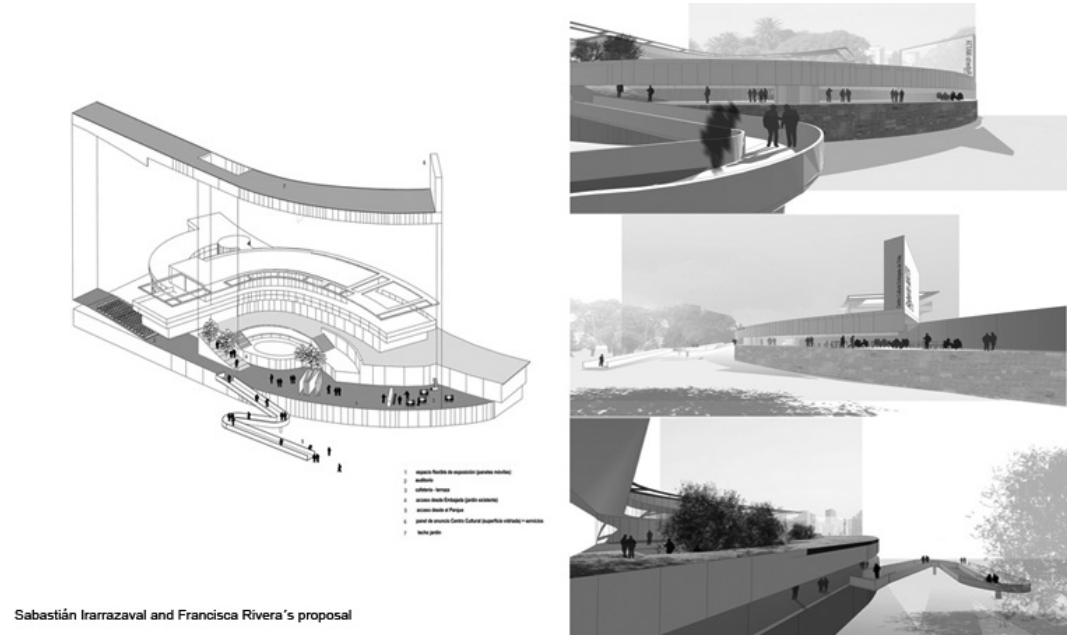




Carolina del Campo and Nicole Iabbé¨s proposal.



Teodoro Fernandez and Phillip Banc´s proposal



Sabastián Irarrazaval and Francisca Rivera´s proposal

Notes

[i] The value of age appraisal used by Alois Riegl in his book *The Modern Cult of Monuments* refers to the evident manifestation of the harsh pass of time on a building.

[ii] These three architects are also authors of the IBM building in Santiago, Chile and many others that stand out for their technical innovations and daring shapes

[iii] The lot on which the Embassy stands was donated by the Municipality of Buenos Aires as a swap for the terrain and house of the Argentinean Embassy in Chile, located in Vicuña Mackenna during the government of president Eduardo Frei Montalva in the early Sixties.

[iv] A jury composed by government bodies and architects of both nations granted the competition.

[v] Remark made by the architect Juan Echeñique, information published in an article on Chilean architecture, construction and urbanism magazine *AUCA*, 1966 (6).

[vi] With this seminary, organized and realized in the Universidad Católica de Chile in 2008, it was sought to start a debate among professionals about possible strategies to face the challenge of modifying a modern building.

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WHEN THE REQUIEM IS A CHURCH: THE POSTHUMOUS MODERN TEMPLES OF RIOLA AND FIRMINY

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Introitus
Requiem æternam dona eis, Domine,
et lux perpetua luceat eis[1]

Design may be understood as the integral plan for building a work of architecture, chiefly via drawings and scaled models, calculations, materials' specifications, cost estimates, etc. In the process of materializing the architectural concept, it is the intermediate representation that documents and informs about the definitive one in mortar and stone. Throughout the twentieth century set of data established before construction become ever more complete, complex and precise and increasingly less open to improvisation. Architectural drawings play a double role; they serve as prefiguration of the future building, and as guidebook for intervention on existing building, especially those from the modern past. Indeed, drawings kept in archives and libraries can make feasible the reconstruction of demolished buildings and the posthumous increasing of the built legacy of renowned architects.
Nevertheless, modern masters' artifacts built posthumous are not ordinary and generally arouse controversy regarding their authenticity, pertinence and authorship, even when properly described as the completion of an incomplete building. This is the case of two remarkable churches —Alvar Aalto's Santa Maria Assunta in Riola di Vergato[2] (Italy) and Le Corbusier's Saint-Pierre in Firminy, (France)— though the extent of their completion was not the same.

The village of Riola belongs to the Archdiocese of Bologna, which had an important role in renovating ecclesiastic architectural production after World War II. The renewal movement began in 1955 with the organization of the First National Congress of Sacred Architecture, mainly owing to the efforts of Archbishop Giacomo Lercaro, a man of progressive ideas who was later put in charge the Vatican's Second Ecumenical Council.[3]
Alvar Aalto was chosen as Santa Maria Assunta's architect in 1957, but the church was only formally commissioned in 1965. He came to Riola in January 1966 to survey the site adjacent to the Reno River and to define the overall conception. He made several sketches entrusting the project development to his assistant Vezio Nava.

Eleven months later, the local authorities approved the design. However, the construction did not escape from the changes imposed by budgetary restrictions, political interests and the passing of time.

The Council had requested some liturgical changes such as the suppression of one structural bay in order to reduce the distance between churchgoers and the altar. The town-planning regulations required a 30-meter setback from the property alignment. Let alone the fact that Lercaro's leave in 1968 [4] affected adversely the project. Stagnation set in and lasted until October 1975 when under the pressure of the community the Curia decided to resume the design process and to renovate the contacts with Aalto's office. However, the architect was already old and ill; he could not see the beginning of construction. He died on May 12, 1976, two months before the prefabrication of the structure started.
Vezio Nava did several posthumous adaptations and additions. They included the detailing of the presbytery and the altar furniture, the changes in the mechanical heating system, the removal of a window and the opening of two doors in the presbytery and the sacristy, to mention the most relevant ones.
On the inauguration day only the church and the parish house were finished. Vezio Nava had still to provide the final plans for the bell tower, the churchyard and the canon house. The bell tower was eventually completed in 1994. The architectural promenade envisaged alongside the Reno River awaits the execution of the necessary retaining walls.

> "(...) non poche analogie legano la chiesa di Riola e quella di Firminy che Le Corbusier lasciò incompiuta alla sua morte incaricando del completamento José Oubrerie che – inevitabilmente – sarebbe intervenuto su un lavoro che non aveva ancora ultimato l'iter burocratico della sua approvazione." [5]

Eugène Claudius-Petit was elected Mayor of Firminy in 1953[1]. A former Minister for Urbanism and the Reconstruction of France, he had commissioned Le Corbusier to design the Marseilles Unité d'habitation.

In Firminy Claudius-Petit proposed an urban project, [6] including a stadium, a swimming pool, a house for culture and youth, and a church dedicated to Saint-Pierre. Le Corbusier was hired to design the stadium and the house of culture in 1955; four years later he was also commissioned the church and the Unité d'Habitation. At the time, José Oubrerie was Le Corbusier's assistant in charge of the religious building that begun in 1961. The design was approved in 1962, after reducing the church's initially proposed height for economy reasons.
By the way, when soil conditions were found to require special foundations, which would be more expensive than foreseen, the Parishioners' Association asked the architect to adapt his plans to another site, but Le Corbusier categorically rejected this change because the urban project would suffer for. His viewpoint ultimately triumphed.

Ironically, when Cardinal Lercaro invited Le Corbusier to design a church in Bologna in 1965, he suggested a design very close to that of Firminy, hardly concerned about the relationship between his project and the site.

> “Una chiesa è come un’automobile, può girare su tutte le strade. Faremo a Bologna il progetto alto; quello di Firminy è stato tagliato; me l’hanno circonciso.”[7]

When Le Corbusier died in August 1965, only the house of culture had been finished. Although there was no consensus on the convenience of building the church, the *Association Le Corbusier pour l'église Saint-Pierre de Firminy-Vert* replaced the Parishioners' Association in 1968 and put Oubrerie in charge of resuming the project. The founding stone was laid in May 1970. The new communist mayor was not interested in completing the church, therefore the works started in 1973 with private funds from Fondation Le Corbusier, and lasted for one year. The building site was reopened in 1975 and closed by lack of funds three years later, leaving behind the concrete walls and the slabs of the first two levels.

Both the stadium and the house of culture were listed as state monuments in 1984. In 1987 the centennial of the architect’s birth helped to increase the appreciation of his work. Nevertheless, after years of neglect the church’s base – that would be listed in 1996 – looked more like a military bunker than the embryo of a Christian temple. Dino Cinieri. the new Mayor inaugurated in 2001, bet on the rise in value of the Corbusian heritage and called Oubrerie to reformulate the church design.

Besides the programmatic change from church to museum that required a different inferior level plan,[8] adjustments were made in order to provide universal accessibility and accommodate HVAC systems, leading to the addition of stairs and a marquee, the alteration of the main ramp, etc.

Sunday Mass celebration was included in the foreseen uses of the upper level sanctuary together with concerts, conferences and meetings. The name church of Saint Pierre was retained. In July 2003, the title of “Heritage of the Twentieth Century” was conferred to Firminy by the Ministry of Culture and Communications and the construction site was officially reopened in September of the same year. On November 25, 2006, Firminy inaugurated its church with great pomp and on July 29, 2007, Saint Peter’s Day, the first Mass in the church was celebrated, followed by a concert of sacred music.

The fundamental controversy about posthumous constructions concerns the authorial authenticity of such operations, as they put two modern principles on trial: the value of originality and the singularity of authorship of an artwork.
At Riola and at Firminy, Nava and Oubrerie had to design "in the manner of" Aalto and Le Corbusier respectively, but nothing ensures effective correspondence of their work to the reactions those architects would have expressed while being still alive.

How can we determine what is original, if the designs have suffered changes before and after their architects’ death? We can point out the initial outline of a project, but we cannot determine an "original" final version. How legitimate is the process of fabrication of posthumous buildings? Doubtless these operations

appear particularly extreme modalities of preserving historical heritage. They are inherently conservative, but at the same time absolutely audacious in their ambition to defy death, malformation, and the linearity of time.

As for the singularity of authorship, since we cannot preview what amendments the missing author would bring to his work, we should better give double credits. Then evaluation may become easier. According to Oubrerie, in the church in Firminy, what is good is Le Corbusier's, what is bad is his work.
Ultimately, the completion of the master's work by his apprentice is an old architectural tradition; the fast achievement of a monumental building is a contemporary novelty.

> "Le parti che invece non erano state progettate prima della morte del Maestro erano i disegni in dettaglio degli arredi sacri. Per fortuna Aalto aveva realizzato molte chiese e quindi ho potuto prendere diversi punti di riferimento da queste."[9]

Another issue should also be considered in order to understand that the relationship of the architect to his design is analogous to that of the painter to his easel painting. Even if, upon a first moment, there is an analogy between the architect's sketch and the painter's draft, it is not just the construction of the building that is made collectively. The design is quite often the result of a team. In architecture, collective authorship is the rule, not the exception, particularly in the case of professionals with many commissions, and of commissions made complex by the program's nature.

Firminy and Riola are a product of many participants, even before Le Corbusier's and Aalto's death, among them Oubrerie and Nava who, since the beginning, were in charge of the projects.

The definition of authorship is not the only question and it should matter much less than the quality of the architectural design and work. The problem is mainly economic: signature matters because a famous name sells better.

Equally fundamental and certainly more meaningful is the concern about the cultural authenticity of the posthumous building, especially when there is a long time gap between the initial design and the final construction. The value given to antiquity and the value given to innovation come under scrutiny here.

Following this line, prosthesis or implant [10] are thought to be false antiquity and false novelty. Well done, that is, faithful to their former existence in stone or paper, they deceive the historian. Posthumous buildings are rooted in the past, but they are not from the past. They are made today, but they seem to come from yesterday. They have no value as novelty, or as antiquity, to use the terms of Alois Riegl. In other words, they are judged as insufficiently contemporary and insufficiently remote.

It seems that to discuss prosthesis in terms of antiquity and contemporaneity just leads us to nowhere. Historically, the dilemma is solved by simple truth: designed in a period X, but built in a period Y, thus correcting the bad habit of

stating a single, unspecified, date. Artistically, by abandoning the fiction of formal consensus in a pluralistic era and straightforwardly assuming that another *Zeitgeist* rules and it votes for blend and diversity.

In Firminy, the urban project condition and the interval of time between the architect's death and the completion of the work are the fundamental differences from Riola.

The French case is about completion through prosthesis – if we only consider the church – or implant – if we refer to the whole Corbusian collection. However, it is undeniable that the church is the most exciting architectural feature, and well advised have been those who struggled for its completion.
As for the Italian case, it is mostly prosthesis, and only the bell tower is an implant.

While some see the design changes as treason to the genius of Le Corbusier and Aalto, others accept them as heritage. The validity of prosthetic operations has to be argued case by case, but their defense cannot disrespect criteria similar to those that lead to the institutional preservation of any building. Heritage, as inherited wealth, is independent from date of acquisition, as long as it contributes to the construction of contemporary identity. We have learnt about this position from Lucio Costa, who played a decisive role in the listing of Brazilian modern masterworks.

The building of the churches of Riola and of Firminy depended on a strict approach to the original design, prerequisite to the kind of posthumous construction that has been commented here. The seriousness of the operation vanishes if this prerequisite is not observed.

This condition does not make easier, however, the posthumous materialization of a praiseworthy modern design. It is tempting to think about the possibility of materializing part of the unbuilt legacy of the great names of the modern movement. The natural tendency is to think that all the related data are available and to overestimate their comprehensiveness, but in none of the examples examined here it has been possible to find working plans that might guide the operation. Posthumous constructions also demand posthumous creation and design, differently of what occurs, for instance, in the field of certain arts of reproduction, such as sculpture or photography.

In her essay "The originality of the avant-garde", Rosalind Krauss discusses the theme of Auguste Rodin's work, and reflects about the legitimacy of production of new sculptures based on casts made by the artist, exploring concepts such as authenticity, originality, copy, replica, etc. The author focuses on the example of the making of a new cast for "The Gates of Hell" in 1978:

> "To some –though hardly all– of the people sitting in that theater watching the casting of The Gates of Hell, it must have occurred that they were witnessing the making of a fake. After all, Rodin has been dead since 1918, and surely a work of this produced more than sixty years after his death cannot be the genuine article,

> cannot, that is, be an original. The answer to this is more interesting than one would think; for the answer is neither yes nor no."[11]

Given the controversy to determine what is authentic and what is not (which, at least in architecture, seems to be more of a political than of a scientific order) the question of pertinence seems to be more important, since it contemplates not only authorship as label, but also – and mainly – as quality of design and its ensemble.

More than the author's fame or reputation – living or dead – what matters to the city and to its inhabitants is the pertinence of the project – new or old – to the contemporary context. That is why prosthesis and implant must persist in the near future as exceptional operations, reserved for out-of-ordinary circumstances.

In conceptual terms, it is a section of the past by the present with a view towards the future. In physical terms, it is an approach to the past from the present that properly carried on may grant "the light of eternal rest" to the deceased, as stated in the introit of the Catholic requiem.

In paradisum deducant te Angeli:
in tuo adventu suscipiant te Martyres,
et perducant te in civitatem sanctam Ierusalem.
Chorus Angelorum te suscipiat,
et cum Lazaro quondam paupere æternam habeas requiem.[12]

Illustrations

Fig. 1. View of Santa Maria Assunta Church on the inauguration day, June 17, 1978, with the bridge along the Reno Valley. (Gresleri, 2004)

Fig. 2. Alvar Aalto and the church committee visiting the project site, on January 10, 1966. (Gresleri, 2004)

Notes

[1] Grant them eternal rest, Lord, / and let perpetual light shine on them.
[2] Riola, a village of about 1.200 inhabitants, belongs to the municipality of Vergato, a small town 38 kilometers away from Bologna, capital of the Emilia-Romagna region.
[3] Pope John XXIII called up the Second Ecumenical Council of the Vatican in 1961. Among the new ideas suggested by the council, there was the one of getting the church closer to their people, as well as giving special attention to the poor people and those living in the outskirts. It was all about a "modernization" of rituals through, for instance, abandoning the celebration of the mass in Latin with the priest facing back the people, which would result in modifications in the physical space of Catholic temples, and would meet the process of typological renovation, already in progress.
[4] According to Antonio Carioti Pope Paul VI might have dismissed Lercaro due to a diplomatic crisis triggered by the archbishop's public declarations criticizing the conduct of the Americans during the Vietnam War. See, Carioti, A., 2004, "Paolo VI e Lercaro, una destituzione all'ombra del Vietnam", in *Corriere della Sera*, October 28.
[5] "There are many analogies that relate Riola to Firminy Church that Le Corbusier left unfinished when he passed away, leaving in charge of its finishing José Oubrerie, who – inevitably – would intervene in a work that still had not finished its bureaucratic procedures for its approval", Gresleri, G. and Gresleri G., 2004, *Alvar Aalto. La chiesa di Riola*, Compositori, Bologna, 72.
[6] Firminy is a municipality with 19,000 ca. inhabitants, situated in the Loire department, Rhone-Alpes region. It is 12 km away from the industrial city of Saint-Étienne (today with 200,000 inhabitants) and 60 km away from Lyon (today with 400,000 inhabitants). Saint-Étienne is the seat of a metropolitan region with 390,000 inhabitants, the sixth in France, which incorporates Firminy.
[7] "A church is like an automobile, it can travel over every road. We shall do in Bologna the taller project; the one at Firminy has been cut; it has been circumcised". See Gresleri, G. and Gresleri, G., 2001, *Le Corbusier: il programma liturgico*, Compositori, Bologna; Gresleri, G., et al, 2004, *Chiesa e quartiere. Storia di una rivista e di un movimento per l'architettura a Bologna*, Compositori, Bologna.
[8] Formerly assigned to canonical functions (parochial residence, confessionals, and rooms for catechesis, sacristy, and parochial room), the base will now shelter shows, exhibitions and lectures, intending to become a place of reference for studying the work of Le Corbusier and related artists and designers.
[9] "The parts that were not designed before Master's death were the drawings of the details from the sacred furniture. Fortunately, Aalto had made many churches and, therefore, I could take them as reference", Nava, V., in Gresleri, 2004, 96 and 101.
[10] The meanings of the terms prosthesis and implant in this text are closer to the ones adopted by the medical field. Prosthesis is the component that substitutes a missing part of an organism (due to amputation, atrophy or malformation). Implant adds volume or function to something that already exists.
[11] Krauss, R., 1986, *The Originality of the Avant-Garde and Other Modernist Myths*, The MIT Press, Cambridge (Mass.), 136.
[12] May Angels lead you into paradise; / may the Martyrs receive you at your coming / and lead you to the holy city of Jerusalem. / May a choir of Angels receive you, / and with Lazarus, who once was poor, may you have eternal rest.

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MODERN ARCHITECTURE IN AFRICA: OPEN-AIR MOVIE THEATRES

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The concept of "freedom" is present in the uniqueness of the works erected in Portuguese language African countries, such as Angola or Mozambique, since the beginning of the 1950s. After WWII, when Portugal was still living under a dictatorship, anachronistically valuing its empire and its colonies, a number of young architects went to Africa and affirmed a modernity that was far from the State-sanctioned architectural models. Such freedom was translated into a firmer appropriation of the modern movement codes in an international meaning.

It is permissible to establish that the first sign of flexibility and openness of Portuguese architecture to the forms and principles of international modern architecture was ensured at the 1st National Architecture Congress, in 1948. In Portugal, upon the end of WWII and the democratization of the European States, the strife against the Salazar regime became manifest, leading to the organization of the various oppositions, who believed in a swift fall of the so-called "New State". The political crisis within the regime forced it to use efficient measures that led to a tougher, more consolidated New State, and at the same time to a growing agitation among the various opposing sectors in the Portuguese society, branding it politically, socially, economically and culturally.

A new generation of architects, trained in the Arts Schools of Lisbon and Porto, laid claim to a new social, ethical and political consciousness. If, on the one hand, they claimed a new vision of reality, on the other hand, they tried to theorize and strengthen an idea of architecture, international and orthodox according to the premises of the modern movement. These young people were the ones who breathed life into the Congress. It was also within this context that the Portuguese architects got interested in the Brazilian architectural production. The large dissemination of the Brazilian projects in foreign magazines since the mid-1940s, and subsequently their exhibition in Portugal, aroused the enthusiasm of the new congress generation. What fascinated these Portuguese architects was the specificity of the Brazilian response as vanguard within the modern framework. It was just as a formal language and in a fragmental way that the projects they developed during the 1950s and 1960s absorbed the Brazilian experience, in a thirst for falling into step with international architecture[1]. In Portugal, "modern architecture is not an expression of national identity as it is in Brazil, nor does it possess the hyper-awareness of being a privileged vessel for acclimatizing a modern world as it is obvious in its Central European genesis."[2]

However, the application of a modern vocabulary based on the Brazilian experience "scales up and acquires a different authenticity in the Portuguese colonies, in Angola and Mozambique"[3]. The size of the territory[4] and the geographical and climatic similarities will find here their conductive wire.

At the outcome of the Congress, this "African generation"[5] went to Angola or Mozambique, surely motivated by different reasons: ideological or political, or simply looking for new opportunities. In a less restrictive society away from the center of power, these architects had in common the possibility of building with a modern vocabulary. And upon appropriating the universality and dogmatism of the modern ideas, their ability, contrary to those principles, to adapt to the specificities of the place is justified precisely by the Brazilian lesson.

One of these architects, Francisco Castro Rodrigues, translated into Portuguese the full version of the *Charte d'Athènes*[6], published in a series of 12 numbers by the magazine *Arquitectura*[7], a few years before traveling to Angola as head architect to the Municipality of Lobito. Upon proposing the revision of the city's urban plan, he applied some of the basic principles of the *Charte*: organization of the city in four main themes – Housing, Leisure, Work and Circulation. Furthermore, he designed two community buildings expressively and exemplarily illustrating the "leisure" theme in a Portuguese colonial society, during the 1950s, and specifically as a response to the tropical climate: Cine-Flamingo and Cine-Baía. These were both open-air movie theatres, as a general rule called "*cine-esplanadas*".

Cine-esplanada, i.e. "a partially roofed or open-air movie theater, is a unique typology specifically conditioned by the climate. (…) In these climatic areas, constructions should be shaded structures openly stimulating air movements. Spaces that are merely roofed, not entirely enclosed, are greatly functional and acquire unique spatial features, since they are systems which viability is restricted to tropical regions. These building typologies are often suited to their weather environment, finding their identity in a confrontation with nature."[8]

Such movie theaters, as a program and architectural response, represented the idea of well being felt by the bourgeoisie of the Portuguese colonies after WWII and before the colonial war. If the movie theatre symbolically embodied the idea of progress, the architecture of such spaces affirmed its consciousness: the *cine-esplanada* is cinematographic in itself. Its spatial structures make us experience an "architectural promenade" with long cinema "travellings".

Francisco Castro Rodrigues's architecture in these open-air movie theatres exemplarily translated a society who urgently wanted to be modern.
These projects were private initiative order, just like the majority of cultural building projects associated to leisure. Unlike the large Government community buildings, often subject to the restrictive conditions of a cultural policy imposed by the regime, this difference allowed for a lesser constraint in the design of architectural structures, a free use of the modern codes.

Our three study cases are located in Angola: Atlântico and Miramar, in Luanda, and Flamingo, in Lobito. Although walled, shut to the city spaces, their symbolic

nature defines them as strategic landmarks. They are large-sized buildings, intended for a mass public, sometimes seeking a “monumental scale, formally targeting the settlement of the structural issue, which is above all rooted, under a functional viewpoint, in the solving how to overcome large openings...”[9]

The main concern that is common to all three projects is the structural design of the roof or projected roof platform aimed at giving it an expressive form. Or else, in the case of Miramar or Flamingo, the significance given to the size and plasticity of the screen. Such plasticity, as well as the textures and color combinations used are a clear reference to the “free form modern” developed by Brazilian architects in the 1940s and 1950s. The exploration of all the potential of reinforced concrete permitted this significant structural innovation and formal freedom, by using a compilation of forms that, little by little, get rid of the pure solids and of the right angle of Le Corbusier’s initial work. And while Le Corbusier, upon designing the Ronchamp Church, Chandigarth, or writing *Le Poème de l’Angle Droit*, seems to propose, ironically and paradoxically, a new reading of geometry and form turning them into “disturbing experiences”[10] within the modern dogma, the route of the Brazilian model, particularly Oscar Niemeyer’s work as from the Pampulha designs, marked this way: “architecture-sculpture, a loose dominating form under infinite spaces”[11]. This formal and expressive experience would be thoroughly explored in those three paradigmatic works of the Modern Movement in the African territory.

Cine-Atlântico, formerly Cinema Império, is located in downtown Luanda. It is a large open-air playhouse, with a 1,500-place capacity. Cine-Atlântico is a roofed amphitheater, formally marked by a structure that is defined by a system of triangulated columns rising above the roof and by the tie rods supporting its huge roof. The building is opened sideways and closed at the front and back: the two-level main body where the entrance and the stage and backstage are located. In this main body, the symmetrical composition facade features the access to the top of the amphitheater through a mixed system of ramps and stairs. The bar, restrooms and other support services are located at the lower level. Unlike the access body, the stage block is opaque and closed. Its large dimensions and monumental character associate this space, even today, to an idea of cosmopolitism representing the scale of a big city.

Cine Miramar is the amphitheater in its classical meaning; taking advantage of its location, at the top of the Miramar hill, it is a terrace overlooking the vast urban scenery of Luanda. Understanding the topographical and geographical qualities of this place is a determinant in the poetic dimension of this work. Designed in 1964 by the brothers João and Luís Garcia de Castilho, it has neither the size nor the capacity of Cine Atlântico. The expressiveness of its design lies on its delicate roof platform, partially protecting the stalls, and on the contrast between the screen, a large concrete plane, and the buoyancy of the city. The shading platform, with a light wooden structure, is carried by concrete columns with metal cable tie rods. A wall-building, which encloses the theater and where all supporting areas, box-offices and bar with a terrace are located, affirms an express modern language in its cadenced roof plane design and in the texture and color of its materials.

Cine-Flamingo is located at the southeastern end of the town of Lobito, between the Atlantic Ocean and the swamps. Expressive and monumental, this open-air theater for 1,200 spectators was designed, in 1963, by Francisco Castro Rodrigues. This work is essentially marked by its huge shading roof-bearing reinforced concrete structure and its gigantic wall-screen. The formwork reinforced concrete structure of the roof platform is V-shaped reaching a suspended 16-meter opening. This is articulated with a smaller platform, which marks the entrance and rises over the wall-building that encloses the “indoors”.

A few support services, such as bars and restrooms, are sheltered under a dynamic belvedere, where the influence of Brazilian modern architecture is obvious, a reminder of Niemeyer’s Casa de Baile, in Pampulha. These roofed spaces are formed by waving walls, zigzagging broken roofs and colorful floors, all of which lend them a light and playful nature. Wrapped in the concrete structure, the building of the projection booth stands out, raised above the ground and connected to the circulation areas through winding ramps. All decorative panels in polychromatic marble-plaster, highlighting the projection booth and the main façade, were drawn by the theater’s author, a defender of the synthesis of the arts and the idea of an overall work. This project answers to a technical and formal improvement of climatic and geographical constraints in a search for tropical architecture.

It is precisely over the answers given, in these three works, to tropical climate and geography that we must think. The weighed study of natural constraints (solar exposure, wind direction, rain intensity, soil characteristics…) and available resources (existing technologies and material, workmanship…) result in exemplary solutions for shading, natural ventilation, space organization, which were the conceptual genesis of those designs. The search for a sustainable architecture in agreement with time and place, rather than an interpretation of the formal codes of the Modern Movement, is possibly the best heritage of those works.

Today, Luanda is a city in transformation at an unimaginable speed. Over the brands left by the war, and the over-population caused by it, Luanda’s skyline changes every day. In these new times of peace, we can see a growing investment, both in infrastructure and in the urban transformation of the city. The reconstruction of a country such as Angola, with the natural resources it possesses and endeavoring to be reborn, has naturally attracted a huge foreign investment, and so saw the arrival of a new population from all occupational areas and originating in all four corners of the world, thus accentuating Luanda’s natural character – its cosmopolitism. This framework explains why the theatres in the Angolan capital are still functioning, and they are both in a good preservation condition. However, Cine-Flamingo, just like Lobito, its city, is very degraded. Of its huge shading roof platform, only its imposing structure remains. Currently, it harbors an elementary school. Taking advantage of the covered space, children arrive with their plastic chairs and settle down in the shade. This is undoubtedly an improvised precarious use, but the quality of the spaces lets us imagine that they could be adapted or rehabilitated for other uses without significantly changing their essential architectural structure.

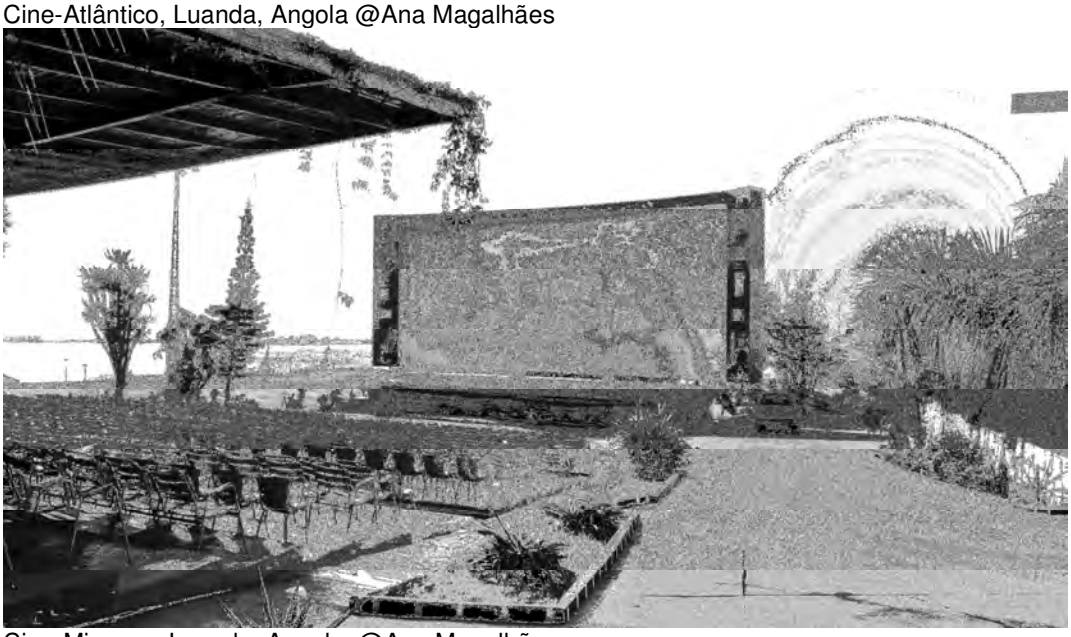
Today, in a post-colonial context, it is important to reflect on the value of the heritage built in Africa, particularly within an international modern architecture tailored for the tropics. And to understand that, other than the research on the historic and heritage meaning of such works, reviewing them may be a stimulus in the search for contemporaneous answers to the specificity of architecture in these territories.

Illustrations

Cine-Flamingo mnb, Lobito, Angola @Ana Magalhães

Cine-Flamingo, Lobito, Angola @Ana Magalhães

Cine-Atlântico, Luanda, Angola @Ana Magalhães


Cine-Miramar; Luanda, Angola @Ana Magalhães

Notes

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[3] Ibidem.
[4] Tostões, A., 1997, "Os Verdes Anos na Arquitectura Portuguesa dos anos 50", FAUP Publicações, Porto, p. 43.
[5] Fernandes, J.M., 2002, "Geração Africana – Arquitecturas e Cidades em Angola e Moçambique", 1925-1975, Livros do Horizonte, Lisbon.
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[7] *Arquitectura*, Lisbon, series 2, nr. 20, February 1948; nr. 21, March 1948; nr. 22, April 1948; nr. 23/24, May-June 1948; nr. 25, July 1948; nr. 26, September 1948; nr. 27, October 1948; nr.

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[9] Tostões, A., 1997, “Os Verdes Anos na Arquitectura Portuguesa dos anos 50”, FAUP Publicações, Porto, p. 94.

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[11] Niemeyer, O., “A Forma na Arquitectura”, in Xavier, A. (org.), 2003, “Depoimentos de uma Geração, Arquitectura Moderna Brasileira”, Cosac & Naify, São Paulo, p. 141.

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AN ARCHITECTURAL DILEMMA: CONSERVATION OR RECONSTRUCTIION OF THE "CULTURA ARTÍSTICA" THEATRE IN SÃO PAULO

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The "Sociedade de Cultura Artística" (1) is a private association that since 1912 promotes cultural events either literary conferences, musical concerts, ballets or plays. The lectures had themes such as "The traditional architecture of Brazil" by Ricardo Severo or in 1915 ten conferences by Afonso Arinos de Mello Franco on "Brazilian folk traditions and legends". The same research of Brazilian roots was very clear in the selection of the musical programs that presented Ernesto Nazareth or Heitor Villa-Lobos as a counterpoint of more classical European composers and artists.

In 1942 the SCA commissioned architects Rino Levi (1901-1965) and Roberto Cerqueira Cesar (1917-2003) to design a large multi-purpose theatre. The construction started only in 1947 and was inaugurated in March 1950 with a two days concert by Heitor Villa-Lobos and Camargo Guarnieri. It was located in Nestor Pestana Street at the edge of the high-rise offices and apartment buildings of the new expanding town centre. Pictures of the early 1950s show the new theatre among small houses, with a low profile and a remarkable façade. Over the upper foyer and closing the 1560 seats large auditorium, with a gentle curve, the architects had provided space for a large 8,0x48,00m mural. The design was by painter Emiliano Di Cavalcanti (1897-1976) carried out as a mosaic of small bits of glass representing the nine muses with a few more assorted "mulatas" of his own invention. This large mural was in the spirit of Latin America art and architecture of its time (2).

Rino Levi had already designed several very large movie-theatres such as the UFA Palaces of São Paulo (1936) and Recife (1937), the Universo (1936), the Piratininga and the elegant "art-deco" Ipiranga of 1941 (3). He had studied the new theories of physicist Wallace Sabine and could then calculate the volume and reverberating time for the new hall. The architects had designed the auditorium for concerts as well as for plays with a considerable attention to the visibility curve and public access. A small rehabilitation in the late 1960s reduced the auditorium to 1170 seats in order to enlarge the stage that was too small for plays or a full symphony orchestra. The Cultura Artística was very popular and received large audiences year after year, making it a cultural asset for São Paulo. It was then a tragic loss when it burned down in August 2008. Nothing remained except the lower and upper foyers, which were protected by the fire doors and fortunately the external mural. The building was listed as historical heritage by two different agencies: Conpresp (Municipal) and Condephaat (State of São Paulo).
Controversial opinions started immediately: should the theatre be reconstructed as it was originally or only what remained after the fire? Could the mural be transferred to a more convenient place? Why was Paulo Bruna hired without a public competition? And many more.

From the published articles (4) a basic line of discussion could be identified: the articles, after showing great respect and admiration for the original design recommended that the spatial configuration of the main auditorium should be retained. If the fire had damaged the concrete structure it could be reinforced and a new roof provided. The point was clear: the sightline curve and the short distance from the last row to the forestage should be retained, because they were quite good. This line of reasoning accepted that a certain degree of modernization may well be considered in the technical support of the stage, fly-tower, dressing rooms, etc. Several examples were remembered such as the new Teatro alla Scala in Milan that had a new structure for the stage designed by Mario Botta at the same time that Elisabetta Fabbri provided a conservative renewal of the interior. Or the reconstruction of La Fenice theatre in Venice, “com’era, dov’era”, from a design of Aldo Rossi. Another recent example of faithful reconstruction is the Petruzzelli Opera House in Bari, destroyed by arson in 1991 and reopened in 2009. But it remained without much discussion, the possibility that the concrete structure was deeply damaged and the original conception outdated and not valid anymore in 2008.

The Cultura Artística Society is a private organization and decided to keep PB as the reconstruction architect because he had worked with Rino Levi and Roberto Cerqueira Cesar, had provided assistance to the theatre since the late 1960s and was familiar with its problems. After long discussions the board of trustees and the architect came to the following decisions:

1– LOCATION. The theatre should be reconstructed at the same well known central address for several reasons: the audience was always extremely diverse and downtown was a common destination; a 650 places parking was built by the municipality at the corner of Nestor Pestana Street; there were many more parking garages in the neighborhood providing enough places for those coming by car; the Avanhandava Street, a block away from the theatre, was transformed into a pedestrian zone and several new restaurants opened recently; the Municipality of São Paulo is engaged in the rehabilitation of the whole central area, making it more livable and secure. These were all good reasons to stay in the city centre and help to consolidate the process.

2 – MURAL. The façade and mural were in a reasonable condition. To transfer the mosaic to another place would risk disaster. In order to take the decision to rehabilitate it in place or outside in a plant two different tests were realized. The first using conventional “ultra-sound” equipment the mural was scrutinized inch by inch. It came out that about 30% of the glass bits were loosening and could drop at any time. There were also water penetration and cracks ranging between 0,20 to 0,40mm . But the external masonry was in good conditions since the architects had designed a cavity wall at the back of the auditorium either for acoustical reasons or for keeping at a minimum level the stretching of the structure. The second test was a more conventional concrete measurement of the slender foyer columns, which came out to be in good conditions, since they were protected by the fire doors. In conclusion, the rehabilitation of the façade and mural could start immediately in place. A steel structure was designed to support the technicians and artists that will be working in the rehabilitation of the mosaic. Architect Isabel Ruas was selected for the job. She and her crew of 6 to 10 craftsmen will work for 12 to 15 months up in the higher part of this scaffold. But this structure is more than a protection for the craftsmen. It is also a temporary support for the entire façade when the calcinated concrete structure of the old auditorium will be demolished. The columns of the small foyers will be connected to the future structure, but in meantime they should be anchored and stabilized. This structure is already in place and the rehabilitation of the mural is well under way at the moment.

3 – FOYER. In a contemporary theatre the planning allowances for the auditorium and the foyers are the same (0.65 to 0.84m² per seat). Herman Hertzberger presenting his theatre designs wrote about the importance of designing new and large foyers with these words: “Seeing and being seen not only obtains in the auditoria but more especially in the foyers. People visit the theatre for each other, and not just for the play…The secret of a good foyer is articulation. Articulation and a view of other theatergoers. There must be plenty to see, you must see people you know or could introduce yourself to and you need places from where you can do that. A theatre is a space for looking, a space where the act of looking is celebrated “(5). The old theatre, from this point of view, was very poor. It had a small entrance and a small foyer at the level +3,80m under the main auditorium. These two spaces were insufficient for all the patrons and when drinks or champagne were occasionally offered half the public could not get in. Since the available land is quite small, the decision to provide the foyer with most of this area, forced the auditorium to be lifted up allowing patrons to circulate under it and in both sides of the main auditorium. Lifts and escalators will allow people to move up and down easily from both sides of the auditorium. Some will have extended views connecting visually the street to the internal life of the theatre and allowing organizing small parties and private receptions for sponsors. There are many wonderful theatres that use this strategy such as the Royal Festival Hall in London, designed by Leslie Martin and Peter Moro for the Festival of Britain in 1951. In 1964 a controversial intervention eroded the clarity of the original concept (6). A full refurbishment was inaugurated in 2007; designed by Allies and Morrison Architects, it restored the original transparency and distinctive “flowing internal spaces” of the foyers (7). A more recent example is the Concert Centre for the Danish Radio in Copenhagen, designed by Jean Nouvel and finished in 2009.

4 – AUDITORIUM. The old theatre had actually two auditoria. The small one, with 336 places, very rarely used, and the main one, with 1171 places in a single tier. The new theatre will have only one auditorium with 1500 seats, but not all of them in the same tier as before. The question to be solved was “adaptability”. The first required adaptability was the orchestra pit, which is necessary to adjust from the demands of a play without music to an opera or ballet with an orchestra that is not in the stage. But the main problem was related to the capacity of the auditorium. Roderick Ham in his useful book on theatres provides a clear point when writing: “Some performances are suitable for, or will only attract smaller audiences than the full capacity of the house, and it is useful to be able to reduce the size of the auditorium in a convincing manner. This is very difficult to achieve in a single tier auditorium… With a multi-tier auditorium, on the other hand, it is relatively easy to shut of the top tiers. Simply not opening the gallery may be sufficient, but a more sophisticated development is to lower the auditorium ceiling to rest on the top balcony front” (8). A remarkable example is the Theatre Royal at Plymouth designed by Peter Moro in 1982, where the full 1296 seats can be reduced to 764. There are other advantages in splitting the audience in different tiers and at the same time bringing as many people as possible within the optimum range of distance from the performance area. The old theatre had managed to solve this problem increasing the degree of encirclement in plan. The new theatre works in the vertical section by adding two more tiers. The lower entrance level will be +3,80m over the foyer and gives access to a 780 places auditorium with 48 seats at the side balconies. Two more galleries were added with 232 seats in the back and 60 places at the sides. This configuration allows the distance from the last row to the proscenium to be kept at 22m, as in the old theatre, and provides a certain intimacy surrounding the acting area or the orchestra. The main disadvantage of a multi-level auditorium is that it is more difficult to get good sightlines because the rake of the stalls has to be reduced so as not to push the balcony too high.

The proposed new theatre allows good sightlines, in a compact volume of only two balconies and a relatively simple vertical circulation.

5 – STAGE. It was decided that the stage will be what is usually known as an Italian theatre and in Britain is called a proscenium theatre, with a width of about 14,00m.This stage should provide impeccable presentations for: full symphony orchestras as well as chamber music; opera or ballet with a 60 musicians orchestra in the pit; musical comedies with songs and dance; conventional plays; conferences with videos. The old theatre had a small stage with a good forestage but quite insufficient backstage. When a large symphony orchestra was playing the musicians had to go out into the patio in the intervals otherwise there was no room for everybody, not to speak of a greenroom. Along most of the year there was classical music on Monday through Wednesday and a popular play the other days of the week. On Monday morning the stage had to be cleaned but there was no place to keep scenery. For all these reasons the new theatre should have a “state of the art stage”, complete with full mechanical and support spaces, under the stage and at the back. The new stage was designed with a 14,00 x 14,00m acting area, with prompt sides with 6.00m and a backstage of 8,00m. The fly- tower will be a 28.00m high, fully equipped.

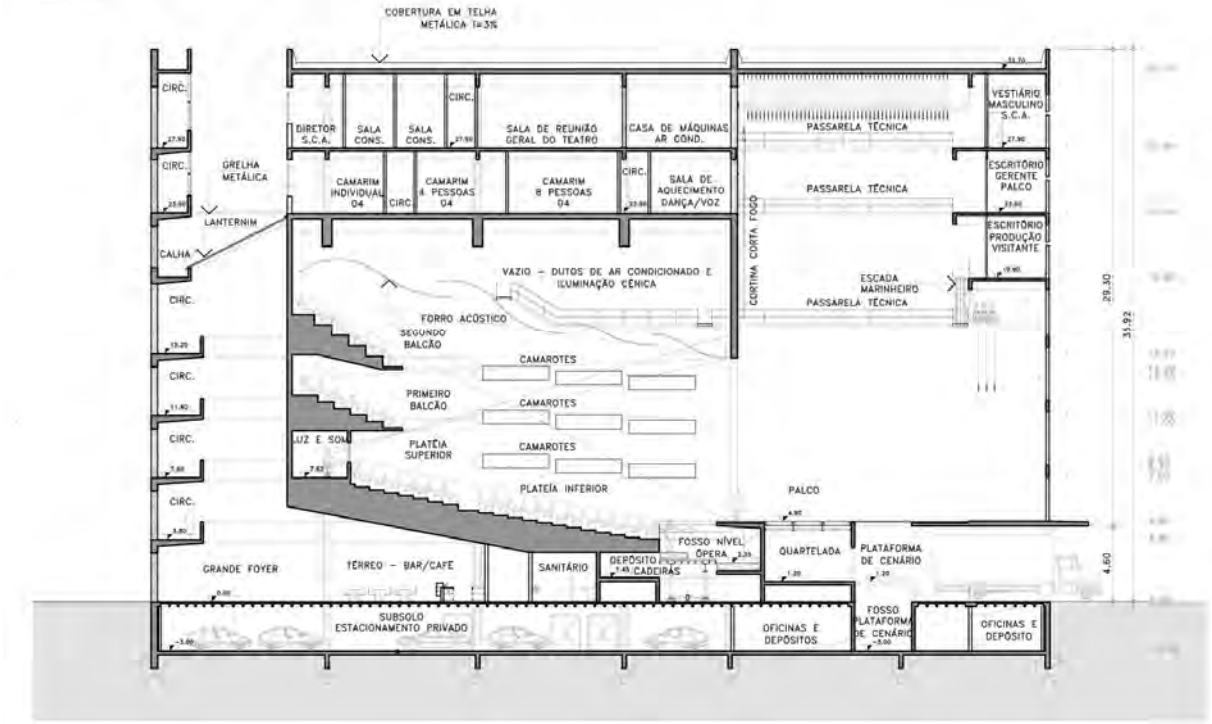
Rino Levi had designed the main central line of the theater perpendicular to the street, with the mosaic panel as the back of the auditorium, with the stage and the small fly-tower at the most inner corner of the irregular site. This central axis was reversed 90º, so as to accommodate the auditorium, stage and back stage with the best dimensions. With this decision the mural was not anymore the gentle curved back of the auditorium, but a figure over a back neutral façade. This point was severely addressed in many discussions and the new project acknowledges this criticism as correct but could only provide a set back of about 6.00m from it in order to keep the mural a focal point of the composition. The final theatre is much higher than the original, since dressing rooms, administrative offices and support areas for the performing actors and musicians were absolutely necessary.

One final observation: the site is 1924.00m² and the built area is 10424,76m², with a ratio of 5,41. This ratio is much higher than the present one in São Paulo. The difference is due to the purchase in 1996 by the SCA of these constructions rights thanks to Roberto Cerqueira Cesar insistence.

Illustrations:

Vista frontal do teatro em meio à cidade

Foyer no pavimento intermediário



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MODERN CITY
Planning the Modern City

During the last two decades historiographers of the modern movement have chinked away at the image of modernity as homogeneous, revealing the complexity and ambiguity of its major proponents and their works as well as great regional diversity. The papers that make up the panel “planning the modern city” show a similar situation in the realm of modern urban planning and highlight the way in which ideas generated in the CIAM were not implemented in a seamless process. The papers also illustrate the complexity of dealing with ideas, such as those of renowned architects including LeCorbusier and J. L. Sert, that both changed over time and made adjustments to regional situations.

One theme that is consistent in this session is the confrontation between ideals or principles of urban planning and the reality of dealing with existent built fabric or establishing new towns in regions distant from the European origins of the formulations of the CIAM.

Latin America, one of the most fertile regions for the deployment of the modern urban planning agenda, is exemplified in two papers. Patricia Schnitter for the case of Medellín presents an example of the confrontation between new ideas and the physical reality of the Latin American city as well as with its inhabitants. This paper reminds us that the process of implementing change in the design of cities or parts of them was multifaceted; the reception of new models of city and housing had to take into account local reactions. Reviewing the correspondence between Sigfried Giedion and immigrant architects in Brazil and Argentina, Anat Falbel brings to the forefront the relevance of certain actors in the promotion of modern architecture and urban planning ideals, revealing at the same time, the way in which personal situations interacted with broader conditions to define changes in Latin American cities.

The complexity of Le Corbusier and the changes in his ideas on city planning over time are dealt with in two papers. Tim Benton reviews Le Corbusier’s Ville Radieuse pointing out his contradictory viewpoints in praise of urban life and condemning it, between the artificial and nature. In another text that delves into a later formulation by Le Corbusier --the project for the reconstruction of St. Dié--, Mary McLeod illustrates the evolution of Le Corbusier’s ideas on urban planning and the treatment of pre-existing fabric; she also demonstrates the relevance of reviewing projects deemed unimportant by other authors in order to understand later “major” projects.

The only paper in the panel that touches on the topic of preservation of urban fabric covers the topic of the little known new town, Portolagos, located on the Greek island of Leros. This example is described by Katerina Chatzikonstantinou with its differentiated layers of urban fabric and the current day problems of valorization.

Together the papers that form this panel provide us with insight into the diversity present in the thought and practice of urban planning in a period often characterized as homogeneous.

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Temporality and Transformation

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LA VILLE RADIEUSE

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In the *Avertissement* of his book *Quand les cathedrals étaient blanches*, published in 1937, Le Corbusier described *La Ville Radieuse*, published two years earlier:

> Ce livre est le fruit de quinze années de travaux; il est touffu; il est comme un collier garni de nourritures. On me l'a rapproché. Je ne puis pas aujourd'hui encore, aménager un beau salon, où l'étiquette soit reine.[1]

It is not surprising, that *La Ville Radieuse* is full of contradictions. Dedicated to individual liberty it advocates massive collective endeavor on the model of military mobilization.[2] It is a defense of dense urbanism, in opposition to the Russian disurbanists, and yet Le Corbusier admits to taking pleasure from escaping the city. It offers citizens standardised housing cells of 12m^2 per individual but presents the joys of living most forcefully in the form of wooden holiday shacks and converted stone houses in Vezelay.

La Ville Radieuse is a founding document of the Modernist doctrine of the modern city at the moment when it had fragmented into warring camps but was achieving worldwide recognition among the young. At first glance, the plans of the Ville Radieuse do not differ enormously from those of the Plan Voisin devised for a lecture in Strasbourg in 1923 and given concrete form in the Pavillon de l'Esprit Nouveau in 1925.[3] There are in fact significant differences in conception and organisation, but these are nowhere near as important as the changes which had taken place in Le Corbusier's mentality in the intervening 12 years.

In one sense, *La Ville Radieuse*, this bad-mannered book, a book without etiquette, is not intended primarily for the reader. It is a settling of accounts by Le Corbusier with a society which had become rotten, but above all with himself. It is a boxing match in which the adversary is the shadow projected by his former self. It is Don Quixote's view of the world of planning.[4]It promotes a doctrine in a form which demonstrates that it cannot be taken literally, that work is still in progress. It both flaunts Le Corbusier's new authority on the world stage and undermines it. It is also the book which took the longest to prepare. The title and the basic arguments were developed in his *Réponse à Moscou* in 1930, arguing against the Russian disurbanists. All his lectures, from December 1930, were based on the Ville Radieuse. Already in March 1931 he was telling his mother: 'Je suis plein de mon sujet puisque je rédige en ce moment ma "Ville Radieuse" (7 chapitres sont écrits, sur 12, et tout est dessiné.)'[5]

Le Corbusier seems to have been well aware of the problems he was creating for the reader. Of the seven parts, two (Parts 4 and 5) consist of articles published in the magazines he helped edit *Plans*, *Prélude* and *L'Homme Réel.* Part 6 is made up of his various urban plans, which present strikingly different solutions for cities he had

visited across the world. Part 2 consisted principally of reports and papers written for CIAM. Only Parts 1 and 3 were written specially for the book, and these include many sections based closely on the arguments of *Urbanisme* (1925) as they were adapted in his lectures from 1924 to 1934. I will concentrate on the first Part, in which Le Corbusier prepares the reader for what is to come. The rhetorical tactics he deploys here, learned in part from his lectures, depend on drawing the reader into his way of thinking with striking anecdotes and analogies, and by shocking juxtapositions and exaggerations.

Among the preparatory papers for Le Corbusier's *La Ville Radieuse* (1935) is a sketch of his painting of 1930 *La main et le silex* (The hand and the flint), which served as the frontispiece for the book, with the legend 'La Ville Radieuse ou le despote'.[6] As published, the word 'despote' was replaced by a caption that includes the statement, 'L'objectif et le subjectif sont les deux pôles entre lesquels surgit l'œuvre humain faite de matière et d'esprit'.[7] On the typescript draft of the title page, the book is still called: '"La Ville Radieuse", ou le despote'.[8] The 'despot' is the law which will rule the modern world once it has penetrated every heart, and the law is 'harmony'. The despotism of 'harmony' implies subservience to universal laws of nature, but Le Corbusier also understood nature in its physical and sensual sense, with all its informality and uncontrollable confusion. This tension, some might call it a contradiction, between the local and the universal, between universal laws of harmony and the close observation of natural forms, of physicality and spirituality, forms part of the text for this paper. Another apparent paradox in Le Corbusier's political approach in the 1930s is his belief in the possibility of absolute personal freedom within the context of an authoritarian political state. I will follow Robert Fishman, Mary McLeod and Mark Antliff in reminding us of the peculiar political circles in which Le Corbusier circulated in the 1930s. Finally, I want to explore Le Corbusier's state of mind in the preparation of this important work. What was driving him? What did he believe in? Is this book a recipe for urban planning or an eschatological reflection on his own destiny?

Nature

The opening words of *La Ville Radieuse* are 'I am attracted to the natural order of things...' but what needs figuring out is what Le Corbusier meant by nature. In a literal sense, Le Corbusier was moving from an obsession with machines to a close bond with natural forms and materials. In his art work, the machine made objects and strict geometrical compositions had already given way to the eroticised assemblages of sea shells, ropes, boats and voluptuous women stimulated by his holidays at Le Picquey with Yvonne Gallis, whom he married in 1930. The house projects for Hélène de Mandrot (1929-31) and Errazuriz (1929-30) threw away, once and for all, the Five Points for a New Architecture, written only three years previously.[9] The architectural revolution had been completed, he claimed, and he had himself passed beyond it. Wood and stone increasingly challenged concrete and steel in his palette of building materials. The simple shacks made of found materials by seasonal fishermen on land they did not possess had replaced the Citroen car as the metaphor for how to live simply and in harmony with nature.[10] His two modest houses of 1935, for Mr Félix and for Albin Peyron, confirmed his rejection of Modernism in its international form. The rectilinear grid of the Plan Voisin de Paris

was being challenged by sinuous curves of the plans for Rio de Janeiro (1929) and Algiers (1931-2).

The manuscript draft of the introduction - 'Je suis attiré...' - was labelled 'Piquey, Trégastel 1934'.[11] There is no doubt that the holidays spent at Le Picquey on the Bassin d'Arcachon and Trégastel in Brittany were fundamental for reordering Le Corbusier's attitudes to nature. Le Corbusier's moving account in *Une Maison un Palais* of the fishermen's houses in the pine forests of the Bassin d'Arcachon is his most heart-felt piece of writing on domestic architecture. Le Corbusier noted 'the isolation, the separation from the rest of the world' of the tongue of sand-dunes, between the lagoon of Arcachon and the Atlantic. The fishermen, who worked there in the summer, 'only came there with the idea of living 'from day to day'. This precariousness puts them into the paradigmatic situation of the house builder; they are making a shelter for themselves, somewhere to live, no more, in all simplicity and honesty. They are carrying out a pure programme unencumbered with claims to history , to culture, to the taste of the day. They're building a shelter, somewhere to live, with the materials that come to hand.'[12] And suddenly, says Le Corbusier, he realized that these houses were Architecture (or as he puts it, they were 'palaces'). There are other signs of Le Corbusier's preference for the most simple and primitive conditions for relaxing and living in the summer. On 10 July 1932 he sketched a wooden shack, raised on stilts, rented by friends of his for a vacation. He noted: 'life enfolds entirely under the pilotis…' and he clearly considered this casual existence idyllic.[13]

In *La Ville Radieuse* (1935) he illustrated the interior of one of the traditional stone houses which his friend Jean Badovici and his then partner Eileen Gray had converted with the following captions: 'In Vézelay, 16th century and modern times and modern people…Why this astonishing freedom?... Why this sweeping generosity?... and this intimacy?... Because a proper human scale (that which has the true dimension of our gestures) has conditioned each thing. There is no longer old or modern. There is what is permanent: the proper measure.' Curiously, in one of the photographs he painstakingly removed the figure of a tall woman, who might well be Eileen Gray, tending a bowl of flowers.[14]

Direct, physical contact with nature was only one of the meanings of 'nature' for Le Corbusier. As he said of *Quand les Cathédrales étaient blanches*, the book, 'sera plein de tumulte parce que le monde aujourd'hui est plein de tumulte, parce que tout est déchainé'.[15] By 'déchainé', LC meant that capitalism had separated people from the natural order of things. And we must associate the word 'tumulte' with Abbé Laugier's well known statement : 'Unité dans le detail; tumulte dans l'ensemble' which Le Corbusier had noted in his sketchbook on 4 June 1934, under a sketch comparing the Campo of Pisa with his scheme for the Palace of Soviets.[16] Far from indicating a design principle alone, Le Corbusier took Laugier's slogan as a metaphysical statement which could be applied also to *La Ville Radieuse*: behind any apparent discontinuities and contradictions lay a unity of purpose and unity of aim. The aim was for harmony between people, materials, time and space. And the purpose was Le Corbusier's conviction that he was on a special mission to give back to people corrupted by capitalism and industrialisation a connection with nature and with their own senses.

An example of the vast sweep of this logic emerges from notes for his stormy lecture at the Salle Pleyel in Paris in December 1931.[17] He wanted to illustrate his concept of an organic architecture using the materials of the age but linked to the great works of the past by a Humanist sense of scale. He imagined the great forms of the Colosseum and the Basilica of Maxentius in a dialectic relationship with a new building of steel and glass. His caption reads: 'Il manque dans les pays "l'harmoniseur" qui rende sensible la beauté humaine des temps modernes. La via Imperiale, Rome.' What is remarkable about this sketch, which he redrew at various times and published in *Aircraft* in 1935, is that Mussolini had only just, in 1931, given the order to cut through the medieval houses covering the Imperial fora to create the via del Impero.[18] It is clear that the via dell'Impero had become for Le Corbusier a topos of verification of his theory that modern architecture and the works of antiquity shared the same architectural values (the thesis of *Vers une Architecture)*. An intriguing aspect of his annotation is the word 'harmoniseur'. Who is this harmoniser who can make the beauty of modern times apparent and comparable to the great works of antiquity? He is, presumably, the subject – the architect - (and author) of *Vers une architecture*, whose basic message was the same. Harmony meant creativity, the ability to escape from the conditions of the era to a timeless Acropolis, 'pure creation of the mind'.

Harmony could also be thought of in hermetic terms. Le Corbusier's friend Francois de Pierrefeu wrote an article extolling the power of the Golden Section :

> Quelle ne serait pas la puissance de la Ville où toutes choses visible – urbanisme, style, habitation – construites sur les harmoniques, irradieront le Nombre d'Or. Ville radieuse de Le Corbusier, sœur humaine de la forêt, sœur de l'orchestre… L'essentiel est de méditer les nombres, et de revenir aux pures mesures humaines et, par elles, aux rhythmes de la croissance animée![19]

The context of the ideas of the circle behind *Plans*, *Prélude* and *l'Homme Réel* help to explain the cosmic tone of *La Ville Radieuse.*[20] On page 7 of his book, a diagram of the solar system is labeled laconically 'système', and a whole section headed 'Lois' spelled out the spirit of the Laws of nature:

> Trois spheres sont en presence:
> Le dictateur : le soleil,
> Le lieu de nos destinées : la terre,
> Une compagne qui tourbillonne autour de nous : la lune.
> D'un coup, le temps de nos agissements est déterminé :
> Les 365 jours de l'année solaire, périple de nos corps, de nos cœurs, de notre esprit…'[21]

Le Corbusier went on to spell out his cosmic metaphors, the male and female (sun and moon), the dictatorship of the sun and the law of water (the law of the meander), illustrated by sketches recalling his flights in South America and North Africa. The great cosmic forces of sun and water, wind, earth and fire governed human existence. All this was challenged and negated by man-made cities. In all of this Le Corbusier was following his friend Dr. Pierre Winter, who had co-written an article about preventative medicine entitled 'Les grilles cosmiques de l'homme' in April 1931:

> La terre, c'est-à-dire: influence centripète, la pesanteur; le soleil: l'influence centrifuge ascensionelle; la lune: influence tangentielle latérale. La force Terre alourdit et tasse l'homme de haut en bas. La force Soleil l'allège et l'étire de bas en haut. La force Lune l'assouplit et le disloque transversalement, agissant au point faible où l'os manque, aux articles.[22]

This article was based on the assumption that, 'le malade est un être sain dont le rhythme intérieur n'est plus en accord avec les rhythmes cosmiques qui l'entourent.'[23] Winter believed that sickness could only be addressed by confronting man's spiritual problems :

> La biologie, en effet, ne doit pas craindre d'aller au-delà d'une physiologie organique grossière et d'atteindre le subtil. Si elle ne s'élève pas à cette vue synthétique du corporel et du spirituel, si elle ne voit pas dans l'homme une sorte de raccourci sublime de l'univers, de microcosme, elle reste dans l'enfance et ses découvertes sont sans signification.'[24]

The metaphor of sickness runs right through *La Ville Radieuse* and the cure is represented in terms of returning man to harmony with the cosmic forces of nature. Sun, air and greenery were official slogans of CIAM, partly thanks to Le Corbusier's efforts, but Le Corbusier gave them a particular charge as a link between man, nature and higher spiritual matters.

The link between physical nature and the ineffable sphere of creation is described by Le Corbusier in *La Ville Radieuse* not in terms of things but people. In the first few lines he explains that he flees the city to find 'des hommes en instance d'organisation.'

> Je cherche les sauvages, non pour y trouver la barbarie, mais pour y mesurer la sagesse. Amérique ou Europe, paysans ou pêcheurs. Je comprends : je vais là où des homme pratiquent des travaux servant à les nourrir et prennent des initiatives dont l'effet est d'alléger leur peine. Ils font aussi ce qu'il faut pour obtenir sans frais ni dépense, les joies de la sociabilité : métier, famille, collectivité. Je mesure donc qu'étant architecte et urbaniste, je viens apprendre les choses de mon métier chez *l'homme* ou *chez les hommes*. [25]

He was referring principally here to the people he met and drank with at Le Picquey. A few lines further down, he notes the paradox of the modern world (the radio, the newspapers) sharing the world of these 'savages'. He accepts too that these men were not without faults, simple-minded and pusillanimous, the weaknesses of those who are disempowered by the modern world.

> Je mesure alors, d'un coup, la distance formidable qu'il lui faudra parcourir pour atteindre de son *esprit simple* à la *pensée simple* [my emphasis]: le point de départ et le point d'arrivée. Tous deux se rejoignent, après la longue route parcourue. Mais, du moins, ai-je ici, au milieu des organisations naturelles, le point de départ : la jauge, l'outil de mesure.[26]

It is worth pausing on the enormity of this reflection. The distinction between 'pensée' and 'esprit' is extremely subtle. 'Pensée' denotes the disembodied, logical thinking of the intellectual, while 'esprit', for Le Corbusier, connotes a mind in touch with the senses and the real world. Le Corbusier has seen his task, as Adolf Loos did, to slough off his civilisation (education, profession, class) to seek the roots of culture in the basic skills of craftsmanship. The certain link with Loos is made explicit a few pages later. After asserting that 'we the intellectuals' live in cities made foul by overcrowding and stagnant under legislation and tradition (as opposed to the peasant who lives by the seasons and natural cycles of birth maturity and death), he sees redemption only with, 'notre tailleur, notre bottier, notre blanchiseuse, [qui] nous aident à conserver encore le droit à être des cerveaux de l'Univers.'[27] Le Corbusier has made the journey back from intellectual ('*pensée simple*') to human being ('*esprit simple*'), from thought to understanding. But the peasant has to travel in the other direction, from simple man of the senses to the higher realms of thought. It is a profoundly Romantic dream. It is the same dream expressed a few pages further on by Le Corbusier in his description of the modern highway built by Primo de Rivera in Spain, in an article previously published in *Plans* (No 8, September 1931). Unlike the railway line which had ruined the towns it visited, the autoroute had not yet disturbed anyone, he claimed.[28]

> Les maisons, au milieu des terres cultivés sont *chastes*. *Nature – homme, fonctionnement = harmonie*. Nulle souillure, nulle perversion de l'argent…. *Si la République veut*, toute sa tâche est en ceci : voir et regarder en son propre territoire et préciser l'esprit qui y est latent, soit : non-emploi de l'argent = non-convoitise = sérénité = équilibre corporel fourni par le travail (des terres) et le repos = économie des futilités = salut de la destinée humaine corps + cœur (essence même de la vie) + administration.[29]

It was from the highway, in his powerful Voisin car, that Le Corbusier had sketched the donkey well with which he had illustrated his first chapter. But this is an illusion. Civilisation kills the 'primitive', especially when it tries to protect and conserve it and Le Picquey was itself succumbing to the tourist trade during the years of Le Corbusier's visits. Le Corbusier went on to bemoan the swamping of Spanish homes with cheap industrial products – 'objets de consommation stérile' – which he contrasts with the honest workmen's tools which are the 'objets de consommation féconde'.

> Tolérerez-vous que ce progrès prenne précisément les formes de l'insinuant destructeur d'un peuple seul aujourd'hui dans le monde à posséder le bonheur de vivre dans un état de sublime sérénité, - la vie intérieure ? (Côte méditerranéenne, Barcelone, Tarragone, Valence, Alicante, Murcie, Alméria, Malaga). Le caractère symbolique de cette invasion m'occupe. A-t-on de droit, sur un terrain vierge, devant l'expérience faite des pays voisins, de laisser se renouveler la lamentable aventure de la production stérile et du faux luxe abrutissant et enlaidissant.[30]

Authority and the individual

The programme of the 'Ville Radieuse' began with his 'Réponse à Moscou' in 1930, was exhibited as a set of plans at the Brussels conference of CIAM in June 1930 and was summed up in a lecture in Brussels on 28 November 1930, in which the emphasis was on a rejection of the collectivisation of private life.[31]

> L'homme s'efforce toujours de se libérer des contraintes collectives, il tend à rester seul vis-à-vis de lui-même. Chaque logement peut être considéré tout bonnement comme un asile indépendant, fermé, privé, sacré. La famille doit y vivre comme il lui plait, sa vie individuelle sans aucun contrainte collective…. Tels sont mes composants : air, ciel, eau, nature verdure, calme (bruit) et proportion. L'ensemble = harmonie. [32]

Like most intellectuals at the end of the twenties, Le Corbusier had lost faith both in the enlightened rationality of industrialists and politicians and in the systems of democratic politics to plan modern society.[33] A new kind of authority seemed to be required. The Soviet model had at first dazzled Le Corbusier, with the scale of its imagination and its authority, but he soon rebelled both at its formal conservatism and at the threat to individual liberty. On the right, Le Corbusier was attracted to Ernest Mercier and *Le Redressement Français*, not least because Mercier lost no opportunity to promote Le Corbusier's work.[34] Le Corbusier gave lectures to the cadres of the movement and was rewarded by flattering publications by Mercier in the house journal. But Le Corbusier soon turned towards more radical partners, notably his friend Philippe Lamour, the lawyer who had prepared the law suit in which they tried to sue the League of Nations for plagiarising the second project of Le Corbusier and Pierre Jeanneret for the Palace of the League of Nations. For Lamour, the only way of achieving radical change was through the economic weapon of the general strike.

Regional Syndicalism proposed a hierarchy of unions, region by region, building up to an economic parliament which would control prices and the distribution of wealth in wages.[35] Everyone would belong to an association of some kind, representing a trade and a region. Economic power, therefore, would lie with the producers, not the consumers. Political authority, on the other hand, would be managed separately in a rather vaguely described all-powerful government structure dominated by farsighted and rational planners. With the frameworks of political stability and economic planning in place, the individual would be able to benefit from perfect freedom within his or her community and work place. The 'dictatorship of the plan', to which Le Corbusier alludes in the frontispiece of *La Ville Radieuse* was to have had some political reality. Behind this rationalisation lies the paradoxical claim, insisted on by all the authors of *Plans*, that democracy only addressed the individual as an anonymous cipher, lacking any physical, regional or professional base.[36] In democracy, the individual is reduced to being a 'citizen', with an occasional right to vote. Only by creating an umbrella of complete authority could men and women claim their active participation as organized labour; the real liberty of the individual required submission to an unquestioned authority. [37] As Lagardelle put it: 'L'homme réel c'est l'homme du métier, dont toute la vie est dominé par le travail. Des différents aspects de la personne humaine, nul n'est plus expressif.'[38]
Le Corbusier looked with interest, as many of his contemporaries did, to the achievements of Fascist Italy in rapidly addressing aspects of the infrastructural problems which had crippled the country. Mussolini's state organised workers and

professionals in corporations and unions, outside of which economic activity was virtually impossible, but within which some measure of collaborative advantage could be obtained. For example, the Architects' Syndicate offered many public commissions to competition and generally honoured the results of this selection process. One of the active members of the review *Plans*, to which Le Corbusier was a regular contributor, was Hubert Lagardelle, who had close connections with the Italian regime. Although Le Corbusier's efforts to obtain a hearing from Mussolini, during his lecture tour of 1934, failed to produce a result, he watched the planning of the new towns in the Pontine marshes with interest. Nor was Le Corbusier hostile to revolutionary violence to cleanse the state of corruption, publishing with approval in *La Ville Radieuse* a photograph of the bloody insurrection on 6 February 1934 when right wing groups demonstrated outside the Chambre des Députés, with several hundred injured and fifteen deaths.[39]

Le Corbusier's *Weltanschaung*

Against the emphasis on individual privacy, Le Corbusier insisted also on collective activity at the foot of the housing blocks, in the form of sport.[40] Everyone should have the right (and duty?) to descend from their apartment and find place and equipment for basketball, tennis or football. Here will take place the sociability and the forging of friendships denied by the workplace. Like Renato Ricci, the founder of the Balilla youth movement in Fascist Italy, Le Corbusier believed in participatory sport. Sport is a metaphor of willing submission to discipline, to the will to improve the body and, with it, the mind. He was true to the principle, playing basketball regularly with his cousin Pierre and his doctor Pierre Winter. Like Ricci, he was suspicious of professional sport, where inactive crowds sat on concrete benches for hours, shouting and gesticulating in a dream of valorous action.

By 1933, he had arranged these conditions for himself, in his penthouse suite on the rue Nungesser et Coli, where he could watch the football matches in the Stade du Parc des Princes, at his feet. Le Corbusier wrote an indignant description of a match between Germany and France he had observed. The Germans won, because they had *decided* to win. Le Corbusier associates the lack of will of the French team with the fact that the stadium clock had stopped some time before and had been left unrepaired. The clock, he thought, was the 'crown' of the stadium, whose 'dignity, status, and morality' honoured the game and the crowd. Later the clock was covered by advertisements and France went on to be beaten by Holland, Switzerland, Italy and Spain. Le Corbusier interpreted the crisis of French sport as a general decadence and loss of sporting honour, which he compared with the public enthusiasm generated by American college football.[41]

Sport played a particular role in Le Corbusier's thinking at this time. He saw it as the antidote to capitalism, to the struggle to beat others in business only to make money. In his chapter 'État de conscience moderne' he contrasted the disinterested charity of the Salvation Army with the mercenary attitude he saw everywhere around him. He was repelled by the popular films which celebrated a million ways to become rich. Good and worthy actions should be their own reward:

> Il vaut mieux donner que recevoir. La joie est de donner. Tendre une main pour recevoir un peu, tendre l'autre pour donner d'avantage: le circuit de

> la vie passé ainsi dans une direction positive et laisse en chaque conscience son engrais de contentement. On referma toutes les portes, on inventa « l'égoïsme sacré ». Le sport de l'esprit, la bataille, la lutte, la compétition, le match, le travail de l'équipe dans la discipline librement consentie, l'emballement, l'enthousiasme, les sacrifice dans ce seul but : triompher ! Insigne faculté humaine, capable de hauts faits. Support licite de l'héroïsme… Seul le sport partit à la conquête du beau. Première conquête. Elle est importante.[42]

Competition for money is corrupt. Competition for the sake of it is vital and good. We remember Le Corbusier's definition of the role of the architect, once the 'standart' appropriate to each age had been achieved: 'C'est le match; pour gagner il faut faire mieux que l'adversaire *dans toutes les parties*, dans la ligne d'ensemble et dans tous les détails.'[43] Sport might in part be about creating healthy bodies (one of the general obsessions of the 1930s), but for Le Corbusier it was above all about winning, and winning in the spiritual sphere in which art is created. The Radiant City would be a world of self-advancement, of meeting private goals not for money but for interior satisfaction. The photograph Le Corbusier commissioned from Brassai, showing him in his study at the rue Jacob surrounded by his books, his Léger, his Bauchant, his African sculpture and his Serb pots, celebrates the central aim of the *Ville Radieuse*.[44]

What was the solution? Le Corbusier's chapter 'Dénouement de crise' proposed replacing a free market world (esclavage) of consumption, fuelled by publicity and marketing, with a productive system driven by need and controlled by a programme. This would be 'Un programme de *production d'objets de consommation féconde*.'[45] The result would be a division of society into cities dedicated to becoming, 'les lieux fatidiques des joutes humaines: combativité, recherché de la qualité, quintessence: événements profondément humains où ceux qui sont marqués d'un certain signe viennent véritablement accomplir leur destinée.'[46] The countryside, on the other hand, would be organised around the associations of productive labour, to produce joyfully and willingly the fundamental needs of society. The violent, cruel civilisation of capitalism would be replaced by *harmony and collaboration*.

To wonder whether Le Corbusier believed in any of this as a practical reality is to misunderstand the role of the spirit as he understood it. It is the labour of the poet and intellectual to see and describe the future, not to bring it about. His is the classic role of the prophet, certain of rejection and reassured by it. His future is one where parallel lines meet, where the simplicity and purity of the peasant comes together with the highest aspirations of the intellectual, where feeling unites with thought.. Where this happens is not in the world but in the book. The over-determined rationalisation of the plans of la Ville Radieuse sit next to images of nature, sport, people, the vernacular and the solar system. Fusion of 'la pensée' and 'l'esprit' will finally put the modern world to rights.

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Notes

1 Le Corbusier (1937) *Quand les Cathedrales etaient blanches; voyage au pays des timides*, Paris, 1937 , 'Avertissement', p. i

2 Just before the introduction of the plates of the radiant city, Le Corbusier hands the reader over to the First World War generals Foch and Pétain before concluding, 'La leçon de l'histoire, c'est un ordre de marche.' Le Corbusier (1935) *La ville radieuse, éléments d'une doctrine d'urbanisme pour l'équipement de la civilisation machiniste. Paris, Genève, Rio de Janeiro, Sao Paolo, Montevideo, Buenos-Aires, Alger, Moscou, Anvers, Barcelone, Stockholm, Nemours, Piacé*. Boulogne (Seine), Éditions de l'architecture d'aujourd'hui, p. 155

3 For the lecture to the French Society of Urbanmists in 1923, see Benton, T. (2009) *The rhetoric of modernism : Le Corbusier as a lecturer*. Boston, MA, Birkhaeuser , p. 94

4 Cervantes's Don Quixote was one of Le Corbusier's favourite books, and invariably accompanied him on his travels.

5 FLC R2(11)111.

6 FLC B2(4)4 and B2(10)320

7 Le Corbusier (1935) *La ville radieuse, éléments d'une doctrine d'urbanisme pour l'équipement de la civilisation machiniste. Paris, Genève, Rio de Janeiro, Sao Paolo, Montevideo, Buenos-Aires, Alger, Moscou, Anvers, Barcelone, Stockholm, Nemours, Piacé*. Boulogne (Seine), Éditions de l'architecture d'aujourd'hui, facing title page.

8 FLC B2(4)3

9 See Benton, T. (Oct, Nov, Dec 1984) 'La villa Mandrot i el lloc de la imaginacio' *Quaderns d'arquitectura i urbanisme* 163: 36-47 and Collins, C. C., Le Corbusier, et al. (1988) *La casa Errázuriz de Le Corbusier : encuentro entre dos culturas ficticias*. Santiago de Chile, Ediciones de la Escuela de Arquitectura Pontificia Universidad Católica de Chile. Les cinq points de l'architecture nouvelle' were written for the Weissenhof Exhibition, July 1927.

10 For a moving description of these fishermen's huts on the shores of the Bassin d'Arcachon, neau Bordeaux, see Le Corbusier (1975) *Une Maison un Palais*. Turin, Bottega d'Erasmo [G. Cres, Paris, 1928]

11 FLC B2(4)7

12 Le Corbusier, *Une Maison un Palais*, Paris, 1928, p. 46

13 The original sketches are in Le Corbusier's Sketchbook, I, B6, pp. 389 and 390 (redrawn later and included in Le Corbusier (1935) *La ville radieuse,* op.cit., p.29.

14 Le Corbusier (1935) *La ville radieuse,* op.cit. p. 54, top. An undoctored version of this photograph is in the Archive Charlotte Perriand.

15 *Ibid*

16 Le Corbusier published this page, with an attribution of the phrase: 'Temps Louis XIV (sic), Abbé Laugier' , in Le Corbusier and P. Jeanneret (1964) *Oeuvre complète de 1929-1934.* Zurich, Les Editions de l'Architecture, Girsberger [1st ed. Zurich 1934], p. 132

17 Benton, T. (2007) *Le Corbusier conférencier*. Paris, Moniteur p.15; see FLC C3(8)175-9 and C3(8)317(14 pages) for the notes for this lecture.

18 Le Corbusier (1935) *Aircraft*. London, Studio , p.47.

19 Pierrefeu, F. d. (March 1931) 'Esquisse d'une production harmonique' *Plans* 3: 24, p. 31

20 The word 'radieuse' appears in Le Corbusier's writings about architecture from the early years,In a letter to his parents in Paris on 2 June 1908, Jeanneret writes ecstatically about his experience of listening to Beethoven: 'Beethoven a le sourire sacré ineffablement vivace des plus belles oeuvres de la statuaire grecque , des plus radieuses manifestations architecturales qui ont peoplée les lieux où, autrefois, on croyait encore au Beau' (FLC R1(04)111). 'Radieuse' was also an attribute he often attributed to his mother.

21 Le Corbusier (1935) *La ville radieuse,* op.cit. p. 76

22 Winter, P. and M. Martiny (April 1931) 'Les grilles cosmiques de l'homme' *Plans, 9, November 193, pp. 49-651* 4: 43-, p. 43

23 Ibid., p. 43

24 Winter, Pierre, 'Le point de vue du biologiste', in Winter, P.-A.-E. and C. Trochu (1942) *Architecture et urbanisme... Un monde s'écroule, on va bâtir un monde, par Charles Trochu. Il faut reconsidérer l'hexagone français, par Le Corbusier. Le point de vue du biologiste, par le Dr Pierre Winter. Forger les outils nécessaires, par Paul Boulard... Texte imprimé*. Paris, les Publications techniques , p.30

25 Le Corbusier (1935) *La ville radieuse* op.cit. p. 6

26 Ibid. , p. 6

27 Ibid. , p. 8. Compare Loos's article 'Architektur' in Loos, A., A. Opel, et al. (2002) *On architecture*. Riverside, Calif., Ariadne Press , pp. 73-85

28 Le Corbusier (1935) *La ville radieuse,* op.cit., p. 10 and *Plans* No 8 October 1931, 'Retours… ou l'enseignement du voyage. Coupe en travers.'

29 Le Corbusier, 'Retours… ou l'enseignement du voyage. Coupe en travers',.*Plans* No 8 October 1931, p. 93

30 Le Corbusier (1935) *La ville radieuse,* op.cit. pp. 10-11.

31 FLC C3(8)156.

32 FLC C3(8)166

33 For a much fuller account of the political journey of Le Corbusier in the 1930s, see Fishman, R. (1982) *Urban utopias in the twentieth century : Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier*. Cambridge, Mass., MIT Press, the PhD thesis of Mary McLeod, McLeod, M. (1988) *Urbanism and utopia: Le Corbusier from regional syndicalism to Vichy*. Princeton, Princeton. 2 vols. and Affron, M. and M. Antliff (1997) *Fascist visions : art and ideology in France and Italy*. Princeton, NJ, Princeton University Press.

34 Another group which tried to draw Le Corbusier into their orbit was Georges Valois's neo-Fascist group le Faisceau des Combattants et des Producteurs and their journal *Le Nouveau Siècle*.

35 As Philippe Lamour put it in the first issue of *Plans*, in January 1931, 'Notes claires pour une civilisation occidentale' (pp. 13-23) it was necessary toeffect the 'organisation de la totalité de la vie materielle et seulement la vie materielle' In other words, the personality of the individual would be liberated as his material needs were accounted for.

36 See for example Hubert Lagardelle, 'Au delà de la démocratie.', *Plans*, 1 1931, p. 24

37 Hubert Lagardelle, 'Dans ce monde capitaliste livré aux convoitises et aux luttes, l'individualisme écrase l'individu et le groupe le libère. Nous somme entrés dans dans une ère de vie collective où l'homme seul est l'homme faible et ou l'interdépendance de tous est la sauvegarde de chacun.' (*Plans, January* 1931, p. 24)

38 Lagardelle, Hubert, 'L'homme réel et le syndicalisme', *Plans* 3, March 1931.

39 Le Corbusier, *La Ville Radieuse*, op.cit., p. 23. Le Corbusier captioned the photograph : ' Le réveil de la proprété'.

40 Le Corbusier (1935) *La ville radieuse,* op.cit. pp. 65-6

41 *Quand les cathedrals étaient blanches*, pp. 15-6

42 Le Corbusier, *La Ville Radieuse*, op.cit.,, p. 15

43 Ibid.

44 For an interesting argument about Le Corbusier's concept of self as 'self-sufficient', see Richards, S. (2003) *Le Corbusier and the concept of self*. New Haven, Yale University Press. Richards argues that Le Corbusier's aim was to master the real world in such a way that the individual could escape into a metaphysical world of thought and the spirit. He noted Le Corbusier's reference to Pascal's *Desideratum*, 'I have often said that the sole cause of man's unhappiness is that he does not know how to stay quietly in his room.' (in Le Corbusier (1941) *Sur les quatre routes*. Paris, Gallimard, p. 18).

45 Le Corbusier (1935) *La ville radieuse,* op.cit., pp. 68-9.

46 Ibid. , p. 70

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THE CIAM AND THE FUNCTIONAL CITY IN LATIN AMERICA BETWEEN 1930 AND 1946

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In his *Precisions* (1929) Le Corbusier wrote that the foreigner who disembarked in Buenos Aires could see more clearly than the native, since, upon his arrival "the former was suddenly hurt by the city disease and thus able to discern the solution". In spite of his presumptuous statement about the city, Le Corbusier was echoing Georg Simmel's formulation regarding the objectivity of the foreigner who, since he was not committed to the tendencies of a group, was freer, practically and theoretically to *"import qualities"* into a space, as well as to survey conditions with less prejudice, through more general and objective ideals.

Based on the correspondence exchanged during the 1930's between the CIRPAC secretary Sigfried Giedion and a group of European architects who had emigrated to Latin America, and using a comparative perspective, my presentation aims to discuss the particular bias, through which, those émigrés attempted to introduce the newly formed organization to the continent in the belief that the CIAM program could be an instrument in the transformation of urban space in America, as well as a space of dialogue between the national and the foreign element, an accomplishment which would also guarantee their own insertion within the cultural milieu affected by the strong nationalistic atmosphere of the period in Latin America.

The analysis is focused on two immigrant architects of Russian origin, Gregori Warchavchik (1896-1972) established in Brazil, and Wladimiro Acosta (1900-1967) in Argentina, and is justified by three main hypotheses. The first one is Angel Rama's formulation of Latin America integration. After defining a common cultural and literary history for the entire continent, Rama acknowledged the Hispano American and Brazilian vanguards as an integrated cultural phenomenon. Therefore, his formulation of "cultural region" – a natural, ethnical and culturally homogenous space where the forms of artistic creation converge – is instrumental in the comparative analysis of two cities like Buenos Aires and São Paulo between the 1920s and 1930s.

The second hypothesis presents a twofold approach based on the recognition of the ties between Latin America and the international context concerning either the Latin American vanguards and the European 'isms', and the social-political anxieties of the beginning of the 1930s which also manifested themselves in the American continent. If the socio-political forces acting during the interwar period can explain the polarization of the international scenario and the formulation of a political and esthetic vanguard as proposed by the CIAM in

its first moment, they also clarify the consequent waves of emigration to America, as well as the trajectory and *fortuna critica* of the above mentioned immigrants professionals during those years with reference to the limited possibilities left for the foreigner within the closed notion of Latin American nation space.

The third hypothesis takes up Simmel's approach concerning the problem of the foreigner within the discussion of the émigré architect's production as proposed by Bruno Zevi regarding Erich Mendelsohn's work outside Germany, as well by Anna Maria Mazzucheli, who already in 1935, suggested that Richard Neutra's restlessness and trajectory in America were emblematic of the modern architect of his generation and his achievements were "evidence of the universality of European taste and a clear instance of stylistic coherence".

Effectively, the particularity of their condition was identified earlier on by Warchavchik and Acosta. If the first recognized affinities with Neutra, declaring that both had discovered America the same year "…bringing with them the willingness to work with a new spirit…", Acosta reinstated Erich Auerbach's formulation of the original vision of the exiled intellectual, stating that his vicissitudes "meant the encounter with other cultures…the intensifying of all differences…and an accentuated sense of evolution…".

These three hypotheses are instrumental as they corroborate the comparative analysis identifying parallelisms or the "common rhythm", as expressed by Rama, between both sides of the Tordesilhas demarcation line. And if, the analogous and synchronic processes were characterized by the dialectic between universality and particularity through the play between either academicism and the neocolonial, or between the vanguards and regionalism – considering that the vanguards were themselves divided between a European modernity and a modernity aspiring for a national expression--, the introduction of the first CIAM representations in the southern continent, and particularly in Brazil and Argentina, could be disclosed through a number of intersections dispersed in space and time.

The first intersection might be identified during the Russian Revolution, in the city of Odessa, from where Warchavchik and Konstantinovsky, later known as Acosta, still young students, departed together to Italy. In Rome, both students completed their architectural education at the *Regio Instituto Superiore di Belle Arti* under the guidance of Marcello Piacentini. It was also in Piacentini's office that they began their architectural practice and were initiated into the architectural debates of the period.

Acosta left Italy for Germany in 1922 attracted by the vanguards and the expressionism. Working with architects connected to the Bauhaus and Ring's circles, including the brothers Luckhardt and Alfons Anker, in Berlin, and Michel Rachlis and Fritz Epstein, in Frankfurt, during the social democratic local administration of Ludwig Landmann and his *Kulturpolitik*, Acosta absorbed the theoretical developments of Weimar's architects as well as the *Kunstchule*'s production dedicated to the *existenzminimum*, and promoted by magazines like

Das Neue Frankfurt, such as Frank Schuster's furniture, Schütte-Lihotzky's kitchen, or Alexander Klein's diagrams and Gropius' writings concerning the minimum dwelling (1929-1931).

It was probably within Frankfurt's progressive circles that Acosta enlarged his readings of Marx and Plechanov and was introduced to the writings and architectural achievements of the Russian vanguards. Hence it was through the work of El Lissitzky, Aleksandr Vesnin, Moisei Ginzburg, Nikolai Milioutine and the German architects Ludwig Hilberseimer and Arthur Korn that the architect matured his conviction of architecture understood as a social fact, or part of a broader project of social transformation.

Warchavchik arrived in São Paulo in 1923. With a little over than 500 thousand inhabitants the city was even wilder and more provincial than Levi Strauss's description ten years later. Nevertheless, when Acosta arrived in Buenos Aires, in 1928, the Argentinean capital had a population of more than 2 million, as shown by Horacio Coppola's images, half of them immigrants forming the urban substratum of painter Xul Solar fantasies and pan language. After a short passage through São Paulo, Acosta settled permanently in Buenos Aires in 1930 working initially beside Alberto Prebisch, the architect who had been advocating a modern language through the magazines *Martín Fierro* and *Sur* since 1924.

Not without facing fierce criticism Warchavchik introduced himself into the Brazilian architectural debate promoting Modern Architecture as a true strategist of a vanguard front. Due to his initial position outside the official architectural circles, and his own training circumscribed to architecture, he barely contemplated the urban problem in his first initiatives. Hence in 1925, he published the manifesto of modern architecture; between 1927 and 1928 he designed his own modernist house with landscaping by Mina Klabin Warchavchik, and reiterating the Weissenhof experience (1927) he inaugurated three exhibitions featuring the manifestations of modern artists and intellectuals: the "Casa Modernista" in São Paulo (1930) and the "Apartamento Modernista" and "Casa Modernista" (1931) in Rio de Janeiro.

Nevertheless, if the Argentinean culture of the 1920's and 1930's was a composite culture, the architectural scenario also presented a wider semantic diversity, exemplified by the different currents within the *Sociedade Central dos Arquitetos*, and its editorial arm, the *Revista de Arquitectura.* In Argentina, Acosta found an established group of architects influenced by the German rationalism, Robert Mallet Stevens, and Americanism, as well as by the theoretical elaborations of modern urbanism disseminated by illustrious visitors such as Jaussély, Le Corbusier and Hegemann. Along with his first projects accomplished within an immigrant and progressive intellectual milieu, Acosta due to his own engagement with an aesthetic and social revolution, already contemplated the urban environment in his first book, the manifesto *"Vivienda y Ciudad"* (1936). To face the social inequality of Buenos Aires his research based on the *Existenzminimum* led him to propose, along with Fermín Beretribe, the communal building as a new urban typology put into practice by

the cooperative *"El Hogar Obrero"*. At the same time, the city of Buenos Aires is envisioned through various versions of his "city block" which might be ascribed to the visionary perspective of Hilberseimer's *Hochhausstadt*, Le Corbusier's Contemporary City and his proposals for Algiers and Rio de Janeiro, or even Frank Lloyd Wright's Broadacre City, though wrapped in a social content.

If Acosta's engagement and militancy in the press, along with his own immigrant condition, prevented his broader inclusion within the body of the aristocratic elites gathered around the *Associação dos Amigos da Arte*, or traditional institutions such as the *Sociedade Central dos Arquitetos*, being the delegate of the Hispano-American representation of an international organization founded on the principle of collective work as stated in the first CIAM project, could mean the fulfillment of the promise of a true architectural revolution he worked towards.

Still for Warchavchik, Giedion's official invitation (1930), which followed Le Corbusier's unofficial appeal for the creation of a South American CIAM representation, was an opportunity to legitimate Modern Architecture and his own work before his detractors "interested in sustaining architecture and nation" for whom either the architect or his buildings represented internationalism and cosmopolitism.

For the CIAM, the establishment of national or regional groups, particularly in South America, was part of a strategy designed to disseminate Modern Architecture. The exchange of reports and particularly images of the latest architecture and urban accomplishments as stipulated by Giedion – who strongly supported photography as a tool in the transferl of architecture culture – was intended to provide new analyses and research, as exemplified by Alberto Sartoris's pioneer initiative.

Warchavchik's correspondence with Giedion which began in 1930 was rather irregular. Although the former had sent some photos of his own projects and a couple of his articles to Zurich, it wasn't until October 1932 that he nominated the members of CIAM's Brazilian group. His reports were infrequent and informal and when, in the preparation of the Moscow meeting, Giedion proposed the analysis of a South American town using Van Easteren's Amsterdam Urban Development Section method, the suggestion was left unanswered, probably due to the dispersion of the Brazil's promising young professionals who, although engaged with CIAM's project, were involved in their own practices under the booming urban development of the period, as was the case of Warchavchik in particular.

Yet, perhaps the debate concerning the "Functional City" in Brazil, could have paralleled the CIAM meetings if Warchavchik had recognized and not omitted from his correspondence the name of a young émigré architect who was his interlocutor regarding the Brazilian CIAM initiatives between 1931 and 1933 – Alexander Altberg. Of German origin Altberg gained professional experience at the office of Arthur Korn and Siegfried Weitzmann in Berlin sharing the same ideological convictions as a member of the "Kollektiv für Sozialistisches Bauen".

Owing to his European experience, Altberg collaborated with Warchavchik in his "Apartamento Modernista" exhibition, organized modern architecture and art exhibitions and began to publish the magazine *"Base"*. In 1933 he began a short term correspondence with Giedion with an enthusiastic and propositional letter suggesting in the name of his own convictions and those of a new generation of architects - *"more apt to involve themselves in the collective work"* – the reorganization of the Brazilian CIRPAC representation.

If Warchavchik's performance as the first representative of CIAM in Latin America could be questioned, he was the first – even before le Corbusier - to introduce Lucio Costa, the future leading personality of Brazilian Modern architecture, to Giedion and the CIAM organization. On the other hand, in the case of Acosta he never mentioned his old colleague´s name to Giedion as someone who could organize a CIAM representation in Argentina. Thus, even if from 1932 both Russian architects had discussed Acosta's nomination, it was this latter who first contacted Giedion in 1934.

In Zurich, in 1933, Giedion received two Argentinean architects of European origins, Isaak and Jacobo Stok, who wanted to create a CIAM representation in Argentina. However, the exchange of correspondence between the architects stopped earlier and it was with some skepticism that Giedion began his epistolary dialogue with Acosta since he was still concerned about supporting CIAM's presence in that country. If, in a certain way it was through his correspondence with Altberg that Giedion was able to understand the dynamics within the Brazilian representation, it was Nelly Guggenbühl Meffert the Swiss historian entrusted with "planting the Congress flag in America" and who reassured him about the eagerness of Acosta project. Nelly was exiled in Argentina with her husband Carl Meffert or Clement Moreau, as he was known after being expelled from Germany for his antifascist militancy. She had worked in Switzerland within the CIAM group with Carl Moser, Rudolf Steiger and Carl Hubacher, and attended the CIAM meeting aboard the SS Patris II. Nelly identified herself immediately with Acosta, thus being able to observe the hardships of the organization's work in the conservative and provincial Argentinean milieu. She collaborated with his audacious editorial project which aimed to propagate the new architecture through the Spanish and Portuguese speaking world, and in the definition of Buenos Aires as a case study following van Easteren's model and the approach of the 4th CIAM meeting.

However, in 1937, the communications between the CIAM's secretary general and the Latin American representations were broken off and in 1938, Giedion was already at Harvard. The communication would be resumed only in January, 1945, under the aegis of the CIAM chapter dedicated to the reconstruction.
Giedion's missive claiming for a resumption of CIAM activities was replayed by the two Latin American representatives each one in a very different mood. From Warchavchik, Giedion received an enthusiastic letter mentioning the success of the *Brazil Builds* exhibition, and including a long list of new CIRPAC members headed by the name of Oscar Niemeyer, as well as a personal invitation to visit the country and appreciate its new architectural accomplishments.

Nevertheless from Argentina, Giedion received a melancholy letter from the militant Acosta; "… is an exacting job to unite people...in disinterested teamwork...for the time I see little hope for productive work… all through the war and specially since the coup d'etat of 1943… Nazi fascism, dead in Europe, is alive and flourishing here… we are all absorbed in combating it… nevertheless, we shall try to do all we can for CIAM…"

After CIAM 3, Richard Neutra identified the distance between the interests of American and European architects, and the differences between American and European cities. In 1932, the version of modern architecture introduced in America by Hitchcock and Johnson had already been emptied of its ideological and social contents. Amid nationalist and authoritarian governments, and the disputes between vanguards and regionalism, the mythical aura of a utopian and revolutionary conception involving the continent as the promise of a New Jerusalem was broken for militant architects like Acosta.

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PILOT PLAN FOR MEDELLÍN, COLOMBIA. EXAMPLE OF MODERN URBANISM

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The architects Paul Lester Wiener (1895-1967) and José Luis Sert (1902-1983) partners of the firm Town Planning Associates (TPA) with headquarters in New York developed urban plans for four Colombian cities (Tumaco, Medellin, Cali and Bogotá) between 1948 and 1953. Sert and Wiener´s association originated in the early 1940s. In 1944, they began their first project in South America, a proposal for a new city: the Brazilian *Cidade dos Motores* near Rio de Janeiro. After the development of the plan, the emerging association between Wiener and Sert was consolidated with the assignation of a series of contracts for the development of urban plans or creation *ex novo* of cities in Peru, Colombia, Venezuela and Cuba, an association that continued until 1959.

Some of these plans were partially implemented, while others were not implemented at all, making clear the existing gap between theory and practice in urban planning. From the urban plans proposed for Latin American cities, those for Colombia had a greater impact than the achieved in other countries, because the higher number of cities involved and their influence on the subsequent urban development. The plans designed by Sert and Wiener for South America represented the implementation of the general principles on physical planning formulated by the International Congresses of Modern Architecture, CIAM, in an attempt of the “new architecture" for planning the sprawl and the creation of new cities.

In Colombia the visit of Le Corbusier to Bogotá in June 1947, opened the possibility for Wiener and Sert as consultants with Le Corbusier to the Master Plan for the Colombian capital. However their first contract in Colombia was not Bogotá, instead it was the Pilot Plan for Tumaco, a port located in the southern part of Colombia, partially destroyed by a fire in October 1947 which led the Colombian government to hire them as consultants for the new city plan. In addition, Sert and Wiener were recruited to elaborate a Pilot Plan for Medellin (1948), Cali (1949) and Bogotá (1951) with Le Corbusier. The five years of their work in Colombia, Wiener and Sert would intertwine with their continuous travel between Peru and Venezuela, their office in New York and with their active participation in the CIAM. Sert had been chosen president of the CIAM in the 6th Congress held in Bridgewater, England.

A determining fact that facilitated in the Colombian context, the presence of Wiener and Sert, was the incipient urban planning legislation (law 88 of 1947) that included for the first time in Colombia the obligation, for the municipalities with a specific budget, to develop master plans. This law enabled the beginning

of town planning, requiring in consequence the participation of foreign professionals in the formulation of the plans, with the idea that this would help the training of local technicians on these issues.

Pilot Plan for Medellín

Medellín, is settled in the Aburrá Valley in the foothills of the Andes system, at 1,500 meters above the sea level, crossed by the River Medellin. In 1948 had a population of 250,000 inhabitants and was considered the second city in Colombia and main industrial center in development. That year the municipality hired Wiener and Sert for the development of the pilot plan of the city, based on the application of the general principles formulated by the CIAM, through the Athens Charter. The plan was delivered in 1950 and estimated a population of 700,000 inhabitants in 50 years. However the population growth resulted very differently than expected. By 1964 the city had reached the 772.887 inhabitants and in 1973, the population had already surpassed one million.

We will now discuss the implementation of the four basic functions (dwelling, recreation, work and transportation), region, and the civic centre in the proposal for the Pilot Plan for Medellín, in an attempt to define the conditions for improving the quality of life in urban areas.
The city and its region was one of the first introductory issues in the Athens Charter: "When undertaking whatever analysis of the four urban functions, it is convenient to remember that every city is part of a geographical, economic, social, cultural and political unit on which its development depends"[1] and concluded that the city could not be studied separately from its region.

In the pilot plan report for Medellín, Wiener and Sert analyzed the regional perspective of the city. They pointed out that Medellín was not a part of a region in the North American or European sense of the word, as it was a characteristic of most of South American cities. The lack of a region concept in the previous term made it necessary to relate the area of Medellín valley to the rest of Colombian territory as a whole, which Wiener and Sert designated as its "greater region" and the immediate area limited to the river, "metropolitan area". The specific geographical conditions of the city concern to the valley and the location of the other municipalities along it, demanded necessary town planning instruments that exceeded the municipal boundaries of the city. This administrative entity was not constituted until 1980, when the Metropolitan Area of the Aburrá Valley was created.

Under "**Dwelling**" the CIAM 4, 1933, emphasized the critical situation of housing in cities due to the high population densities, unhealthy conditions, lack of open spaces and arbitrary distribution of social services among other problems. And demanded for residential areas, the selection of the best sites and a minimum amount of solar exposure required in all dwellings. Also as a fundamental requirement, the rational distribution of the population, definition of set densities and prohibit its location along transportation routes. Demands that could in the future lead to propose legislation to achieve better housing quality.

Sert, in his book *Can our cities survive?*,[2] presented the neighborhood unit, NU, as a model in the development of housing, describing it as a group of housing and community services, surrounded by open space capable to improve living conditions.[3]

In the Pilot Plan for Medellín the neighborhood unit, NU, was proposed as the basic unit of town planning and the district as its grouping. For the implementation of the NU in the existing zones it was necessary to reorganize the social services distribution, although its implementation was difficult due to the existing urban fabric. However, in the expansion areas of the city, the NU represents the basic unit which replaces the "old block" considered as a model for expansion of the urban structure since colonial times.

The NU for Medellín was based on a population of 5,500 and 6,000 inhabitants that could justify the construction and maintenance of basic social services. The NU´s formal proposal was determined by an area with a secondary street system where no direct roads go through the unit, and provided for single-family houses, four floor buildings and basic community services.

In the application of modern urbanism it was necessary to consider the reorganization of land. For the implementation of the NU it was required, in most cases, a land unit or management instruments which would allow that a subdivided or fragmented land, belonging to several owners, be organized. In *Can our cities survive?* Sert pointed out how urban renewal, beside from the financial and political obstacles, had to overcome technically two obstacles: first, the subdivision of the land in plots with different owners, and second, the pre-existing urban grid system. These two conditions paralyzed any renewal project in the city.[4]

In the Colombian case, the lack of urban legislation was one of the major difficulties in the implementation of the different plans. The existence of a subdivided land belonging to several owners made difficult the process of implementation of the NU model. The procedural instruments for reaching the integration of real estate or land, especially in cases of renewal, did not exist, nor were to be developed by then. In the existing sectors already consolidated it was impossible to carry out the proposal of NU, but instead in the new development sectors, in the western part of the city its implementation was feasible. At present the NU concept may be seen throughout the morphology in the urban fabric distribution.

Under CIAM 6, 1947, the concept of "**Recreation**" was replaced by "**Care of body and spirit**"; it covered a wider range of activities included in the direction of the new objectives, "working for the creation of a physical environment that cares man material and emotional needs and encourage spiritual growth"[5]. The lack of places for leisure in the city had been one of the main conclusions of cities in CIAM 4. According to the planning charter, spaces for recreation should represent the basic complement for housing and required that open spaces beside being playground spaces, should be places for Community purpose such as nurseries, public library, museum district, auditoriums, among others.

In *Can our cities survive?*[6] Sert intended to form green networks, "a true network for leisure" consisting of recreational facilities and social services in residential areas, interconnecting facilities and increasing coverage, and in turn related to the civic center as a complement.

In the Plan for Medellín, this function materializes in the recreation and social services network organized by distributing the lineal parks along the streams. Green areas were projected as continuous natural ways to open land on the slope of the mountain. The Valley´s topography and stream system naturally facilitated the implementation of this structure. This network easily adapted to the new areas on the western expansion, not so in the existing city.
Social services were set up as a necessity and in Sert´s point of view, those projects built ignoring the need of these services would constitute in the slums of the future, considering that the slums are not only by reason of their decadency but also because they have failed to satisfy human needs.[7]

The land classification according to its functions became the basis for the organization of the plans. Under "**Work**", CIAM found that workplaces were generally not well situated for their functions and that the relationship between dwelling and workplace was not rational. They recommended that industrial zones should be located independently from residential neighborhoods and isolated by green stripes or neutral zones. The location of these zones would be determined by its proximity to the communication and transport routes.

Due to the rapid industrial growth of Medellín, the pilot plan proposed a major area reserved for this purpose in the south of the city, along the river margins and the railroad, isolating industry from housing by means of green belts. Topographic conditions, easy vehicle access and the direction of the winds, North-South, determined its location, to prevent pollution in residential areas.
Some of the commercial and business areas of the city would develop along main avenues and separated from housing areas while others would concentrate around the new civic centre.

Providing a new road system suitable for modern traffic was the main objective under "**Transportation**" in CIAM recommendation. They proposed that rigorous statistical methods be used to establish rational street widths, classed according to the speed of different means of transport. The road network proposed must include paths for pedestrians differentiated from road traffic. Housing quarters should be isolated from major transportation routes by green zones.

In Medellín, the Plan proposed for Transportation was based on the organization of existing routes, modified accordingly to the new role assigned, a hierarchical road system ranging from heavy to light traffic. The geographical and physical structure of the city, as well as the degree of development of the existing city at that moment, allowed for the implementation of a road system along the valley (parallel to the river) complemented with a peripheral road. The main roads would be transversal to the valley and perpendicular to the river

The **Civic Center** was relevant in understanding a new city model proposed by modern urbanism that may be traced in José Luis Sert´s discourse from Functional City (in CIAM 4, 1933), to the Heart of the City (CIAM 8, 1951).

There are no references to the civic centre in CIAM 4, or in the Athens Charter by Le Corbusier, instead in *Can our cities survive?* Sert expressed the need to consider the role of cities as "organs of cultural progress", emphasizing "that no urban reorganization could achieve its objectives if this role was underestimated".[8]

The Civic Center that had interested Sert as a component in the city planning will find a space for discussion in the CIAM 8. If the idea of implementing an order to the urban chaos was the main concern of the Functional City in CIAM 4, the situation changed for 1951. “The study of the Heart of the City is necessary and timely in our minds. As we understand that its definition is necessary and this is why we have chosen the Heart of City as the topic for CIAM 8 Congress”,[9] stated Sert, president of CIAM.

The Heart of the City centered on urban places for the congregation of masses, centers of collective life and at the same time, symbols of the city itself; they are also centers for the meeting of arts, were the main monuments would form a group around public squares and promenades visited by tourists, motive of citizen pride, giving character to a city that could not be conceived without them.[10]

In the implementation of the Functional City, emerged the need to formulate principles on the Heart of the City, which were already being implemented and being a fundamental part in the organization of a city. CIAM 8 and the publication of the Congress´ proceedings will generate a reflection on the city centers and give the new centers relevance not attained in the Athens Charter.

In the late 1940´s, Medellín was characterized by a rapid urban growth, where the old centre, too congested, was insufficient for the growing needs of the city. The guidelines proposed by the Pilot Plan designed a place for the new functions of the city that had no place in the old centre. The new Civic Centre represented a new geographic centre in the reorganization of the city.

The displacement of the Centre to the River determined the new centrality acquired by the city in a metropolitan dimension. Medellin’s proposed Civic Center would be located where the railway station and warehouses used to be, thus displacing these activities to the Northern part of the city.
This large area would be destined for museums, conference rooms, public libraries and exhibit centers, a main theatre, and an outdoor auditorium, as well as for administrative and municipality buildings, a main square reserved for public meetings, a park and a hotel.

The Civic Center was proposed as an extension of the existing Centre of the city, connecting with the lineal park in the East bank of the River. The architectural image proposed for the Civic Centre of Medellín was defined by the contrast between high rise and low rise buildings, the use of urban spaces

and green areas to harmonize the monumentality of the group and the human scale. It would be necessary to connect all this buildings to the civic life, and the new centrality with the old centre.

The concept of Civic Centre proposed by Sert and Wiener did not materialize at all. The proposal for a variety of uses that considered the participation between municipal administration and the private sector had no chance of developing at that time. The concept of the Civic Center gradually transformed, becoming a place that concentrated only administrative activities of the municipality and the nation. From the different proposals, elaborated by Sert and Wiener, Medellín was the only city in which the civic centre remained in the defined area.

For this purpose an architectural competition was awarded in 1974. But the unit of the grouping proposed by Sert and Wiener for the Civic Center never occurred; the road system imposed years later splintered the large area projected for that function and in the large triangle in an isolated way, the complementary uses as the exhibit centers and the metropolitan theatre, were located. In recent times new buildings located in the area have taken the initial concept of the civic centre, generating open spaces and integrating public buildings to its surroundings.

Illustrations

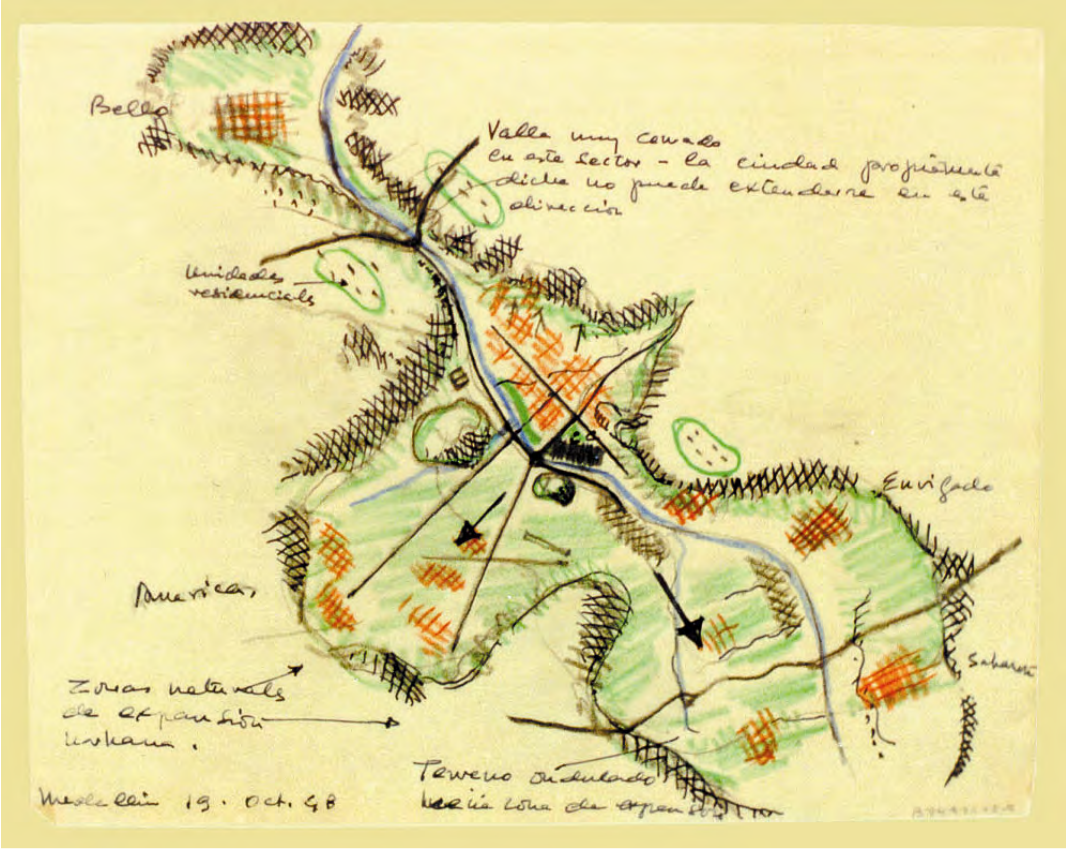

Figure 1: Sketch by J.L. Sert of Medellin. (19, Oct, 1948)

Figure 2: Pilot Plan for Medellín, 1950.

Figure 3: Proposal for Neighborhood unit, Medellín. (January 1950)

Figure 4: Proposal for Civic Center, Medellín. (January 1950)

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Notes

[1] Sert, J. L. , 1942, *Can Our Cities Survive? An ABC of Urban Problems, Their Analyses, Their Solutions, Based on the Proposals Formulated by CIAM*. Harvard University Press, Cambridge. p.10.
[2] Ibid., p. 70
[3] Neighborhood unit, term proposed by Clarence Perry (1872-1944)
[4] Op. cit., *Can our cities survive?* p. 209
[5] Giedion, S., 1951, *A decade of New Architecture.* Editions Girsberger, Zurich. p. 25.
[6] Op. cit., *Can our cities survive?* p. 92
[7] Ibid., p. 68
[8] Ibid., p. 230
[9] Rogers, E. N. Sert,J.L., Tyrwhitt, J., 1955, *El Corazón de la Ciudad.* Hoepli, S.L., Barcelona. p. 4.
[10] Ibid., p. v

Abbreviation Archive

JLS SC HU Jose Luis Sert Special Collection Harvard University
PLW SC UO Paul Lester Wiener Special Collection University of Oregon

PORTOLAGO IN LEROS: A COLONY OF ITALIAN RATIONALISM IN GREECE

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INTRODUCTION

The city of Portolago on the Greek island of Leros is an entirely new, purpose-built city, with military character, that could be considered an exhibition of Italian rationalist architecture (fig. 1). Its architecture and urban planning is part of Mussolini's expansionist fascist state scheme to construct exemplary settlements -'New Cities'- during the inter-war period, in combination with his attempt to Italianize the Dodecanese through built form that would decode the ideological background and the colonial benefits of Fascist Italy in the Aegean sea. Portolago too, was intended as an example of modern living in the *stato nuovo* that the Fascists were building.

In contrast to the problematic conflict between tradition-oriented classical styles and the modernist style, witnessed in other 'internal recolonization' projects in the Dodecanese, such as the grandiose faux-historicism of Rhodes and the expressionistic, eclectic art deco of Kos, the example of Leros translates the colonial philosophy of a 'dominant nation' using pure rationalist morphology as the official architectural language of the regime for a 'modern, technologically advanced state'. Entangled in the "contest for control over the structures of representation",[i] the fascist regime returns after 1936 with the proclamation of the *imperium* to the monumental architectural expression, as is best exhibited in the facade alteration of entire buildings in Rhodes.

LAKKI

Lakki, the largest deep water harbour in the Mediterranean sea,[ii] was seen by the Italians as an opportunity to create a flagship city for their Greek empire during their occupation (1912-1943), wishing to compete with the English naval base in Malta and establish control over an area of vital interest to the Allies (the Aegean, the Dardanelles and the Near East). The purpose of this development was to transform Leros into an important naval and aerial base for the Italians by taking advantage of the island's strategic geographical positioning as well as the unique morphology, and fortification of the largest of the three natural bays at Lakki (the other two are Partheni and Aghia Marina). Porto Lago was also considered to act as the Italian antipode to the native settlements of Platanos and Aghia Marina, to which the Italians could not sufficiently intervene in order to impose the ideologies of the regime.

THE 'NEW CITY' OF PORTOLAGO

When Italy took over Leros in 1912, Lakki was a rural marshland with a few summer houses built by Greeks from Egypt. Under orders from Mussolini, and during the government of the commanders Mario Lago (1923–1936) and Cesare Maria de Vecchi (1936–1940), the Italians transformed the small agricultural village of Lakki (probably named after the water pits 'λάκκοι' in the area) into a bustling town they named Portolago (meaning port-lake, due to the bay's similarity to a huge lake that communicates with the sea through a narrow opening of 400 meters). The city was almost unalloyed Italian, capable of meeting the rising civilian needs of the military community in the adjacent fully equipped aeronautical base "G. Rosseti" in Lepida.[iii] The man power for all the defensive, custody and technical needs of the aeronautical base was 8.000, out of which 6.000 belonged to the Navy.

While the whole island becomes accoutered with a road network and various entrenchment works, Portolago is designed from scratch, similarly to the 'new towns' in Italy, with a large series of compulsory expropriations during the period of 1928-1935, and extensive reclamation. Modern technology of the time is used for the whole resettlement project and road bed stabilization of specifically the western part of the bay, with the application of concrete on flagging, which is laid on a layer of wooden piles fixed on the ground and a layer of iron beams. The eucalyptus trees still visible today are planted in order to assist in the draining of the marshland. Works of infrastructure, water supply and drainage follow, and finally the construction on the reclaimed marshland begins in 1935. According to an unverified source, the new city would be able to host 30.000 people (military staff and their families), when the whole island only had 4.000 inhabitants.

URBAN HIERARCHY

The urban morphology of Portolago in *modo razionale* (fig. 2) was approved in 1934 after the recommendation of the commander Mario Lago, who wished to comply with the choice of politics of the regime to use rationalism as the official architecture of its public image. The architects A. Bernaditi and R. Petracco were accountable for the design, and Ministry of Public Works in Rome (Labori Publici) responsible for the supervision; the technical department of the Navy being responsible for some of the construction. It is worth noting that even though both architects had taken over the design of other settlements on Leros and on other islands in the Dodecanese in general, in Portolago, they exhibited unique consistency in rationalistic austerity both in architecture and urban design.

The aesthetics and the organization of the city that followed the logic of the 'dominant nation' imposition in the Dodecanese, were based on clear institutional order: the separation of the natives from the 'metropolis' i.e the Italian colonists; the creation of a centre of military, political, religious and commercial services with monumental buildings, wide streets, rows of tree and parks along the coast and a peripheral development of housing; the morphological and organizational differentiation from the existing architectural

expression choices of vernacular or neoclassical architecture.

The city plan comprises a paradigm of a strictly compartmentalized modern urban composition with the stylistic homogeneity of simple geometrical volumes, austere lines and curves. This *piani regolatori* achieved urban order, aiming ultimately at social order, corresponding to the hierarchical and elitist model of society, promulgated by Fascism, even if in this case it was an almost exclusively a military society. In addition to the urban order, architectural order was to be total, even totalitarian, based upon new models that eliminated any eclectic styles and 'old fashioned' decorative devices. The resulted impression was to be a very harmonic, symmetrical town, of a controlled, classicizing modernity. The compartmentalization is organized around three basic axes. The main one is perpendicular to the coast connecting the two main squares (the one now called P. Roussos square and the one of the Hotel Leros). The other two axes run parallel to the coast dividing the settlement into three zones, that are in turn subdivided by minor streets into building blocks, enabling a smooth circulation.

Colony politics demanded a hierarchical structure with the monumental administration buildings along the seafront as points of reference in the urban landscape. The shopping district lies behind lining the central streets with ground floor shops and workshops and dwellings above. The use of porticoes and arcades provided informal meeting places in front of the shops and cafés. Services such as army barracks and a hospital in the northwest preceded the residential area, with many green areas around. The attempt for a colonization of space becomes apparent in the *Foro Italico*, a wide boulevard along the sea front with public buildings, aimed for the ceremonial parades of the regime. Along the boulevard a square is formed in front of the Casa del Fascio, where a vertical axis leads to a second internal square and later to a small cliff, where most likely a monument or statue would declare once again the fascist dominance.

ARCHITECTURAL ORDER

Starting from the building of the Naval Administration (1929), the seafront unfolds to the east with the complex Casa Littoria, that hosted the post office, the pharmacy and the fascist authorities (*Fascio, Dopo–lavoro, Milizia*) on the ground floor and the municipality on the first floor (1935-1938); the neighbouring Hotel Roma (nowadays Hotel Leros) with the adjacent cylindrical Cinema (built in 1935-1937, it was not originally an open-air cinema/theatre, but had an unfolding roof); the Customs' Building (built in 1933, today hosts the Police Department); the *Casa Balilla* (built in 1933 and designed by Armando Bernabiti, the building hosted the fascist party youth group). In the centre also stands the Elementary School (1934-37, fig. 3), the building that housed the 10th Infantry Regiment and was called the *Caserma di Regina*, and the San Francesco church (1935–1939, nowadays the Orthodox Aghios Nicolaos). The former Naval Hospital (1935-1946) lies on the other end of the city. The circular market complex composed of an atrium with a colonnade (1934 -1936) stands out as the attached brick-and-concrete Clock Tower (1934 -1936, fig. 4) is along with the church tower and the

extruded cylindrical volume of the *Casa del Fascio*, the highest built structure in the city's overall low skyline, attributing them both a symbolical importance. The tower, an excellent bridging of geometrical forms, might also have worked as a symbol of power, fortress, solidity, money and history. Elements of fascist architecture, such as painted tile crests featuring Mussolini's rod-and-axe symbol can still be observed in some of the buildings such as in the entrance of the *Caserma Regina* building and the entrance of the Cinema, as well as at the corner of the *Casa Balilla* building.

In the construction of the efficient, modern fascist nation, the practical instrumentality of architecture and the extensive building programs were seen as part of a propaganda strategy wishing to interfere with the life of the citizens, where the architect takes on the role of a social planner. The residential areas were separated, and designed, according to the occupation of their inhabitants. This elitist thinking and class structuring is clearly visible in the three types of dwellings: the workers' quarter, near the modern port, was characterized by modest uniform blocks of flats; the commissioned officers' quarter near the barracks by stately villa-like homes; and the non-commissioned officers' area, to the east, by less individualistic semi-detached houses. All houses have a simple design, with small decorative details such as doors, doorknobs, different types of verandas, etc.

The existing island architecture composed of geometrical volumes, white surfaces, flat roofs, meets the respective architectural expressions of rationalism, where perhaps for the first time the 'modern' gains Mediterranean characteristics and coincides with the Aegean, merging all the island's influences from East and West concerning colours, materials, symmetries, symbolism, climate scale of intervention etc. with the progressive model of living that rationalism propagated through its proposed built form and urban morphology.[iv]

CONCLUSION

Exhibiting the largest and most complete urban planning intervention that the Italians undertook in the Dodecanese, Portolago is an extraordinary example of city takeover in Italian rationalism, in terms of both architecture and urban planning, easily compared to the city of Sabaudia outside Rome and hence different due to its clear military character and its geographic and cultural location in the Aegean sea. Political meanings are integrated in the city plan, but also in the vertical and horizontal dimensions, expressing the fascist ideology in depth and perspective as well and creating a geographical urban landscape similar to those of De Chirico, in which wherever one looked, the State looked back at you.[v] The city functioned on the one hand as an exhibition window to the world– a museum piece promising a new society and a prosperous nation based on emergent technologies. On the other hand, underneath this intention for the construction of a bright future lies the reality of Portolago's architecture solutions to also express ideology, power and heritage, as a monumental, solid, political instrument of oppressive governance.

Nowadays repopulated and renamed Lakki, the small city's architectural configuration aftermath offers insights into the complex interplay of continuity and change that burdens the city. Bombarded heavily by the British and German forces in the Second World War, Portolago was deserted with the end of the war and its architecture was rejected as it was equated with fascist Italian occupation. The broader area has since functioned as the host for left party political exiles and for the mentally ill that were hosted in the old Administration building, being rendered even more contested as a place of displacement and confinement.[vi]

The signs of erosion are evident on the buildings of Lakki, which have lost the symbolic character and status and lie in danger of the arbitrary functional and aesthetic interventions of contemporary development, such as in the hotel Leros in 1955, where his original mailing and colour are lost. Despite a few recent actions for the preservation of some of the buildings, and the insertion of new monuments in the area, Lakki still seems like a ghost city and raises the question on the ways the community could start to embrace the modern city and its burdened architecture.

Illustrations

Figure 1: Birdview aspect of the Portolago city centre: General State Archives, 1935

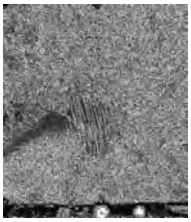
Figure 2: aerial photograph of Portolago: Hellenic Military Geographical Service, 1991

Figure 3: Elementary school, architect R. Petracco: G. Gerolympos, 2000

Figure 4: The clock tower, architect R. Petracco: Sensi Contemporanei - Cities of Stone, 2005

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[i] Stone, M. S., 1998, *The Patron State: Culture & Politics in Fascist Italy*. Princeton: Harvard University Press, 23.
[ii] The geographical location of the Dodecanese resulted to. The Treaty of Lausanne confirmed the Italian possession of the Dodecanese (1923 –1943) after a continuous interchange of occupancy between the Turkish, the English, the Greek and the Italian governments. Oppressive rules were enforced in an attempt to Italianize the inhabitants.
[iii] The base in Lepida was a large naval base constructed in 1923, that next to the necessary military and technical facilities in the southwest part, also included a zone of housing for the crew, officers and their families on the northeast area.
[iv] Colonas, V., 2002, Italian Architecture in the Dodecanese Islands (1912-1943), Oikos Press Ltd, Athens.
v Caprotti F., 2007, “Destructive creation: fascist urban planning, architecture and New Towns in the Pontine Marshes”, Journal of Historical Geography 33, 651-679.
[vi] In 1957, Leros was chosen as the site of the state psychiatric hospital which was built to relieve the congestion in other Greek psychiatric hospitals. At Lakki, just as in Partheni, the Greek military dictatorship from 1967 to 1974 created prison camps for political refugees and prisoners in an abandoned section of the Italian barracks, which had also served as the Royal Technical Schools until 1960 and as the Leros State Rehabilitative Institution afterwards.

In the conservation of modern buildings and sites, awareness about problems of temporality and transformation has been frequently approached in the perspective of confronting an idealized past with a derelict present. The promises of the future are very rarely taken into account as an active and potential process of transformation. This session of Docomomo's Eleventh International Conference will explore through several case studies in England, Mexico and Denmark these two concepts of temporality and transformation as dynamic and intertwined approaches of urban "regeneration". All the presentations stress on the urge of bringing ageing urban and industrialized ensembles into national, regional and local heritage strategies in order to shape a new heritage thinking in relation to modernism. In addition to institutional concerns, they also tackle with the way the loss of the original utopia and the disorders of time must be processed and analyzed methodically in order to be integrated into contemporary planned regenerations projects.

The main ambition of the session is to confront what had become a "canonical vision of urban planning" - such as the one developed in the 1930s in Mexico City - with the reality of "temporal disorders". This issue also questions the concept of "the ideal modern city" as opposed to the one in which we effectively inhabit. Are these two cities belonging to different "mental categories", as coined by Giorgio Piccinato, or to a single one for which we still have to accommodate both the past and the future? These are a few of the issues which will be discussed during the session.

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MODERN URBANISM AND OLD CITIES: TWO EXPERIENCES OF URBAN PLANNING IN CONSOLIDATED URBAN CENTRES

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In order to limit the tendency towards suburban sprawl defunct inner city sites must be regenerated. To answer criticism of the Modern Movement this study attempts to explain modernist proposals which deal with consolidation of existing urban fabric, where the different values of the Modern Movement city must co-exist with its existing architectural heritage.

The documents and models inherited from history shall assist us in ordering the ideas necessary to delineate and define a modernist project. The Athens Charter, the study undertaken on the occasion of the 8th CIAM congress whose subjects were city centres and the Le Corbusier projects: *Ville Contemporaine or Contemporary City for Three Million Inhabitants* and the *Ville Radieuse*, as well as the *Vertical City* contribution by Hilberseimer *and* the proposal by C. Van Eesteren for Unter den Linden, among others proposals, are all at their base proponents of very direct messages. On the one hand they underscore the impotence of the older city planning tools, and on the other hand, they also allow us to infer eight basic design principles which characterize modern urban planning: **1**. The independence of the major arteries with regard to buildings, **2**. The incorporation of green spaces **3**. Space, light, sun exposure, aeration; building on an open plan **4**. Rationalized urban planning; suitable infrastructure with services and facilities with the required capacity **5**. The separation of car and pedestrian traffic. The vertical segregation of spatial uses and thoroughfares **6**. An ordered composition and geometry **7**. The development of mixed uses and spatial design and **8**. Respect for historical buildings. We shall study two plans for the city centre in two cities in order to highlight the key elements of their modernist style, determining their contributions and validating their current relevance: The Barbican Centre of London and Stockholm's Hotörgscity. Both projects are ambitious. Their goal is to claim a central role in the city.

The area where the **Barbican** was built had been devastated by bombing in December 1940 during the Second World War by German bombers. In 1955, the architects CP&B -Chamberlin, Powel and Bon-, presented a plan for a residential complex including projected high population densities, which meant a far-reaching transformation of the neighbourhood with regard to its use, its grid plan and height. In 1958 work was commenced on a number of mostly residential buildings with a number of cultural facilities, businesses, schools and services. Its complex and innovative morphology did nothing to attenuate a generalized reaction towards sky scrapers towering for the first time above the traditional skyline and its elements, which had hitherto defined the city horizon.

The independence of the Barbican‘s traffic arteries and buildings would be very obvious even if it had been designed on a single axis, due to the obvious effect of the geometry and orientation of the building blocks and towers. Yet even so, the car traffic and trains were located at different levels, independent of the levels that were reserved for collective use and pedestrian traffic. The layout of the buildings, aside from the effect of their orientation and their particular juxtaposition, reflects internal laws governing the composition of the complex. Nevertheless, the layout of the traffic aims for integration, reflecting the general needs of the city as a whole. It is also important to underscore the reinforcement of the strategic purpose of the plan in its interconnection with the rest of the urban traffic grid in an absolutely natural and formally free mode. The influence of Clarence S. Stein’s studies on traffic segregation clearly marks the structure. In this case, the access by car traffic is at a lower level while the green spaces are accessed from the buildings surrounding the open building blocks. We can also confirm that this is an example of how to adapt Hilberseimer’s vertical city for a resolution of empty urban space, with the separation of car traffic from pedestrian traffic and shops.

Out of the free spaces set aside for collective use, green spaces occupy a generous share. Furthermore, the project’s emphasis on freeing up land and open spaces for the introduction of vegetation in the city centre is quite notable. Likewise, the project has introduced extensive buffer areas between the buildings, thereby favouring lighting, sun exposure and aeration of those spaces. Also, there are connecting spaces without interior patios using a spatial language that clearly subscribes to modernist principles with regard to design, orientation and distribution. The Barbican complex includes services and facilities for varying scales of use. This remodelling of an urban space provided an opportunity to balance the various dysfunctional features of its surroundings. The project also intended to serve as a model exchange point that would include connections between the underground and train stations, as well as with a large number of public parking spaces.

The shape of the buildings is based on simple geometric principles, with straight angles conferring a rational plan on the overall complex, which also facilitated the construction, standardization and serialization of the project’s components. The plan’s design recalls the Greek scroll motif used by Le Corbusier for the Ville Radieuse, visible in the drawing.

The ordered combination of linear eight-floor blocks with two-floor buildings and forty-floor towers resulted in a rich composition, managed through the great variety of architectonic genres that were used.

Within the green space inside the Barbican centre, we find Saint Giles church which survived the bombing along with part of the medieval defensive walls of old London dating from 4th century. In search of a greater effect, an opening of an atrium space of the main door of Saint Giles was created, with a water motif that clearly attempts to bring out the historical nature of the structure, dwarfing its surrounding and harkening the original scale of the buildings in its previous context. This effect is graced by a linear pattern of trees which minimizes the distance between the surrounding backdrop and the church against which it is set out.

There are clear references to the design codes of Camilo Sitte[1] and the interpretations of Cornelius van Eesteren’s proposal for Unter den Linden in a project that is at the scale of the Brandenburg Gates.

The Nedre Norrmalm neighbourhood (**Lower Norrmalm**) was and still is the heart of **Stockholm**[2]. In the late 1800s, shops, businesses, administration and entertainment increasingly converged on this part of the city. For this reason, increased densification of the area led to a growing need for better communication and mobility. The neighbourhood wasn't prepared to receive this intense service–oriented transformation and its infrastructures became outdated, with the appearance of traffic problems and the obsolescence of its buildings affecting the neighbourhood. In 1945, following various attempts to solve the problem[3], the Director of Urban Planning for the city, Sven Markelius, asked David Helldén to take charge of the bureau in charge of preparing the development of the centre of Stockholm, transforming it into a modern urban and financial centre for the city.

The independence of the traffic arteries and the buildings is not as clearly delineated as in the case of the Barbican. The buildings are laid out on an independent geometrical layout of a parallepipedal quadrangle, with no formal concessions to the generatrix of the main avenue whose axis is at an inclined angle with respect to the sidewalk vectors surrounding the site. However, a small dislocation is tolerated from one structure to the next to compensate for the adaptation to the mentioned incline in the main traffic avenue. This might be considered as a concession to the roadway system or it might be a compositional element making each building block visible from any vantage point in Stockholm. We tend to favour this second viewpoint. Both the dislocation which is felt in the internal geometry of each large block element, as well as the displacement of each tower with respect to the next closest one, are formalisms which help us to understand the complex in terms of urban landmarks, comprised in this case by five towers arranged unerringly and thus conferring a greater distinctness on the plan, which can be seen from many vantage points throughout the city. The parallel layout with respect to the sidewalks of the streets in the town centre is an ordering principle which avoids the contrapuntal effect of having the towers lined up in a perfect North-South axis. Although the contours of the five blocks are parallel to the street generatrix, the fact that they consist in five independent buildings makes the notion of the street as a connecting passage a very remote one.

The geographical situation of Stockholm creates a bond with its natural spaces, which is essential to understand the paucity of green spaces introduced in the city centre. It is a city where the temperature between November and April is below zero degrees centigrade and in this sense, the creation of large commercial underground thoroughfares throughout the entire centre reminds us of the disadvantage that proximity to nature can mean. The scale of the project and this particular feature within it, makes it somewhat complicated to estimate whether there is indeed a lack of green space both in the Segerls Torg square as well as between the five monumental buildings. It blurs the notion of whether this is due to a poor adhesion to the principles of modernist urbanism or if the inherent liberty and potential of modern urbanism enhances its confident adaptation to the special context of each location. However, if we are to adopt a stricter stance that does not make allowances for the particular climate and geographic conditions of the city, we can indeed affirm that this is not the strongest feature of the project.

Apparently the project integrates all of the sanitized principles of modernity and it is particularly attentive to the requirements of space, light, sun exposure and aeration. The orientation of the buildings is the proper one, and the buildings offer connecting spaces with no internal patios, but the separation between them does not meet the specifications

of the designs presented by Walter Gropius at the III[rd] CIAM, as we have noted in the pertinent section.
We may speak of very clear zoning in this project. On the one hand, the five majestic office blocks symbolize the modernity of Stockholm. The bottom two floors are occupied by shops. There are also shopping areas linked to the cultural centre (Kulturhuset) located next to the subway, in underground streets which favour commercial traffic during the cold winters. The cultural centre offers complete adjunct services, including day-care, restaurants and a library. In this sense, the functional balance is upheld: the basic functions of living space, social services (cultural and recreational), work and traffic are included.

We have already mentioned the representative qualities of the urban landmark presented by the five high buildings. Furthermore, the square acquires a more monumental dimension thanks to the off-centred fountain and a glass sculpture placed on large circular spotlights which light up the commercial areas. This sculptural feature acts as the articulation between the traffic avenue, the five buildings and the Kulturhuset which acquires a special visibility as a result. Thanks to its function, it also acts as a silent, glass observer which reflects the five buildings on its main facade. The towers take on the appearance of infinity, shaping a very attractive urban plasticity. The geometry of the buildings is so powerful that the daring pavement patterns and the spatial volume of the square do not outweigh and distort the overall effect. The impression made by the five buildings remains unaltered at the different levels at which it interacts with the street.
Referring to the composition, variegated architecture and changes in heights are used in the configuration of the lower shopping levels, affected by the presence of the blocks. One can observe screens glowing inside offices, lower level shops, the facilities that belong to the movie theatre or the linear block configured by the Kulturhuset. The entire plan acts as a counterpoint to the city.

The neutrality of the architecture is a dominant factor in the glass and the smooth textures which sets off the visibility of older monuments. The blocks are parallel to the facade of the monument, yet the view of the buildings from Hötorget square, where the Koncerthuset is located is completely different. From this vantage point, the columns of the historical buildings acquire heightened visibility reinforced by the series of buildings which appear in the background and in parallel. From the viewpoint of the pedestrian, the blocks seem to present a continuation of the columns of the historical buildings due to the effect of perspective.

Hotörgscity received a lot of criticism. It was thought to have banished the accepted traditional ambience, but it was also praised for creating a consistent unity with a powerful architectural presence. Without doubt, it is one of the most charismatic areas of Stockholm. After having been looked on very questionably during the 80s and 90s, it is now getting a second chance. The area was declared to be of national interest in 1990. This second chance comes hand in hand with an impressive cultural development and it is also due to the fact that it is the place where most offices are located and where the most popular shops are found in Stockholm.

As we have been able to show, modernity is able to bestow significant improvements on existing city centres. In the designs that we have analyzed we have seen how modern urban complexes are able to provide a planned design for city centres, one which the inhabitants can relate to. Representative buildings don't need to represent either religious or political power. They may consist instead of office towers, shops and even housing,

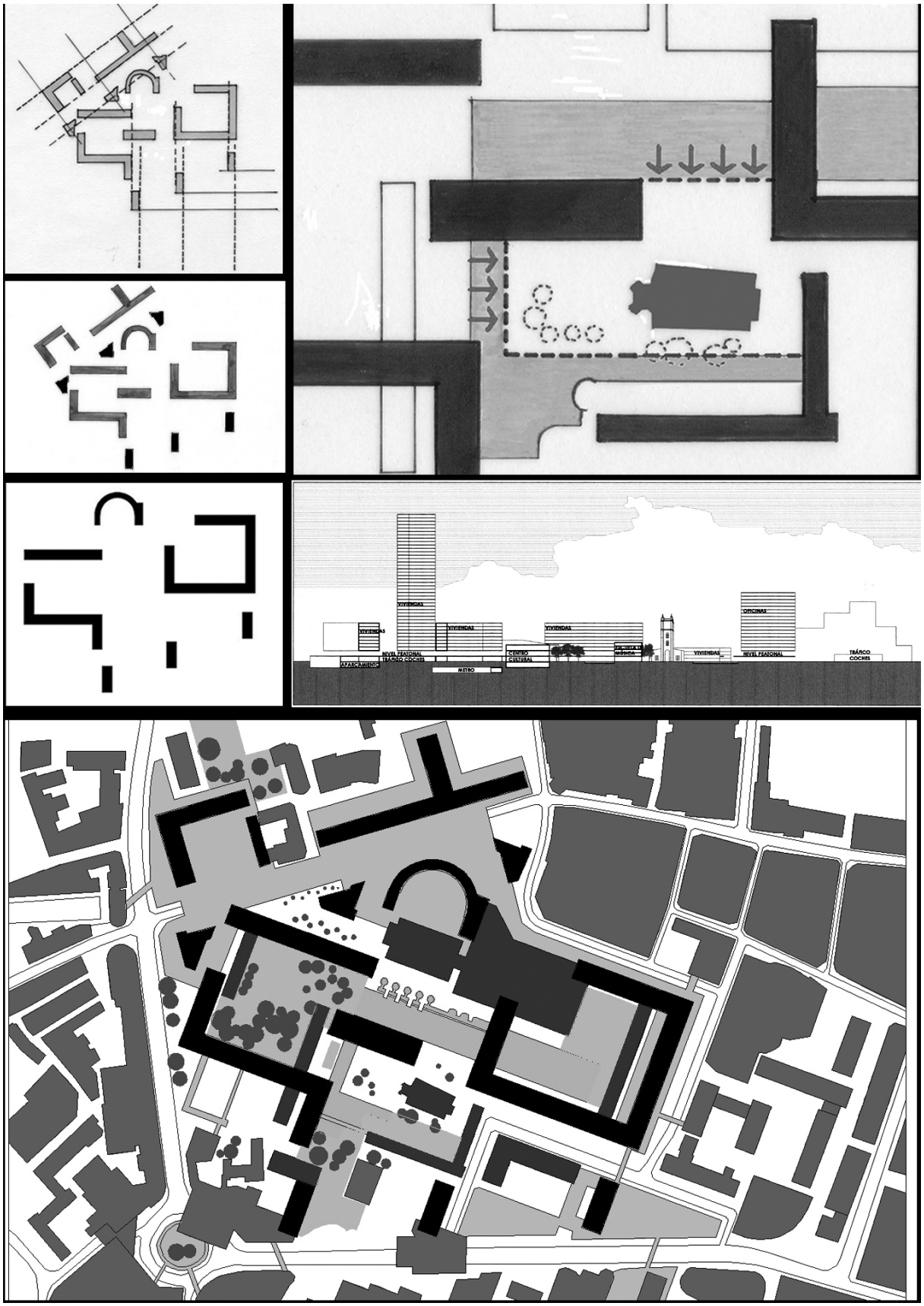
which can serve as city centre landmarks in their own right. The studied placement and distancing of buildings, instead of their linear alignment along the streets brings added complexity which in turn opens greater possibilities for creating spaces with better sun exposure and aeration. This is how the incorporation of green spaces in the city tends towards better environmental quality while brining one of the least contested contributions of modernity.

The modern city is based on order and rationalism. The system of geometrical interrelations between the architectonic volumes predominates over an outlook based on individual architectonic elements. The functioning of the modern city seeks efficient solutions, since the modern city was conceived with the present infrastructural needs of its inhabitants in mind, and as such it is better equipped to deal with real social problems than the traditional city, which was based on a different set of premises and composed of a fabric which is now obsolete.

Without appropriate foresight the infrastructure of the inner city can become a problem. Taken into account from the first conception of the overall urban plan, it can be moved to areas of lesser interest to improve urban space quality where pedestrian areas are of primary interest[4]. This reinforces the idea of traffic segregation, which can generate better results by providing pure pedestrian spaces.

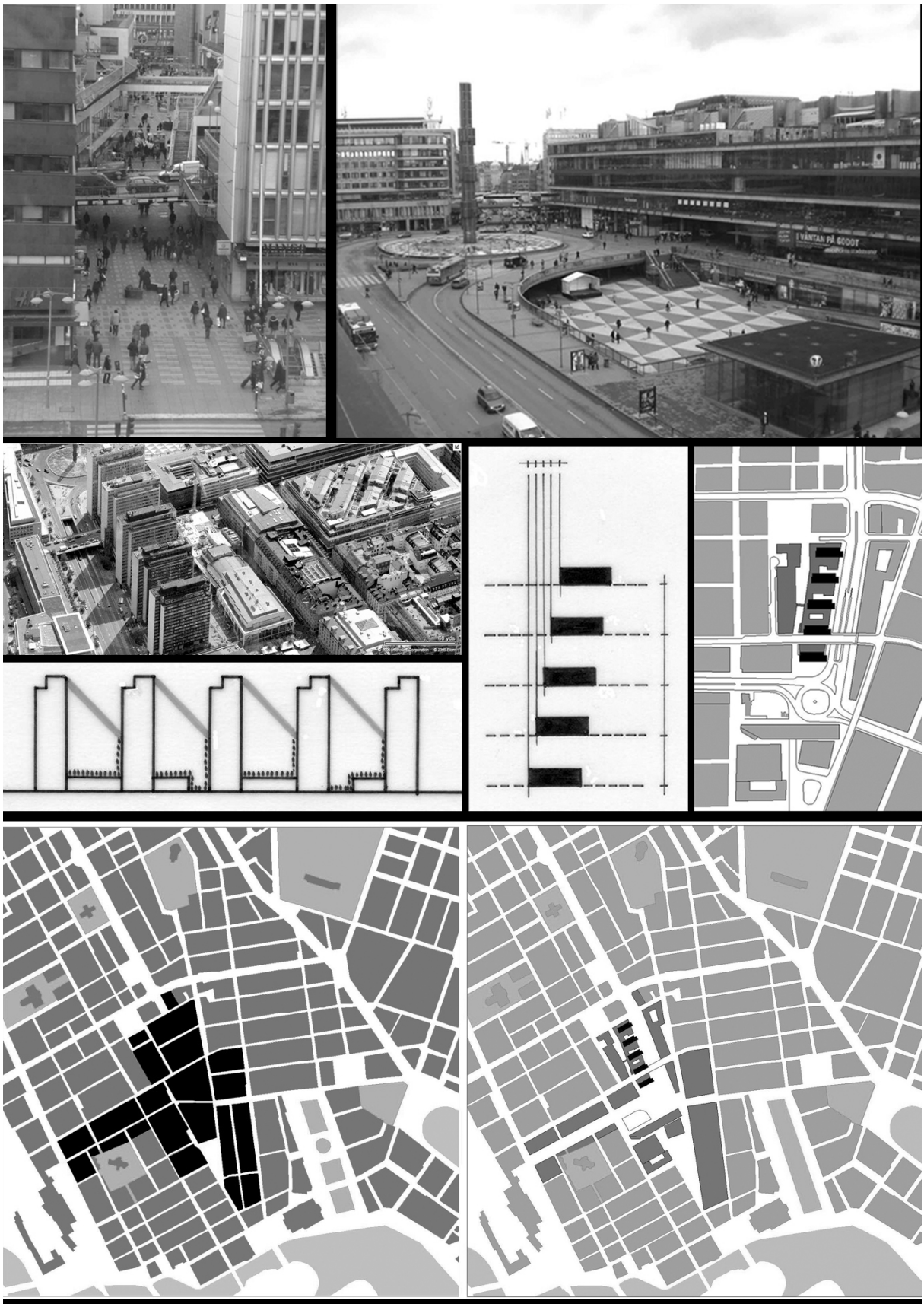
According to classical procedures, the opening up of a street is just that, an opening contingent on the needs of traffic filled in with buildings aligned along the street. Modernity works at a greater scale and goes further in conceiving a unitary space for the whole city. That is how it establishes connections and the interrelation of systems which articulate all the parts by avoiding unconnected concepts. Modernity is not what has brought us the high density, the fragmented fabric of discordant volumes, the falsification of forms and models, the absence of compositional criteria beyond the city block, the lack of balance and pacing between the filled-in spaces and the empty ones, or the fact that the integration of green spaces as well as the use of public and collective spaces are an afterthought, since they are supposedly not modern characteristics. In fact, the very opposite is true.
The milestones of modernity have achieved a level of quality which we reject whenever we deny its current relevance, and later trends have only achieved timid improvements upon them, in many cases accompanied by the loss of the theoretical and purposeful coherence of modernity.

Illustrations



Barbican plan and section and composition analysis. Source: own elaboration.

Barbican. Photographs.
Source: own elaboration



Hogörscity plans before and after the project. Composition analysis and photographs.
Source: personal elaboration and aerial view from Bing Maps, Microsoft Corporation.

Hogörscity. composition analysis and photographs.
Source: own elaboration and aerial view from Bing Maps, Microsoft Corporation.

Notes

[1] Sitte, C. 1926. *La construcción de las ciudades según principios artísticos/ City Planning according to Artistic Principles.* Canosa Publishers. Barcelona.

[2] The first part of the name (*stock*) means log in Swedish, although it may also be connected to an old German word (*Stock*) meaning fortification. The second part of the name (*holm*) means islet, and is thought to refer to the islet Helgeandsholmen in central Stockholm. The city is said to have been founded by Birger Jarl to protect Sweden from a sea invasion by foreign navies, so it was built a city wall. Stockholm has a small remainder of the medieval city wall preserved in the Museum of Medieval Stockholm in that islet, not far from Hotörgscity.

[3] Le Corbusier and Alvar Aalto submitted proposals to the international competition.

[4] Rogers, E.N.; Sert, J.L.; Tyrwhitt, J., 1955. *El Corazón de la Ciudad/The Heart of the City.* Hoepli,SL. Barcelona

MEXICO CITY:
THE WAY TO URBAN MODERNITY: 1920–1940

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This paper reflects on how urban modernity was adopted in Mexico City between the decades of 1920 to 1940, through a movement lead by the architect Carlos Contreras (1892–1970). The scope of this process was set by two congresses organized by the *International Federation for Housing and Planning* (IFHP): that of 1925, held in New York City, where Mexican architects could participate firsthand in the central issues on urbanism; and that of 1938, when Mexico was the venue.
During his adolescence and youth, Contreras lived and studied in New York City, graduating as an architect from Columbia University. There, he became familiar with the practice of the so called American City Planning (1), as well as the projects of eminent European urban planners. Contreras then returned to Mexico, at a time when the fight for power was almost over, and received some interest from politicians, businessmen, and intellectuals on the political and economic reorganization of Mexico during its post-revolutionary phase.

At that time, Mexico City was a hub of economics, industry, trade, and services—those things essential to a country's function—making the city a laboratory for proposals on reorganization and urban space regulation. This in the wake of the major expansion Mexico City had undergone over the last decades.

This paper is focused on the planning movement, lead by Contreras, and Contreras' impact on the institutionalization of urban modernity, with specialized organizations, legislation, city plans, and the knowledge and experiences of the international town planning movement. Several movements, each specific to their country of origin, made for a heterogeneous and diverse process in the early years of its modern phase. This was linked with speeches and testimonials of such personages as G. E. de Haussman, Camilo Sitte, Joseph Stübben, Ildefonso Cerdá, Daniel H. Burnham, Ebenezer Howard, Raymund Unwin, Patrick Geddes, Patrick Abercrombie, Edward H. Bennet, John Nolen, George Benoit-Lévy, Louis van der Swaelmen, and Le Corbusier.

I. MODERN MOVEMENT ON CITY PLANNING

Starting in 1925 at the New York City *International Federation for Housing and Planning* congress, (2) in which Mexico had been invited to participate, it was accepted that planning or urbanism was a necessary discipline for the Mexican

capital and the country's other cities. (3) This congress provoked a major interest in the field of architecture in Mexico, with the two main newspapers of Mexico City publishing several articles on the event and addressing in their pages the planning problems of the capital.

The Mexican delegation at the congress was formed by members of the Mexican Architects Society and Carlos Contreras, although at that time he was already settled in New York City. The architect presented the "National Plan Project for the Republic of Mexico", proposing that planning be a national issue and taking Mexico City as a model. The reorganization of the country would need to be made through a coordinated regulatory plan to ensure ordered and harmonized development, all formulated within an overall government program. Contreras returned to Mexico with the aim of setting the foundations for the development of planning, taking advantage of his knowledge and his connections gained abroad. Soon thereafter, Contreras became the de facto contact of Mexican planning with the rest of the world. In the United States, he established relationships with prominent foreign urban planners such as Edgard H. Bennet, John Nolen, Thomas Adams, George B. Ford, Harland Bartholomew, and Raymund Unwin, who would later on collaborate as consultants, authors, counselors, and honorary members of the projects of the Mexican architect. He also represented Mexico in the *International Federation for Housing and Planning* congress, as both a member of its Board of Directors Council and a representative. His long struggle for Mexico to be named host venue of a congress was successful in 1938, when the "XVI Congress on Planning and Housing" took place in Mexico City.

Once settled in Mexico City, with a group of prominent Mexican planners, Carlos Contreras founded the National Association for Planning of the Mexican Republic (ANPRM, for its Spanish acronym). Between 1927 and 1938, this organization was at the forefront in the movement to provide experts and political leaders with the necessary tools to work collectively on national planning.

Between 1927 and 1936, this group published the magazine *Planificación*. Over 26 issues, the magazine provided theoretical and methodological tools, as well as testimonials from France, England, Germany, and the United States. (4) Further, it created a common code among its readers, a group formed by experts, CEOs and members of associations, officers, and private corporations.

From a theoretical perspective, *Planificación* defined concepts such as city planning and comprehensive planning; methods of technical procedure, and elements of city plans. Among the themes published by the magazine are: industrial housing and health, by Thomas Adams; the notion of city, by Louis van der Swaelmen; garden cities, by Ebenezer Howard; the city distribution and design of street system, by Raymond Unwin; zoning, by Harland Bartholomew; and, the new professional's profile, by John Nolen.

In a few years the Association succeeded in creating government agencies and laws; while the magazine *Planificación* made public testimonials and studies of the international movement of city planning.

II. MEXICO CITY AND ITS ENVIRONS

Contreras' projects for the planning of Mexico City and its environs were published in the "Plan of Federal District 1933" ("Plano Regulador del Distrito Federal de 1933") and in "Mexico City Planning, 1918-1938" ("La planificación de la ciudad de México, 1918-1938"). In both studies, his urban ideals, taken from foreign examples and adapted to Mexican needs, are outlined. He addressed topics such as population, zoning, housing, recreation, architecture, patrimony, financing, legislation, and means of municipal transport.

In his organic vision the problems of Mexico City and the Federal District were linked to those of the Valley of Mexico. Thus, he proposed an integrated Regional Plan that could foresee and direct future developments of the Valley for the following fifty years. (5)

One of the major problems of Mexico City was the great expansion of the urban core that took place over the last two decades of the nineteenth century. This process would cover the territory of Mexico City and of the Valley of Mexico some decades after, provoking serious concern from Contreras. His response was to link the broad area through a system of great avenues and parkways that would cross Mexico City, connecting it to certain areas of the Valley of Mexico. These avenues would be complemented with parks, plazas, greenhouses, besides sport fields, stadiums, forest reserves, etc.

For Contreras, Mexico City and the Federal District were not hygienic, as they had had experienced unchecked growth. The integration of its parts, the organization of the urban core, and the distribution of traffic would be made by great avenues traversing North to South, and East to West; plus, two peripheral boulevards would provide the city with "a vigorous personality".

Two wide peripheral boulevards with their own characteristics and operation would surround the old trace. The external boulevard, where today one finds "Bicentenary Circuit", was formed by the path of what used to be several rivers. It would be the residential extension and reserve zones beyond the central nucleus.

The interior boulevard—the central nucleus—was the most densely populated area, and within were located the government buildings, civic centers, and the most important trade facilities in town. As Contreras said, "it should be preserved by creating around it a circular ring boulevard 200 feet in width and by controlling all buildings within this area as to use, weight, bulk and architecture which should harmonize with the best examples to be preserved within the zone." (6)

This inner boulevard would also operate as a relief artery, allowing vehicles to pass around the city without going directly through the downtown. It would be accessible by vehicle and linked via highways to all other points in the country.
During Contreras' studies, the "heart" of the city, what today is known as the Historical Center, more or less preserved the original Spanish layout. Contreras took into consideration the trends the city had shown over the centuries, noting: "In my opinion the original and traditional trace of Mexico City should be kept intact: Cortés' trace, with its streets from North to South and from East to West, and also the natural movement of the inclined avenues running from Southwest to Northwest should be linked to those running from North to South, and to those from East to West…" (7)

Contreras wanted to mimic the original layout of Mexico City by using a template of four 40 meter wide avenues. He also wanted to correct street alignments and, finally, to free the monuments and places of architecture or traditional value from all adjoining construction, isolating them when possible, and create "plazas" or gardens around them to enhance their value, and create urban destinations of importance.

For the arrangements of the *Plaza de la Constitución*, "the main civic center in town", Contreras carried out several projects between 1928 and 1933. He wanted to achieve an urban–architectural harmony for the Plaza, showing its magnificence and displaying the architecture of the buildings around it. In one of the projects he designed a central square and a monumental fountain; he eliminated the tramways and buses terminals, and redefined the vehicles' points of access and exit to achieve a fluid circulation around the Plaza.

III. THE WAY TO URBAN MODERNITY

Between 1925 and 1938, Carlos Contreras brought to Mexico ideas from the international town planning movement pertaining to theory, methods, procedures, testimonials, professionalization, organization, and legislation, putting them into practice in the Republic of Mexico. Based on this we conclude that he introduced urban modernity to Mexico, Mexico City being his laboratory.

Within his proposals for Mexico City, Contreras assimilated the pragmatic urban thought of the American City Planning, that had adopted and adapted for itself knowledge and experiences from the German, French, and British schools.
The reviewed process, of scarce 13 years, was short and intensive and there was no time for him to sensitize his contemporaries. There was a generation change and, starting in the decade of 1940, Mexican architects as Mario Pani and Domingo García-Ramos were inspired by other urban trends, precisely those from the CIAM congresses, and those of Bauhaus with the work of Hannes Meyer, who lived around a decade in Mexico.

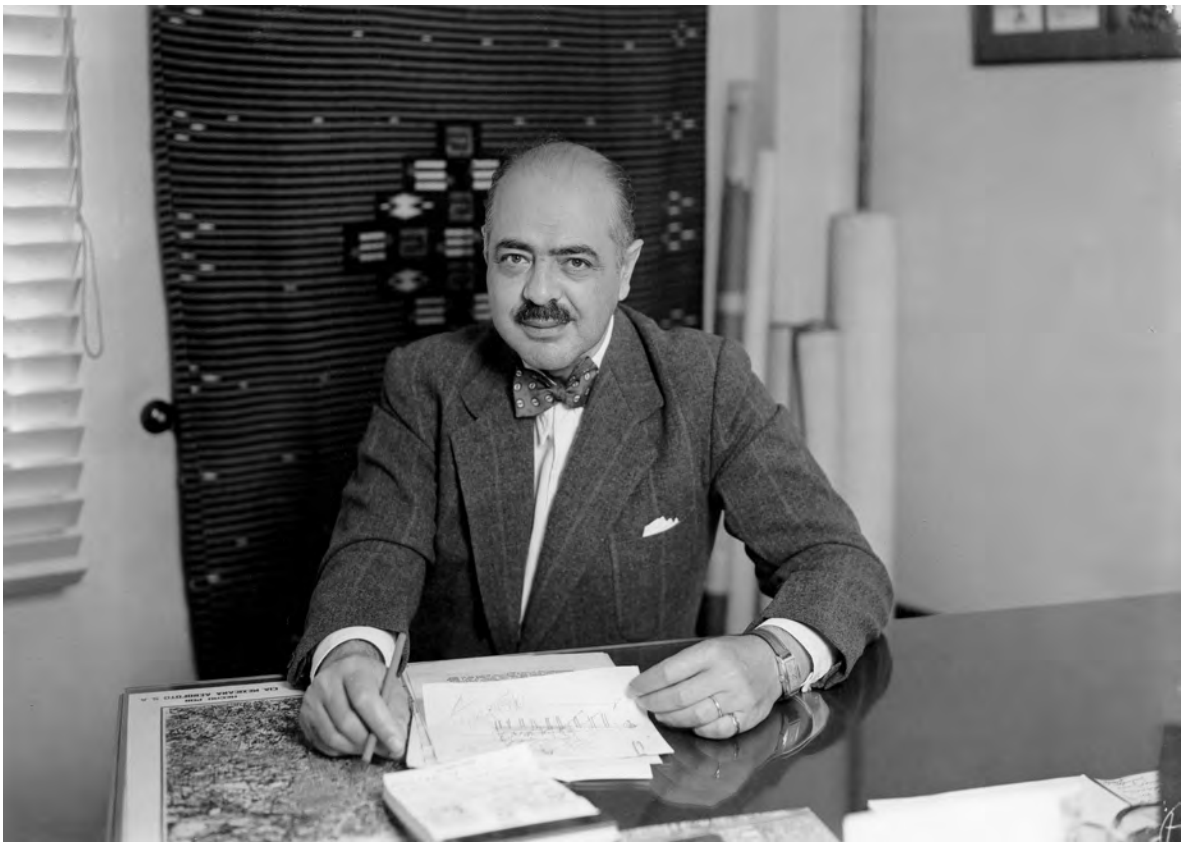
There was not continuity in the achievements of the planning movement leaded by Contreras, during the early decades of the XX Century. As a professional he

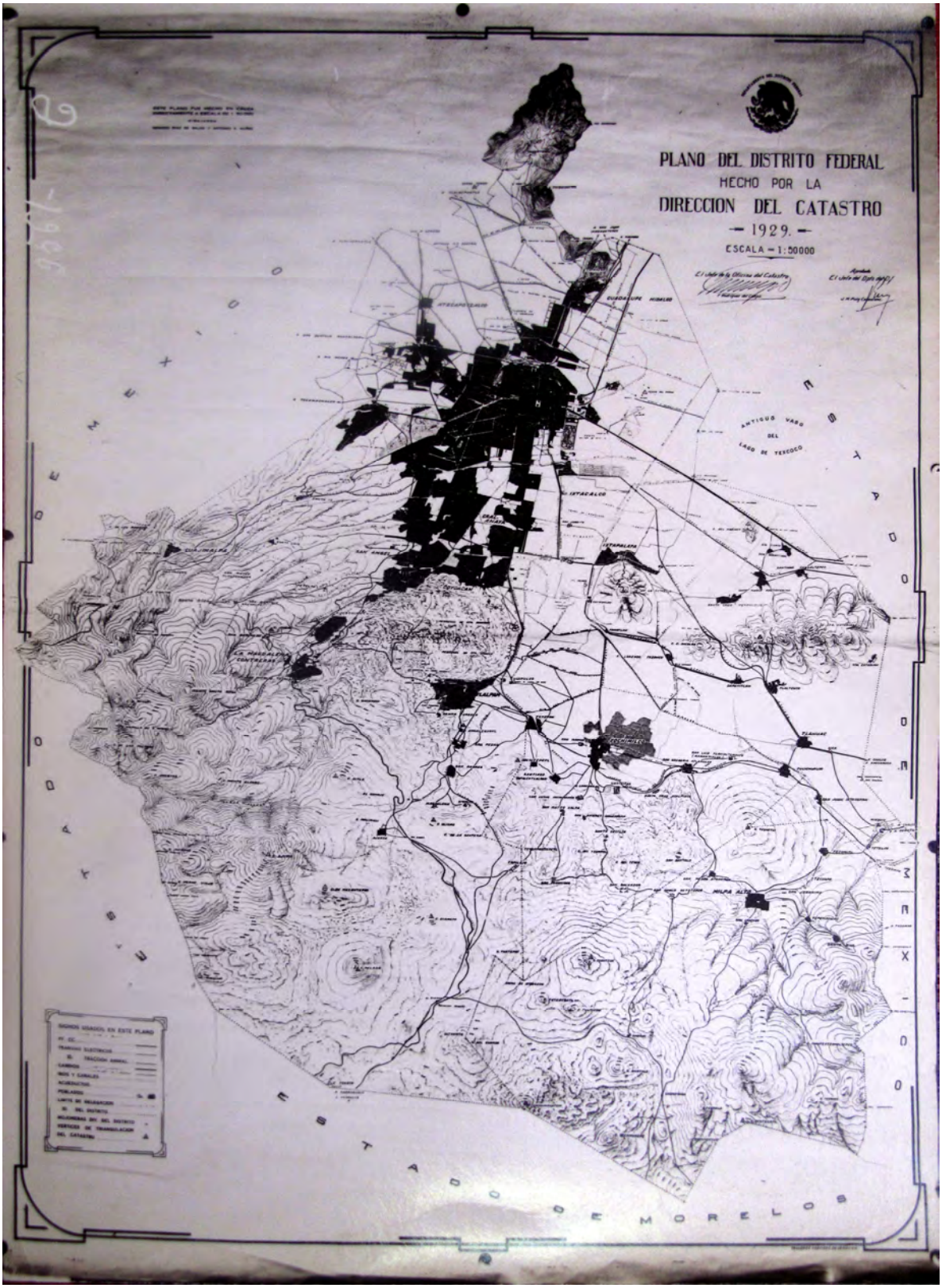
counted with the new urban planner qualities and had the certainty of being able to concrete his works in our country; nevertheless, when trying to apply them in the field, he found a critical, apathetic, and skeptical environment, he had to wait for hours to see the current government officials, he faced local prejudices, selfishness, and professional envies, and had to solve the financing problems to put his works on field.

The urban movement generated by Carlos Contreras and his achievements has not yet been studied by Mexican architects, urban planners or historians. We do not know the impact of his comprehensive plans on Mexico City, a post–revolutionary city in need of solving major problems such as tremendous expansion, lack of housing for the lower classes, and uneven provision of urban services. Contreras planned for a “noble and logic” city, as the work of his city plans and in other unpublished projects demonstrates. We know they were adopted later on, the name of their author forgotten. The manner by which Contreras forged his ideal city from the international town planning movement is another unknown.

The few publications on Contreras have reproduced only fragments of his projects, arguing that they should be interpreted as visionary and utopian proposals. We do not agree. Contreras was not a visionary: he was present at the right moment to adapt the tools from a new discipline to the needs of the Mexican capital.

Illustrations

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3 TERMINAL DE LA CENTRAL DE AUTOBUSES
4 SANTIAGO TLALTELOLCO.
5 SANTA MARIA.
6 BUENAVISTA.
7 COLONIA.
8 ALAMEDA CENTRAL.
9 CIUDADELA.
10 PLAZA DE LA CONSTITUCION.
11 S. LAZARO.
12 PENITENCIARIA.
13 CARCEL MODELO.
14 PUERTO CENTRAL AEREO.
15 CENTRO ESCOLAR.
16 HOSPITAL GENERAL.
17 ESTADIO.
18 HOSPICIO.
19 RASTRO
PROYECTO DE PERIFERICO Y CONTENCION DE LA MANCHA URBANA
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COYOACAN
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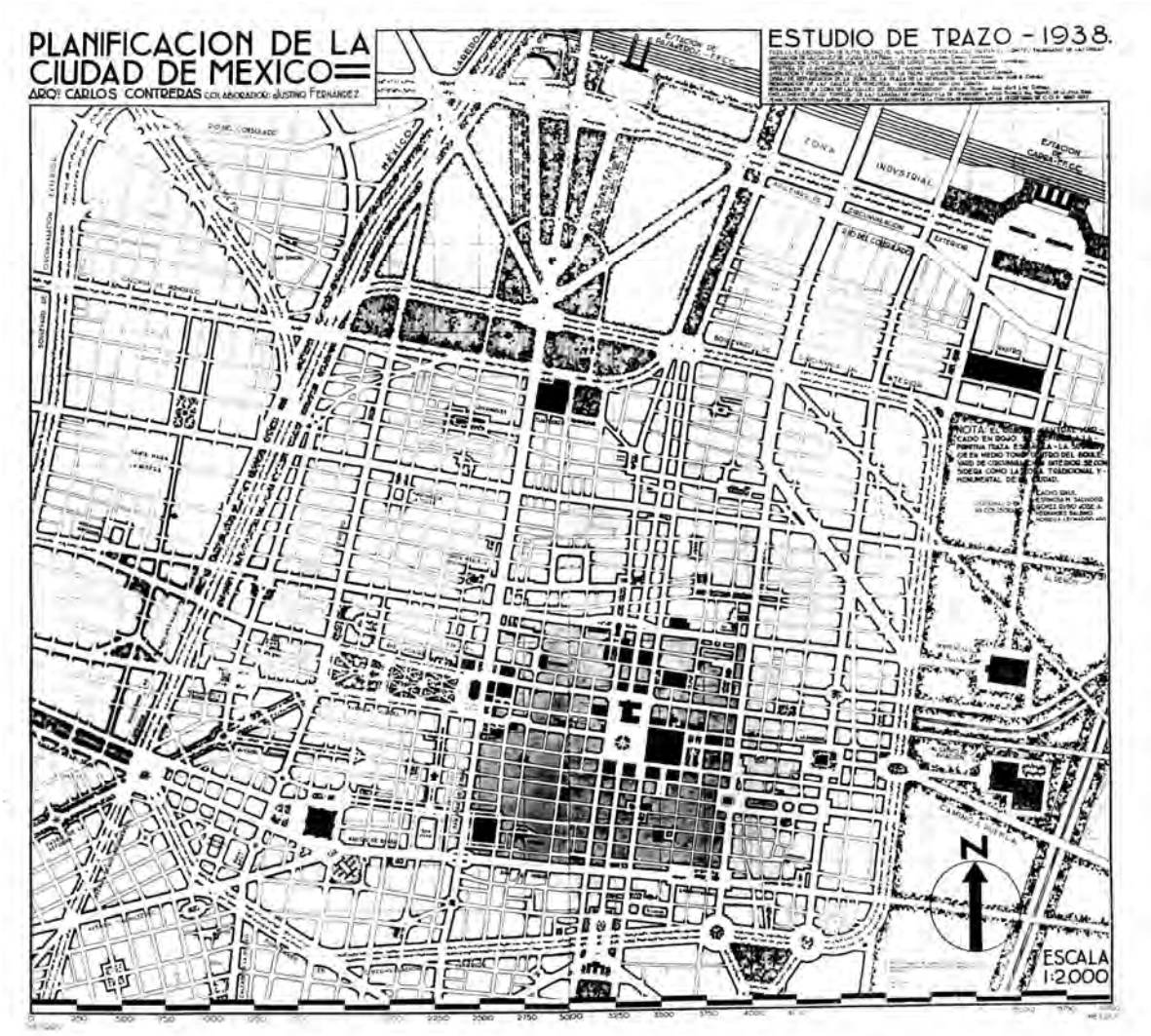

FOOTNOTES AND REFERENCES

1. Tehranian, C. K. (2000), *Modernity, Space and Power, The American City in discourse and Practice*, Hampton Press, Inc., New Jersey.
2. Congresses organized by the International Federation for Housing and Planning (IFHP) were periodically organized in the main capitals: Paris (1914, 1922, 1928, and 1937), London (1914, 1915, 1920, 1922, and 1935), Brussels (1919), Gothenburg (1923), Amsterdam (1924), New York (1925), Vienna (1926), Rome (1929), Berlin (1931). Created in 1913 by Ebenezer Howard, “father of the Garden City” the IFHP was originally named “Garden Cities and Town Planning Association”.
3. Contreras adopted the term planning that circulated during the first decades of the XX Century under the names of Town Planning, Civic Art, City Planning, and Stadtebau. In this paper we will use planning and city planning indistinctively.
4. For the issue of urban knowledge disclosure, through the National Planning Association of the Republic of Mexico, and the magazine *Planificación*, plus the strategies to start a national movement for planning, see Escudero, A. (2006), “*Planificación* magazine and the bases for the development of town planning in Mexico, Masters Degree thesis on Art History, UNAM, Mexico.
5. The Valley of Mexico is a geographic unit. Mexico City is the settlement for the old Tenochtitlan, capital of the Aztecs and conquered by the Spaniards in the XVI Century, when it became the place of the political power for the Vice–Kingdom of the New Spain. With the independence of Mexico, in 1824, the Federal District was created as headquarters of the Republic’s capital. The change from

the colonial city to the modern one, during the XIX Century, spread Mexico City toward the municipalities of the Federal District, which were transformed into delegations in 1928. Here we refer to Mexico City and the Federal District as an inter–dependent unit, according to Contreras' projects.

6. Carlos Contreras (1937) "*Plan Development of Mexico City*", in Esther Born, *The New Architecture in Mexico*, New York: Morrow, p. 4.

7. (1937) *"Memorándum relacionado con la prolongación de la avenida Chapultepec, de Balderas y Arcos de Belén a la Plaza de la Constitución"*, September 8, Carlos Contreras Archives.

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MAKING IT NEW: TEMPORALITY IN THE MODERN CITY

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In Denmark, the rise of new towns was an "explosion" in terms of residential capacity. More homes were built faster than in any previous historical period. Their basic premise was one of newness - of significant difference from what went before - in terms of plan, form, materials and execution.
Approaching the half-century mark after the completion of Corbusier's 1952 *Unité d'Habitation* in Marseilles and the many new-town developments built across the world in the following 30 years, the time has now come to reassess what is probably the most pervasive result of the modern movement.
As another wave of large-scale residential building projects sweeps across the world – especially in Asia, the ensembles of the first wave are reaching an age where they require either refurbishment or demolition. This prompts the question: How do new towns age?

Considering the current state of the first wave of new towns the immediate answer appears to be "not very well". Many have developed contrary to intentions to become emblematic of much of what their creators sought to counteract: decaying ghettos characterized by social and financial deprivation and dogged by disproportionate crime rates. Yet they also provide an interesting insight into the life of architecture over time. The industrialized, mass-production-oriented means of their construction and the comprehensive plans that underlay them effectively combine to "standardize" many of the locally determined variables that generally complicate the study of complex urban settings. Furthermore, their underlying premise of newness presents a form of temporal insecurity which highlights the universal architectural interplay of time and form.
This paper presents a brief case study of the new town development *Urbanplanen* in the southern part of Copenhagen, Denmark, considering this development at the experiential level of the street, it aims to examine how the radical architectural novelty of this type of complex has developed over the past 40 years.

Case: A Brief history of Urbanplanen

Urbanplanen is a new town development built between 1965 and 1972 on the island of Amager just south of Copenhagen and named after Copenhagen's mayor Urban Hansen. Originally intended to comprise 50.000 residential units, only 2400 were realized with 140 units added some 20 years later
Built of prefab concrete, the spaciously laid-out apartments featured all modern conveniences, while leafy exteriors with playgrounds, lawns and traffic-free footpaths provided a marked contrast to the crowded older districts of the city from which many young, predominantly working-class families were eager to escape. In Scandinavia,

architecture and its social potential were high on the public agenda in the late 1960s and early 1970s. However, while civic concerns underpinned the ideology behind Urbanplanen - as it had with many other new towns - the conditions surrounding construction were essentially dominated by the pragmatic need for the rapid and cost-efficient establishment of new homes in great numbers.

Urbanplanen - like many other new towns especially in the Nordic countries - was conceived according to a comprehensive overall plan and featured its own day-care facility, school, shopping centre, library and numerous clubs, laundries and other amenities for the residents. According to the original plan many of these were to have been situated in the shopping centre, which was to have been a central hub serving but ended up in a somewhat peripheral location since the estate was never completed.

Social problems have plagued Urbanplanen for the last 20 years, partly due to a certain “ghettoization” - effect exacerbated by municipal housing policy. The post-office, the bank and the supermarket are all long closed and although the crime rate has been reduced, no new shopkeepers can be found to take over the disproportionately costly leases. Intense efforts including social schemes for residents - especially youths and children - and even an extensive, locally based art-project - have gone some way towards improving the situation since the 1990s.

Nevertheless, the area is still largely perceived as a socially disadvantaged ghetto and the housing authorities are seeking to change the demographics of the area through preferential treatment of potential tenants who are either employed or currently enrolled at an educational facility. Yet Urbanplanen is popular and there is a 25-year waiting list for the larger apartments.

Urbanplanen today

Urbanplanen was originally constructed right on the edge of the city, where the 4-5 storey blocks taper off into a residential district dominated by single-family homes beyond which lay the undeveloped land of Amager Commons. The large concrete structures dominated the neighbouring buildings, which are mainly brick single-family homes built in the years from 1910-1930 supplemented by a few later 4-5 storey brick apartment-buildings. Although the city has expanded westwards since Urbanplanen's completion - and now includes a new Metro line a few hundred metres beyond its boundaries, the area still provides a sense of being on the outskirts of the city.

On entering Urbanplanen the architectural environment is denser - and on a larger scale - than the surrounding architecture. In accordance with the original plan, no motorized traffic is permitted; the interior of the estate can only be accessed by foot or bicycle through the peripheral parking lots. The auditory surroundings alter as the noise of traffic fades. The sensation of leaving the city behind is striking. The scale, sound and materiality all conspire to provide the experience of entering a different space. The main impression is one of material and functional uniformity. Each building type - apartment blocks or terraced houses - is repeated numerous times, with a single high-rise block acting as a visual anchor point. The residential buildings cluster around a central low-density area featuring playgrounds, day-care centres, "The Farm", and the somewhat desolate shopping

centre *Solvangcentret* that now features little other than a pub and a social services office. The school, church and library delimit the estate to the South. The experience is one of moving within a hive of concrete with intermittent cells of green - concrete prefab elements make up the walls of the buildings towering overhead, the pathways are partially delimited by in-situ cast concrete walls and lined with concrete slabs underfoot. Sometimes the concrete is covered in another material - carbon-fibre siding, white or yellow brick, or the most recent addition - printed glass:
Urbanplanen is currently undergoing major renovations of its facades and outdoor facilities. New playgrounds and ballparks are being added to the areas between the buildings and the originally identical apartment blocks are being covered with glass sheeting featuring different print-ornamentation for each building, grouped together in geographical regions, so that buildings located close together feature e.g. Scandinavian or South-American-themed motifs. At the time of writing, the first phase is completed, while roughly half of the buildings in the complex have yet to be renovated.

From Site to Stuff - Temporal Layers

In order to consider the temporality of *Urbanplanen* I shall be using the "shearing layers" [1]described by Stewart Brand in the 1990s: Site, Structure, Skin, Services, Space Plan, Stuff - these are the "layers of longevity" that make up architecture - each altering at their own pace. (Brand 1994) The Site has the longest life, whereas the building Structure typically lasts 50 to 100 years. Other layers such as the external cladding - or Skin - of the building might last 20 years with fittings - Services, design - Space Plan and, decoration and furniture - Stuff - generally lasting 5 to 10 years.

In terms of public space Urbanplanen - like most new towns – is in a peculiar position: Built according to comprehensive plans, this large-scale project was constructed at great speed, hence in many ways it can be considered as a single, architectural work. Yet its main contribution to public space lies neither in the facade it presents to the surrounding city; its position vis-à-vis other buildings; nor in the modulation of interior/exterior: Urbanplanen constitutes public space in its own right; its size and comprehensive plan create a characteristic form of "interior public space".Aesthetically speaking it is particularly interesting to consider this - the internal "street-level" of experience since it is precisely within this context - as public space - that many new towns are considered in negative terms.

The spatial ambiguity of the street-level experience or "interior public space" of Urbanplanen described above is a kind of blurring of the temporal layers: There is a solidity - an immutability - to the large concrete spaces, which belongs to the layer of site rather than of structure. Even the extensive green wedge at the heart of the complex has many structural characteristics: Its physical form - the hills and mounds - is partially determined by the dumping of soil dug out to establish foundations during the construction process.

Unusually for a new town development, a decision was made to retain "The Farm" in spite of the formal anomaly of such a traditional vernacular building within a modernist complex. This typical 19th-century farm building narrates the history of the land and is now used as part of a playground with a petting-zoo. Hugely successful in its new function, "The Farm" -

by relating to the underlying land in a new context - provides a narrative trace by which to distinguish the layers of site and structure and discern the historicity of the location.

The dual uncertainty of site/structure and "interior public space" in Urbanplanen is largely determined by the comprehensive plan - a form of "over-determination" locking the estate and making it time-restricted in the sense that it opposes growth: Hence inevitable entropy becomes not generative - adapting to unforeseen developments and making room for the new, but tends toward the negative - or degenerative - entropy of wear, decay, even active destruction in the form of graffiti and vandalism. For example, the plan could not accommodate changes to counter the ultimately peripheral location of the shopping centre.

The level of the Space-plan interacts with the Skin to counteract the legibility of development over time.[2] The logistics of renovation counteract entropy, since e.g. all identical window frames need replacing simultaneously. Similarly, although a new glass Skin is creeping over the buildings the effect of the different prints described above tends to be overridden by the uniformity of the intervention with dozens of identical buildings being renovated simultaneously: The underlying programme resists entropy. The additional outdoor play areas - while introducing a great deal of new Stuff between the buildings - still basically adheres to the original plan with fixed recreational areas between the apartment blocks.

However, while the scaffolding was up, the residents had the option of having a balcony fitted in exchange for a nominal rent-increase. The result was that the facades bloomed with randomly scattered balconies, providing a functional and aesthetic opening within an otherwise closed system, enabling the form to break free of the comprehensive plan. In other words, the main difficulties in Urbanplanen appear to be at the level of Site, Structure and - above all else Space-plan, but renovations are primarily taking place at the level of Skin, Services and Stuff and hence change little.

Planning for entropy

The hierarchy of the various material shearing layers is pivotal? in the "reading" of architecture and its history. Although the individual layers evolve at each their separate pace, with little mutual interference, their contact points offer essential points of temporal reference. This provides Sennett's "narrative of development".[3] In connection with the previously-mentioned art project (Yde et al., 2009) the artist Nils Norman emphasized two aspects of Urbanplanen: the residents' allotment gardens (now razed to make way for additional upcoming residential buildings) and the "construction playground" where the children build their own playthings from planks (now somewhat institutionalized into a large fort, undoubtedly compatible with current safety regulations, but with little or no opportunity for creative building). Norman termed these places "Disorder Pockets" and suggested that they might have the effect of counteracting the planned rigidity of the complex. The perennially incomplete forms of these unfinished and transient "pockets" provide openings for new developments as yet unplanned:

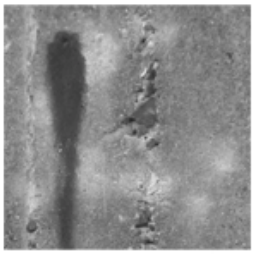
For nearly 40 years, Urbanplanen has proven remarkably resistant to adaptation. The plan was inherently temporally restricted. Perhaps this was simply because it reflected the vision of planners, who were - for the first time in history - able to ensure the realization

of their visions so swiftly that little or no adaptation took place in the process. This effectively "closed the gap" between planning and execution. This was only possible because there was no need for the plan to adapt within the (severely limited) temporal horizon of the project. Thus the inevitable deviations have tended to be of a degenerative as opposed to generative nature, simply because they could not be accommodated.
The original novelty of new towns was in itself an increase in entropy, something previously unseen that arose full of promises for the future. In Urbanplanen however, the fact that this newness was specifically planned for effectively froze the estate time, making it impossible to uphold, precisely because it left no room for generative entropy - for the generation of newness.

Situations have existed within Urbanplanen, which opposed this tendency to stagnation at different temporal levels and they continue to arise and sometimes to disappear (like the allotment gardens and the construction playground). “The Farm” and the balconies and however, offer a form of “disorder pockets” at the more fundamental and enduring levels of site and structure within the overarching level of the comprehensive plan. Embracing a certain amount of “temporal disorder” - adapting the plan to accommodate both the past and the future at these basic levels - may offer a key to establishing generative entropy in architecture: allowing space for potential creativity as opposed to simply locking into a contemporary vision.

Illustrations

Urbanplanen, Copenhagen, Denmark, ca. 1970



Photos: CM

Photos: CM

Notes

[1] The term "shearing layers" - also used by systems theorists and ecologists - was coined by Frank Duffy and developed in an architectural context by Stewart Brand. (Brand 1994)
[2]) The term "Brittle City" was coined by Richard Sennett to describe the problems arising from architectural over-determination in form of excessive regulation, zoning, etc. Sennett describes a city that has no resilience or ability to adapt to inevitable changes over time. (Sennett 2006)
[3] According to Sennett a city should be open and there are three elements urban elements that enable an open system as opposed to a closed one: passage territories, incomplete form, and narratives of development. (Sennett 2006)
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AVEDOERE HOLME A MODERNISTIC INDUSTRIAL AREA : AN INVESTIGATION INTO TRANSFORMATION AND PRESERVATION ASPECTS OF A MODERNISTIC INDUSTRIAL DISTRICT NEAR COPENHAGEN

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Introduction

The industrial area Avedoere Holme, covering 540 hectares in the municipality of Hvidovre near Copenhagen, represents a story of unique modernistic planning ideals. As a radical and rational answer to the needs of the rapidly growing industrial city for areas to place potentially polluting industries, planners pointed to the shallow waters only nine kilometres southwest of the centre of the Danish capital. Here on the edge of the city there would be access to harbor facilities and an effective highway system as well as to the workforce needed.

The potential location for a new industrial area came into focus around 1940, was planned in the late 1950´s, came to use in 1966, was hit by the first oil-crisis in 1974. It turned out to be the last Danish big-scale industrial area – indeed the largest in Scandinavia - where rationality was the sole foundation for planning and realization as opposed to the next generation of industrial areas, where aesthetics became of ever growing importance.
The industrial area, Avedoere Holme, was obtained at the cost of a biotope that - at the time - was considered of low value. Twenty years later it would have been protected as a nature reserve.

Today the architecture of the district forms an anonymous flatscape of low concrete panel-constructions, and the few landmarks in the area are all placed on the absolute fringes and their functionality points not to production or logistics but to serving the cityscape with deliverance of energy, waste deposits, sewage cleaning and offices.
This area - as similar areas elsewhere in Denmark - has not yet attracted interest from the creative classes and has with a few exceptions not been generally recognized as an object for preservation. [i]

The History [ii]

The shallow waters with tiny islets that often were flooded had for centuries delivered cattle grazing and reed harvest for the local farmers. With the industrialization and growth of the city of Copenhagen the area in the first half of the 20th century changed function and turned into a mix of wasteland and leisure area.

A small colony of privately owned summerhouses grew up during the 1930´s, held by people who enjoyed sailing, fishing and hunting. This use reflected a shortlived culture, where the newly acquired leisure time of the working classes had not yet found its later form, where a few biotopes were recognized as attractive as holiday and weekend locations.

At the early stages of the german occupation of Denmark (1940-1945) danish planners began considering the future use of the area. In the event of a german victory in WWII it was expected, that Copenhagen would need bigger harbor facilities for coaster traffic on the german north coast. Avedoere Holme could provide the area needed, and the location south of Copenhagen was perfect.

As the military tide turned, these plans were put away, and after 1945 the discussion centered on whether Copenhagen was now in need of more quays or of new industrial areas.

In the planning discussions that took place in the 1950´s there was focus on very different uses ranging from a new airport (was dismissed amongst other reasons on the grounds of incompatibility with the hunting in the area) to a new location for a more natural zoological garden in Copenhagen.

In the end the discussions concentrated on the need for industrial areas that could hold the more polluting processes within a consequent zoning of the new urban landscape. Five models for establishing industrial zones in the area southwest of Copenhagen were presented in 1958, and the model chosen and later realized was the one, that focused on industry and created the industrial area Avedoere Holme by reclaiming the islets and surrounding water.

The whole project was developed as a private initiative and was economically considered a high risk project. License to reclaim the water area was given by the government.
Reclaiming on private initiative was very unusual in Denmark, and Danish experiences with reclaiming land were limited. Technology for the project was imported from The Netherlands, and the Danish company Kampsax A/S developed the project after having made an assessment of the future need for centrally located industrial plots.

The company financed the reclaiming project and the development ripening project by selling the plots, and later the roads were taken over by the municipality.

One of the principles behind the structure, that was folded out in the area, was that enterprises could acquire plots of a size that allowed for future growth, and with a mix of very large and smaller plots there would be room for moving enterprises without leaving the area in a kind of life-circle thinking.

As a truck based production area Avedoere Holme was laid out with extraordinary broad roads, and the project offered to finance the connection of the area with the national highway system. The knowledge that a major highway would soon connect it with the international transport system placed Avedoere Holme as an ideal lay out along the principles of functional segregation and rational function. The planning conditions were later strengthened by bridge building, that gives the area direct connection to the European continent as well as Scandinavia.

In 1966 the first company moved in, and among the first buildings, there was a number built in traditional style with brick walls and saddle roof, but as the Danish building sector steadily was industrialized the prefabricated concrete panel buildings began to dominate.
It was characteristic that the industrial buildings in no way were affected by the fact, that the district is placed by the sea. The main part of the buildings are of two storeys and that does not allow any views over the surrounding dykes.

Contrasting the industrial flatscape are the spectacular power plants that dominate the southern seafront together with gigantic windmills and a wastewater treatment plant. Dominating the northern main entrance to the area is a 300 metres long multistorey office building that spans the entrance.

The planners had spoken of 25.000 workplaces on Avedoere Holme after completion, but at the time of the first oil-crisis in 1974 only 14.000 had come into existence, and today it holds 9.000 workplaces. This number partly reflects the economic crisis that dominated the 1970´s and 1980´s and partly the shift from production to storage. Similarly the need for areas for highly-polluting industries has practically disappeared - with the public works as the exception.

Challenges

Industrial areas as Avedoere Holme face serious challenges today. The ever increasing outsourcing of industrial production from the western world, leaves the industrial areas open for transformation as they are drained off. They will have to be opened for new uses - or decay.

The industrial areas around Copenhagen are in these years characterized by a planned transformation of the former monofunctional areas into mixed areas, where a number of the original production buildings will be preserved and brought into use with new functions, mainly housing.

Experience tells the planners and developers that this already classic approach to the monofunctional areas of modernism is considered attractive by most parties. And areas placed directly on the seafront can hold the most attractive residence areas, and this function is welcomed by developers as well as municipalities.

A precondition for a development along this line is to romanticize the area - mentally and physically.

A second probable approach will be to let the area continue to develop along the now well known lines with a diminishing number of workplaces, growth of a “terrain vague” and the loss of an already waning identity.

Whichever development occurs it means either the destruction of the physical modernistic landscape or the positive history of modernisms unique ability to organize industrial production in accordance with welfare ideologies such as consideration for the health of not only the workforce but for the population as a whole.

Heritage - conservation and development

As a third possible way could be to introduce heritage thinking as one of the factors behind the necessary future development.

Based on the assumption that even these late monofunctional structures represent an important history of how engaged and visionary planners in the 20th century handled the challenges of organizing industrialization, population growth and welfare within a framework of modernistic thinking and acting.

The flatscape of Avedoere Holme is at large void of the aesthetic and architectural values that generally constitutes the base of preservation thinking. The buildings are massproduced, and were not constructed for a long life. Few well-known architects have contributed and the buildings are mainly manned by workers. Exceptions are the power plants which were added to the area at a later stage.

The dominant history behind Avedoere Holme is immaterial. It is the history of modernity and rational solutions to specific challenges: In a century where Denmark within the framework of industrialization has been dominated by a democratic evolution in the meaning of constantly increased access of anything from voting, wealth and housing to education, health and work, the history of planning and production is essential.
Avedoere Holme represents the final stages in this development, where the level of planning and the scale of work culminated.

In a heritage project promoted by the "Heritage Agency of Denmark" "Forstadsmuseet Historiens Huse" has initiated the development of a methodology for identifying heritage values in the built industrialized structures.[iii] They raise challenges in regard to scale, materials, aesthetics and messages and massive negative storytelling has proved to be an obstacle.

The project has among other structures focused on the cultural heritage of Avedoere Holme and pointed it as a possible alternative foundation for future development.
This work identifies the principal history of Avedoere Holme as being the copestone of the development of major industrial areas in Denmark. Its modernistic planning carries importance comparable to recognized classic town planning projects from earlier centuries, but its buildings differ in the sense that they are erected in cheap materials with the idea of changeability or demolition.

The keywords are industrialism and modernity, and when we raise the level of observation and see the industrial area in combination with the matching neighboring monofunctional elements in the cityscape Avedoere Holme marks itself as a central element in the history of planning the welfare state.

The cultural heritage values of Avedoere Holme are represented in the grid of wide, straight roads which meet in right angles and bear witness to the cronology and intended function of the area.

Facing the recent challenges where national and regional planning maintains the area as location for non-existent polluting industries, it is necessary to point at alternative uses, that can maintain the ability of the area to communicate its history while developing in accordance with the market.

The vision of the analysis is, that the future function must reflect the strengths in the original rationale behind the modernistic planning. Modernism created the zoned industrial area to hold functions that you would not have in your backyard. At the time of planning this function was polluting industrial production, todays production does not call for such measures and furthermore the contemporary ideals call for integrated town functions. But that does not mean that we do not have modern urban functions, that would benefit from the same kind of location planning.

By considering which new activities would best be situated apart from dwelling areas it becomes clear, that - for instance - part of the rising leisure industry could benefit from a location in a classical zoned district.
By placing elements as football-ground, amusement-park, racing-circuit and the likes it will be possible to continue the necessary process of transformation on a basis of the strengths and benefits of the modernistic industrial area.

Introducing alternative uses of the area which benefit from the same elements, that the modernistic planning defined, it becomes possible to preserve the fundamental, historical structure of the area.

Preservation of the grid, the monofunctional use and perhaps some of the buildings in the area will secure possibilities for future understanding of the rationale behind this modernistic landscape. Transformation in accordance with the market and based on the original planning ideas will keep the structure alive and keep the industrial history visible in new circumstances.

To bring the vision into reality it first of all takes communication and persuasion. The value of the late industrialized structures must be integrated in national, regional and local heritage strategies, private/public partnerships must be formed and heritage thinking in relation to modernism must be introduced into the contemporary planning processes.

As to the last part we have succeeded in incorporating heritage thinking on modernistic topics in the municipal planning[iv], but the other levels remain to be activated.

Illustrations:

1.Map of Copenhagen with Avedoere Holme.

2.Summer life at Avedoere Holme, 1950´s. (Photo: Forstadsmuseet)

3.Avedoere Holme, 1966. (Photo: Forstadsmuseet)

4.Avedoere Holme, 2007. (Photo: Forstadsmuseet)

Notes

[i] Avedoere Holme is included in a list of the 29 most valuable industrial heritage sites in Greater Copenhagen: *"Industrisamfundets kulturarv",* 2004. Reported by regional heritage authorities on the initiative of the Heritage Agency of Denmark.

[ii] This part is base don an unpublished study: *Avedoere Holme*, 2007, by Boding-Jensen,K. curator m.a. The study in danish is located in the collections of Forstadsmuseet Historiens Huse.

[iii] The report on the method "*Paa sporet af velfaerdssamfundets kulturarv*", (Tracing the cultural heritage of the welfare society) 2007 can be seen at www.historienshus.hvidovre.dk/Default.aspx?ID=1884

[iv] www.kommuneplan2009.hvidovre.dk/ The master plan 2009 for the municipality of Hvidovre introduces the results of the heritage project. In the coming years the challenge is to implement the way of thinking in practical planning at higher levels and outside the public sector.

CIVIC AND SOCIAL INFRASTRUCTURE
City and Nature

When thinking about new towns and landscapes, the first thing that comes to mind is the privileged aspects of nature and its possible contemplation and appropriation by urbanism. This attitude relates to the idea of approaching nature, shaping it so as to provide private spaces for recreation and enjoyment, combined with a type of design and gardening that enhances the relation to the site. Since the beginning of civilization, men have actively tried to relate to nature by leaving a mark through the organization of the environment; but it was the Modern Movement that introduced a new way to correlate to the site with specific urban proposals and the introduction of landscape architecture.

This section aims to explore the achievements and failures of urbanism within a close relationship with nature, dealing with new ways of relating to the context. Here specific examples of planning for cities and neighbourhoods are part of political and social proposals as much as a personal search for new alternatives of land occupation. It can be said that these propositions present themselves as “ideal cities”, taking into account changes in the way of living, social fairness, and new alternatives in the leisure time.

It starts with “Transformations of the linear city in early 20th Century” where Carlos Eduardo Feferman clarifies the diverse origin of the linear cities that by the 1930s became autonomous structures in search of a highly organized and sub-divided urban environment. Here the input of some highly publicized works, like Le Corbusier´s and the Garden Cities, are placed in context with the important contributions of the Ciudad Lineal in Madrid. Two presentations, “Suburbanization and modernity in Andalusia: the case of the Mediter- ranean highway and the Ciudad Sindical de Vacaciones” by Plácido González Martínez and Marta Santofimia Albiñana, and “The Bonet Plan 1961-1964: planning and development of la Manga del Mar Menor” in Murcia, by José Parra, Maite Palomares and Ginés Sabater, take central stage as examples of these ideas in Spain. The first deals with the result of the actual hundred mile linear city, from Gibraltar to Malaga, that had its origin in the political and social effects of building the “good citizen”, during Franco’s regime, and its ideas of “vacation housing in an intimate connection to the landscape”. The second relates urban framework and countryside, through an uncompleted development of tourism infrastructure in an unspoiled sand bar near Murcia, by Antoni Bonet, that today faces the ravages of avid real state. The debate closes with “Eduard van Steenbergen and the garden suburb concept: a theoretical re-interpretation on the suburban context of Deurne” by Pieter Brosens, Piet Lombaerde and Yves Schoonjans, as it showcases one Belgium’s most interesting post World War I social housing projects; the proposal of the Unitas Garden Suburb was based on the ideas of Ebenezer

Howard and Raymond Unwin, but adapts to the existing urban fabric and to the local social demands.

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TRANSFORMATIONS OF THE LINEAR CITY IN EARLY TWENTIETH CENTURY

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Introduction

The Linear City is one of many broad-spectrum designations which make up the modern urban repertoire. Though linear plans may share some formal characteristics, they often differ greatly from one another, attaching themselves to distinct debates geographically and in time. Linear cities, as proposed from the 1930's onward, were presented as autonomous structures attempting to create a highly organized and subdivided urban environment. In the early twentieth century, however, the linear city theory was associated with expanding European cities, their transformation and the urban way of life emerging in European capitals.

Despite differences, linear cities seem readily recognizable. The historian George Collins dedicated himself to mapping their occurrence and proposed that they be organized into a common category: linear planning. According to Collins, "a linear city is one that is formed – and grows – along a line. This line is usually its artery of transport for people, for goods, and for services: roads, rails, pipes, and wires. A city of this sort can grow freely – infinitely – in increments that are repetitive in character. Its internal circulatory system is planned for the utmost efficiency: all its parts are, presumably, of easy accessibility to each other and share the same urban amenities." Plans, such as Le Corbusier's *Zlin*, Kenzo Tange's *Tokyo Bay*, or Leonidov's/OSA's *Magnitogorsk* are main examples of modern urbanism within Collins's definition. Significant variations between linear cities point to their experimental nature. Though Collins's efforts went toward creating some unity of purpose, he began studying the importance of each plan's unique context. His unpublished *Utopias that allow for growth and change* (1962) proposed an arrangement of linear and non-linear plans into three categories: 1. The Extensible Suburb; 2. The Assembly Line City; 3. The Dynamic City. In this unfinished research project, linear cities are placed alongside other plans according to their capacity for coordinating urban growth. Though this includes the extension of existing cities, the notion of autonomous systems remained. What the modern plans have in common with the early theory is a radical distancing from traditional notions of what a city should be.

Though historians are unanimous in placing the Spaniard Arturo Soria y Mata at the origin of the linear city, there is no clear line that links early and later developments. A hiatus between the early proposition, in the late nineteenth century, and the spreading of the concept, from the 1930's onward, remains

largely unexamined. The trajectory of the linear city theory up to its recognition as a main conceptual line within modernism depends on the understanding of European urbanism in the 1910's, when an interest in the dynamic phenomenon occurring in large cities arose.

Early Theory

Soria y Mata presented his *ciudad lineal* (linear city) in the early 1880's as a plan of "indefinite length," which could have its extremes in "Paris and St. Petersburg, or Peking and Brussels". He intended it as an instrument for conquering the vast, unoccupied Spanish territory. His ideas also inscribe themselves within the peculiarly Spanish concept of *ensanches* (urban extensions), of which Cerdá's Barcelona plan is the best known example. From early on, Soria y Mata envisioned his linear city as a universal model, which would substitute existing cities.

The Ciudad Lineal began actual development in 1894, two years after Soria y Mata founded the Companhia Madrilena de Urbanización. The company was to carry out a plan to build a linear city ring uniting the existing settlements around the Spanish capital. [**FIGURE 1**] Like Cerda's *ensanche*, Soria y Mata's ambitious vision would structure the city's development from then on. For its author, the Ciudad Lineal around Madrid would remain an experimental and "incomplete" version of a larger, ideal plan. Its suburban character, reflecting its dependence on the city of Madrid, seemed far from the grandiose, independent plan first imagined.

Soria y Mata's interest in the vast, unoccupied Spanish territory relates to his search for a context where the linear city could develop freely. Following Cerdá, he proposes to "ruralize the city and urbanize the countryside", in a much similar manner to the equilibrium between rural and urban sought by Howard in the garden city – a common nineteenth-century discourse. Through his study of geometric structures, Soria y Mata formulates a system of triangular developments in which bordering linear cities enclosed rural areas. [**FIGURE 2**] The territorial scale, related to such a *ruralizing* equilibrium, allowed the linear city to develop geometrically and freely. The result would be a lower density development, which could substitute old cities and grow indefinitely.

Soria y Mata's search for a universal model would inhibit him from realizing the unique outcome of combining his linear plan and the existing city. The territorial scale would remain an *ideal*, while a local, more pragmatic version – as was the case with the Ciudad Lineal around Madrid – seemed provisional. This led to a somewhat ambiguous situation, where the Madrid development seemed too close to the typical nineteenth century urban problems, while the theoretical model remained connected to an unrealized territorial vision. The complexity of the experience developing around Madrid, nevertheless, would fit the urban debate in early twentieth century well.

Consolidating the Linear City Model

Georges Benoit-Lévy, French promoter of the Garden City and member of the Parisian Musée Social, became interested in the Spanish Ciudad Lineal in 1913, after participating in the *Premier Congrès International des Villes Comparées* in Gand, Belgium, where it was presented. By request of the Spanish, he would be responsible for a French version of the Ciudad Lineal theory, shortly after the *Congrès*. Benoit-Lévy was also a source for Le Corbusier on matters pertaining to the Garden City theory during the 1910's. He would hand Le Corbusier two booklets which might have otherwise remained obscure: *La Cité Linéaire: nouvelle architecture de villes*, containing the presentation made in Gand, and *Projet de Cité Linéaire Belge*, presented at the Exposition de la Reconstruction in Brussels. Both documents appear in Le Corbusier's personal library and were published by the prolific *Imprenta La Ciudad Lineal* in 1913 and 1919, respectively.i [**FIGURE_2**]

The booklets are mainly the work of a lesser-known character: Hilarion Gonzalez del Castillo, an early advocate of Soria y Mata's ideas. Castillo, a Spanish lawyer and diplomat would move with his family to the Madrid Ciudad Lineal. He would also come to play a fundamental role in the promotion and restructuring of the theory, and would ultimately propose a modified linear plan of his own: the *Cité Linéaire Belge*.

Castillo's writings are almost entirely found in the *La Ciudad Lineal* review, published between 1897 and 1932. The review is an invaluable document, testimony to the Ciudad Lineal development in Madrid. The need to present periodical balance sheets to the investors was seen as an opportunity to propagandize Soria y Mata's ideas and attract new enthusiasts. Along with the finances, the monthly publication allowed a glimpse into the daily life of the *Ciudad Lineal* and gradually, mostly through Castillo, addressed some of the main urban issues debated in Europe.

Castillo's contribution can be divided into two distinct moments. His first articles show an acute interest in Soria y Mata's theory and an effort to sort out its main points. He quickly realizes the peculiar characteristics of the Madrid development and the need to distinguish it from the large-scale, "universal" version of the plan. This is the case in the article *the Linear City as Development and the Linear City as Idea* (*La Ciudad Lineal*, March, 1908), where he refers to the local plan as a provisional experiment – much like Soria y Mata had done. In *the Colonizing of Spain and the Linear City*, the plan's potential for territorial conquest is reiterated (CL, Jan. 1909). At the time, the interest in the large scale features of the linear city was further encouraged by discussions in Parliament around a law to foster the colonizing of Spain's interior. Castillo seeks to distinguish local and large-scale issues and understand their individual characteristics.

A second moment involves Castillo's growing interest in the Madrid development more specifically. He senses that it too might provide universal examples. The absence of a city center had been pointed out as a main shortcoming of the theory and the Ciudad Lineal was criticized for being little more than a populated route. Furthermore, Castillo's recent study of the Garden City model heightened the feeling that the linear city was incomplete and that a

center was needed, especially for its promotion of cultural life and other features of large cities. Many aspects of the combined development in Madrid seemed to address these matters.

The Garden City was well known to the Ciudad Lineal advocates and seen as a rival and inferior model. The general feeling was that its fame was undeserved, and that if the linear city was well publicized it would ultimately be chosen instead. Soria y Mata's argument against Howard's model was that, despite having positive qualities, it essentially reproduced the old city in its *concentric* form. The linear city, he would argue, by dispersing through territory, eliminated hierarchy between center and periphery and, consequently, eliminated differences in land value. This, then, would allow for the cohabitation of different social classes, as the land would be more accessible to all. Though the argument might seem like a *tour-de-force* to justify *form*, it is reiterated on many occasions and was, therefore, of main concern to Soria y Mata.

Castillo comes in contact with the Garden City model though the local quarrel, but does not adhere to the general uncritical opposition. Out of loyalty to Soria y Mata, perhaps, he searches for shortcomings in specific points of the English theory. This, however, further deepens his interest in the Garden City. Upon the visit of Garden City representatives Aldridge and Thompson to Madrid, in 1913, Castillo and Soria y Mata question the principles which determine the placement of railway lines:

> FOURTH QUESTION:
> Railways regulate the price of land and elevate land value. They are also a first necessity of urbanizing. Therefore, city form must adjust itself to the form of railway lines.
> Answer: we agree with the first part, but not with the second for we believe that it is not indispensible that the form of a city must conform to the railway. Sometimes, as is the case in Ruislip Manor, it is convenient to give the city an irregular form.

The debate is described in the only article co-signed by Soria y Mata and Castillo: *The Garden City in El Ateneo* (La Ciudad Lineal, May, 1913). Here is seen for the first time, a more critical examination of the English model. The questioning of transport line position was crucial, as it touched on the key structuring element of the linear city. If, in fact, the transport line was not to determine city form, but simply be contained within it, then the underlying transport line argument sustained by Soria y Mata would be fundamentally shaken.

Castillo was indeed moved by the presentation and would publish, shortly after the event, the booklet *Ciudades Jardines y Ciudades Lineales* (Garden Cities and Linear Cities), where he tries to bring together the Spanish and English models. The booklet also contains a synthesis of the main points of the linear city and serves as basis for his presentation at the *Congrès de Gand*, where he came in contact with Benoit-Lévy.

In consolidating the theory, in 1912, the Ciudad Lineal is presented as having three distinct applications or *cases*: “1. The linear city is a suburban extension of large capitals, surrounding the old cities with a green zone...; 2.

Agglomeration uniting two existing cities; 3. Colonizing and populating of the countryside.” At this moment, the third item, containing Soria y Mata’s original intention of conquering vast unpopulated territories, had become of lesser interest than the previous two, and matters of extensibility or transport had lost some of their autonomy, being subjected to the complex relationship between new plan and existing city. Thus, thirty years after its appearance, Soria y Mata’s ideas had reached a consolidated format and would, at last, participate in the larger European urban debate. Castillo’s efforts are not merely auxiliary. By downplaying the role of transport and linear form within the plan, he would allow the theory to attach itself to different debates more specifically, bringing forward the peculiar relationship between extension plan and existing city.
Castillo’s interest in the Garden City reflects his interest in the social and cultural life of big cities. In his understanding, some elements in the English model could help restructure the relationship between the city of Madrid and the linear development by the Compania Madrilena de Urbanización. At the *Congrès* in Gand, a new series of issues, related to large European cities, to their borders and to recent urban theory would be available to Castillo. His efforts, from then on, would be to transform Soria y Mata’s linear plan into a full-fledged city, particularly through the addition of a modern center.

The Liberal City and City Center

In *Cause and Effect in the Modern City*, presented at the Town Planning Conference, in 1910, H. V. Lanchester proposes the study of cities through the understanding of how their fundamental components are shaped by dynamic forces.

> While one may take a single example of an important modern city and point out its characteristics, it seems to me that such a study would be of less value than a more general one ranging over the causes that have resulted in the various types of city as we find them at the present day. Only by such a course can we secure the knowledge necessary to bring our work in the future into harmony with the natural forces, and thus ensure that what we do should be on sound lines and likely to endure.

The “natural forces” to which Lanchester refers relate to the urban phenomena that determine the gradual transformation of the city.

> We have the original city gradually taken up by commerce and exchange, the residential districts filling up by degrees the spaces between the star points composed of mills or factories, and the retail traders following along the main radial arteries. The most attractive district will naturally be selected by the wealthy, and the others will secure occupants on a basis of necessity or convenience. The governing or official centre, unless firmly fixed by tradition, will slip into a position between the commercial centre and the wealthy quarters, while the leading places of entertainment will gravitate in the same direction”.

Lanchester's keen observation of city transformation sheds light on the role of the city center in coordinating the remaining urban components. The expressions *filling up by degrees*; *gradual taking up*; *slipping into position* and *gravitation* describe a dynamic transformation. [**FIGURE 3**]

The transformations in Lanchester's presentation do not belong to just any city. They are typical of large cities, mainly capitals, and relate to a growing liberal class, linked to administrative and financial functions. His description of city center "migration" is a radical change to the way large cities were viewed. From Lanchester's standpoint, Howard's Garden City model might have seemed quite static. "Old" cities, often seen indistinctly as an obsolete "type," are distinguished by him according to their recent development.

In 1919, Castillo presents the *Cité Linéaire Belge*, his own version of a linear city. It is a modification of the "second case" linear city ("the union between two existing cities through a linear stretch"), to which he has added a city center at midpoint. [**FIGURE_4**]. Castillo thus describes the role of the center:

> All urban agglomeration is a living organism. As the human organism has a heart that pumps blood and carries activity, life and movement to the whole body, so the city needs a center of activity that irradiates urban life and business life. The planned heart of the *Cité Linéaire belge*, which I have named *Forum*, will have, like the ancient roman forum, a triple aspect of place of amusement, center of public life and business center.

Thus, Castillo believed to have countered the main criticism leveled at the linear city: that "in spreading out the city one would end up making it disappear."ii The use of the term "urban" to distinguish the peculiar class of mobile, *liberal* citizens – as Lanchester had pointed out – appears in Castillo's description. He refers to his city center as the "urban zone" and distinguishes it from the "industrial zone". He also divides the population into *urban*, suburban and rural. Castillo attempts to accommodate the linear city theory within a new dynamic context, taking into account the movement of its different population segments. Similarly, Le Corbusier subdivides the population in the *Ville Contemporaine* into *urban*, *suburban* and *mixed* – the use of the term *urban* to designate the liberal segment is, again, noteworthy. In chapter 11 of *Urbanisme*, he describes the population in greater detail:

> A.) The *urban*, those living in the center (*cité*) that have business and reside in the city.
> B.) The suburban, those who work in the periphery, in the industrial zone and that do not go to the city (*ville*); they live in the garden-city (*cité-jardin*).
> C.) The mixed, those who offer their work in the city center (cité des affaires) but who raise their family in the garden city.
>
> To class a, b, c (and by classing, we mean the *virtual transmutation* of known species) is to attack the problem of urbanism at its root, for it entails the placing of the three units and their extensions, consequently posing and solving the problem of the:
>
> 1. *Cité*, business center and urban residences.

2. The *industrial city*, and the garden-cities (transports).
3. The garden-cities and the daily transport.

The above subdivision and its implications on the plan are similar to what Castillo proposed a few years earlier, and which appears in the *Cité Linéaire Belge* booklet, given to Le Corbusier by Benoit-Lévy. There is an important social component in both Castillo's and Le Corbusier's propositions. The element of movement – especially in relationship to the place of work – is fundamental to the equation. The provision of extension areas for growth of each part individually, completes the scheme. In choosing to accommodate, through a grandiose city center, such a cultural and financial lifestyle, Le Corbusier's *Ville Contemporaine* would have needed reserve space for the ensuing dynamic transformations.

Le Corbusier's and Castillo's subdivisions are not strictly class-based. They relate to the attempt to combine liberal and industrial cities in one and the same plan, while trying to accommodate the city center in a key-structuring position. The division, which commands the placement of main urban areas, warrants a "safe" coexistence between the modern city center and the industrial development, farther away in the city outskirts. The attempt to combine functionality and social profile, is distinct from the stricter functional division that came to be associated with the CIAM. Modern zoning, which pertains to a "freer" formal scheme and departs more radically from the traditional city, results in the downplay of the city center's coordinating role.

As is well-known, Le Corbusier had consolidated the image of a modern city center with great high-rises, following Perret's vision, around 1915. By the end of the 1910's, the city center corresponding to the scale and lifestyle of large European cities remained, for Le Corbusier and Castillo, somewhat of an isolated object within the plan. Both see it as a key element in coordinating a complete and contemporary city, but there are still obstacles to be overcome before its full integration into the plan and the full understanding of its potential role. The search for a "matrix" in which such a modern center could be embedded was still largely dependent on elements inherited from the garden city theory.

There are some striking similarities between Le Corbusier's and Castillo's plans. [**FIGURES 5, 6, 7**] These go beyond visual resemblance, particularly when the role of social profiles and the subdivision examined above are taken into consideration. Though Castillo utilizes Soria y Mata's strong heritage, he introduces important new elements derived from his study of the garden city and from his observation of contemporary urban debate. The problem of urban extension; the role and placement of city center; the problem of extension; and the role of transport lines in city structure are all clearly displayed within the *Cité Linéaire Belge*.

CONCLUSION

The accommodation of a city center, allowing the linear city plan to achieve the status of a "complete city", had been the object of Castillo's interest for many years. Such an operation, as seen in his *Cité Linéaire Belge*, produced a *heavier*, less autonomous plan than the early linear city proposition. Soria y

Mata's geometric system, on the other hand, stood a great distance from the traditional idea of a city. His vision of a freely geometric occupation of territory depended on a detachment from the city center and on the availability of free space. Castillo's original reworking of the linear city theory involves precisely the reconciliation of these distinct lines. His perception that the Madrid situation could help equate such a relationship results in the series of articles and booklets published by him during the first two decades of the twentieth-century.
The urban operations that yielded such plans as the *Ville Contemporaine* and the *Cité Linéaire Belge* were ones of approximation to existing cities. The grandiose city centers that coordinated such efforts represented the burgeoning social life of European capitals. Even the *Plan Voisin*, generally seen as an attack on the existing city, derives itself – albeit awkwardly – from efforts to combine old tissue and new plan. [**FIGURE_5**] The freer, more experimental versions of the linear city, which came to be associated with modern urbanism and which compose Collin's "linear planning" depended on a revision of the concept of city center: its dispersal or its elimination, as proposed by the soviet "disurbanists". Though the linear city is often associated with the "freer" plans appearing from the 1930's onward, it plays a key role in the "negotiation" between early modern experiments and the existing city. Central to these early developments was the attempt to accommodate the way of life emerging in large European cities within the new city plans.

FIGURE 1

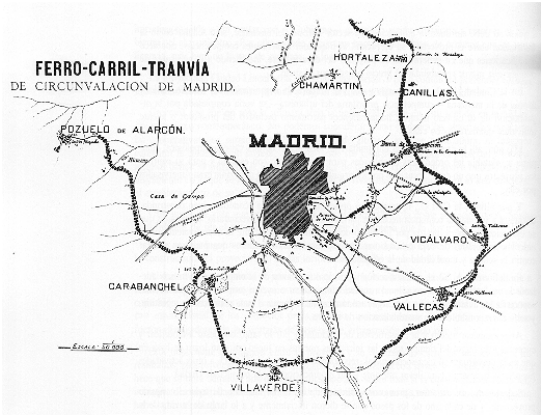


FIGURE 2

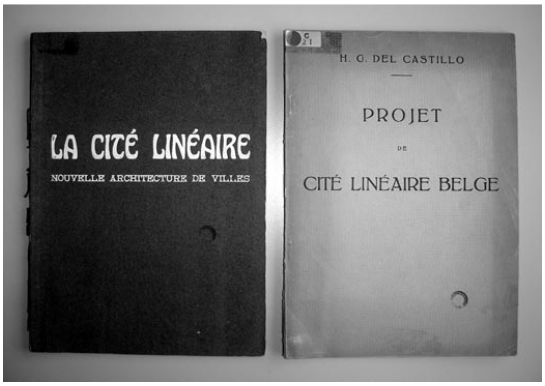
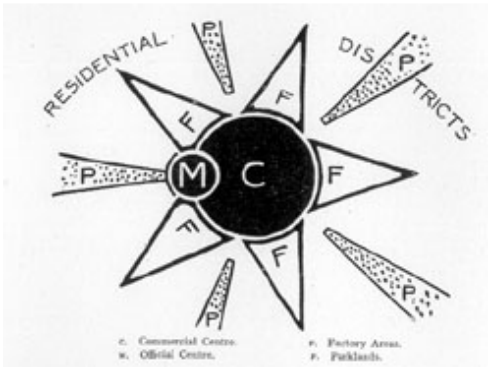


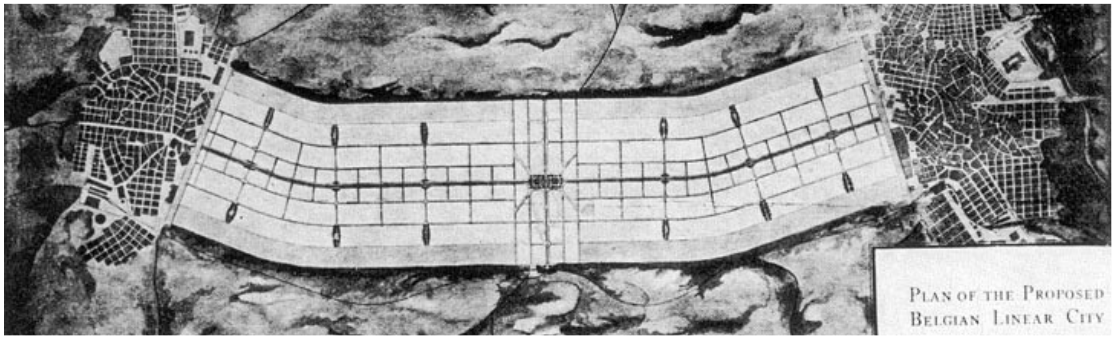
FIGURE 3



Copies of La Cité Linéaire: Nouvelle Architecture de Villes (1913) and Projet de Cité Linéaire Belge (1919) found in Le Corbusier's personal library. Published by the Imprenta La Ciudad Lineal.

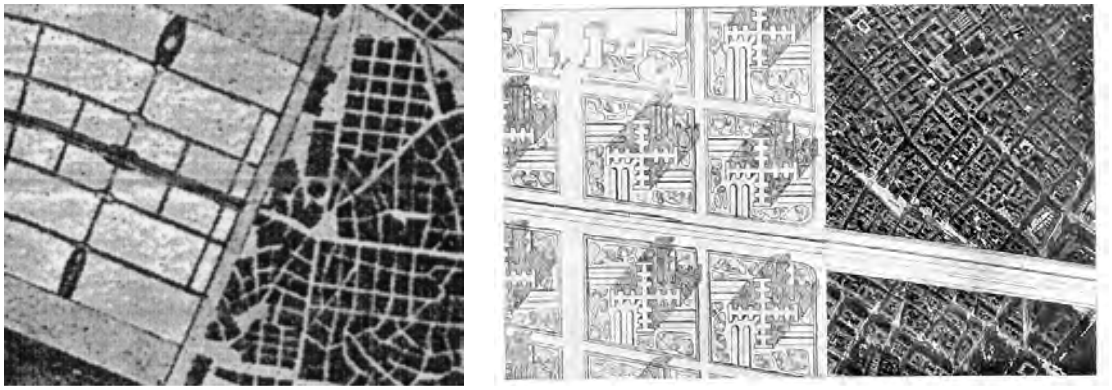
H.V.Lanchester. Diagram showing dynamic displacement of city functions due to settlement of its liberal population and accommodation of the city center.

FIGURE 4



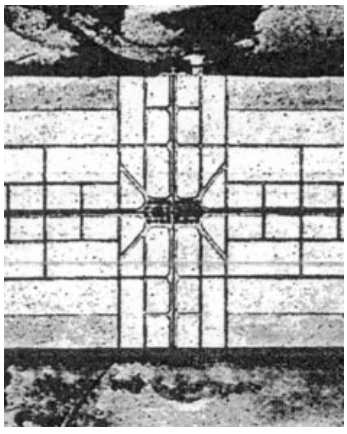
H. G. del Castillo. Projet de Cité Linéaire Belge (1919)

FIGURE 5

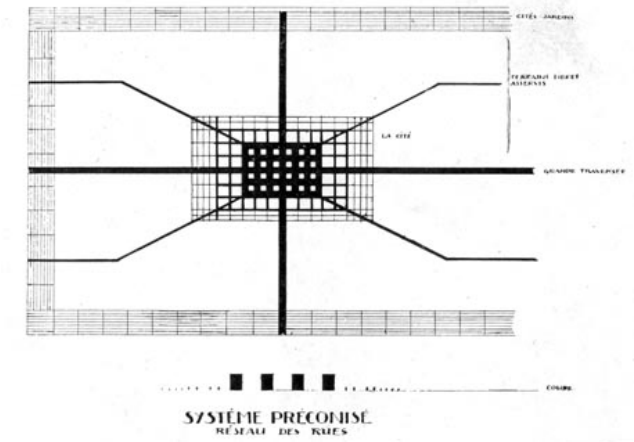


H. G. del Castillo's Cité Linéaire Belge, 1919 (left, detail) and Le Corbusier's Plan Voisin, 1925 (right).

FIGURE 6

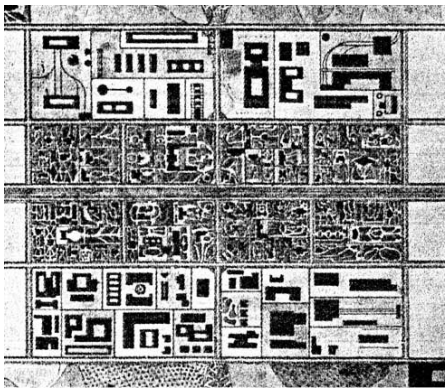


H. G. del Castillo. Cité Linéaire Belge, 1919: structuring street system.

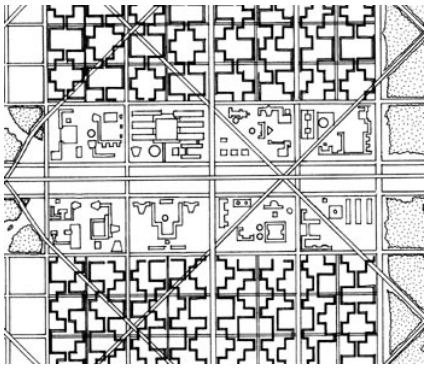


Le Corbusier. Ville Contemporaine: general plan structure showing city center, and route system.

FIGURE 7



H. G. del Castillo. Cité Linéaire Belge, 1919 (det.)



Le Corbusier. Ville Radieuse (det.)

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The Imprenta La Ciudad Lineal is the publishing house of Soria y Mata's Compania Madrilena de Urbanización.

Castillo, H. G. d. La Cité Linéaire Belge.

THE BONET PLAN 1961-1964
PLANNING AND DEVELOPMENT OF *LA MANGA DEL MAR MENOR* (MURCIA, SPAIN)

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The 1959 Stabilisation Plan brought to a close the period of autarchy which followed the end of the Spanish Civil War. That very year, President Eisenhower's visit to Madrid gave political credence to the re–establishment of international relations with Spain. Economic recovery and increased openness helped transform promising tourist activity into an unprecedented race towards urbanisation.

The architectural colonisation of the Mediterranean coastline generated a new channel through which modern ideas reached peripheral areas like Spain's south-eastern regions. An exciting new period began there in the 1960s when some master of the Spanish modern architecture arrived in Murcia to work on its unspoiled coast. Among them was Antoni Bonet, who was commissioned to carry out the development plan for *La Manga del Mar Menor*, a 22 km sand bar that lies between a unique saltwater lagoon and the Mediterranean Sea.

Drawn up to accommodate 60,000 people, the *La Manga Plan* reverted to the principles of modern urbanism learnt by Bonet during his formative work on some of the Avant-garde urban projects (Barcelona *Plan Maciá,* Le Corbusier–GATCPAC, 1932). The *Plan* also provided a bridge[1] between his own experiences of the vast scale of Latin–American cities and landscapes (*Punta Ballena*-Uruguay, 1945) and his later commissions for Barcelona's sea-front (*Montjuïc Plan*, 1964).

Until 1964, the first *La Manga* proposals were designed in collaboration with Josep Puig Torné, a key figure during Bonet's return to Spain from his exile in Argentina. The two had become associates in 1959 after opening an office in Barcelona and being asked to work on some projects on the Catalan coast[2]. One of their most successful works together, the 1959 *Casa Rubio* in Salou, was later to bring them into contact with *La Manga's* developers.

The division of *La Manga* into two municipal areas —Cartagena to the south and San Javier to the north— was a difficult initial challenge to overcome in

drawing up a single conceptual project which had to take into account future development within two different administrative districts. Land title was a further problem since it was owned by just a few interrelated families with opposing business interests. The first of them to understand the area's tourism potential was the Madrid–based lawyer Tomás Maestre who managed to buy all of *La Manga* by 1961.

Reading the landscape

Around 1950, the western shore of the *Mar Menor* was practically isolated and unsupplied. The benefits of its climate and the therapeutic nature of its waters were reserved for a privileged few who, in the summer, took up residence either in grand self–sufficient country houses or in small wooden spas constructed over the lagoon. The eastern shore —*La Manga*— was thought to be thoroughly inhospitable due to its dryness and exposure to the Levant winds.

Following a sedimentation process which sealed off a cordon of coastal islets, *La Manga*'s appearance enclosed an interior 140 km^2 sea, characterised by its shallow depth and high salinity. It was naturally balanced by three channels ("*golas"*) connecting it to the Mediterranean Sea —*Marchamalo, El Estacio* and a northern area of salt marshes and ecologically valuable wetlands where a traditional Arabic fishing weir system called "*encañizadas"* is still used.

Aerial photographs collected by the architects during their documentation process revealed a spectacular 100 m to 900 m wide chain of dunes rising above sea level; this strip —as well as the landscape surrounding the lagoon— is topographically defined by a noticeable horizontal component[3].

Due to a lack of pre–existing structures, the area's geography was ultimately responsible for the urban plan's general form, which was adapted to the physical features of the site and provided the environment with qualities to make it habitable. The wish to preserve its natural values led the architects to propose a non–continuous territorial occupation, grouping the buildings in clusters organised around 21–floor towers repeated every 1.2 km along the length of a backbone-like road.

Taking inspiration from Le Corbusier's plans for Algiers or Buenos Aires and from his vision of these cities from the sea, the architects used the same topological opposition strategy to underline the vertical presence of the towers as landmarks which, from afar, marked the position of the inhabited clusters.

The analysis of *La Manga* as a linear configuration which occasionally broadens its transversal dimension with rocky peninsulas was also decisive as regards the dimensional conceptualisation of the *Plan*; this could be seen in the comments made about the sequence of artificial *islands* in the May 1962 Project Report: "*one could say the current terrain only has one dimension: length; with the systematically located towers and artificial islands, we add two new dimensions: height and width.*"

Puig Torné first visited La Manga in April 1961 and left his impressions[4] on two initial sketches which were corroborated by Bonet, who could not visit the spot until the summer[5]. Both drawings show a condensed version of the main ideas which would define the *Plan* until 1964.

The first sketch, labelled "*basic ideas*", was limited to the northern area but made on a map which takes in the whole of the *Mar Menor* area on a 1:50,000 scale. It is a declaration of intent and advances the idea of a project conceived from the landscape, as Puig Torne's annotations show: "*group of towers joins whole, introduces vertical element into landscape.*"

A second 1:10,000 sketch outlined the road along which the main elements of the *Plan* were located. Tourist settlements, artificial *islands* and even the idea for a raised road over the narrow isthmus to allow a '*double beach*' can all be seen.

Taking advantage of Bonet's stay in Barcelona, in September 1961 they drew up two series of plans in colour pencil. Each was made up of five usage plans on topographical surveys with a scale of 1:2,000. The first one, named *Plan Parcial "La Encañizada*", was the clearest predecessor of the *Plan Norte*. The second one includes several freehand corrections and differs from the previous one in its treatment of the space between clusters. This land has been divided into large plots (3,000 m^2–1,000 m^2) perpendicular to the road and reserved for single-family houses with direct access to one of the two seas.

The *Plan Norte*, 1961

Covering some 290 ha of urbanised surface area it fitted 12 practically identical clusters located along 16 km. Each unit is laid out symmetrically and comprises two hotels, two stepped terraced blocks[6], small groupings of bungalows, and commercial and service premises such as restaurants, a petrol station and a small chapel, solved as hyperbolic paraboloid shells. The ground floors are open–plan spaces and generate shady areas which define an enclosure facing the isotropic dune space.

Each unit is presided over by two square-plan apartment towers flanking a rectangular third tower whose axis —perpendicular to the natural profile of the coast— marks the centre of the cluster.

Wherever the topography allows, an artificial *island* is laid out, aligned with the axis of the central tower. On these *islands*, both the Le Corbusier reference and the idea of vernacular constructions moving into the lagoon in search of depth come together. Accessible via a jetty, the *islands* included facilities like restaurants and swimming pools and had to function as piers for leisure boats, converting the entire western shore of *La Manga* into a natural harbour on the scale of the *Mar Menor*.

The great marina and civic centre at *El Estacio* must be added to the twelve nuclei. Next to a 25-floor tower, there is a small fishing harbour which provides a tourist settlement for the year–round residents. On another of the natural

peninsulas, *El Pedrucho*, a second village was foreseen, like the first, to bring together small businesses and serve the local population. In the sixties, these 'little villages' were typical of some Mediterranean tourist developments such as the *Casbah* in Cano Lasso's 1962 *Plan del Saler* for Valencia's *Albufera*.

The *Plan Sur*, 1962

In May 1962, the so–called *Plan de Marchamalo* was finalised. This adapted the *Plan Norte's* ideas to a much smaller area —just 6 km— in which 4 clusters were to fit. It also developed the connection with the northern area via a *country club*, which had already been included in the *Plan Norte* as part of a great green infrastructure.

Among its most significant novelties were the atrophy of the *islands* and the appearance of the hexagonal shape which, from then on, would become one of Bonet's recurrent geometries.

The landscape treatment: the road

The road, which runs parallel to the coastline and is a consequence of *La Manga*'s morphology, is the *Plan's* main device. The different elements of the project hang on its axis according to the free space between the road and the beaches.

Although the territory's linearity demanded the use of cars, the *Plan*'s initially low population density (120 people/ha), the autonomy of the clusters to minimise unnecessary journeys, and the treatment of the road as a promenade preventing high speeds respond to the architects' wishes to turn this artery into a landscape element despite its importance as an order generator.

With just one lane in each direction, the road only has double lanes when passing through the clusters and avoids turns and changes of direction along the rest of the route. Furthermore, a careful study of slopes and trees separates pedestrians from vehicles and —defeating the idea of an urban sea-front esplanade— the architects block vehicle access to the beach. Instead, the road's height is slightly elevated to allow controlled views of the sea.

Like in *Punta Ballena*, the bridge becomes another key element integrating nature and machine. In some clusters, buildings leap from one beach to the other above the road. In other instances, the road itself occasionally rises above the ground to minimise its impact on the dune ecosystem.

The balance between the poetic and experimental aspects of the *Plan* and the unavoidable geographic, biological, economic and technical requirements revealed by all the local analysis conducted for the project and available in Bonet's archive is truly remarkable. They include water supply problems, pluviometric and sunlight abacuses, and wind and sea erosion patterns. The attention paid to fishing productivity is conspicuous, as is that paid to marine fauna and the impact of its modification on the local economy. The vegetation studies were also extremely important so four experimental plots were

cultivated: "*on the first two, crops most suited to areas containing arable land, plus the action of the wind on the plants. On the last two, try and determine which crops are suitable for pure sand or sand mixed with algae*[7]."

Urban structure

The project is generated as a repetition of 12+1+6 discrete units, whose features (surface area, number of inhabitants, etc.) were predetermined as a function of binding parameters such as the population's need for water or the viability of the investments. Thus, the units' autonomy allowed the *Plan* to be built in several phases according to changing socio-economic circumstances.

Unlike many other contemporary coastal developments where architects misused planning tools more properly belonging to city peripheries, Bonet and Puig Torné put forward an urban scheme which emerged from their *ad hoc* approach to *La Manga*'s nature. Based on a linear system of independent compact sets directly related to their nearby surroundings and joined together with a road, it rejected any notion of an urban continuum. These systematically repeated *city fragments* enhanced comprehension of the landscape through a new system of visual and topological relationships.

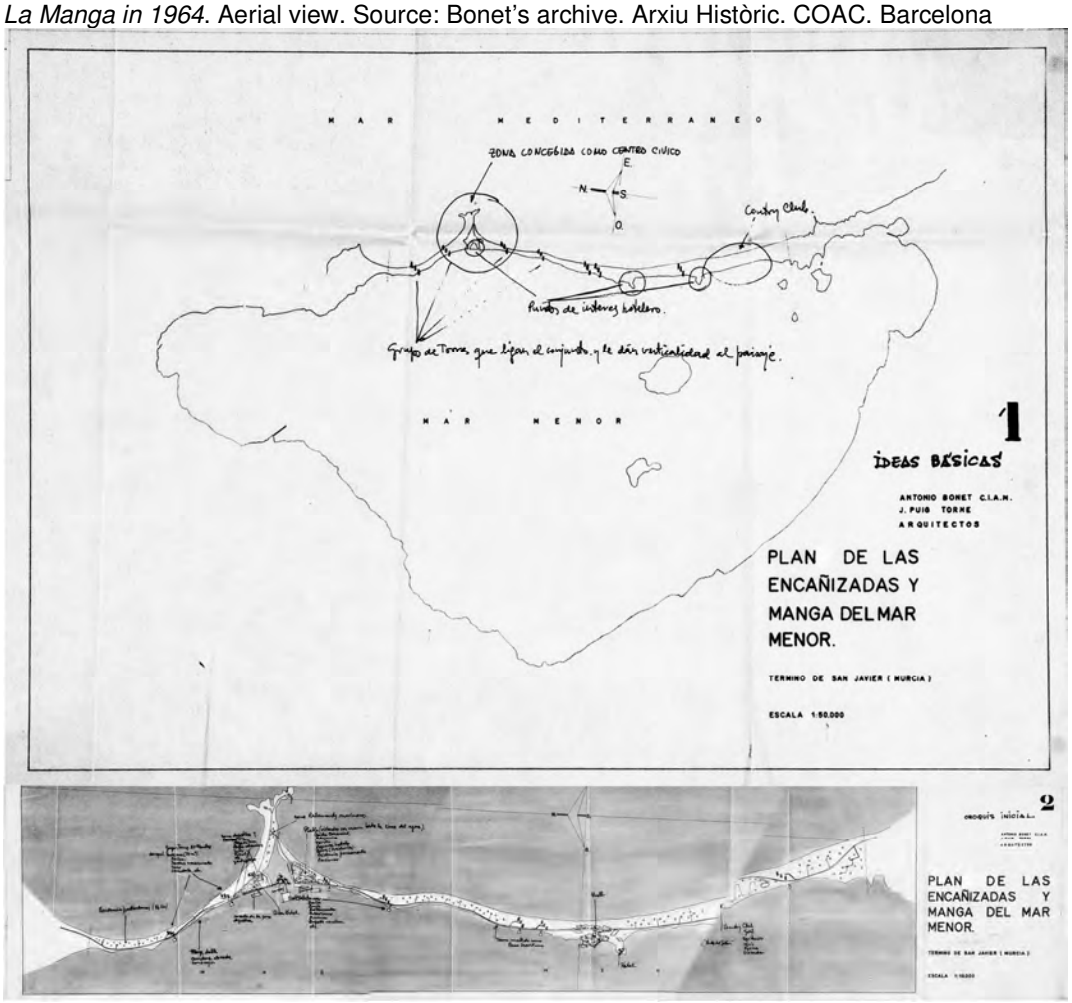
In June 1962, a model of the *Plan Norte* was displayed in San Javier; this —along with an effective advertising campaign— helped developers to win the support of town councils in San Javier and Cartagena. Definitive backing came from the Tourism Ministry in 1963 when it included La Manga within the scope of the Centres of Tourist Interest Act. That very summer, the model was again displayed in Madrid at the *Exposición Nacional de Recursos Turísticos*.

Later development of the *Plan* had to incorporate important legal and financial considerations affecting the proposal's original form. Perhaps the most representative change was the elimination of the artificial *islands* following repeated objections by the Spanish Coasts Department. In the 1963 projects, the cluster set up was considerably modified: its symmetry was abandoned for a shape similar to *immeubles à redent* and its three towers were reduced to a single cruciform building.

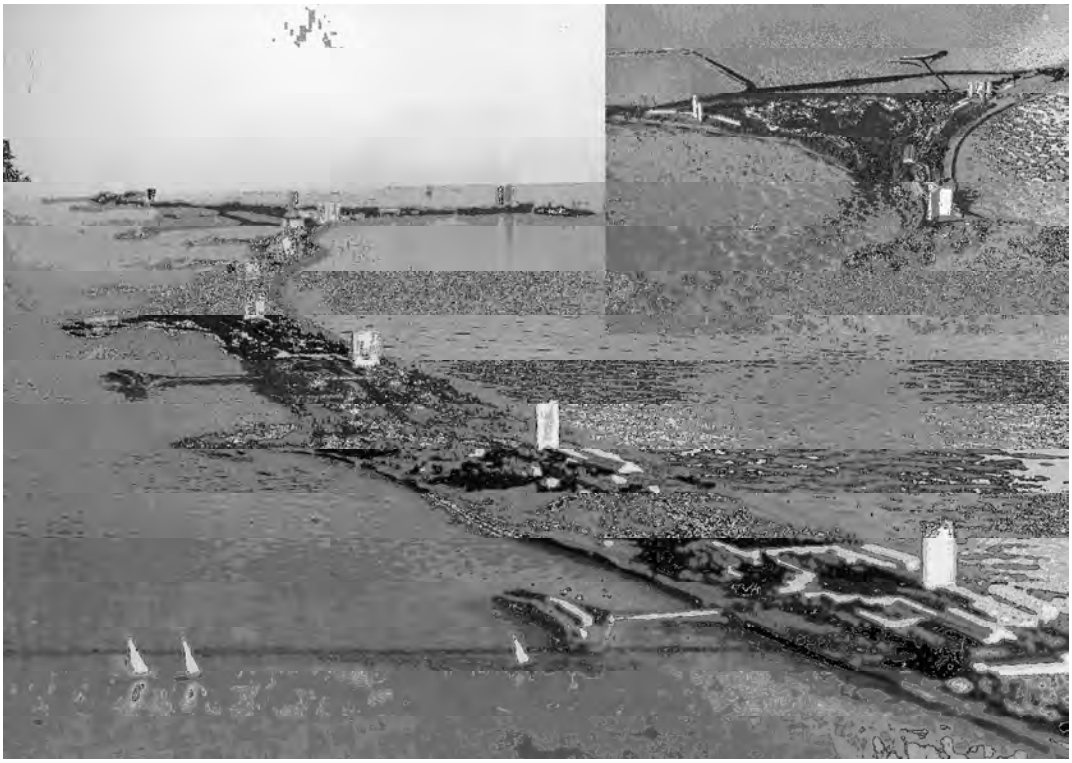
In 1964, urbanisation work began in the southern area, opening up the possibility of selling plots of land in order to raise funds. From 1965, changes happened very quickly and systematically violated the spirit of the original *Plan* until it became completely obsolete in the early seventies. Nevertheless, from 1964 to 1969, when the first towers were built approximately according to the planned distance between clusters, photographs show the efficiency of the original proposal for what *La Manga* should have become. The images taken at the time capture the true achievement of *Bonet* and *Puig Torne's* ideas: an abstract reproduction of the landscape using visual landmarks through which the profile of the coast from any point along the lagoon could for the first time be recognised.

Illustrations

La Manga in 1964. Aerial view. Source: Bonet's archive. Arxiu Històric. COAC. Barcelona



La Manga Plan. First sketches, 1961. Source: Bonet's archive. Arxiu Històric. COAC. Barcelona



Plan Norte, 1961. Model, 1962. Source: Bonet's archive. Arxiu Històric. COAC. Barcelona

Plan Sur, 1962. 1:2,000 Usage Plan. Source: Bonet's archive. Arxiu Històric. COAC. Barcelona

Notes

1 Cfr. Cánovas, A. and Amman, A., 2002, "Monólogos", *in* VV. AA., *Sundland Architecture*, Barcelona, 222-231.
2 "*I had just graduated and due to my inexperience and my parent's friendship with his family, I wrote to Bonet asking for his help on some projects in Salou*". Interview with Puig Torné, Barcelona, March 2010.
3 The impact caused by the *Mar Menor*'s landscape in the media also reached the architectural magazines. See *Revista Arquitectura* 131, 1969, 2-18.
4 "*Never before had I seen anything remotely close to La Manga's beauty. And there I was, alone on a never–ending dune in between two seas*". Interview with Puig Torné, Barcelona, September 2009.
5 "*Bonet was in Argentina but we tried to speed up our correspondence by going to the airport to hand the drawings to the Iberia crews*". Ibid.
6 In a 1961 sketch, the unaccustomed proportions of the double orientation stepped blocks seemed to insinuate a possible undefined prolongation. Although this typology recalls the landscape reference of Le Corbusier's *Durand* project (Algiers, 1933) —which had inspired

Bonet's 1957 *Terrace* building in Mar del Plata—, the peculiarity of the double orientation arises in *La Manga* as a response to the existence of the two seas.
7 Technical Report, Minutes of *ManMenor*'s Board meeting, 26 October 1962.

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EDUARD VAN STEENBERGEN AND THE GARDEN SUBURB CONCEPT A THEORETICAL RE-INTERPRETATION APPLIED ON THE SUBURBAN CONTEXT OF DEURNE (ANTWERP, BELGIUM)

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Introduction

The *Unitas-Garden-Suburb* (1923-1932) in Deurne is one of the most interesting post WWI Belgian housing projects. Although complete garden cities were hardly built on the continent, it is interesting to see how their urban layout and architecture, combined with continental ideas, were adapted into a local reality and culture.

Since there was no space or need to expand the Belgian urban-spread with autonomous garden cities, mainly garden suburbs were implemented. Particularly the *Unitas-Garden-Suburb* was very specific in its formal and social interpretation. The Antwerp architect Eduard Van Steenbergen (1889-1952), a modernist interested in regionalism, managed to meet two challenging goals. First, he studied meticulously the program and site and integrated the whole in its existing surrounding fabric. Second, he conceptualizes open building blocks with a density anticipating a future suburban vision. The result is an urban sustainability rarely seen at that time.

This paper focuses on his reinterpretation of building blocks and housing elements, exploring interactively the local urban, architectural and social levels. It is precisely this multi-layeredness and complexity that makes this project an extraordinary case in the growing modern city. The design principles used by Van Steenbergen for this case contain interesting insights on the evolution of suburban neighbourhoods and on the influence of formal and social principles of the garden city ideas in specific contextualized situations.

The classical educated Van Steenbergen, son of an architect, was inspired by the Arts and Crafts Movement and by Dutch and German modern architecture. His regional functionalism flourished in Antwerp and is recognizable by the diverse use of bricks and the distinct emphasis on artisanal craftsmanship. He managed to create an impressive oeuvre and became one of the key figures of what is called *Flemish brick modernism*.

The Belgian and Antwerp context

Halfway the 19th century the harbor city of Antwerp was one of the bigger cities in Belgium to undergo the consequences of the first industrial wave. Working-class housing was dominated by a liberal ideology. Ebenezer Howard's publication *To-Morrow: A Peaceful Path to Real Reform (*1898) was overlooked by the Belgian artistic milieu, although they formulated an anti-urban stance. Due to misconceptions and misinterpretations Howard's Garden City concept was hardly known in Belgium on the eve of WWI. Unwin's book *Town Planning in Practice* (1909), usable for practical design, and his lecture at the 1913 *International Exhibition* in Ghent gradually changed the ignorance.
Urgent needs for postwar rebuilding strategies resulted in an intensive cooperation between the Belgian government in exile in France and the Belgian refugees in the Netherlands and Great Britain with the English *Garden Cities and Town Planning Association*. Pivotal figures as Raphael Verwilghen and Louis Van der Swaelmen were solicitors of the garden city vision. Despite the proactive ambitions of the English government and the efforts of the *Belgian Town Planning Committee* to educate and inform Belgian politicians and architects, the true garden city idea never kicked off.

Historians bring up different reasons for this failure. The bound combination of private land ownership structure and urban spread of small and middle-large towns throughout the countryside left a dense constellation of urban settlements with no base or space to be more intensified. We can suggest that conservative forces on different levels countered numerous initiatives. [1]

But some possibilities opened up. The law of October 11th 1919 established a credit organisation for affordable housing, the *NMGWW*[2], which financed building companies. Through these companies social housing was introduced in Deurne, by far the most expansively growing district around Antwerp. Building companies had a big impact and played an active role in its urbanisation process, triggering a request by the low-wage clerks and workmen.[3]

In 1922 the outspoken socialist Eduard Van Steenbergen is chosen by the art and architecture critic Edward Leonard to design the *Unitas-Garden-Suburb*. Leonard was the managing director of the *Unitas-Tuinwijk* tenant's society and a good friend of Raphael Verwilghen, whom he worked for at the *Administration of Destroyed Area's*[4] from 1919 onwards.
Because of a conservative legislation in 1923, the tenants' society *Unitas-Tuinwijk*, one of only two examples nearby Antwerp, was transformed into a lesser social owners' society. An affirmation of this change can be found in the different urbanisation and demography of the geographically divided North-South structure of Deurne. We recognize in the South a richer character in housing quality and typology, due to larger parcelling. The population in the North consisted of a 50% working-class people, whereas only 33% in the South.[5] Organizing a truly working-class based garden suburb in the South, where the *Unitas-Garden-Suburb* is located, seemed therefore improbable.

The urban layout

After meeting Verwilghen, Van Steenbergen had also his first contact with Van der Swaelmen. The Antwerp avant-garde group *Circle Modern Art* [6], with Van Steenbergen as co-founder, organized interdisciplinary congresses where Van der Swaelmen lectured (1920):

> "… bordering upon the city, garden suburbs will arise … in harmony with the city character; these will be alternated with country parks … from the suburbs green roads will enter the city … where little parks, squares and playgrounds are spread out, which will generate air and light … these parks and fields can be connected in a park system … can you imagine what role a park can play in contemporary urban design …"[7]

Van der Swaelmen prospected this situation for Brussels and Antwerp: small-scale suburban nuclei of residences imbedded in greenery. A surrounding rural or green belt as Howard proscribed wasn't realistic, since the urban sprawl and the degree of urban fragmentation was too high. Van Steenbergen was lucky to take advantage of an existing park at the West side of his site, the *Boeckenbergpark*[8]**.**

In May 1923 Van Steenbergen proposes his first design to the 140 members of the Unitas society. Involvement and criticism of future residents were essential to Van Steenbergen, a true socially inspired interaction. Three types of houses were proposed with façade widths of 7m, a standard type, and two variants of 9m and 5,5m, later increased to four types, and subtly altered and mirrored in favor of the overall variation.
A hierarchy of roads was essential to link the site with its still developing surrounding fabric. The typical oblong North-South oriented site of 100m by 550m requested a specific treatment. In reference to the medieval Belgian towns and the garden city aesthetics, the architect favored to create varying 'broken' street perspectives on greenery and façades, without any detriment to orientation and functionality. He made a scale distinction between main roads (North-South) and residential roads with smaller widths (East-West). This resulted in a coherent main structure with local varying picturesque block dimensions, principles taken over from Camillo Sitte and Raymond Unwin, oriented outwards to a yet fully to be defined surrounding fabric. Another Belgian garden suburb typicality was the increase of density towards the centre.[9] Van Steenbergen did the opposite, accentuating the edges of these blocks with different types of volumes and opening up their cores.

Initially three urban plans were proposed to the Unitas society members. In all cases the outlines of the building blocks were practically the same, only the two main communal elements in the North and South blocks evolved during the process, especially the treatment of the latter. Van Steenbergen had a vision of infusing communal life by 'socializing' building blocks. In his first and most social proposal the South part contains a big semi-public courtyard, multi-accessible by three arched vault passages underneath the houses and with backyard paths connecting the different houses. In the second design

this public space turned into a rather small communal garden alongside an inserted street, which cut this South part in two. The whole evolved into a rather pedestrian variation of the *close concept.* In the executed 3rd version the paths and the arched vaults were erased which made the whole idea into a rather classic public street. The reinterpreted close typology can be read more clearly in the North block, where the idea was kept from the first design proposal onwards.

Most likely the architect was asked to make these changes, in favor of more houses, because he recovered the initial idea in a 1929 design proposal for an extension on the East side of the suburb. Two semi-public courtyard spaces were analogically worked out, as a kindergarten and an inner court. The same typology and approach for streets, building blocks and housing volumes was used in this proposal.

In all designs and proposals we recognize the open corners and the 45° rotated double corner houses, inspired by Unwin, and the disconnections of big housing volumes. These elements, together with the changing and shifting of the building lines, manifest not only visual connections and perspectives between the insides and outsides of blocks but rather ambiguous relationships between the public front and the private back parts of the classic building blocks as well.

Different blocks, as a constellation of components, were implemented on communal green *close-type* spaces. The rather classical building block exposes irregularities in its borders and boundaries and unfolds a gradual flow between private and (semi-)public, between streets, communal spaces and the houses with their back- and front yards.
The whole becomes a model for interaction between the individual and the collective.[10] Public space was stretched out and the site gave its inner qualities back to the owners by total spatial awareness, visual perspectives and the possibility for intensified human contact.

The architecture

Van Steenbergen referred to one of the main interests of Unwin, i.e. the rational base that lies at the foundation of apparent irregularities. Here the idea was elaborated through plastically fragmenting building block volumes by outbalanced architecture and so bringing the whole gradually to a human scale. The architectural characteristics were to be related to the streets, their widths, the yards, etc.

In three fazes a total of 199 houses was built, consisting of four types with different variations. The built surfaces varied from 36 up to 65 m2. With 33 houses per hectare the density was higher than Unwin's proscribed 30/hectare.[11]

We can recognize a romantic-rational architecture displaying different types of materials: bricks, plain-surfaced roughcast, wood, etc. At the ground floor we discover diverse bricklaying with various expressive and plastic motives in the

bay windows and around the entrances. On the 3rd floor, the roofing is plastically worked-out by applying two types: the higher parts with gutters are extended out of the façades to the bay window depth, while the lower parts vertically infiltrate the roughcast façades of the 2nd floor. In the ground and roof level, which are divided by a soberly plain-surfaced roughcast 2nd floor, we recognize a distinct influence from the architecture of the *Amsterdamse School*. The total picture results into horizontally alternating volumes between the upper and lower parts, like a half-brick motive. The windows of the halls deliver vertical accents in the mainly horizontal outlining.

Outbalanced architecture treats the housing blocks as unities of different parts, whereas before architects always had been trying to create a unity by assembling different units.[12] This urban merit from the *Amsterdamse School*, as composed earlier in the *Spaarndammer-neighborhood* example in Amsterdam, proposes a more complex morphological continuity of the urban fabric. Graphic changes and alterations in the building blocks stress the integrated different functions and spaces. Not only the two shops in the *Unitas-Garden-Suburb* are proof of that, the mixture of functions within a united form is seen in the extension proposal of 1929 as well.

Conclusion

The re-interpretation of the garden city idea was a challenge to be faced by Van Steenbergen. This theory, combined with the architect's strong identification with the *Amsterdamse School*, were to be redefined as instruments to accentuate different scale levels in this specific suburban context: the site, the block, the street, the volume, the house, the façade, etc. Especially spatial and formal characteristics were obtained and infused with a local formal heritage, resulting in variable spaces and places.

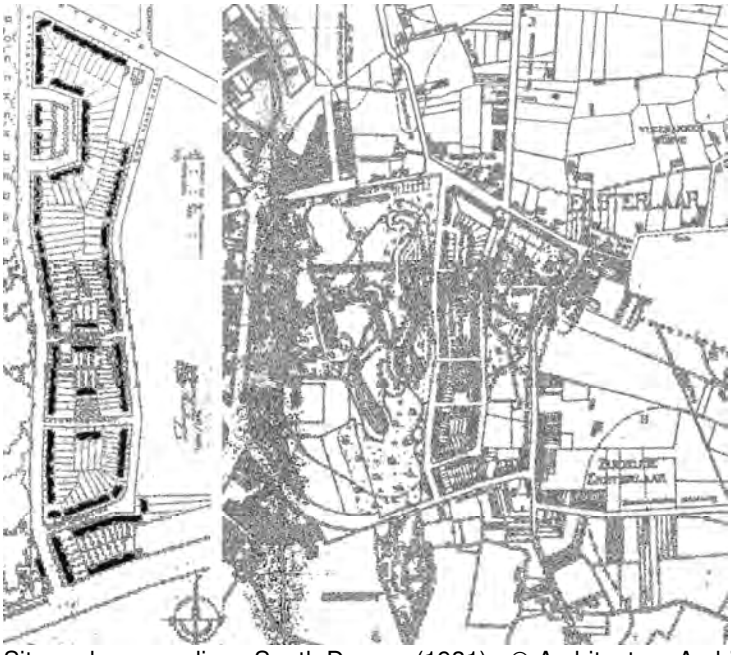
The mixture of large and small-scale gestures becomes a tool to mould and characterize mass and open space for designing a new social living-modus. Moving from a 19th century scheme, where the public prevailed at the cost of the private, garden city principles stressed the private within a public structure to be organized.[13] This tension requested a local solution for private form, through architecture, and public space, through urban schemes.

The formal autonomy of the architecture gives unity to the whole and identity to the particular, but poses analogies and affinities to its surroundings as well. The building block as a defined and defining unit of the urban fabric, despite its classical form, is in this case not folding back on itself. For instance, the project's link to an outside public park triggers and intensifies this external contact.

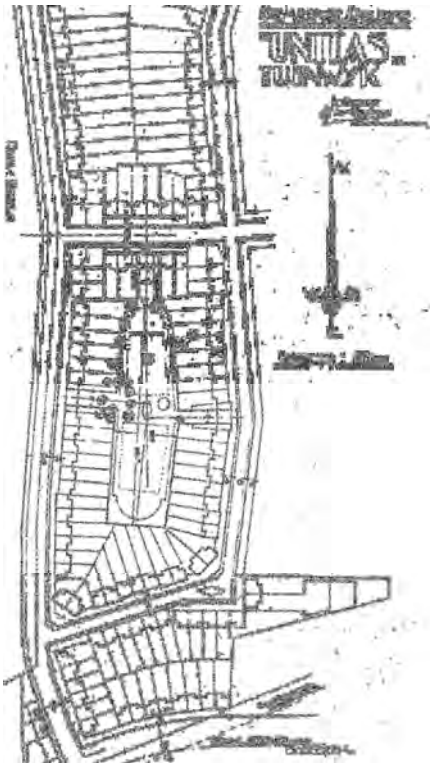
It is interesting to unfold how these building blocks enable the relationships inside/outside and private/public. In the ultimately chosen design, without an inner court, there is less ambiguity about private and public or front and back, although there are still different layers of intimacy and a high degree of porosity of the building blocks.

An idea of layout, scale and form was proposed for a suburban area in growth, in order to create a mere rural character within an urban density. It was a symbol of a new collective society by which the inhabitants could identify and develop their own individuality. Van Steenbergen characterizes particularity within uniformity and at that time did set out a standard for suburban living to be followed nearby Antwerp.

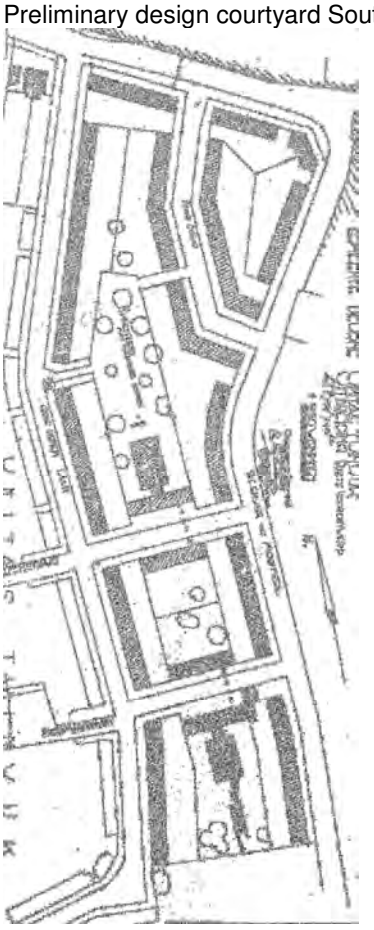
Illustrations



Site and surroundings South Deurne (1931) - © Architecture Archive Antwerp



Preliminary design courtyard South block - © Architecture Archive Antwerp



Extension proposal on Eastern part of site (1929) - © Architecture Archive Antwerp

Houses: N-S street, North square, corner houses - © Architecture Archive Antwerp

Notes

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SUBURBATIZATION AND MODERNITY IN ANDALUSIA: THE CASE OF THE MEDITERRANEAN HIGHWAY AND THE CIUDAD SINDICAL DE VACACIONES

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Two scenes

We begin with two journey scenes. One occurs in the summer of 1930, when Le Corbusier travelled around the Spanish east coast on his way to Africa. That trip would allow him to experience the progress in transports during Primo de Rivera's mandate through the "National Circuit of Special Surface" (1928). Under the hottest part of the summer, Le Corbusier is full of praise:

"Spain built the National Circuit, a very wide highway, banked and made by excellent tarred and porphyry cobblestones, with numerous white-painted railings. This country hardly had modern roads. Today it has a continuous road, the most beautiful road I know, sometimes wonderful, something new of modern times, splendour".[1]

According to Le Corbusier, the road is a tool, an object placed at the service of truth, in the sense that its dialogue with the landscape is sincere, its technical execution is perfect and the relationship with the people in place is natural.[2] The highway, the tourist and the landscape made a unity that could only be broken through a speed increase.

The other scene is cinematographic, and takes place twenty-three years later in the film "Bienvenido Mister Marshall" directed by Luis García Berlanga in 1953. It shows the revolution that lives a small town near Madrid, Villar del Rio, in the face of the imminent visit of a U.S. delegation. The town dresses up disguising itself as an Andalusian village. Its inhabitants, dressed in festive andalusian clothes, ad-lib flamenco shows. When the caravan finally arrives, it passes by, without even reducing their march. Villar del Río returns to normality, though full of disappointment.

The leap

The differences between the two scenes are remarkable but we will mainly emphasize those concerning the perception of landscape. In the second scene, the efforts of the inhabitants of Villar del Rio were entirely ineffective since, travelling at a new speed, motorist tourist perception did not accrue to the detail.

A new way of perceiving the landscape, fast and fleeting, emerged in the Fifties, thanks to the motorization of society and the distinctly modern building infrastructures, and with it, the transformation of the country's identity was irreversible.

The slogan "Spain is different", tiresomely repeated by the Ministry of Tourism since its creation in 1951, should be illustrated with contemporary new milestones. The landscape was no longer contemplated but consumed, and the emergence of the silhouette of the Toro de Osborne, designed by the artist Manolo Prieto in 1956, gave the starting signal for the creation of new icons.

Franco's regime had turned into the new culture of mobility bringing private transport closer to the masses. With the creation of the SEAT Company in 1950, the Spanish middle class could cherish the myth of suburban life that came from the USA and Northern Europe, which became more accessible: the production of the SEAT 1400, the first luxury model, started in 1953, and from November 1957, the production of the SEAT 600 began, and immediately became "the people's car".

The Highway CN340

The road that Le Corbusier had travelled around, showed itself as a promise of development after the Spanish Civil War, being renamed by Alfonso Peña Boeuf 's 1940 Highway Plan as the CN340 or Mediterranean Highway. The name reflected the tourist orientation of the infrastructure, linking the cities of Cadiz and Barcelona.

This peripheral route allowed the beginning of a process of urban sprawl along the coast which acquired the status of a linear city. In particular, the stretch of coastline over 150 kilometres long between the cities of Malaga and Gibraltar counted with two airports as privileged ways open to the western world, allowing the inoculation of life forms, services and hyper-modern culture into the stagnant dictatorship.

The Highway supported the emergence of what were called the "bourgeois utopias"[3] that form the basis of extensive occupation of the Costa del Sol. These utopias were characterized to establish isolated islands of order that connected each others indirectly, according to the hierarchical step that was set by the Highway and thus denying spatial and social cohesion of the city.

A purely modern phenomenon, which attracts our attention to Marbella by the fact that it served as a Trojan horse for the implementation of the new self-referential urbanism in the Costa del Sol that we analyse relying on Françoise Choay's reading of the anthropological statute of the built space.

Choay performs a "culturalist" interpretation of these spaces where she detected the need to provide residents with a sense of balance, security and stability, which are obtained against a utopian background:

- First of all, making a criticism of the modern city, to establish a separation defining clearly its limits maintaining its connection by the infrastructure.
- Secondly, the creation within those contours of an ordered spatial pattern, in which nature and architecture play a behaviourist role on humans.
- Finally, the design of a community model, emanating from the physical model, in which any hint of contradiction is eliminated.

It tried to solve the dilemma between community and society as described by Ferdinand Tönnies.[4] Facing the inevitable life in the big city, it was necessary to set up situations and scenarios to retrieve all the values that were associated with extinguished experiences: the closeness of the family, the control of village life and the enjoyment of nature.

Criticism

The creation of these enclaves was the key to suburbanization, a critique of the industrial metropolis: from an ease in transitions between private space and public space, of environmental control in the relationship with nature, a small and human scale, as opposed to the gigantism of the industrial metropolis.

Franco's regime showed a constant ambivalence towards the city: it was considered a necessary evil to provide support to the industrial fabric and centralization of dictatorial power, but it was suspicious as a potential scenario of political subversion. The isolation of the Ciudad Sindical was the expression of this fears, and was developed in terms of separation from the city, nine kilometres away from the town of Marbella, fifty-three from the city of Málaga and ninety from the British colony of Gibraltar.

Isolation was based on the existence of the Highway, to which Ciudad Sindical is hooked at one point, in the same way of Ludwig Hilberseimer's *New City* (1944).[5] An introverted model of civility, which imposed what Albert Pope describes in the late nineties as the logic of the ladder on the territory.

A conservative and defensive "culturalist" program, in which, the connector and unifying role that historically had been public space in the European city, was turned off. Instead, it offered the illusory continuity of natural areas devoid of attributes: impenetrable barriers of vegetation and endless stretches of dunes and sand…

The spatial model

Once the separation from the city was made, the construction of a new identity raised the stakes for the Garden City from the perspective of the "small town" that Heinrich Tessenow and Bruno Taut defended. This reinterpretation was held in Marbella through the combination of three factors: the picturesque manipulation of nature, the provision of community buildings, and the standardization of housing.

- Firstly, the adoption of a plan based on the legacy of Radburn (1929), generating an internal circuit of roads that intelligently separates routes of rubber tires from the tread of battered feet of sand.

The irregularity of the layout, which resulted from negotiations with the topography, provided a sense of newness and malleability of the natural landscape against the rigidity of life in the metropolis.

An effect that was sought from the decision to respect a number of existing trees, and the planting of a total of 14,000 new samples: pine, eucalyptus, casuarina, false pepper, palm trees and parquinsonias would act as wind, sights and sound barriers of the ensemble.

- Secondly, as a letter of introduction, the architecture had iconic value to be appreciated from the Highway at unusual speeds. The fluidity of the floor plan of the reception building gradually enveloped the visitors, putting them metaphorically in a cozy womb. The small and thin concrete awning for unloading luggage was a surreal wink to the operation of the assembly line while the water tank turned into a call from a distance.

A design guided by the single stroke, claimed by Vernacular values of Mediterranean architecture that Luigi Moretti exemplified in Italy in his villa "La Saracena" (1955), and which went to the sixties with the house of André Bloc in Carboneras (1964) and the house in the Cyclades of Iannis Xenakis (1966).

The strategic layout of the community facilities pursues the confirmation of the area closest to the beach as a new crown of the city. In this place, emerged the unmistakable silhouette of the church, drawn back with a single stroke back on itself, offering an exposed elemental enclosure, open so welcoming towards the interior of the town and providing the reference of a white candle to the public place, the beach.

Next to the church, the community program was completed with the building called "relationship and restaurant", which served as a daily meeting place for all the guests, following the maxim of Ferdinand Tönnies about the table as a true meeting point of the community, because the houses were devoid of their own kitchens.

- Thirdly, the general organization bet to deconstruct the model of urban hotel that had been established in the Costa del Sol with the Hotel Pez Espada in Torremolinos, recreating the collection of bungalows that the creator of the myth of the Costa del Sol the aristocrat Rafael Soriano, had built for his guests at his farm "El Rodeo", in Marbella, in 1945.

A vital issue is the standardization of the rooms, with three types of "small hotels" that define a unique way of understanding the relationship with nature, the question of identity and family life. The project defined three types: those that clearly respond to a suburban model, which are called types “A” and “B”, and the sea-front staggered row, defined as type “C”.

Above the common feature of the fluidity of its floor plans, which is reinforced by the simplicity of the "home program" that it had to accommodate, the relationship between the three types shows a unique proposal for transition from private to public space, which equates to the Kingo houses (1956) by Jorn Utzon.

The courtyards of the houses, each one anchored by the presence of a tree, established a transitional step between public and private, reinforced with intentional changes in height on the wall, which we appreciate as an invitation to embrace the landscape and put it inside the enclosure.

This idea becomes particularly evident in isolated types, called "A" and "B". Unfolding as a gradual discovery, the winding route of the walls moved in a continuum from the most intimate space of the housing to the living room, to the courtyards and finally expelled the vacationer to the tame nature of the intermediate landscaped areas.

Society

The effects of the implementation of this spatial arrangement were to ensure continuity of the system, creating an ideal society model immersed in the best breeding grounds of leisure. In its effort to dismantle the social dialectic embodied in the class struggle, Franco's political system took a step further, using the leisure of the workers for their indoctrination, in the manner of other similar organizations, such as the Italian Dopolavoro and the German Kraft durch Freude, which proposed to retrieve the values of community life and nature, against the anonymity of the society in the metropolis.

The annulment of the conflict between political and union power that Franco´s regime promoted, would have the moral basis of the functioning of the Regime as a result. They showed completely utopian aspirations, lacking any notion of clash.

The Ciudad Sindical de Vacaciones orchestrated a sophisticated assembly of solidarity, altruism and spirituality shared by employers and employees under the common name of "producers". Still following the principles of strict separation of sexes and ages, an intensive program attempted to create idle virtue of the citizen, promoting sport and physical education, art education, cultural training, as well as trips and excursions.[6]

That affected the way of grouping residents by age, origin and character, looking for uniformity in ensuring the proper conduct and effectiveness of instruction. Social classes were canceled for the creation of an ideal community, leaning heavily on the family institution[7] in a context of equally idly promoted utopian annulment of time.

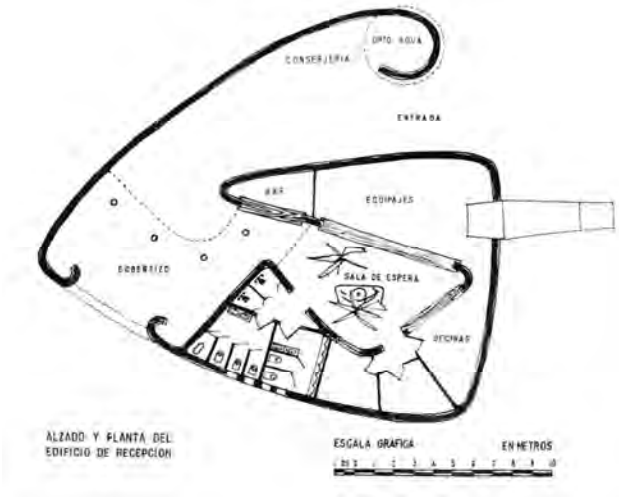
Epilogue

The evolution over the years of the Ciudad Sindical de Vacaciones in Marbella has been complex, because although the environmental values of the

organization were strengthened over time, we cannot say the same thing that happened to architecture.

Architectural interventions have been controversial and nothing respectful to the original project. The reception building shows its old cozy courtyard completely blinded now. The church has been deprived of its uninhibited character and has been completely closed. The housing units have been transformed, and some even demolished and forged to meet the excessive demands of contemporary tourism.

We have discussed in these pages the influence of utopia in the creation of the Ciudad Sindical de Vacaciones, and the willingness of its authors, Manuel Aymerich Amadiós and Angel Cadarso del Pueyo, to make their architecture transcend the political situation of its time. To do justice to these purposes, we propose that future interventions invent new utopian purposes. It will be the only way to guarantee the survival of its heritage value.



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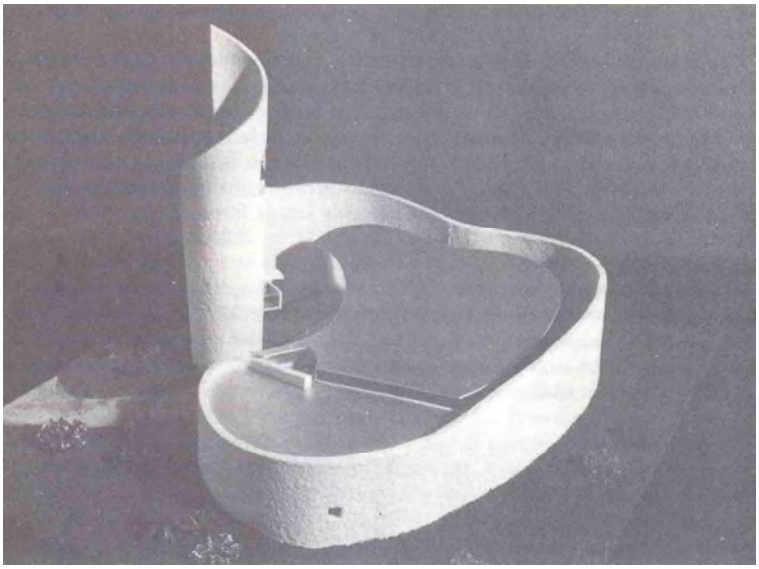

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CIVIC AND SOCIAL INFRASTRUCTURE
The Modern City from a Contemporary Perspective

Urban planning in the second half of the twentieth century became increasingly inspired in the doctrines of the Modern Movement. Post World War II European reconstruction and urban expansion projects encompassed both new developments and interventions on existing urban fabric, and had a lasting impact on their cities as a whole. As such, the Modern City became a source of inspiration or an outright model for cities around the world, with regional and temporal variations: to some degree its principles adapted to local conditions and had an undeniable impact on local culture, economy and planning policies.

From a functional perspective, the Modern City relied on industrialization and technical innovation to meet the needs of a rapidly growing urban population; from a formal or aesthetic viewpoint, the design principles of the Modern Movement sought to modify o redefine urban shape and patterns; from a social standpoint, the Modern City would play an active role in social transformation to achieve ideals of equity and social justice.
Today it is pertinent to reconsider the transformations undergone over the past sixty years by the contributions of the Modern City and the evolution of their physical surroundings, as well as their economical, political and social circumstances.

Papers in this section of the conference present examples of the evolution of such modern cities and neighborhoods in various countries, and the achievements and failures of modern planning they embody. In some instances the papers document the impact of modern concepts on urban evolution in the twentieth century, while other contributions propose the conservation of certain projects, appraise the new role they play in current cities, or include lesser studied aspects such as the landscaping involved in modern urban layouts. In most cases the projects and planning policies analyzed here have evolved to meet contemporary needs and adapt to their new surroundings.

It is important, for each particular case, to assess whether the original intent of these Modern Movement urban projects is still meaningful or appropriate in the context of present-day urban expansion. This would be helpful in defining criteria for the reappraisal, conservation, restoration and rehabilitation of neighborhoods and urban developments of the Modern Movement from a contemporary perspective.

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PHYSICAL TRANSMUTATIONS AND SOCIAL DISRUPTIONS OF THE FUNCTIONAL CITY PARADIGM IN THE AMERICAS: THE CASE OF EL MONTE REDEVELOPMENT IN SAN JUAN CITY, PUERTO RICO.

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Twentieth century suburban growth in Puerto Rico experimented with several modern neighborhood types. During the first half of the past century, political, technological and socioeconomic changes propelled a rapid growth of San Juan's metropolitan area. This occurred after the Spanish-American war of 1898, when the island of Puerto Rico was ceded to the United States of America. The new political center and the local colonial government slowly implemented a major paradigm shift in economic and urban development. This shift brought forth significant transformations that resulted in a transition from a poor agricultural society to a modern and still developing industrialized economy (1930s–1960s). The unprecedented economic growth that followed, spurred a new wave of suburban expansion. In contrast to the consolidated and organic urban growth pattern that characterized urban settlements in Spanish colonial time, new disconnected suburbs started to emerge in surrounding agricultural lands. This pattern, now defined as sprawl and "leap-frog" development, has become the predominant form of residential and commercial development.

Many of the new suburban developments were influenced by modern discourses related to neighborhood design, both from Europe (CIAM) and North America (RPAA). Among these Clarence Perry's *neighborhood-unit*, Stein's suburban aggregate neighborhood scheme, Garnier's *La Cite Industrielle*, CIAM's Functional City *superblock*, the *planned unit development* (related to CIAMs functional city paradigm and Sert's *unit development* and Puerto Rico's predominant suburban residential model based on the local zoning code number four (*Reglamento de Zonificación Número 4 – JPPR*). These paradigms coexist with other variants and hybrids in San Juan's disarticulated mosaic of utopias (Ramos 2008). Of interest to this paper is the transmutation of a variant of the modernist superblock scheme, the *planned unit development* El Monte Redevelopment (El Monte).

In order to contextualize El Monte four transition period suburban developments should be highlighted. One such example is the *Roosevelt Development*. Constructed in the mid 1930s in the Hato Rey Ward of San Juan City, it was modeled after the Industrial City prototype. In general, the development consists of one-storied concrete single-family units and duplex residences within an

orthogonal street system. This project was geared to working class families in its first phase of development. Large open recreation spaces and institutional-civilian structures were located within central neighborhood grounds and were linked by way of wide diagonal streets. Local commercial lots were designated at all four corners at principal intersections with the peripheral arterial streets. The neighborhood is located adjacent to a large planned industrial district. Significant physical and land-use changes to the prototype can be identified in its final implementation.

A second example from the late 1940s is *Puerto Nuevo Ward*. It is located adjacent to Hato Rey Ward and ~~is~~ understood as the first mass-produced suburban development in Puerto Rico (Sepulveda, 2003). It was inspired by Clarence Perry's *neighborhood-unit* but can also be related to Stein's neighborhood pattern. This vast suburban development was also geared to young working class families and particularly to WWII veterans. It consists of repetitive one-storied concrete houses organized by *neighborhood units* with concentric street patterns. As in *Roosevelt Development* adaptations, physical-spatial transmutations are present in Puerto Nuevo. However, these hinder the original concept geared to foment socio-economic interactions and community life (Ramos 2008).

Baldrich is the third example. This residential development is also located in the Hato Rey Ward and adjacent to El Monte. It can be described as a typical "zoning-code" suburb geared to the middle and middle-high class. This type of suburban development and similar variants became the predominant model for residential developments for most part of the mid and late-twentieth century expansion in San Juan Metropolitan Area. It consists of single-family concrete structures, though larger than those in *Roosevelt Development* and *Puerto Nuevo Ward* and feature customized designs. However, it lacks the programmatic complexity and physical-spatial clarity (lack of a clear community "center") associated with the previous examples and their respective neighborhood archetypes.

Concurrent with the previously described suburban developments, the government also experimented with large-scale public housing projects based on the modern superblock archetype, locally known as *caserios*. This would be the fourth example. Multistory housing blocks on large expanses of green areas were neatly organized as enclaves for economically disadvantaged sectors of Puerto Rican society and for marginal communities being relocated as consequence of government sponsored redevelopment/housing efforts in the city. Many of these enclaves rarely interacted with the surrounding existing context, were unconcerned with defining outdoor civic spaces, neglected the streets, and did not demarcate public/private territorialities. Eventually, these developments became the focus of social ills.

Almost 22 years after *Roosevelt Development* and 12 years after *Puerto Nuevo*

Ward a new and distinct modern multi-use complex emerged from this diverse, low-profile and experimental suburban setting: El Monte Redevelopment. This project, located in the Hato Rey Ward of San Juan City, is adjacent to *Baldrich Development* and in close proximity to both *Roosevelt Development* and *Puerto Nuevo Ward*. Originally constituted as a single *planned unit development* (PUD), it is now administered as four distinct high-rise, low-rise and multi-level parking condominiums. Still, its unity is unquestionable as it functions as a community.

El Monte sits where "El Monte" neighborhood originally stood. This was an early 20th century, low-income *barriada* known for high crime rates and social ills. More than 1,500 families lived at this location (*El Mundo*, 1952).

Planning by local and federal government for the 33-acre site began in the early 1950s (*Progressive Architecture*, 1963). In 1958 developer James H. Scheuer won a government sponsored competition. The Federal Housing Administration (FHA) and the local *Corporación para la Renovación Urbana y de Vivienda* (CRUV) co-subsidized the project. These public agencies also executed the expropriations, land clearing and resident relocation. Architect Edward Larrabbee Barnes (FAIA, AIA Gold Medal; RIP), designed the master plan and architecture for the new project. Renowned landscape architect Hideo Sasaki (RIP) designed the grounds and park for the first phase of the compound (El Monte Norte high-rise). The local firm "Reed, Basora & Menendez" operated as associate architect and architect of record.

When compared to the previous suburban examples, several distinctive features become evident. First, its two most prominent structures are high-rise residential structures, each housing more than 300 apartment units, a size and scale not previously seen in the island. One, two and three bedroom two-level units are deceivingly contained within repetitive modular facades. One-level garden apartments, penthouses, and studios are also found within the high-rise structures. One and two-level duplexes and studios are clustered in low-rises. This variety of unit types is significant in that the predominant paradigm at the time was one-storied suburban single-family homes. As such, El Monte is unique among modern suburban neighborhoods and high-rise residential condominiums; it provides for a more heterogeneous composition of residents, and promotes a more diverse community.

Second, the project was a joint public-private redevelopment effort geared to provide rental housing for an emerging middle-class market. This government-led effort was initiated and directed by the federal Housing and Urban Development agency (HUD). At the time, most developments were either privately funded single-family housing developments for sale (some government subsidized), fully funded public housing projects, housing cooperatives or self-built structures.

Third, it is based on a Functional City paradigm variant, the *planned unit development* (PUD) a novel concept at the time in Puerto Rico. This sought to

create multi-use semi-autonomous districts within the larger urban system and usually contained internal pedestrian networks; an idea experimented with earlier at Radburn (USA). The concept can be traced to CIAM's city discourse, particularly Sert's earliest *unit-development* proposals in South America (1948-1953; Bogota, Cali, Medellín; Schnitter, 2003). It can also be associated to Clarence Perry's *neighborhood-unit* model in its overreaching goal to establish the neighborhood scale as the basic module for accommodating communities and as a fundamental spatial unit for growth in sub-urban agglomerations.

Fourth, substantial landscaped areas and recreational amenities such as swimming pool, community center, sports courts, and tot's playgrounds were a government required provision. These facilities were then associated only with hospitality facilities. Such requirements were in tune with current hygienist, leisure and aesthetic goals of the modern city paradigm as promulgated by the CIAM. This made *El Monte Redevelopment* special from others providing for a leisurely residential ambiance.

Furthermore, in contrast to precedent developments based on CIAMs superblock paradigm, El Monte is characterized by a distinct urban design that creates a strong sense of place, is able to condense a clear image of community and provides a memorable experience within a modernist tropical architecture framework. A kinesthetic and phenomenological appraisal of the complex reveals qualities that make El Monte a noticeable experience in San Juan's uneventful suburban matrix and an exceptional modern *planned unit development*. The overall geometric order, scale, and architectural design of the predominant structures of the complex create a unique physical and spatial monumentality. This dual monumentality is carefully orchestrated and sequentially experienced as one approaches the compound. From afar, the multistoried structures gently emerge from the surrounding low-profile suburban context. Their curved geometry, horizontal architectural emphasis, and clever façade manipulations help to scale down the drastic change in size and volume.

As one approaches the compound a subtle figure-ground exchange occurs. The "reading" of the objectified buildings becomes a "reading" of an objectified space, a fluid and shared space of monumental scale. The field of vision is always contained within the structures, thus creating the sense of traveling through man-made canyons. The meandering and curved disposition of the principal avenue echoes that of the buildings and gently weaves through this intriguing man-made landscape, creating a sensation of continuous discovery as new perspectives and vistas come into view. This pleasing and sensual phenomenological experience, more akin to the modern era *zeitgeist* of fluidity and discovery (Berman, 1982) becomes a key element in the design and overall aesthetic experience of the compound. Thus, in contrast to other modern superblock precedents, in El Monte the designers reclaim and celebrate the street as a central piece of the overall experience (albeit more symbolically than as a multi-functional civic space).

The high-rise urban gesture of facing and defining Hostos Avenue, together with the presence of exterior single-loaded corridors that double as communal balconies create a sense of urbanity and territoriality (building-street relationship) more akin to traditional urbanism than to the modern movement predominant disposition of buildings as sculpture-objects within a park-like background, generally unconcerned of the street. This characteristic is also distinctive of El Monte when compared to other PUD examples in the Americas (i.e. Reidy's *Pedreghulo* in Brazil, Sert's *Medellín/Cali* plans, or the *Watergate Complex* in Washington DC).

In addition, El Monte's exemplary modernist bioclimatic tropical architecture is deserving of special recognition. In an era of ecological consciousness and in particular to sustainable tropical architecture and urbanism this is worth of emulation and further study. The aesthetic qualities and functional attributes of the *brise-soleil* systems should also be noted. The interplay between light and the shadow geometries created by projecting overhangs, balconies, corridors and vertical shading elements is visually enriching in what could have otherwise be a repetitive and monotonous facade. Effective cross-ventilation makes mechanical air conditioning unnecessary.

Notwithstanding the architectural, landscape, urban, and environmental merits of the project, it is important to point out significant shortcomings in the implementation process, particularly related to social justice and quality of life improvement of the original residents of *barriada.* Responding to pressing socio-economic and urban issues at the time the redevelopment implementation strategy reflects the predominant state policy in relation to slums: expropriate, demolish and relocate the existent community to new *caserios*. As the project was conceived for a middle-income rental market, more in tune with the emerging and inmediate context, the new apartments were not affordable for most of the original population. These residents and owners did not benefit from the improved urban conditions and increased real-estate values. In effect, this practice only relocates urban and socio-economic deterioration (poverty) to new localities and contributes to sustain inequalities in the distribution of wealth and urban segregation.

The project did not consider the possibility of simultaneously adressing redevelopment and community revitalization *in situ* as an integrated social, economic and material improvement effort as has been proposed for recent revitalization projects and proposals (Ramos, 2008; Navas, 2004). As such, it presents contradictory and conflicting aims when evaluated against a public policy of socio-economic improvement for all.

Nevertheless, the integration and orchestration of landscape design, urban design, and architecture in El Monte successfully condenses an image of a new modern community. In El Monte the symbolic and social value of the street and a

strong sense of exterior space as a community signifier are re-discovered and embraced. A fusion of *progressive* and *culturalist* approaches to urban design synthesizes, where spatial, symbolic and communal values as well as the functional attributes of the modern city are recognized. As such, the project is able to create a unique *genius loci* and is able to achieve the "New (modern) Monumentality". Its value as a sustainable tropical urban setting makes El Monte conservation worthwhile and necessary to guarantee its rehabilitation and maintenance.

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MODERNSCAPE: READING THE UNEXPECTED DIVERSITY OF OPEN SPACES IN FRENCH URBAN SOCIAL HOUSING DEVELOPMENTS (1940-1980)

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1 – Introduction

"Barren", "disproportionate", "overwhelming", "uniform": real caricatures of the worst types of urban planning. Since 1965, in France, the productions of modern town planning, particularly in social housing districts have been regularly denounced. While the "good urban planning" would focus on forms and spatial structures of the site, modern urbanism would prefer a tabula rasa approach. The spaces produced after the Second World War, are often considered responsible for the ills suffered by the inhabitants: neurotic anxieties, community isolation and endogenous violence… including unemployment!

In 2003, the French government initiated a policy for these districts demolition. The French National Agency for Urban Renovation collects funds from public and private sources to conduct ambitious projects based on the tabula rasa approach which is supposed to be denounced! The demolished buildings are replaced by less dense programs, spreading along the streets built from scratch.

Yet, the government cannot deny the achievements of renowned architects like Le Corbusier and Auguste Perret in housing complexes. In the mid-1980s, urban planning historians have launched major research highlighting the real complexity of the productions of this era [1]. Since the 1990s, advocacy groups were created to oppose certain demolitions. The fiction of a dualism between two different approaches of urban planning, the bad vs. the good, modernism vs. post modernism, crumbles. From one to another, there is no real break but a progressive and complex transition[2].

Objectives and methods

For all of these reasons, the French Ministry of Culture initiated in 2008, three studies on the constructive, architectural and landscape quality of these areas. We studied 284 urban housing schemes built between 1940 and 1980, looking for a landscape dimension susceptible to be valued and exploited within a less aggressive restructuring[3].
The analysis considered three scales:
- The territory (topographic, hydraulic, vegetation, road and urban systems);
- The master plan, the forms of public places, their diversity and connections;
- Finally, the closer scale of relations between the private lodgings and public places.

The 282 sites have been first analyzed through maps, aerial views, and articles in the professional press of the time. 60 districts were then selected for on-site research, photo reports, plans, and section drawings. Finally, nine remarkable sites were examined through in-depth archives studies.

2 – Landscape culture of modern architects

The landscape quality of many housing schemes partially results from the fact that most modern architects had a culture of landscape and garden art. Often underestimated, certain figures are exemplary, such as Auzelle, Aillaud, Breuer, Dubuisson or Fayeton. The latter for example, great architect of several housing units, with a dual training as engineer and architect, graduated from the Ecole des Beaux Arts in 1937, was particularly attached to the creation of green and open spaces. Even his detailed plantation plans were sent to the contractors. Beyond the composition of plans, the sensitivity of the architect plays with the plant shapes and colors and the building materials. Many of his achievements deserve attention today, more for their landscape quality than for their architectural details.

The landscape culture of modern architects is based on:
- The academic education. Most architects who realized housing schemes in the 1950s and 1960s were students at the Ecole des Beaux Arts in the 1930s. One of the most esteemed professors, George Gromort (1870-1961) published many books on Garden Art, including *L'art des jardins* (1934), which presents his landscape teaching. The separation between architectural and landscape training became effective in the 1940s and tangible only in the 1960s.
- The structures of propaganda in the cause of landscape. Several professional organizations and training structures have renewed ideas on landscape such as « Musée social », and its « Société des espaces libres et des terrains de jeux », or the « Société nationale d'horticulture de France », among many others… Key figures like Henri Prost and Jean Claude Nicolas Forestier acted both in these unofficial circles and in the administrative structures of Paris or the State. The publication of *Grandes Villes et Systèmes de parcs* in 1906 by Forestier has influenced a generation of modern architects.
- Finally, the artistic avant-garde. The work of the painter and landscape designer Roberto Burle-Marx, who still plays an important role in the spreading of new ideas in the field of garden art, shows how modern art has stimulated creativity in landscape design.

3 – Master plans and landscape shaping

What our research has first emphasized is the extreme diversity of landscape situations. Classifying these multiple approaches raises some difficulties. The most evident typological classification is based on master plans, as those were the base of urban planning at the time.

Their diversity partly results from the evolution of housing public policies and the architectural trends of the time. In 1945-1955, projects remain in line with the urban design rules developed between the two World Wars, and are fed, as seen above, by the Ecole des Beaux Arts. The figure of the wide central space is dominant (Cité Rotterdam[4], Strasbourg, Beaudouin) before giving way to the supremacy of "open order". Experimental operations (SHAPE Village, St-Germain-en-Laye, Dubuisson and Dumail), gather various forms which make use of previous knowledge[5] ; while large-scale operations (2500 to 5000 housing units) are mainly set up with parallel layers or orthogonal frameworks including towers or blocks. The designers then integrated the critics of Team X within the CIAM, which led to the idea of urban continuity (Bagnols-sur-Cèze, Candilis, Josic and Woods) and then to the experimentations with internal streets and passageways (Toulouse Le Mirail, Candilis et al.) but also in clusters or layers (Givors, Renaudie). At the same time, several atypical approaches were developed: plastic approaches by Emile Aillaud, the adherence to classical rules by Fernand Pouillon and typological and environmental research (urban landscape) led by Robert Auzelle.

But if master plans help to reveal how architects framed the open space, they do not tell us how they did so in terms of landscape.

The landscape, indeed, takes place on the ground and from the ground. We can appreciate it mainly when roaming through it. It is structured by the modalities of passage from one building to another, from one level to another. It takes place in the dialogue incurred by the project and its boundaries. In short, it is a matter of relationships much more than assigning functions, even "green space' functions. The landscape dimension is a question of relation both horizontally, in term of distribution of spaces, and vertically in the link between the project and its ground established by excavation. How then establish a "landscape typology" of the studied sites, reflecting not only the forms of the public spaces, but also their ability to articulate them? We have identified three types of devices that emerge respectively from vegetal material, buildings articulation and leveling.

In addition to the many types of vegetation filters, the figure of planted path, ranging from the mall to the green corridor, conceived for fluid and continuous connections between open spaces, independently from the master plan, can be identified in many projects. This device is effective when it is freed from the strict guidance of the road: at Cité de l'Abreuvoir (Bobigny, Aillaud), it constitutes the framework of the project, while in Villeneuve de Grenoble (AUA, Corajoud) it emerges from the simple evocation of traditional figures of cultivated landscape.

A second type of devices gathers ways to link open spaces with the built masses. It includes configurations of open angle, porch, and "sliding effects". In section, thresholds, terraces and *belvedere* can strengthen these subtle lines of passages from one area to the other. In La Maurelette (Marseilles, Chirié, Sgard), the buildings reflect the principle of urban continuity along a series of mineral plots, connected by

passages that reveal modes of local architecture. In other places (Bas Coudrays, Sceaux, Challier), a double layer of buildings articulate the central space with different types of peripheral contexts.

Finally, the exploration of leveling modes, natural or artificial, as major dimension of landscape project offers a fruitful angle. The point is through excavation to structure the base of the urban project, directly linked to the ground floors and the lower levels of the buildings, in-between spaces which are often sources of conflict today. From the inscription in a natural topography (Beaulieu, St-Etienne, Hur, Marc) to its radical transformation (La Villeneuve, Grenoble), via the subtle shaping of the ground in the Olympic Village (Grenoble, Novarina, St-Maurice), the design of the ground can be seen as the foundation of the project in the site, integrating the management of the substrate quality and the water.

These three types of devices work together. And, finally, it is their combination that enables to characterize different types of plans. Three brief examples are developed below.

In Les Aubépins (Chalon-sur-Saône, Jerrold, Henri Pasquier landscape architect), on a former tile fabric site, parallel bars slide around a large central space, enclosed within peripheral planted malls. An attentive reshaping of the ground has transformed the clay excavations into abundant ornamental lakes. In this inhabited park the administrative authorities have refused the ANRU demolition project.

In Sarcelles (Boileau, Labourdette), the whole complex is built on an orthogonal grid. The angles of the buildings open deep crossing views and invite for a visual and mental journey in the district, different from the traditional movements. Two main *mails* structure the public squares including a major central space (Parc Kennedy). This planted heritage (Jean Camand, landscape architect) qualifies the appearance of this area, too often stigmatized and currently under renovation.

The area of Les Chatillons (Reims, Marot) where the landscape designer Jacques Simon worked, illustrates the will to federate, along a continuous planted promenade, the different urban spaces connected by a network of passages under porches. This interior landscape of mounds at the buildings scale, created from scratch, dilates the space towards a possible horizon. Even metaphoric here, the horizon will eventually become the object of the landscape project.

4 – Composing from the fringe: the invention of contemporary landscape project

These configurations refer to different sources than the strict Charter of Athens which remained very cautious on how to organize life on the ground. By making the “liberation of the ground” through vertical urban planning one of its key principles, architectural modernism has made the “free”, “open”, “green” space (as called at the time) the cement of urban space. However, landscape is also conspicuously absent from these projects. Until 1965, for most architects, even landscape designers the composition of housing schemes was not a matter of landscape [6]. What is at stake in the master plans of upholders defending a more assertive “modernism”, is the

sculpture of space conceived as an abstract and homogeneous material, the pure space of modernity, not landscape.

Nevertheless, it is very much in contact with these housing programs that reflection on landscape emancipated itself. How could we overcome this paradox?

Thinking about landscape means to think the inside through the outside, the heart through the outskirts, the town through the site, etc. This is in fact what most architects had to do. Most housing schemes, situated in urban periphery, far from the valley bottom (where urban centers historically established), were located on their sloping hillsides. Architects could thus easily take advantage of the viewpoint offered by the topography. Projects such as Le Haut du Lièvre in Nancy (Zehrfuss) are emblematic of the architects' obsession to open housings towards light and distant landscape. But this relationship is purely visual, and often produces complete nonsense. For example, the Haut du Lièvre, implanted at the top of a plateau overlooking the city, just before a cliff that, because of increasing wood (consequence of the agricultural abandonment resulting from urbanization itself), has become an impregnable wall by sight as by walking.

A landscape orientated reflection would have been to develop beyond the project boundary, and to consider future extensions. To prevent budgets increase, elementary modes of management and development would have sufficed to guarantee the physical and visual permeability which is so often lacking today. This problem did not escape landscape designers, and Jacques Simon, in his chronicles in the magazine "Espaces Verts", has been since 1969 the critical witness of this backward tendency due to a lack of consideration of the margins[7]. For him, dialogue between the program and the site must be sought where the two meet: in the margins of the project, conceived as spaces of confrontation, porosity, exchange, transition, and threshold. The evolution of projects between 1940 and 1980 shows how these marginal spaces, concentrating urban and social stakes, gradually became the real heart of the project. Progressively, the material forms of free space became more complex: they summon local figures of public space, as in La Maurelette with the use of Provencal register. Inside the master plans, malls spread in width and length, and try to open perspectives towards elsewhere. Above all, parks move away from the centre, towards suburbs and link with the countryside or the surrounding city. Seminal spaces like Saint-John Perse park, in the suburb of the Croix Rouge district in Reims, the park of La Courneuve, or the park du Sausset in border of the Aulnay 3000 program, show this public park dynamic towards outlying places.

5. Conclusion

Landscape designers and landscape thinking have found in social housing schemes two ways of feeding new methods of project design : on one hand ample spaces, to cope with few resources but with a certain freedom, and on the other hand schemes oriented towards fringes first considered as independent component and then as real heart of the place. As landscape laboratory, social housing schemes often present clumsy and unfinished attempts, but also brilliant intuitions on which could be based urban projects in real dialogue and coherence with the spatial singularity of these districts.

Illustrations

1 - Model of “Les Hauts de Vallières” in Metz. Jean Dubuisson, architect.
Landscape as part of a modern architects’ culture;
Source: Institut Français d’Architecture – Photograph: Denis Delbaere

2 - A planted main road at Bellevue, Nantes. Marcel Favraud, architect.
Landscape composed at urban scale;
Source : Denis Delbaere

3 - A mineral place at La Maurelette (Marseille). Jacques Sgard, landscape architect – Regionalist emphasis on modern landscape;
Source: Bernadette Blanchon

4 - Central planted path at La Croix Rouge, in Reims Jacques Simon, landscape architect Source: Denis Delbaere

Notes

[1] Vayssière, B., 1988, *Reconstruction, Déconstruction*, Paris, Picard
Voldman, D., 1997, *La reconstruction des villes françaises de 1940 à 1954*, Paris, L'Harmattan
[2] For a story of modern urban planning rediscovery see *Criticat*, No. 3, March 2009
[3] Blanchon, B., Delbaere, D. & Garleff, J., 2010, *Le paysage dans les ensembles urbains, 1940-1980,* DAPA
[4] We precise data for each example as following : name of (operation, place, architect-s, landscape architect)
[5] Dehan P., Jullien B., in Picon Lefebvre, V. (dir), *Les espaces publics modernes*, 1997, Le Moniteur

[6] Pousin, F. (dir.), 2007, *Saisir le paysage urbain*, BRAUP
[7] Ibid.

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SERIAL PRODUCTION OF MODERN CITY AND ITS CONSUMPTION TODAY ZLIN SERIES: THE CASE OF BATOVANY

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The Bata Group was a well-known and prosperous shoe-making company as early as the 1920s. The company expanded outside its "mother" town of Zlin in the 1930s. The than economic crises forced solutions introduced earlier in theories on minimal housing standards and economy of construction proclaimed by radical functionalists, in Czechoslovakia especially by Karel Teige, to be applied and realized by private investors and industrial companies for purely pragmatic reasons.
The Bata Co. established a series of production facilities in Czechoslovakia (like Batovany or Svit in Slovakia), as well as abroad, e.g. in Croatia (Borovo), Poland (Chelmek), the Netherlands (Best), Switzerland (Möhlin) and in the USA (Belcamp), India (Batanagar) or Brazil (Batatuba).
The motivation behind this paper is the presumption that the way these cities were once produced serially upon the shared concept of Zlin, today the confrontation of their isolated realities could give ground to comparative investigation of how the consumption of modern urbanity takes place in multiple contexts.

Variations in repetition

Looking back from the contemporary perspective the Zlin concept of a city was a serial act expanded in time – a production of networked city in global scale. The production of the "new" urbanity did not operate on the principle of small-scale copies of an original model on the outskirts of cities. For all the later Bata localities the large scale urban experiment of Zlin is point 0, a non-place, the maternal periphery. The hierarchy of the many local points of this industrial city series was operative and methodological. It was expressed in the management of the process of multiplication and innovation of what was already present in the prototype (concepts, diagrams, buildings, details).

The architecture of the industrial city of Zlin and of almost all the other functionalist towns "serially produced" by the Bata Company was based on the economic and social philosophy of Tomáš Bata, which was continued after his death in 1932 by his brother Jan A. Bata. For the Bata Company, the functionalist town was more about building a corporate identity than implementing an ideology and theory.[1]

The unified architectonic form of the buildings in Zlin and in the exported series of towns like Batovany was the key side-effect but not the key conceptual aim to achieve. It resulted from the specific approach and systematic logic of their production that ensured the success of this global experiment in town planning conducted from a single design studio. The repetition and variations on typology was a successful modernist method. However in the Zlin series, the quality architecture was rooted in consistency with the entrepreneurial philosophy of the Bata Co. and efficacy applied in each new geographic location. The materiality, typology and spatial standards were always considered anew

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from the central design office in Zlin but these were subsequently not only distributed but often elaborated upon and developed further in the local conditions of new serial cities. From a merely production network model the Bata urbanity can be viewed today as an early social network construction on global scale - based on the interaction and the feedback, a multidirectional growth of one city into the many cities being one community type regardless geographical distances (export of professional managers versus career development of the best local employees towards their exchange on higher managerial posts abroad).

Serial houses, serial cities

The development of the town of Batovany in Slovakia, and hence the export of architecture from the Czech centre to its Slovak periphery started only shortly before the democracy of the first Czechoslovak Republic was destroyed and the Slovak State was built on its ruins. After the declaration of Slovak independence in 1939, Bata came under pressure from Berlin because he was Czech, and hence a foreign investor in a pro-German context.[2]

Besides planning activities for Zlin, the central planning office also supervised the activities of the newly-founded satellite towns like Batovany in the person of the architect Vladimir Karfik, and after him architect and urban planner Jiri Vozenilek.

After his return from the USA, Vladimir Karfik designed two projects for the Bata Company in Bratislava, the Slovak capital: a department store (1930) and a Roman-Catholic church (1932) – constructed using the standard reinforced concrete skeleton system employed in the Zlin factory.[3] Soon afterwards a church design produced for Bata's town of Otrokovice in Bohemia in 1940 was adopted for Batovany in Slovakia in a modified form.

Jiri Vozenilek was co-founder of PAS (Architectural Working Group, 1932) which advocated a strictly scientific approach to architecture and was sympathetic to the theories of Karel Teige. Vozeníiek joined the Bata Company in 1937. He took part in the design of several "serial towns" (e.g. Best in Holland and Tiszalfoldváru in Hungary). After World War II he became head of the company's design office. He also took charge of the post-war general plan for Zlin (1946). His general plan for Batovany (1938) was respected as a concept for a town of 5,000 to 15,000 inhabitants decades after it first phase of implementation at the end of the 1930s.

The method for constructing serial towns evolved gradually, in parallel with the development of the Bata footwear group as a whole. The theoretical concept of the town was developed as part of that extensive experiment: from a town-planning concept to a design process and standardized implementation.

In 1937, a book was penned by the corporate architects of the Bata Co. setting out the methodological process of the *Ideal Industrial City*, but its planned publication did not come about. Nevertheless, three "serial towns" on the Zlin model were designed in line with its principles.

In view of the remoteness of the satellite towns, the firm principles adopted for endorsing projects from the centre were logically relaxed. Nevertheless, in spite of the

fact that specific local conditions were reflected in the final serial town project, the architectural vocabulary of Zlin was clearly fundamental to it. Economic efficiency remained the main criterion when deciding between different project variants.

Apart from Jiri Vozenilek and Vladimir Karfik, designs by the architect Miroslav Drofa (among others) were implemented at Batovany. His prototypes of dwellings were used, with certain variations in terms of local material and spatial considerations.

The relations between the Zlin office and its Batovany subsidiary were based on a system of strict hierarchy and established rules. The modus operandi of the central office in Zlin was adopted for Batovany and implemented in the phased construction of the settlement. Some basic designs were directly "exported" to Batovany, other Zlin prototypes were "innovated" either in the central design office in Zlin or directly in the Construction Department at Batovany. The architect Frantisek Fackenberg, who was local department head from its inception in 1938, was able to make use of the experience he had acquired in Zlin, and he also designed or adapted several types of buildings for Batovany.

Most of Batovany was completed during World War II. The use of saddle roofs, which had more in common with German "Blut und Boden" architecture[4] than with Zlin-style modernism, influenced the image of this serial town and explains the many differences between it and the Zlin prototype.

What makes Batovany unique among the other serial towns is its specific combination of universal and Zlin-style modern methods with a more conservative local architectural vocabulary influenced by Slovak cultural and political realities.

In the case of Batovany, this serial spatial production went ahead consistently even during the major political changes that first occurred during the last years of the first Czechoslovak Republic. A city was created during the war years, which afterwards proved resistant to the collectivization requirements of socialist society after the change of regime in 1948.

Most of the projects originated directly in Zlin. Many projects remained unsigned. They are simply headed with the words "based on Zlin plans". That explains the long-standing continuity and consistency of the concept, from the basic prototype of Bata houses to their serial implementation worldwide, from the prototype of Zlin city as a whole to the Bata serial towns of which Batovany was one.

In a sense, the worldwide serial production of towns designed by Bata company architects was an architectural and geographical experiment insofar as it was an idea for how to "operate an economic reality spatially and to strategize it architecturally."[5].

Batovany (later renamed Partizanske) retained the character of a garden city even though its general plan was repeatedly modified. The town's architects respected Voženílek's vision until the nineteen-sixties, thus confirming the quality and timelessness of his architectural concept from the 1930s.

Vehicles for activation

What bridges history and present of Partizanske is the possibility of growth within and outwards the abstract grid of the master plan by Bata Co. urban planner Vozenilek.

Serial quality of urban scheme deriving from Zlin can still be found inherent in the Batovany-Partizanske in the way this minor town in the Slovak countryside posses the unusually vivid metropolitan scale, standard and heterogeneity of the public spaces and adjacent neighborhoods.

The Vozenilek´s regulation plan of the inner city resisted the post war building boom and it may be viewed as continuous project without many destructive ruptures. Only the high rise low-cost apartment building which in late 1970s broke the modernist "emptiness" of the main square with the continuity of view on the axis from the main public space through the public park down to the Karfik´s church is the intervention of the post war regime that proves its ideological understanding of functional city to be wrong. Still this relatively new fragment fits the abstract grid by Vozenilek without breaking its consistency, however the material and social deterioration of the prefab building clearly shows how resistant and timeless the much older Bataist buildings are architecturally and socially.

Thus the realization of Zlin ideas in Batovany-Partizanske (and very similarly in Svit) was successful in more that the pragmatist, fordist concept T. and J.A. Bata promoted in Slovakia and in many other countries – the success lies far beyond the mere fact that the industrial city has been preserved until today. The preservation of architectural values provides an opportunity to sustain the cultural experiment of insertion of a universal idea of planned and designed settlement into a local context. The urban structure and architectural austerity of former Batovany provides a frame in which the Partizanske today is free to develop inwards and outwards of the Vozenilek scheme – the Zlin spatial and urban frame is both a limit and a horizon of growth of the contemporary city.

Our archival and field research in 2003 as part of the MoMoNeCo (Modern Movement Neighborhood Cooperation) cultural project focused on the differences between the Zlin plans and the actual buildings in the various communities in the neighborhood, such as Batovany (today Partizanske). One of the tools used to communicate with the original inhabitants was their participation in the process of shooting the documentary film "Batovci"[6]. Making hours of interviews with them was an approach to achieve a lively confrontation with their authentic neighborhood once strictly controlled and organized, today disappearing in fragments of private worlds of few families that still occupy their Bata houses. For the inhabitants´ personal histories the media space seems to be the best *vehicle* of change of their social isolation. [7]

If there is a missing link between history and inhabitants of Bata serial cities, it is the communication barrier between the small pool of "historical inhabitants" and the wider uninformed public. The fact of the shared "serial" identity between Zlin and Batovany-Partizanske is known very little, while this attribute can be the key motivation for re-activation of such public conscience. Building on the potential of Batovany-Partizanske to enter cultural networks of similarly attractive MoMO localities in Europe would upgrade the city not only physically via polishing the old redbrick facades, but would upgrade the sense of sharing the Bata modern heritage. Being a part of a series means

there are values and problems that can be shared, communicated and translated across the Bata cities with impact on their reality.

Notes

[1] Topolcanska, Maria: “Consistency of Serial City: Baťovany (Slovakia) designed by Architects of Bata Co.”, DC Papeles, Monografía *El GATCPAC y su tiempo. Política, cultura y arquitectura en los años treinta*, Departamento de Composició Arquitectònica ETSAB – UPC, Barcelona, N. 13-14, 2005, 312 pp., pp. 182-199.

[2] Moravčíková, H.: “Baťovany - Partizánske: vzorné slovenské priemyselné mesto”, *Architektúra & Urbanizmus* XXXVII, 3 – 4, Bratislava, 2003, p. 116.

[3] Dulla, Matúš – Moravčíková, Henrieta: *Architektúra Slovenska v 20. storočí.* Bratislava: Slovart, 2002, p. 119.

[5] For details on the hypothesis about the influence of German forms on the Baťovany environment see Moravčíková, Henrieta: “The Social and Architectural Phenomenon of Baťaism in Slovakia”, *Slovak Sociological Review*, 6, autumn 2004, Bratislava, p. 537.

[5] Cohen, Jean-Luis: “Anymore Context? A discussion”, *Anymore*, Paris,1999, p. 141.

[6] Documentary film “Bata People”, 11 minutes., film director: J. Štrbák, concept: H. Moravčíková, M. Topolčanská, S. Toscherová (MoMoNeCo Slovakia), 2003,

7 When Karen Guthrie & Nina Pope released a new Czech / English sub-titled version of their documentary Bata-ville (2006), which follows a group of UK visitors on a ‘Bata pilgrimage’ to Zlín in the Czech Republic, the film itself became a vehicle to communication and change on the perception of the Zlin phenomena and the personal impact it still has on Bata cities inhabitants today.

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MODERN CITY? CIUDAD JUÁREZ AND THE NATIONAL BORDER PROGRAM.

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Ciudad Juárez is rarely considered a paradigm of modern urban planning. The city has made a reputation for itself on account of decades of violence, corruption, environmental hazards, social degradation, and a general sense of urban disorder. It would seem more like the antithesis of the Modern City: a collection of scrap yards, dirt roads, factories, highways, themed bars, and corrugated plastic shacks. Yet precisely what I want to argue here is that under the disarray of contemporary Juárez it is possible to find traces of a modernist utopia. In this paper, I call into question commonplace notions of Ciudad Juárez as a product of urban accidents, informality and the “failure” of policy and design (or the absence thereof). Is Juárez a failed version of the Modern City, or simply an exacerbation of certain modernist elements, such as fragmentation and detachment? Is it possible that the city's distorted development is not a product of accident, but a result of a coherent set of architectural and planning schemes? With these questions in mind, I will reconsider the role of preservation in an urban context where historical value is not necessarily based on formal architectural merit, hoping to make a case for the documentation and reappraisal of ignored buildings and discarded plans.

The most salient features of Ciudad Juárez’s strand of urbanism can be traced back to an urban planning project of the early 1960s which, despite being one of the most important referents in the city's architectural and planning history, is usually dismissed as a short-lived initiative with mediocre realizations; a marginal and practically anecdotal footnote: the Programa Nacional Fronterizo (National Border Program), or Pronaf. Funded by the federal government but promoted as a private-public venture and led by local promoter and former mayor Antonio J. Bermúdez, the Pronaf was, in a nutshell, a Gruenesque endeavor that championed urban beautification and development through government-led industrialization, tourism and retail. The program reflected a radical overhaul in urban policy and architectural practice in Mexico, following the sociopolitical and economic restructuring period that marked the end of the Desarollo Estabilizador (stabilizing development) and the "Mexican Miracle" years of rapid economic growth.

In the context of “desarrollismo”, Ciudad Juárez remained a dark spot on the national conscience throughout the 1950s and 60s. Age-old problems regarding the city’s dependency on the American market for basic supplies, the physical and political distance from Mexico City, and the poor state of the built environment were intensified by the radical demographic shifts brought about

by its position as a springboard for migration to the United States. In only a decade, Ciudad Juárez doubled its population, jumping from around 130,000 people in 1950 to close to 280,000 in 1960. The challenges posed by the city's growth rates were heightened by the cancellation of the Bracero Program, after which over 2 million temporary laborers were deported back to Mexico in 1964, creating a further strain on demands for housing, services and employment. This situation was considered unsustainable, at a time when the country was contemplating an Olympic bid, and the border cities were expected to perform as entry gates for many visitors. The Pronaf would thus tackle the supposedly innate problems of Juárez, such as commercial imbalances that forced local consumers to do their shopping in El Paso, the seediness brought about by the "vice tourism" that flourished during Prohibition and WW2, and help build an image of Mexico that was ready for consumption.

The Pronaf channeled its sociopolitical and economic concerns through a peculiar formula that combined politics, architecture and consumer culture, changing the typical developmentalist maxim of economic reactivation and industrialization through import substitution by adding elements of cultural commodification and urban beautification as development strategies. The peculiarities of the program were a result of the professional and personal histories of the two leading figures behind it: Antonio J. Bermúdez and Mario Pani Darqui. Bermúdez and Pani managed to compress the spirit of the times and a complex political and development system into a single, coherent, integral urban development plan.

Before Antonio J. Bermúdez was named director of the Pronaf by President Adolfo López Mateos, he had been a notable local businessman, mayor of Ciudad Juárez, and director of Pemex, Mexico's national oil monopoly. As head of the Juárez Chamber of Commerce, in 1929, Bermúdez championed the creation of mixed public-private initiatives and "nationalist consumer campaigns" to promote import substitution, decades before it became the backbone of Federal economic policies. As mayor of Juárez, he reinforced a series of urban "clean-ups", targeting the brothels and the seedy bars built during Prohibition and WW2, when alcohol-thirsty Americans and soldiers stationed in Texas flocked to Juárez for their respective doses of unwholesome entertainment. Bermúdez was even a pioneer of the tourist industry during his Pemex years, developing a series of promotional campaigns and publishing a number of maps and tour guides in English with the purpose of enticing Americans to drive down Mexico way and fill their tanks with Pemex gas. The Pronaf was basically a replication of these strategies, albeit on a much larger and more spectacular scale.

While the political bent of the Pronaf can be traced to Bermúdez, the roots of the program's architecture are found in the work and biography of its "Architecture in Chief", Mario Pani Darqui. Pani's design trajectory reflects the mutation of post-revolutionary modernist architecture into an officialist, neutered architecture that prefigured the retreat of the Constructor State in favor of the commercial and consumer appetites promoted by a new breed of corporate interests, or "revolutionary capitalists". The term was actually coined by Pani's uncle, Alberto J. Pani, who perfectly embodied the confusion between public

duty and private interest. (He also gave his nephew his first major commissions and introduced him to him to the many influential acquaintances he made over the years in numerous high-ranking public office positions, including architects like Carlos Obregón Santacilia and politicians like President Miguel Alemán.)

For the Pronaf, Pani developed a series of urban plans along with students of the Urban Planning Workshop at the National Autonomous University and also contributed a series of preliminary, speculative project sketches to the program's promotional leaflets and brochures. As one of the earliest modernist urban planning ventures in Mexico, and possibly the first one that equaled improvement with beautification and was almost exclusively concerned with the "image" of the city, the Pronaf intended to bring officialist modernist architecture to the border, as tangible proof of national integration and of the reach of State power. Bermúdez wanted to "turn the border into a grand commercial, recreational and cultural avenue; and an immense showcase" in order to flaunt the values and achievements of Mexico under the PRI, a demonstration of soft power that would rely on the "coordination of every single aspect of daily life" in Juárez and the other border cities where it operated.[i]

The program was divided in two phases: the first one comprised land acquisitions, refurbishing border entry gates --the “Doors to Mexico”, modern gateways, which included border checkpoints and customs offices, as well as business, retail, tourist, and cultural facilities--, creating incentives for private investment, and promoting Ciudad Juárez through a series of urban marketing campaigns. In the longer term, the Pronaf would construct American-style malls (the first ever to be built in the country) and industrial parks, all to be administered by the government. The idea was to create a modern architectural showcase, a neutral, International-style container for the “authentic” objects and atmospheres of choice to be displayed as reflections of the new, modern Mexico. It was a monumental yet inviting architecture, a politically correct and contained patriotic affirmation. More than a quest for Modern Mexican Architecture, the Pronaf was eager to accomplish a polished “Mexican Look”.[ii]

Pani’s early sketches for the Pronaf were charged with the “aggressive optimism” of mid-century American modernism.[iii] Combining the retail urbanism of Victor Gruen with more classical CIAM planning prescriptions, they resemble storyboards for a low-budget sci-fi movie: super-slim skyscrapers and concrete archways, shell-shaped amphitheaters, glass curtains, plain Miesian blocks, floating staircases, office complexes and recreational facilities. Adjusted to middle-class aspirations and morality, they are perfect examples of the watered-down designs Pani produced through the 1960s, when he abandoned the high-density social housing schemes and large-scale public projects of his earlier years for yatch clubs and airports in Acapulco and suburban developments in Ciudad Satélite: projects celebrating wholesome recreation, technified comfort, and contained sociability. In the same spirit, Pani's scheme for the Pronaf points to a programmatic break within modernist architecture in Mexico: a time when architects and planners, backed by the State, abandoned the fundamental social compromises of past decades--building schools, hospitals, and social housing--to embrace the potential of urban regeneration, commercial developments and tourist infrastructures. Only the celebratory gestures and the

political intentions of the projects remained: Mexican modernism reduced to malls and monuments.

Only five years after it was launched, the Pronaf was permanently stalled due to numerous problems including financial shortcomings, presidential elections, and attentions focused on the capital for the 1968 Olympics. Bermúdez resigned bitterly in 1965, cutting short the great ambitions for the program. A minor version of the Pronaf was actually built in Ciudad Juárez, featuring a Convention Center, the Museum of Art and History by Pedro Ramírez Vázquez, a couple of statues, a hotel and a retail complex with a supermarket, a handicrafts center by Enrique del Moral and a handful of small souvenir shops.

The Pronaf fell short of its grand ambitions, but the main legacy of the program is logistical, not built. The Pronaf set the pace for public-private real estate ventures and contemporary boosterism, and shifted the concerns of authorities and planners away from the problems of the city to the problem of the image of the city. It pushed forward a new era of urban development dominated by private interests, land speculation, and social exploitation. Actually, the Pronaf contained the seed of what was to become contemporary Juárez's hallmark: the "maquiladora" or cross-border industry.

The same year that Antonio Bermúdez resigned, unemployment figures in Ciudad Juárez rose to somewhere between 50 and 70% due to the repatriation of the braceros (temporary workers in the United.States). The government hastily came up with an emergency plan that took up the task of building factories along the border where the Pronaf had left off, with one key difference: The Border Industrialization Program (PIF, for "Programa de Industrialización Fronteriza") dropped the idea of a government-led industry providing for local markets, and opted for private industrial parks with foreign-owned factories that catered to the U.S. market. The first maquiladora industrial park in the country was established in Ciudad Juárez in 1967, on the very same lots that had been urbanized by the Pronaf a few years earlier. But the coincidences don't stop there: the mastermind behind the whole maquiladora program was in fact Mr. Bermudez's nephew, Jaime Bermúdez, who later also became mayor of Juárez and had been employed by his uncle as a consultant for the Pronaf.

By the time Jaime Bermúdez was elected mayor of Juárez in 1986, a total of 1,238 hectares of public property that originally belonged to Pronaf had been transferred to private interests, mostly through uncharted or dubious transactions. The Pronaf Zone was also wrapped in shady property disputes. In the early 1990s, a new set of affluent tenants started occupying the area, which came to be known as the "strike zone" because the strip refurbished with bars, restaurants and clubs was also a chronic crime scene, a local favorite for brawls between drug cartels and executions in broad daylight. Bermúdez continued to build industrial parks in other parts of Chihuahua, and used his influence to occupy and privatize communal lands on the outskirts of the city. His "New Juárez" proved disastrous in areas like the Lote Bravo or the Rancho Anpra, where he promoted informal occupations of private property hoping to develop the lands, leaving them as slums instead. Both of these sites were two of the

main areas of the city where dozens out of the hundreds of corpses of murdered women were found throughout the 1990s.

Regardless of its importance as a cultural or economic policy, or of the formal value of its architectural production, the Pronaf is most relevant as a discarded product of official culture--which Roger Bartra describes as a "culture emanating from the habits and values that mark the behavior of the Mexican political and bureaucratic class" and reflects the "close relationship between the folklore of the government office and the shape of the official reconstruction of Mexican culture."[iv] Taken as a significant remnant, the Pronaf becomes fundamental in understanding the particularities of Ciudad Juárez's spurious urbanism. Thus, it can be used as proof against the distorting rhetoric of beautification and urban improvement, but also as an antidote to the excuse of the urban accident.

The "failed" utopias that make up Ciudad Juárez's planning history are in fact a consistent set of development strategies concentrated on different stages of social, economic, and environmental exploitation. In an extreme social, cultural and urban context such as this, architectural preservation--of buildings, but also of archives, commissions, discarded sketches, abandoned plans, as well as other minutiae and ephemeral documentation-- becomes an indispensable tool for historic disclosure. As Kevin Lynch noted, "wastes are full of information."[v] Among the spoils of Ciudad Juárez's urban history lies the evidence of an alarmingly consistent and opaque policy implementation.

Illustrations

Figure 1. Zona Pronaf, Ciudad Juárez, ca. 1971. Author unknown.

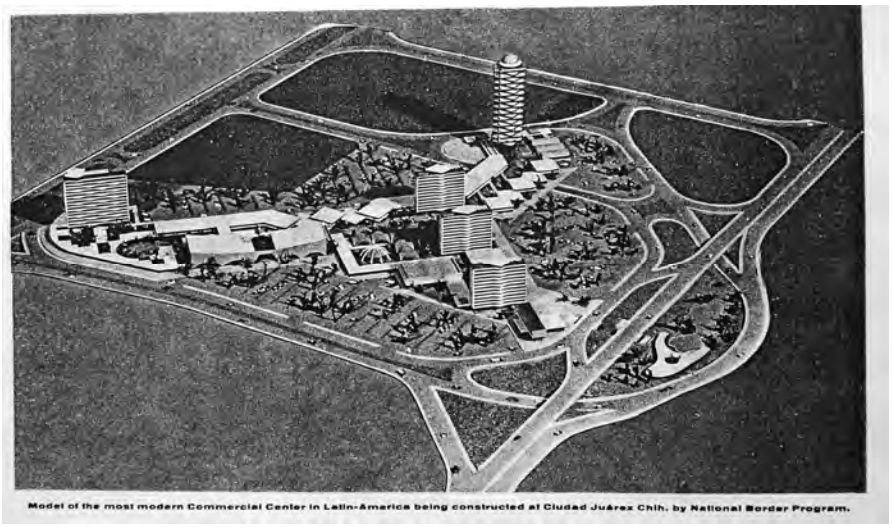

Figure 2. Model of the Pronaf Mall in Ciudad Juárez. Pronaf, 1961.

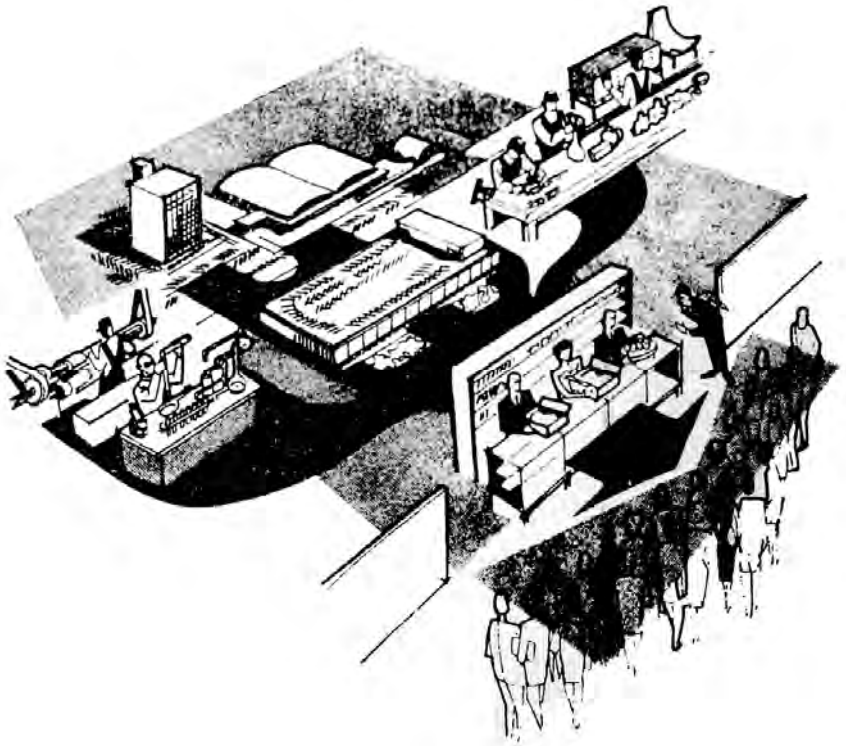

Figure 3. Rescuing the Border Market (diagram), Pronaf, 1961.

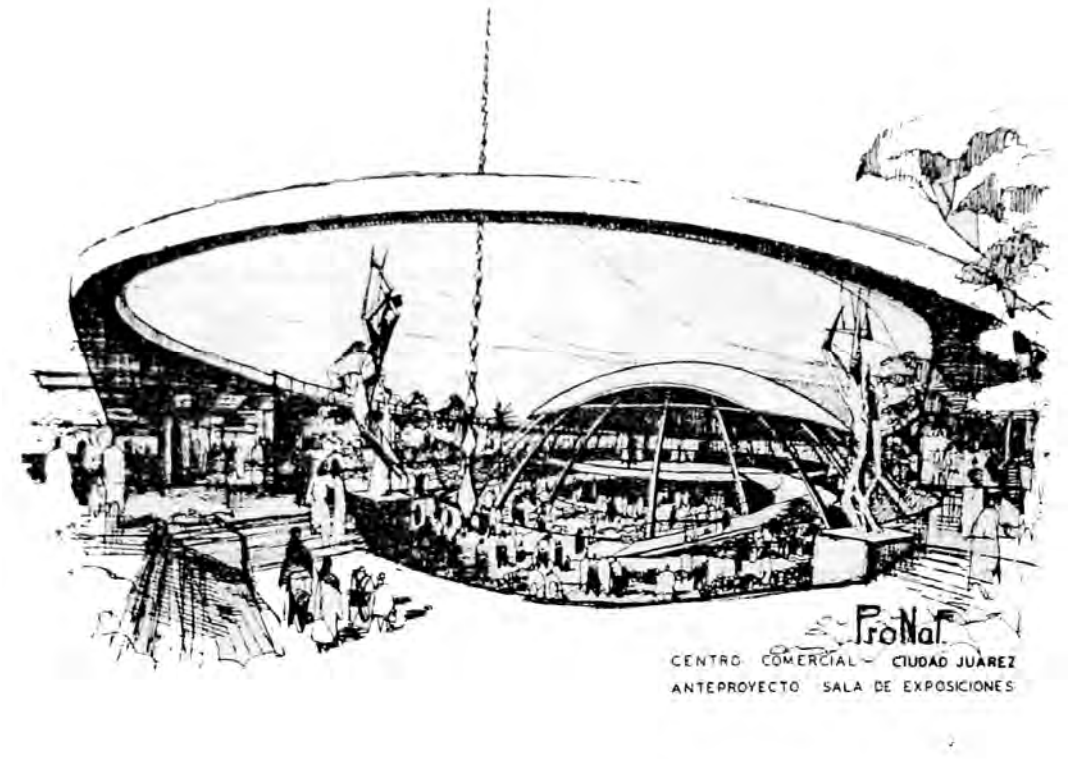

Figure 4. Pronaf Exhibition Hall, preliminary sketch by Mario Pani, 1961.

Notes

[i] Bermúdez, A.J., 1966, *El rescate del mercado fronterizo*, Eufesa, Mexico, p. 87.
[ii] "The Mexican Look," *New York Times*, March 1, 1964.
[iii] Colomina, B., 2007, *Domesticity at War*, Barcelona, Actar, p. 2.
[iv] Bartra, R., 1993, *Oficio mexicano*, Grijalbo, Mexico, p. 31.
[v] Lynch, K., 1991, Wasting Away, Random, New York.

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TEL AVIV AND JERUSALEM:
TWO OPPOSING HISTORIES OF URBAN MODERNITY

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Since the 19th century, Tel Aviv-Jaffa and Jerusalem, Israel's two major cities, have undergone parallel processes of modernization influenced by the industrial revolution under the Ottoman Empire, colonial development during the British Mandate (1917-1948), and political changes in the State of Israel.[1] Yet, Tel Aviv and Jerusalem are profoundly, almost antithetically, different, with opposing stances toward modernity.[2] Their modern urban and architectural history represents two different scenarios of modernization.

Parallel Histories of Tel Aviv and Jerusalem

The modernization of both cities began in the 19th century, with the transformation of the Ottoman Empire under the impact of the industrial revolution. Civic clock towers - those Ottoman symbols of modernity - were set up in both cities ca. 1901, symbolizing the new spirit of change. Expansion beyond the ancient, intra-mural core, a major development common in other Ottoman towns after ca. 1860, occurred in Jaffa as well as in Jerusalem. Spacious mansions in new neighborhoods, built by an emerging Palestinian bourgeoisie, appeared outside the ancient walls. The poorer, indigenous Jewish communities overcrowding within the old city also ventured outside it and constructed housing compounds. The city of Tel Aviv, founded north of Jaffa in 1909, began similarly as an extra-mural Jewish settlement. European entrepreneurs, missionaries and settlers were attracted to Jerusalem, and (to a lesser extent) to Jaffa.
British rule in Mandatory Palestine had both modernizing and preservationist aspects. Palestine became a modern state, with internationally recognized borders and a capital (Jerusalem), as well as the administrative apparatus of a modern government. Under modern administration, modern planning concepts and systematic urban planning were introduced. All this modern machinery was created within the context of colonial trusteeship, geared towards regulating change, not initiating it. Nevertheless, in the 1920s business centres emerged in both cities: Jaffa Road in Jerusalem, Jerusalem Avenue in Jaffa. Electricity was installed and official administrative buildings constructed.

The Mandate Government was committed to one 'interventionist' project: establishing a 'Jewish National Home' in Palestine. Inspired by the Zionist vision of a Jewish national revival, Jewish immigration had begun in 1882. The events leading to World War II brought new immigrants from Europe in the late 1920 and the early '30s. They settled

mainly in the three major cities, Tel Aviv, Jerusalem and Haifa, in new 'Garden City' neighbourhoods designed primarily by Richard Kauffmann.[3] Patrick Geddes, British pioneer of modern town planning, also had a hand in planning both cities.[4] His superb Tel Aviv plan of 1925 provided the structure for the city's meteoric growth for more than a decade, during which its exclusively modernist Jewish construction produced a uniquely homogeneous urban environment - the 'White City' (Fig. 1),[5] recognized in 2003 as a UNESCO World Heritage Site. Its much smaller Jerusalem counterpart is no less striking example of Jewish modernism.
The war that followed Britain's withdrawal from Palestine in 1948 ended with the establishment of the State of Israel. Jerusalem was divided into an Israeli city and an Arab one under Jordanian control, which contained the old intra-mural city. Jaffa, largely ruined and depopulated, was subjected to a municipality now named Tel Aviv-Jaffa. The building-types and forms of post-independence Israeli architecture and urbanism - housing projects, public buildings, neo-brutalist exposed-concrete architecture - left their mark on both Tel Aviv and Jerusalem.[6] Post-modernism, and Israeli control of Old Jerusalem which began after the Six-Day War of 1967, revived interest in architectural conservation, first regarding Jerusalem's historic areas and later regarding the modernist fabric. Recent years have brought major commercial development - high-rise office and residences - to both cities.

Tel Aviv versus Jerusalem

Though similar forces and parallel developments existed in both cities, Tel Aviv and Jerusalem have distinctly different characters due largely to the differences in their geographic positions and histories. Despite its long and ancient history, by 1800 Jaffa was a small, insignificant town on the Mediterranean coast. When circumstances changed in the 19th century, Jaffa became the major maritime gateway to Palestine, a position it held till 1930 when a modern new harbour was constructed in Haifa. Jerusalem, located in the mountainous inland on the desert's edge, has always been difficult to access. Conservative Jerusalem was never able to develop extensive industry, commerce, or even agriculture, while Jaffa and Tel Aviv did all of these. However, Jerusalem's long and continuous history as a holy city, combined with the 'preservationist' preferences of colonial trusteeship, made her the obvious choice as Palestine's capital during the British Mandate. Thus the dichotomy between a traditional, 'noble' Jerusalem, and a dynamic, 'frivolous' Tel Aviv was born.[7] Similar such pairs could be pointed out, e.g. Rabat vs. Casablanca or New Delhi vs. Mumbai, or, in the non-colonial context, Edinburgh vs. Glasgow and Moscow vs. St. Petersburg.[8]

We could plot the histories of the two cities on the axis of modernity as two ethical poles, representing them as a dialectical process, the interaction between 'modernity' and 'tradition', each city achieving its own balance between the two. 'Modernity' would represent the Enlightenment, universalism, and rationalism; 'Tradition' - cultural relativism, regionalism, and passion. The modernity-tradition dichotomy was compounded in Palestine by an array of other oppositions – West-East, religious-secular, Jewish-Arab, cultural differences, class tensions.

During the Mandate, Zionism often presented itself as promoting modernity, which it considered its entry ticket to 'underdeveloped' Palestine.[9] This may have been a means to sublimate the conflict with Palestinian Arabs that the Zionist enterprise inevitably provoked, defining it as a dilemma of modernity. More intricately, the stance towards modernity taken by the various protagonists in the Israeli scene affects their attitude towards the national conflict to this day.

Zionism, a forceful modernizing movement, recast Judaism as a national identity rather than a mere religious denomination. This meant relying on modern or Enlightenment ideas on how to order social and political life. Disagreement with the more orthodox Jewish communities, inside and out of Palestine, was inevitable. The Old Yishuv (pre-State Jewish settlement), including the Jewish Quarter in intra-mural Jerusalem, was largely hostile to Zionism. The Orthodox community, expanded further through immigration, today comprises a large portion of Jerusalem's population, though it is little represented in Tel Aviv. The most poignant current expression of the Tel Aviv/Jerusalem dichotomy is, perhaps, the contrast between the exceedingly religious character of Jerusalem and the tolerant, even libertine, atmosphere of Tel Aviv.

Modernity, we suggest, is fundamentally an ethical stance with political, national, social and religious implications, but ultimately it also finds a spatial expression. The urban scene is a document that records society's response to modernity's challenge. The stance of the various parties towards modernity is, in a sense, the 'knowledge' encoded in urban landscapes. Let us now interpret this code from the different urban fabrics of Tel Aviv and Jerusalem.

Tel Aviv vs. Jerusalem: Reading the cityscapes
(a) Urban pattern

Both Tel Aviv and Jerusalem may claim to be international, multicultural cities, but they do so quite differently. Tel Aviv is a crucible of diverse ingredients that interact; Jerusalem is a mosaic, each of whose elements jealously guards its distinctiveness. This is reflected in the cities' layouts. Greater Tel Aviv is relatively homogeneous: the fabric surrounding the modernist, 1930's core is basically an update of the older order, serving similar values. Like any city, she contains sections with different characters, but these cannot be compared to Jerusalem's compartmentalized layout. 'A city of compounds (neighbourhoods)', Jerusalem is sometime dubbed in Hebrew.[10]

Admittedly, Jerusalem's hilly topography must have encouraged this fragmentation, but there is likely a more fundamental cause: modern, contemporary Jerusalem echoes the compartmentalized structure of the old intra-mural city, with its strict division into Muslim, Christian, Armenian and Jewish quarters. As the city expanded outside the walls in the 19th century, this 'quartered' pattern was reproduced. The city developed segment by segment, producing self-contained units, housing different, sometimes antagonistic, communities. The divide between the Jewish section and the Arab one is the most prominent in the city, but even the Jewish section is not homogeneous. For security the 19th-century Jewish settlements outside the walls were designed as closed

compounds; many of them remain 'segregated' still. Compounds like Me'a She'arim developed into ultra-Orthodox religious precincts. New religious neighbourhoods that have sprung up since reflect a variety of religious life-styles and affiliations. Some of them deny the authority of the State and shun modern, secular culture and its paraphernalia. The presence of these neighbourhoods seriously impacts the city's functioning since their populations vie with secular residents for control of the urban space.

After 1967, Israel's policy to ensure control over all of re-unified Jerusalem led to the construction of many suburban neighbourhoods around the city. Inserted between Arab areas, these amplified the segmented nature of Jerusalem. And finally, Israel responded to the Palestinian intifada of 2000-2006 with the construction of a defense wall around the West Bank, which cuts through the Eastern part of Jerusalem.

(b) Architecture

During the British Mandate, Jerusalem passed a bylaw that required stone facing on the exterior of every new building. Paradoxically, even new modernist buildings of the 1930s were often faced with stone. In Tel Aviv, where no such law existed, buildings were plastered in keeping with modernist taste. The contrast between Jerusalem's traditionalism and Tel Aviv's modernism was thus inscribed, literally, onto the cities' architecture, and maintained during the following decades.
British consideration of Jerusalem's genius loci, well evident in Mandatory buildings like the High Commissioner's Residence and Palestine Archaeological Museum, is echoed by some Israeli architecture in Jerusalem, in a variety of aesthetic modes. The Israel Museum by Al Mansfeld and Dora Gad, 1959-1965, evokes the silhouette of an Arab village; the more recent Supreme Court (Ram & Ada Karmi, 1986-92) refers to the historic city in a technique reminiscent of Peter Eisenman's 'artificial archaeology'. The post-1967 satellite neighbourhoods refer to the historic townscape through numerous formal devices.

Architects in Tel Aviv, on the other hand, always felt free to follow contemporary trends, resulting in some fine, monumental structures such as the Tel Aviv Museum, but also in bland commercial, international architecture: residential and office towers throughout the city.

These aesthetic choices often implied an ethical stance. British regionalism was grounded in paternalistic, colonialist concepts.[11] The zealous modernism of Tel Aviv architects in the '30s expressed the modernizing mission of the Zionist Movement. A group of Jewish architects working during the same period in Jerusalem (Erich Mendelsohn, Leopold Krakauer, and Richard Kauffmann), though committed to modernist architecture, purveyed a softer, regionalist look. In Mendelsohn's case, this 'situated' modernism contained an inherent criticism of political Zionism.[12]
Finally, it is interesting to note how each city has responded to architecture contradictory to its ethos. Today Jerusalem boasts a suspended bridge designed by Santiago Calatrava for a new tramway (Fig. 2). The tram itself reverses British

regionalist policy: Ronald Storrs, Governor of Jerusalem from 1918-1926, held in his time that a tram would violate the nature of Jerusalem and declared that such a thing would only 'run over his dead body'. Now the tram's foreign-looking bridge greets traffic entering the city. While some residents are pained by it, others look at it as a refreshing 'secular symbol'[13] against its backdrop of old stone facades.

In the centre of Jerusalem, on the grounds of an old Muslim cemetery, a proposed ultra-modern Museum of Tolerance by Frank Gehry became a Supreme Court case when Muslim leaders objected to its construction.[14] If the building is eventually erected, it will be a rare example of blissfully unrestrained modern architecture in the Holy City. However, the controversy over the site of the cemetery gives a somewhat comic air to the museum's so-called 'celebration of tolerance'.

The protests against a synagogue donated to Tel Aviv University are, perhaps, a mirror image of the above episodes in Jerusalem. In the centre of a Tel Aviv university the synagogue was perceived by some as a religious effigy in the temple of secular scholarship, despite the building's enlightened goal: its commitment "to mutual understanding."[15] Commissioned from Mario Botta and completed in 1998,[16] the Cymbalista Synagogue features two identical halls, one for Orthodox prayer, the other a general meeting hall, a sort of 'secular synagogue'. Whether this design helps bring hearts together, or rather highlights the rift between two camps, is open to interpretation.

(c) Conservation

Jerusalem and Tel Aviv both present great challenges of conservation. The major question in Jerusalem is how to care for the old intra-mural city, with its historic heritage and holy places; in Tel Aviv, it is how to preserve the modernist architecture and layout of the 'White City'. Both are UNESCO 'World Heritage Sites'. In Jerusalem, preservationist issues constantly come up against the charged religious and political associations possessed by every relic of the past; in Tel Aviv, intense commercial development poses the chief challenge.

It is important to distinguish between two kinds of conservation (or restoration). The 'modernist' or 'scientific' one aims to preserve a scientifically-constructed historic memory and authentic architectural value within the grand narrative of architectural history, and is often initiated or regulated by the authorities so that it conforms to its 'scientific' content. Another type of conservation may be termed anti-modernist or 'vernacular'. Its chief goal is to adapt a site to the practice of ritual, a function which takes precedence over historic authenticity. Such renovated holy sites have proliferated in recent years, especially in the country's northern and southern peripheries. In Jerusalem, the unique Western Wall prayer area may be included in this category.
Another example of such 'ritualistic' restoration is the recent rebuilding of the Hurva Synagogue of Jerusalem's Jewish Quarter, destroyed in the 1948 war (Fig. 3). The idea came up after 1967 when Israel regained control of the Quarter and was promoted by the mayor, Teddy Kollek. Louis Kahn was commissioned with its design and prepared

three daring, innovative, and totally undiplomatic proposals for a wholly new building in 1969-74. They were rejected, and instead a single arch was restored as a symbolic evocation of the ruined building.[17] The restored arch became an icon of the Old Quarter. However, neither Kahn's intellectual conceptualization of ritual nor the subtle historical reference of the arch retained any appeal. In 2002 the government approved the rebuilding of the synagogue in its original form as an active place of worship. It was faithfully recast in reinforced concrete, and stone facing, replicating the original exterior, is now being laid.

Secular, enlightened Tel Aviv would seem immune to such phenomena. One might, however, suggest that she now has her own 'holy site': the memorial to Prime Minister Rabin, assassinated in 1995.[18] Fifteen years after the event, people still lay flowers there, and it is the venue of an annual demonstration in Rabin's memory.
Beside pure architectural conservation, both cities have dealt with the restoration of urban fabric ruined by war. The Palestinian houses deserted on the hill of Jaffa, rehabilitated as a popular artists' quarter and touristic attraction, and the rebuilding of the Jewish Quarter in intra-mural Jerusalem after 1967 are the most prominent examples.

Conclusion

When one enters Jerusalem today, the huge cube of the Hassidic Belz synagogue dedicated in 2000 looms on the skyline north of the highway. It paraphrases the design of the community's synagogue in the Ukraine lost in World War II. The new building conducts an ambiguous dialogue with the Jerusalem landscape, perhaps as ambiguous as the group's attitude to the Zionist state. While it unmistakably announces the Belzer presence in Jerusalem, it speaks of the distant world of the Diaspora.[19] The building is a striking comment on modernity, a kind of 'anti-modern modernity': While ultra-Orthodox communities shun the paraphernalia of modern secular life, they find their own way to respond to change.

Meanwhile the White City of Tel Aviv has become an internationally-celebrated icon of modernity. Its precocious, sweeping adoption of modernist architecture in the 1930s has come to stand for the pioneering spirit of the city's builders, and Tel Aviv has been promoting her image of modernity ever since. A wall of skyscrapers has been going up recently along the ravine of the Ayalon River: Tel Aviv is growing a high-rise business district as impressive as any large city's. Yet with all her ethos of modernity, Tel Aviv never again generated anything as unique and fresh as the modernism of the 1930s. Now in 2010, a hundred years since the founding of Tel Aviv, the White City has become a *Città vecchia*, a monument in need of protection.

Illustrations

Fig. 1
Tel Aviv, aerial view with Dizengoff Circle, 1945

Fig. 2
Bridge for tramway, Jerusalem, Santiago Calatrava, 2008

Fig. 3
Hurva Synagogue, Jewish Quarter, Old City, Jerusalem. Built 1864, destroyed 1948.
Views: Louis Kahn's proposal for rebuilding, ca 1968; a single arch restored 1976; reconstruction works, 2008

Notes

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TECHNOLOGY FOR A MODERN HABITAT
Conservation Issues for a Modern Habitat

Since the early 1990s practitioners have struggled with a number of technical, physical and philosophical conservation issues specific to buildings of the Modern Movement. The search for new architectural typologies to meet the demands of social reform resulted in large-scale building complexes, many of which are undergoing major repair and adaptation. Economic construction that utilized industrialized process and materials have left a legacy of concrete buildings that has created challenges for those involved in their conservation.

This session begins with an examination of the challenges relating to conserving the surface appearance of MoMo buildings and then examines case studies involving conserving large-scale housing complexes. The session starts and concludes with papers that question the approach to these dilemmas.

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TOWARDS THE TECHNO-AESTHETICS OF WEATHERING IN THE MODERN MOVEMENT

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"Finishing ends construction, weathering construct finishes."[1]

This statement challenges and invites analysis of the ideals of Modern Architecture in relation to the transformations experienced due to weathering. The paradigm of the 'white cube' represented as the iconic figure of the Modern Movement (MoMo) does not remain immaculate forever. The effects of weathering have changed the external appearance of the buildings over time. But, what is (are) the attitude(s) towards the effects of weathering in the aesthetics of modernist buildings?

On the one hand, we find in the modern Conservation Theories the concept of 'age value' as defined by Alois Riegl at the turn of the 20th century in *Modern Cult of Monuments: Its Character and his Origin* as an important aspect in the understanding of historic buildings. In other architectural periods, the 'ageing' gives the buildings a romantic look deemed as appealing; however in the case of the Modern building, it is usually interpreted as decadent. It is perhaps for that reason that it seems generally accepted to restore those modern buildings to their original external look, whenever the opportunity presents itself. Such intervention in buildings' façades might find justification by preventing the progressive deterioration of the building and its final crumbling apart, which would obviously have a bearing on its 'use value' – term also designated by Riegl. However, it usually involves a severe compromise in terms of the visual quality of weathering, objectionable for reasons other than maintenance[2]. The key issue here would be how to reconcile the aesthetics of senescence with the low acceptance that aged modern buildings have among critics, conservationists and the general public.

On the other hand, it could be argued that the modernist architects disregarded weathering as a valuable attribute in the life of their buildings unlike other architects of earlier past times or even contemporaries. That hypothesis could be grounded in a rather simplistic interpretation of the aesthetics of the Machine Age, where only buildings which looked brand new could be appreciated, as just-finished objects produced in a factory would be. Taking this reflection into consideration we will encounter a clash within the conservation criteria between retaining the aged appearance of a building and conserving - re-establishing if necessary - the look of the building in accordance with the original intention of the architect. That direct confrontation of the two positions initially represented by Ruskin and Viollet-le-Duc could never find an absolute reconciliation in the History of Conservation.

Modern and aged looking: a dysfunctional marriage? Finding a place in 'conservationland'

"…it is in that golden stain of time, that we are to look for the real light, and colour, and preciousness of architecture."[3] *John Ruskin, 1880*

In contrasting position to Ruskin's inspirational words apropos of the aesthetics of conservation, Georg Dehio would declare early in the 20th century "to protect monuments does not mean to look for pleasure, but to practise piety"[4]. This statement, likely contentious within the conservation lobby, seems to be overlooked when the aged buildings in question are from the MoMo, then widely seen as filthy and decrepit. This judgement is perhaps grounded on the reading of modernist buildings as too recent in history, the temporal distance between the viewer and the modern building not great enough to qualify it as 'historical'.

The First Machine Age was generally associated with the denial of nature and the firm drive for technology to take over in an increasingly artificial everyday life. This was the time when Le Corbusier envisaged the house as "a machine to live in": buildings could be erected by assembling the prefabricated components as if they were products of a factory themselves. This revelation seemed to strive for an ephemeral architecture as part of the global emphasis on production - which implied constant change and transformation. The notions of life cycle and "the return of the matter to its own source"[5], an intrinsic characteristic to all objects (here including, ironically, objects found in nature), appear logical in the manufacturing discourse. The latter might suggest a radical shift in the traditional call for an enduring architecture expressed in John Ruskin's famous words "when we build, let us think we build for ever"[6]. Thus, one of the keys issues to discuss is the lifespan aspirations of the MoMo: was the modern building conceived to last, and – therefore - was the ageing of building taken into consideration during the design stage?

At this point, we could argue the conflict over the hierarchy of values analysed is abridged to the question of perception, as the values related to historic architecture are such insofar as they are re-interpretations of the subject. Since these interpretations might differ from viewer to viewer, both from current and future generations, then the strength of the Conservation dogma falls entirely on the topic of authenticity. The issue of authenticity - relevant to the MoMo - under examination in this paper takes into account two faces: one which deals with the authenticity of the historic materiality of the building; the other dealing with the authenticity to the original design conception.

There is no question of the significance - in terms of authenticity - of conserving the original fabric of the historic building, the "fossilised bearer of information"[7] as the physical representation of the architectural concept, the fabric for memory to take place in our consciousness. However, there is another line of thought which suggests that the general stress on the

authenticity of material appears to follow a different hierarchy of importance when dealing with Modern Architecture, that is: 1. authenticity of the concept, 2. the form; and only then 3. the authenticity of the material[8]. This new rather debatable assertion adds, once again, an extra unresolved contradiction to the Conservation criteria, more if we bear in mind that the original concept does not always present itself clear cut.

Perception of the original aesthetic intention in the MoMo: values and aspirations of the "white box"

Over the years, the MoMo's pioneering character has been the focus of much speculation with regard to its grand utopian aspirations. As the CIAM stated in its opening declaration, the new architecture had to aim for standardisation and mass production, marked by the aesthetic of the industrial epoch. It is extremely improbable the symptoms of senescence in the modern buildings were a determining factor in the conception of the early design. More likely, the abstract, spotless, pure, "objective architectural finish"[9] would depart from the traditional representation, thus revealing an ahistorical attitude and establishing a straight divergence with the ageing temporal reality. After all, the role of weathering might be understood as the imperfect symbol of the material presence of the building limited to a given context through time; weathering roots buildings, challenges the "white as the essence of emptiness and indefiniteness"[10] making manifest the failure of its eternal pure ideal.

Le Corbusier himself revealed the contradictions of the Movement's ambition with his words: "architecture is what produces a beautiful ruin"[11]; thus, entailing an understanding (although perhaps not aspiration) of the long-lasting presence of the built environment in one form or other. One could vaguely regard the Movement's purpose of breaking with tradition and urging social reform by means of an architecture of ephemeral existence. From this we could deduce the MoMo was intended to have some continuity into the future if it was to change an upcoming society, with the ultimate resulting exposition of architecture to transformation and deterioration.
If we consent to the argument of the potential longevity of the modern building, then the next question we confront is that of its transformation over time. That call for social reform through architecture could not possibly be achieved by an ideal of static architecture, which rejects the passing of time and aspires to freeze in a specific point in time. The rejection of the past as the basis for future change could not assume a rejection of its own transformation over time; that would have supposed its self-denial in the (ever since) fast-changing world. Even the "machine" (to live in or to be utilised in another way) suffers alteration and deterioration over time – both by human use and as a result of natural processes. In that line of thought there is a little chance for the modern building to be understood by its creator in a more depraved form; as at some point in its functional life the machine needs to be repaired and the broken pieces replaced, or thrown away altogether. The apparent conservation clash between ageing and the original intention might have found a degree of resolution here. Nevertheless, there are strong reasons to support the original materiality of the building[12] (even if somehow

distorted because of weathering) as the most authentic reading of the original intention since it is the actual physical evidence of that intention.

Conservation dilemma: from creation to perception, from production to consumption

Perhaps the desired compromise between these conservation positions lies in one of the most influential hypotheses on the topic of authenticity of aesthetics of the historic work of art: the Theory of Restoration. First published in 1963 by the Italian theorist Cesare Brandi, it underlined aesthetic values above all the rest when carrying out preventive restoration. Curiously enough the author's direct references to Modern Architecture suggested a denial of its right to call itself architecture[13]. Despite this derision, later analyses of his treatise became worthy guidelines to mediate between the crucial aspects of authenticity: that of the phenomenology of creation of the work of art by the author and its perception by a different viewer. He proposed a balance in the legibility of the building as a work of art. Therefore the effects of weathering should be considered valuable even if their visual appeal is disputable as long as it does not compromise the recognition of the Modern building by its own aesthetic qualities (Illustration 1). That taking into account "the materials and techniques applied to the architectural surfaces play their autonomous aesthetic role"[14]. The reading by the individual might change but the materiality of the aged fabric will contribute to the collective memory of the modern building.

As the conflict of values seems settled it is still worth pointing out the most destructive threat to the positive assessment of weathering in contemporary intervention: the formulation of the icon.

The shift in economic terms in the 20th century – always under the capitalist umbrella - from production to consumption might have changed the reception of the modern buildings, from new goods of a mass produced factory to obsolete entities in an ever growing global market[15]. The thinker Manfredo Tafuri highlighted the similitude between the principles of the economical domain and those of the Modern Architecture[16]. MoMo's ideology had been reduced to a mere instrument for the purposes dictated by the overruling capitalist system. Taking this as valid, then the arbitrary staining of the modernist façade can only be deemed as harmful to the assertive imagery the international economical structure was/is aiming for. The consequences of this insinuation might throw further controversy on the implications of conservation values in the capitalist system.

In that train of thought, the recent revival of Modern Architecture might be identified with the recycling process in the production cycle: from waste to 'new antique' by means of the appropriate facelift, a new icon is born. All modern imagery has a potential "Unique Selling Proposition"[17], with the "medium coming before substance"[18]. Even the ruin could become a selling product[19], only then is weathering allowed to express itself fully (Illustration 2). The aggressive alienating capitalism is ruthless to authenticity values. "The

dominance of reception over creation"[20] in these terms might never find a compromise even with best-intended conservation philosophy as moderator.

Some recent refurbishments to very renowned modernist 'jewels' have ambiguous acceptance in weathering terms. The Bauhaus School, icon by excellence of the MoMo, was overhauled between 1996 and 2006. Despite deep research carried out on the nature of the external materiality of the building[21], the result of the renovation could easily confuse the untrained observer about the original date of the building (Illustration 3). Another well-known modern building, The Van Nelle Factory, has been lately "successfully" converted into a "Design Factory"[22] (Illustration 4). This work has possibly suffered more from cost-effective pressures, and although the need for repair (on preventive grounds) might have justified the "new" look, one wonders if a more sensitive attitude towards weathering would have offered an alternative outcome.

Conclusion

The thin - sometimes blurred - line between the so-called 'age value' and the unattractive imperfection caused by weathering in the external envelope of buildings has always been intricate to trace. In the case of the Modern Architecture, a thoughtful understanding of the complex make-up of the movement can bring light to the future of the marks of the past, insofar as the viewer withstands the demands of the 'iconisation' drive imposed by the ruling economic system.

Illustrations

Illustration 1: De Bijerkorf Departement Store in Rotterdam by Marcel Breuer, 2008. Photo: Author ©.

Illustration 2: St. Peter's Seminary in Cardross, Scotland, showing its ruinous condition. Photo: Author ©.

Illustration 3: The Bauhaus building after recent renovation, 2008. Photo: Author ©.

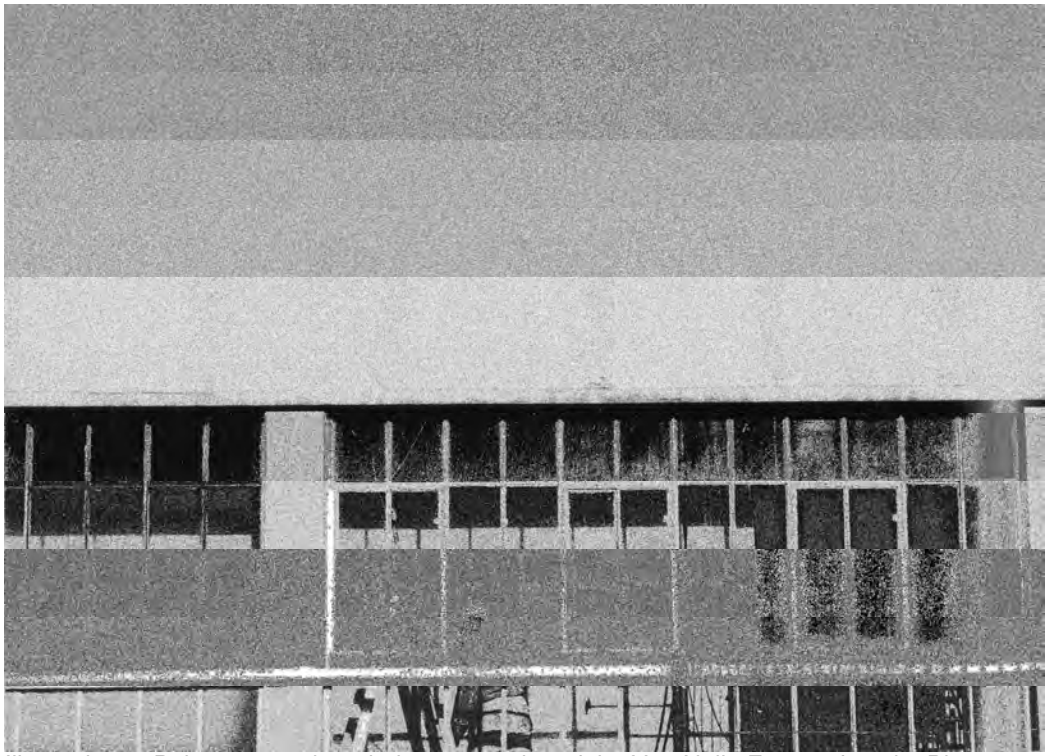

Illustration 4: Paint test patches during restoration of the Van Nelle Factory façade. Photo: Gude, E. (ed.), 2005, Van Nelle, Monument in Progress, 274.

NOTES

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CONCRETE AS ARCHITECTURAL LANGUAGE BY JOSEP LLUIS SERT: TECHNOLOGICAL VALUE, TYPICAL DAMAGE AND PRESERVATION CRITERIA

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Josep Lluis Sert (1901-1983) was born in Barcelona, Spain. As an architect, he always looked for a connection between will of expression and construction technique. Sert's architecture stemmed from rationalism, influenced by Le Corbusier - with whom he worked in Paris in 1929 - and the constructive realism from the Group of Catalan Architects and Technician for the Progress of Contemporary Architecture (GATCPAC) [0]. Based on GATCPAC's principles, the technique used in his first work reflections the will for social reform and the desire to incorporate progress in architecture, represented by the use of new materials, new construction methods, and the importance of industrialization to in the process and to achieve precision.

The continuity of the architectural aspects of Sert showed a permanency in the language of construction, giving identity to his work which adapts to time and place, integrating elements from the local culture [1]. The use of concrete in around 70% of his buildings as skin or structure, the play with light and shadow, and the repetition of simple shapes based on the harmony of their proportions (skylights, panels and windows) are the characteristics of his technical approach and to the composition of his buildings.

IN SEARCH OF A NEW ARCHITECTURAL LANGUAGE

During his exile in North America, Sert began to feel the need to enrich his vocabulary. The expressive possibilities that reinforced concrete, an eminent modern material, had to offer were extraordinary. From the 1960s onwards Sert carefully explored its potential in the majority of his buildings. Sert prioritized the use of concrete as a basic construction material for its dual quality - as the **resistant** skeleton (as the building structure) whilst at the same time being its **skin**.

The first building where he used concrete as a new element to express his architecture was the *Estudio Joan Miro, Palma de Mallorca* (1954). The most remarkable aspect of this building is the vaulted concrete roof, which provides its characteristic silhouette. These white vaults create a wave effect above the more regular structure of the building, providing additional light and ventilation, allowing the recreation of new geometric shapes which expressively resemble the artwork of Joan Miro. Sert combined the concrete vaults with more

traditional materials, using local stone in the retaining walls, and terracotta for the floor and wall surfaces. He combined design and practicality with tradition and modernity, thereby creating a new style which distanced itself from the rigid geometry of functionalism and took a very important step in applying the technology of concrete to the Mediterranean architecture.

In general, as Robert Campbell once said

> *Sert's achievement was to enrich the vocabulary of modernism by combining the formulas of CIAM with the visual delights of modern painting and with the timeless architectural elements of the vernacular peasant architecture of the Western Mediterranean.* [2]

In his design of the Office of N.E.G.E.A *(1959-61)*, Boston, Sert introduced an experimental exterior façade, modeled on the principles of the balloon frame, replacing the wooden elements with vertical pre-cast concrete mullions and adding translucent sandwich panels. The building is a five storey reinforced concrete structure. The mullions on the middle floors and the panels on the top floor were made with pre-cast concrete with exposed granite aggregate. The structural system consists of a double row of columns with girders cantilevered at each side and ribbed concrete slabs between the beams. The structure is clearly visible in the open space of the ground floor. Due to the fact he invented and tested everything before applying it in on almost all of his works, this building represents the maturation of his work, and is the reference point for all of his future projects. In this building Sert used the concrete as an element of the façade, attempted what could be considered as one of the first concrete curtain wall and thereby created a prototype.

The curtain wall consists of pre-cast concrete mullions with panels of diffusing or clear glass installed between them. Sert asserted:

> *It was only with the lightening of structures, with the introduction of steel and concrete skeletons that transformed the nature of walls from bearing walls to non-bearing partitions, curtain or screen walls, that the window could be radically transformed and its triple function re-examined.* [3]

The curtain wall does not act as a structure, rather it is the skin of the building. In addition it allows great flexibility in the interior space. The clear glass windows are in multiples of one, two, or three modules and form a free pattern over the exterior surfaces of the building, with at least one clear view window in each office. This module, repeated on the four façades, adapts to the orientation through various types of glass (translucent or transparent). This type of curtain wall provided the vocabulary of Sert with a new element: *"Walls can be translucent without being transparent, and translucent walls can be designed for varied intensities of light".* [4] An unmistakable trait of this interplay between solid and transparent through the concrete and glass can be seen in the night time silhouette of the building.

Another feature of these concrete mullions is that they act as fixed *brise-soleil*, providing shade. The interplay of light and shadow is a constant themes in Sert's architecture. The entrance acts not just as a door, rather an area of the building perfectly differentiated where the continuity of the curtain wall breaks.

To accentuate this entrance more, the solid wall of concrete is found set back from the façade plan and displays boarding patterns to create a visual rhythm.

Peabody Terrace, Boston (1962-64)
The architectural composition of this complex, an example of modernist urban planning, is defined by three residential towers (22 floors) connected by low-rise wings (3, 5 and 7 floors). This arrangement of stepped volumes and series of courtyards establishes a transition between the different scales of the buildings and the surrounding neighborhood.

Sert developed a basic unit three-stories high and three bays wide, which contains a central stairwell and two apartments per floor, with a total of six per building. By repeating this module, the number of spatial conditions were limited and construction was simplified as far as possible by standardizing formwork. The short 3.4 m wide span and the low 2.3 m high floor to ceiling permitted the use of a poured-in-place structure with a flat slab, minimizing the construction height needed. This innovative structure and design used a standard constructional unit for economic purposes. Sert notably simplified the structural creation of volumes, the planning rationale and reduced construction time - the entire 500 units were built within 18 months.

The reinforced slabs and walls define the basic grid structure. The pillars are 30 cm wide but vary in depth according to the loads. The shear walls were cast in situ and served as the finished partitions. Spaces between floor, "*columns and walls were filled with full-height cladding units consisting of pre-cast concrete panels* [5]*, a window, a solid ventilation panel, or a metal railing with movable vertical louvers or combinations".* [6] The towers were built using a mobile formwork, at a rate of one floor per week.

Creating a different architectural rhythm on each façade, the towers represent a chessboard dependant on the orientation and external view. The west and south elevations are architecturally more expressive and dominated by balconies with revolving sun shields of different lengths and various heights. In contrast, the east and north façades are comparatively flat, except for the exterior corridor. This is how Sert plays with massing and sculptural exterior.

Sert used the color [7] and texture of concrete to make some architectural elements stand out. The natural gray of the exposed concrete and green ventilators dominate the north and east elevations. In contrast, the white *brise-soleil* metal sunscreens, white balconies, red ventilators and maroon panels provide luminous touches and dynamism in the design of the west and south elevations. During construction, as a new accent of color, he dyed the pre-cast concrete panels maroon with a striped texture, thus differentiating the skin (panels) from the structure.
Peabody is one of the most important examples where Sert used modulation as his composition principle. Utilising repetition whilst creating variety and freedom, he used only 4 types of windows.

The construction system utilized in Sert's buildings in Harvard, NEGEA, Peabody Terrace, Holyoke Center (1960-65), Science Center (1969-72) and the

Martin Luther King School (1972) show the frequent use of standardized systems and the repetition of pre-fabricated concrete elements applied in situ to a structural framework of reinforced concrete, notably simplified. This illustrates Sert's and his team of engineers technological knowledge in the search for the expressive potential of concrete techniques in modern architecture, and his ability to interpret the demands for industrialized processes.

The MacKinnon Building (1967) in the University of Guelph, exemplifies much of Sert's formal concrete language developed at Harvard. This building, in a typical modernist approach, inverts the courtyard type to create a forward facing green space around which the building's circulation is organized. Formed by one central building of 8 floors and 2 wings of three floors that integrates with the smaller buildings of the surroundings. In the main building, following the classic rules, three elements are distinguished: the base (represented by large sheets of glass), the body (continues fenestration by pre-cast panels in a rectangular module based on the golden section) and top (a balcony with a concrete board pattern). This reinforced concrete structure has a balanced mix of cast-in-place and pre-cast finishing that cleverly shows the construction system and highlights the *brise-soleil* and framed skylights. In all the façades, the cast-in-place has a boarding pattern (diagonal, horizontal and vertical lines). In contrast, the panels have a rugged finish due to the stone aggregate. The combination of texture and visual properties from the panels and the smooth gray concrete in situ, are the only decorative features of this building.

The McLaughin Library (1968) is visually the heaviest building on campus with six floors and shares a common language in materiality, typology and modulation with the front building (McLaughin). In addition the gray color range harmonizes with the older stone buildings. It displays strong interaction between the smooth cast-in-place and the rough pre-cast panels, which creates easy reading. Moreover, the four corner towers are highly textured, poured-in-place using boarding patterns to create a visual rhythm. In the west and south façades the panels work as a *brise-soleil,* which enriches the volume and creates a play of light and shadow.

Fundació Miró, Barcelona (1972-74)

The style of this building is easily recognized and distinguished by a constructive homogeneity (the only material used is the unmistakably smooth white concrete), a variety of architectural spaces and its cubic volumes influenced by the Mediterranean architecture. These elements produce the rich expression of the complex.

The plan of the exhibition area follows a predetermined, one-way circulation. The path flows in a succession of three courtyards around which the whole composition revolves. From inside, its transparent walls reveal a rich sequence of views, the patio and the city, and juxtaposes art and nature. This transparency is achieved by reducing the height of the window sill (converting it into a small baseboard), increasing the dimensions of the glass windows while concealing the woodwork. One particular feature is the absence of window

frames; the plate glass was fixed directly to the concrete beams. This construction solution complicates the already difficult task of building the formwork, as the structural concrete not only has to meet the requirements derived from being exposed, but also has to express an architectural image. The highest expression of these requirements is found in the thin parapet walls of the terraces.

Sert also believed in "the need for changes in the character of buildings" emphasizing a more sculptural quality. This explains the variety of heights and volumetric play - a series of cubic volumes - which rise above the flat roof with white quarter-circular concrete vaults containing clerestory windows. The light is diffused as it bounces off the curved surfaces. Molding concrete*, in situ*, was the only constructive solution to obtain these vaults. This type of formwork was affected by problems of deformation due to drying shrinkage, temperature change, and a lack of thermal protection.

The structure of the building is of reinforced concrete. The non-bearing walls were made of two layers of brick and a layer of insulation. The interior was plastered with mortar and painted white, and the exterior was covered with pre-cast panels with an exposed aggregate surface. To avoid problems of differential deformation between the panels and the structure, it was decided to leave a perimeter gap between each piece. In addition, the exterior has another basic texture provided by the board-marked cast-in-place with white concrete. Sert again showed a freedom of expression by contrasting the smoothness of the white texture with the roughness of the panels.

The ceiling was formed by a narrow barrel-vault of concrete in situ. These concrete shells measure 50 cm in the thickest part and 5 cm in the narrowest part, they are 5 to 6 meters long and there is a distance of one meter between each vault axle. These vaults are arranged perpendicularly in the direction of the longitudinal path and are surrounded by perimeter beams of reinforced concrete. This ceiling was created by pouring two different colored concretes on prefabricated wooden moulds of great length for each one of the vaults. The flexibility and capability of concrete was systematically exploited by Sert in every situation.

TYPICAL DAMAGE AND PRESERVATION CRITERIA

Both Peabody Terrace, Boston and Fundació Miro, Barcelona have been found to be highly vulnerable to chemical attack and display corroded metallic elements.

The exposed white concrete at Fundació Miró started to deteriorate five years after its construction. The two phases of repair work undertaken (1st phase in 1987 and 2nd phase from 1994 to 1997) have already begun to crack, indicating the repair method selected was poor and the work was superficial and only carried out in specific areas. [8]

After detailed analysis and several pilot tests conducted between 2002 and 2004, it was found that the main damage was caused by cracks and peeling,

damp in lower parts, ageing of seals in concrete joints, breakage of prefabricated panels, and fungus and lichen stains. The most affected areas were the gutters, corners and the thinnest parapet walls. A detailed map was drawn up showing all of the cracks, horizontal, vertical and diagonal, stating thickness and whether or not they had been repaired in previous phases. [9]

Another problem found during the detailed analysis of Fundació Miró was: *"the white concrete of the walls was going to remain exposed and sand blasted to obtain a smooth surface with no formwork marks. Once most of the structure had been put into place, the work was put on hold for over a year due to financial constraints. This might be the reason why the treatment planned for the surface could no longer be applied, as the delay had caused an extraordinary hardening of the structure".* [10]

The delay in the work resulted in the concrete surface hardening as it cured and the process of carbonation commencing. The project report suggests that the cement content was low, affecting the quality of the concrete. It also suggests that rapid absorption of water from the mix by the wooden formwork may have affected the curing process. The reinforcement rods were also covered with insufficient depth of concrete and had been left exposed during the delay in construction. The steel therefore may have started to corrode before the work proceeded. This combination of issues led to the process of corrosion of the steel occurring early on, leading to the usual cycle of cracking, increased water ingress, further corrosion of the steel, spalling of the concrete and so on.

The chemical and structural study conducted in 2005 made it clear that currently there is no structural danger, but the many problems in the façade walls with cracks, surface exfoliation and spalling, affect the visual integrity of the Fundació Miró. It was, however, concluded that there is a danger that the spalling will continue, and above all, that there may be long-term deterioration due to the loss in thickness of the rebars caused by the water penetration continuing and ongoing rust, eventually compromising the structural integrity.

The third phase of restoration work was carried out between 2005 and 2008. The percentage represents the area that had repaired and the criteria, consisted of: (18%) repair surface and volume; (10%) replace certain elements such as the thinnest walls (according to the report: *"it is advisable to reconstruct with reinforced concrete with fibreglass"*, [11] and (55%) reconstruct the parapet walls with new rebars; protection through electrochemical treatment (realkalization) of the repaired areas and adding a final coat of paint to finish the entire concrete surface (walls and vaults).

The concrete surfaces were treated differently depending on the damage caused to the concrete. Areas with structural damage were repaired by removing all the layers until the rusty rebar was reached, and replacements were made where necessary. The concrete was peeled to a depth of 5 cm, and up to 12 cm in the corners. The depth of concrete cover to the rebars was checked, and where it was less than 25 mm, a new rebar was welded maintaining this distance from the exterior. All rust on the rebars was removed and a corrosion inhibitor was applied in order to improve the effectiveness of the

protection. The undamaged areas were cleaned, and all the walls were protected from water penetration with acrylic coating.

The restoration work on ***Peabody Terrace*** began in 1993 [12] and was carried out over the three following summers. The damage that the cast–in-place concrete walls showed was typical of post-World War II buildings and posed a serious restoration challenge. Extensive spalling of the poured-in-place concrete resulted from corrosion of the rebar and insufficient concrete cover. Prior to this restoration, some concrete patching work had been carried out randomly and due to leaks, all the panels had to be recaulked. [13] In 1993 the restoration work included careful analysis of - the existing concrete to find the best visual match possible, because it had previously been patched with a harder and whiter concrete than the original. The faulty areas were cut out and in some cases extended to visibly form joints, minimizing the patchy look. It was decided "*to use sand from the original pit, with no coloring agents. The original texture was effectively duplicated by embedding soluble gelatine pellets in the new surface".* [14] The spalling found in the concrete in situ was the result of the original design and of the construction faults. John Morris said: "*In the early 1960s there was apparently too much confidence and not enough experience in casting".* [14] The original pre-cast panels, on the other hand, remain in better condition than the concrete in situ due to much higher quality control from being a manufactured piece.

During 2007 and 2008 I visited Peabody Terrace on many occasions to view the state of damage and maintenance. At a simple glance, previous patching could be seen in some prefabricated panels of the towers. In addition, there was a lot of deterioration in the color of the panels dyed maroon and, most of the balconies were peeling, suffering from damp and the rebars were rusting. In 2009 restoration work was carried out on the balconies.

Conclusions:

Upon anaylzing Sert's work it is clear to see, even from his early work, his will for innovation in the construction process. One of Sert's main attributes was his desire to incorporate innovative techniques to be at the forefront of his time which he employed in different contexts (Spain, the USA and Canada).

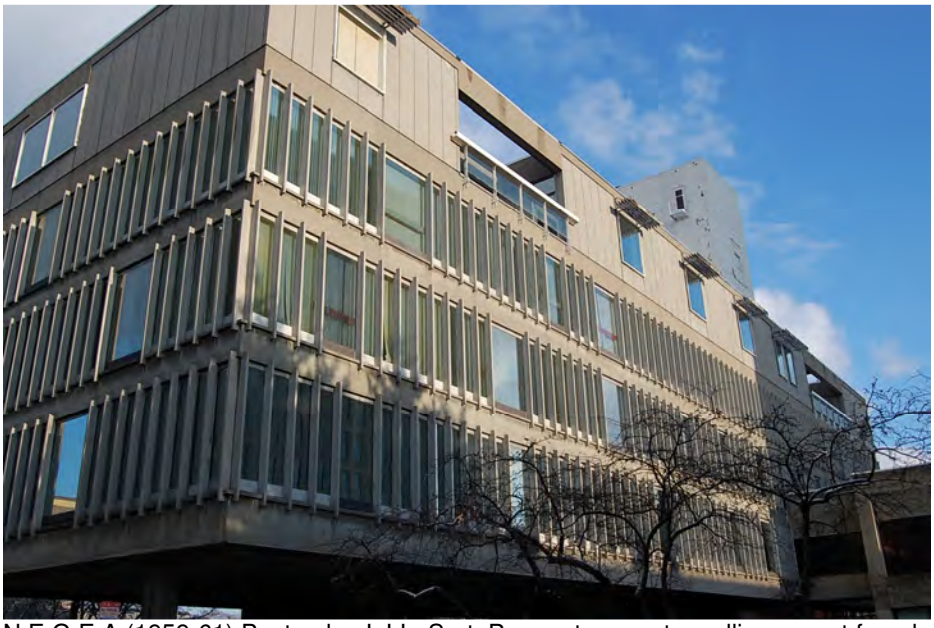
Sert's buildings from the sixties and seventies are a sophisticated and mature example of concrete architecture and highlights of his career. His work in the USA and Canada shows a clear ideology of construction, in which the technique is clearly established and the levels of demand and quality are high. In the N.E.G.E.A building he constructively optimizes the façade-structure connection and subsequent work - Peabody Terrace and Guelph University (McLaughin Library and MacKinnon Building) are examples of how the new technique using concrete became independent from construction elements. This is an important evolution in which prefabricated concrete panels, playing with different textures, colors, finishes and sizes, create maximum expression in the architectural and constructive language of Sert.

Another example of his innovation is the Fundació Miro, for which the use of concrete was mainly sculptural, promoting its use as an expressive material. The structural concrete is the external covering, whilst at the same time, forming supports, slabs and walls – this selection of exposed concrete reached the limits of construction. Added to this, during the latest analysis (2005) of damage to the concrete, it was discovered that there were errors in the design and execution of the work, including: low quality concrete; insufficient concrete cover to the reinforcement; the grid of the framework did not join correctly (too much separation between rods); and there were no plastic separators used (therefore there was no control of the separation between the rebar and formwork). The expansion joints of some horizontal elements, such as the beams were not included in the project. The two phases of restoration work in 1987 and from 1994-97 were superficial and random. In addition, they were carried out incorrectly - some cracks were simply covered over with no research into discovering the source of the problem. On some occasions the rods were not cleaned and others were simply painted over without the existing rust being removed. The concrete was also patched with a harder, whiter and smoother concrete than the original.

Sert's concrete structures are masterpieces of the Modern Movement which should be preserved in a way which recognizes and retains their original technology; however, we now know this inevitably leads to quite rapid deterioration. Thus, it is important to discuss & analyze how to reconcile authenticity and durability in conserving Sert's work with concrete, whilst maintaining its long-term sustainability.

It is important these technological values be understood and considered in order to obtain a complete view of Sert's architecture and to comprehend how he used concrete to demonstrate structural honesty as an essential condition for representing the technological advance of Modern Movement. Given the signs of damage the concrete has begun to show, assessing the current condition of Sert's work will enable us to determine the various approaches to preserving this material and subsequently the criteria for a meaningful conservation of his masterpieces in Spain, the USA and Canada.

Illustrations

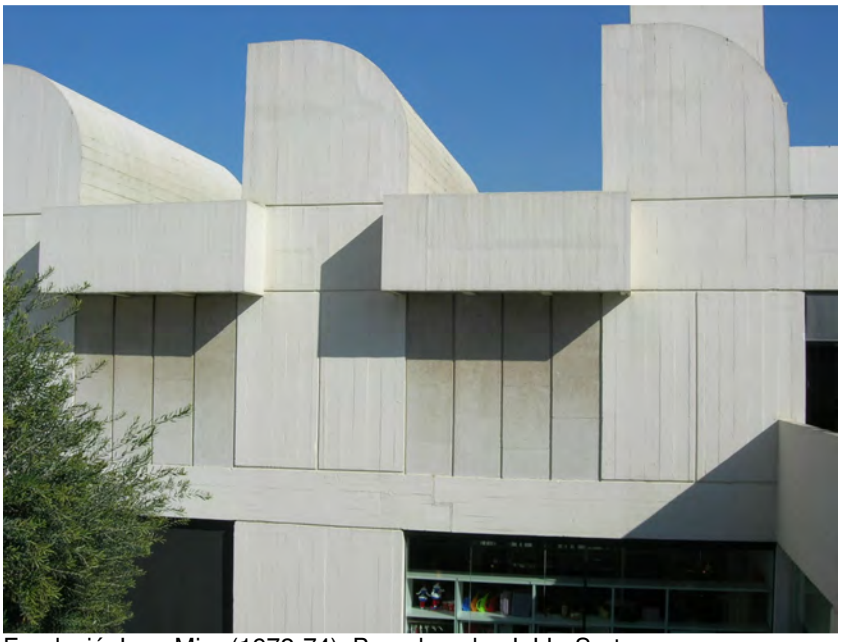


N.E.G.E.A (1959-61) Boston by J. LL. Sert. Pre-cast concrete mullions, west façade As it was in 2010 [Photos: M. Esponda]

N.E.G.E.A (1959-61) Boston by J. LL. Sert. Concrete pattern inthe main entrance

Peabody Terrace (1962), Boston by J. LL. Sert. Detail of fenestration and maroon panels
As it was in 2010 [Photo: M. Esponda]

MacKinnon Building (left) and McLaughin Library (1964) by Josep Lluis Sert.
University of Guelph, Canada, as it was in 2009 [Photo: Mariana Esponda].



Fundació Joan Miro (1972-74), Barcelona by J. LL. Sert.
After restoration in 2008 [Photo: M.Esponda]

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(o) J. LL. Sert and J. Torres Clave were the heads of this group that was formed in the 1930s as a Spanish branch of CIAM (the International Congress of Modern Architecture).

[1] The influence of the architecture of the Spanish Mediterranean coast that adds cubic volumes to flat roofs, in white or ochre stucco, with occasional color accents at doors and windows, is only one of the many resources Sert used, not only in Spain but also in the USA and Canada.

[2] Campbell R., 1982, “J.L. Sert: Enriching the vocabulary of modernism” Process Architecture 34, 38

[3] Sert, J.L., 1962, “Windows and Walls: An approach to design” Architectural Record. May, 132.

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[5] The pre-cast panels are composed of 5 cm thick concrete, foam glass insulation, metal lath and plaster, making a panel only 12 cm thick, which gives full protection and insulation. These panels vary in length between 120 cm and 210 cm, but are of consistent height. Steel pan stairs were shop fabricated. Structural steel sections were used for the balconies. Brick was only used in corridors and stairwells. All the materials were chosen to reduce maintenance.

[6] Prudon, T., 2008. “Preservation of Modern Architecture” p. 287

[7] Color is used internally to augment the spatial concept. In the interior, the exposed concrete walls and ceilings are generally painted white, except the bathrooms and walls in the kitchen which are painted with stronger colors.

[8] Taking advantage of the extension work in 1987, carried out by the architect Jaume Freixa, a pupil of Sert, it was decided the damaged areas would be repaired. Both surfaces were painted with acrylic coating to unite them. Even though, the paint did not stick nor produced the seal in the walls as expected, it did work in the vaults.

[9] During the visual inspection, digital photography was also used. This mapping was done for all of the walls of Sert's original building and has been of great help to understand the real damage of the building.
[10] Aguado, Antonio (October 2002) *"Estudio del estado actual y propuesta de actuación para la reparación del hormigón en la Fundación Miró de Barcelona".* Universitat Politècnica de Catalunya, Departamento de Ingeniería de la Construcción. *(Analysis of the current state and proposal of work for restoring concrete in the Fundación Miró, Barcelona – Polytechnic University of Catalonia, Department Construction Engineering*
[11] I will confirm this point (with its percentages and the execution of all the substituted elements) with the director of the work during my next visit to Barcelona in May 2010. I consider it to be extremely important to check the actual values and criteria applied. It has been suggested the reconstruction *in situ* of the architectural elements deeply deteriorated - due to the limited covering of the rebars and/or of the work being poorly carried out, such as the parapet walls around the central patio, the gutters and the gargoyles - with more resistant concrete, better covering and rebars of stainless steel. In addition, the gutters will also be redesigned.
[12] The head architect was Leland Cott, from the firm Bruner/Cott & Associates in Cambridge, Mass. The work focused on the site, as well as in the interior and the exterior of the building.
[13] Hale, J., (1974) "The years past at Peabody Terrace", in: *Progressive Architecture* 55, October. pp. 72-77. Ten years after the construction of Peabody the most obvious signs of aging were: peeling paint on the galvanized metal of the balconies, and the rust on the balcony dividers. In the 1993 restoration the steel frame windows had severely corroded and were replaced by installing insulating glass in thermal-break aluminium windows. The ventilation panes were replaced by insulated panels, while the vertical louvers had previously been repaired.
[14] Morris D. J. (1994) "Yesterday's Paradigm, Today's Problem", in *Progressive Architecture* June, pp 100-107.

Freixa, Jaume *&* Correa Mario (2008) *pers. Comm.*
A lot of this information was explained to me by this Sert's pupils, during January and February 2008.

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CONSERVATION CHALLENGES AT FRANK LLOYD WRIGHT'S SOLOMON R. GUGGENHEIM MUSEUM

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In the summer of 1943, Frank Lloyd Wright received a handwritten note from Baroness Hilla Ribay inviting him to design a building in New York City to exhibit Solomon R. Guggenheim's collection of Non-objective Art. It took 16 years to finalize the plans and complete the project in 1959, and less than five years for museum officials to start considering the first repair campaign. After a number of additions and alterations, and the worsening of deteriorating conditions unresolved since the original construction, a long-term intervention was orchestrated by late 2004. This paper outlines some of the challenges faced during the recently-completed conservation work at the Guggenheim as they relate to the building's cultural significance and conservation state.

Early Building History and Existing Conditions

For years, Wright worked tirelessly with Mr. Guggenheim and Ms. Ribay, then the museum curator, to choose the appropriate site for the building and to conceive the 'temple of spirit'[1] that Ms. Ribay had invited him to create. From the outset, his design was based on a two-part solution including a Rotunda with exhibition spaces connected by ramps around a multistory void, and a smaller structure, then known as the Monitor, dedicated to offices and supporting spaces. As the Solomon R. Guggenheim Foundation secured the chosen site, Wright developed several schemes refining the building's layout, geometry, and a variety of exterior finishes and colors.[2] By the summer of 1945, the first complete design set emerged and Wright presented his radical solution through a model brought to New York from Taliesin West in Scottsdale, Arizona. Mr. Guggenheim and Ms. Ribay were then so excited to move forward with the project that they did not hesitate to direct Wright to complete the working drawings to start construction as soon as possible. A year later, however, as America recovered from the economic restraints imposed by World War II, Mr. Guggenheim placed the start of construction on hold with the hope that the price of materials and labor would decline over time. After Mr. Guggenheim's passing in 1949, his nephew Harry succeeded him as the head of the project and committed himself to bring it to fruition as a monument to his uncle's memory. In the ensuing years, under his leadership as Chairman of the board of trustees, the Foundation purchased an adjacent lot that expanded the project site, dismissed Ms. Ribay, and fine-tuned the

building's operation and program with Wright and James Sweeney –the newly designated museum curator.

To form the shell of his famous Rotunda, Wright chose to spray *gunite* –a lightweight cementitious mix known today as shotcrete– against an array of reinforcing steel and curved, tilted and spiraling plywood formwork. To accentuate the building's seamlessness, he deliberately omitted expansion joints in the detailing of the walls. For the fenestration, he designed scallop-shaped glazed enclosures (Fig. 1), porthole windows and floor-to-ceiling storefronts using a traditional galvanized steel-frame glazed system with monolithic float glass. Aluminum-frame skylights were placed along the top of the Rotunda walls, out of sight from the street and screened from inside with a suspended glazed laylight system.

During over three years of site preparation and construction, between August 1956 and October 1959, the daring nature of Wright's design was shaped by the resourcefulness of George Cohen, the only contractor confident of erecting the reinforced concrete and shotcrete building envisioned by Wright. At the time of its completion, which Wright did not live to see (he passed away on April 1959), George Cohen had succeeded not only in erecting Wright's building up to the highest level of construction standards available at the time, but also, in doing so with only a few design changes. One of those changes was in response to Wright's request to obliterate a clearly discernible pattern imprinted by the plywood formwork on the exterior shotcrete surfaces.[3] Despite Cohen's efforts, the formwork marks remained readably visible, especially as sunlight meets the curved surfaces of the Rotunda walls. Another change pertained to the installation of the *Cocoon*, an early version of a high-build elastomeric coating proposed by the painting subcontractor as a way to remediate the formwork marks and the extensive cracking that had appeared on the exterior shotcrete surfaces shortly after removal of the formwork.

There were other design changes as well. For instance, to Wright's dismay, the interior of the museum was not painted with the same color as the exterior. This chromatic choice was decided after the installation of two interior color mockups[4] and a notorious exchange of correspondence between Wright and Mr. Sweeney,[5] who advocated for the use of white for the interior, a color that Wright avoided. Similarly, and contrary to Wright's original intent, the use of day-lighting from the perimeter skylights along the top of the Rotunda walls was minimized in response to Mr. Sweeney's concerns on the effect of direct, unfiltered daylight on the artwork. As a result, interior lighting has since prevailed as the main illumination system for the museum's exhibitions.[6]

By mid 1960, soiling was accumulating rapidly and in spite of the high-build properties of the Cocoon wall cracking remained a concern, causing museum officials to start considering the first repair and repainting campaign.[7] Over the years, seasonal condensation on the un-insulated aluminum skylights, steel-sash windows and glazed enclosures remained problematic. In addition, growing institutional needs led to several alterations over time. The most visible, dating to 1992 and designed by Gwathmey Siegel & Associates Architects, expanded a 1968 concrete-frame addition

by Taliesin Associates, the firm that succeeded Wright's practice. In addition, the 1992 work adapted the offices in the upper floors of the Monitor building into gallery space, and for the first time, provided insulation to the Rotunda walls. By late 2004, the building exhibited multiple cracks, coating failures, soiling, ongoing condensation and other signs of deterioration.

Building Significance and Intervention Approach

Over time, the Guggenheim became an international icon of Modern architecture. Its significance stems not only from the innovative and experimental nature of Wright's original architectural concept, and from the building's unique form and use of materials, but also, from the enduring legacy of the museum's institutional presence in the American cultural landscape.

Furthermore, unlike many other buildings from the Modern period, the Guggenheim has retained its original function over the years. After fifty years of uninterrupted use, Wright's solution to its architectural program –the uninterrupted succession of exhibition spaces along the magnificent spiraling Rotunda– has remained virtually unchanged. Modifications to the original construction, either in the form of very subtle alterations, exterior repairs or more prominent additions, were in most of cases conceived to reinforce continuity of use, and to minimize, as much as possible, their impact on the original building, which has remained the centerpiece of the Guggenheim as both a museum experience and a cultural institution.

Architectural conservation at the Guggenheim during the recent preservation work was, therefore, implemented as a holistic intervention. That is, instead of limiting the interventions to the preservation of original historic fabric and distinctive architectural features, the project embraced character-defining changes embodied in both the original construction and the ensuing alterations.

Conservation Challenges

There were major conservation challenges during the recent intervention at the Guggenheim. The first one was imposed by the amount of information available to the team, ranging from the first 16 years of design and construction, to the many projects, publications, condition assessments and repair campaigns that followed. As a result, dozens of publications and hundreds of original construction photographs were reviewed. More than 1,115 pages of reports were compiled into five double-sided volumes and distributed among key team members for review. Up to 6,535 drawings were flattened, catalogued and organized into 323 folders. A drawing database with identifying critical content information was created as part of this effort by a team from Pratt Institute's School Architecture. Part of this information, particularly epistolary, graphic and technical data related to the original design and construction, has been recently made available to the public online as part of the Museum's efforts to celebrate the building's fiftieth anniversary.[8] However, no matter how much of the early building history was available to the team of architects, engineers, conservators,

contractors and consultants assembled for the project, little was found about the construction details of the existing shotcrete walls, which had been cracking since the original construction.

Addressing the extensive cracking required the insertion of discrete exterior control joints on the uppermost Rotunda wall. In other words, to enhance durability of the original shotcrete, an omission by Wright seeking to ensure 'the simple curved surfaces of the Pantheon'[9] that he envisioned for the museum, had to be reconsidered on both technical and aesthetic grounds. To ensure proper performance, the new control joints were built at the locations of the existing embedded steel members; these are now covered with a concrete repair compound and an elastomeric coating with a polyurethane reinforcing-fabric.[10] This repair detail was designed to allow for the expansion and contraction of the walls documented during the project, without introducing vertical breaks at cyclical intervals, which would have compromised the building's appearance and architectural character.

Improving the building's structural performance without erasing the physical evidence of the original formwork marks was another challenge addressed during the project. As probes made evident that the top floor Rotunda wall had been built differently than its lower counterparts, and that the horizontal reinforcement was discontinuous at this level, a number of reinforcement options were considered. The most optimum approach –installing the reinforcement on the exterior side of the wall to reestablish structural continuity– was rejected. An analysis of potential repair solutions following this approach revealed that the extent of horizontal repairs required to 'stitch' the wall would have resulted in vertical 'zippers' with numerous exterior patches that would have been difficult to conceal, or to blend-in with the formwork marks. Another solution entailing carbon-fiber reinforcement installed either in bands or as a continuous exterior wrap, proved similarly challenging. The scope of surface preparation required for this repair would have introduced a new exterior surface pattern and erased the original formwork marks. Consequently, a less optimum but structurally satisfactory solution was implemented, resulting in the installation of a basket weave of carbon-fiber reinforcement concealed behind the interior wall finishes,[11] which had to be fully removed and replaced to allow for the work to be implemented (Fig. 2).

In recognition of the building's evolution, the color selection for the new exterior coating emulated the finish installed during the 1992 work, instead of reinstating the original Cocoon color. This choice unleashed a public debate and divided the preservation community. Those following a more conservative approach advocated for the reinstatement of the original yellowish 'buff' Cocoon color, which appears to have been in place for roughly five years. Per the authors' recommendation, the Foundation chose to embrace the relevant changes embodied in the 1992 addition and alteration, and to mimic the off-white, light-grey color applied at the time. That work, which sought to expand exhibition and administrative areas to ensure survival of the original building function, while satisfying growing museum services and an ever-increasing audience, was not insignificant and therefore valorized by the Foundation.

The original steel-sash, un-insulated glazed enclosures, which were in a good condition but rendered very low environmental performance, were removed and replaced with a state-of-the-art thermally-broken steel-frame system for which there was no precedent in the fenestration industry.[12] This solution successfully balanced the building's need for enhanced environmental performance while preserving significant features that define its historic character (Fig. 3). Similarly, even though the replacement skylights were equipped with the weather-tightness and UV protection required for a museum, day-lighting was kept to a minimum to further enhance a coherent museum experience throughout the Rotunda –undisturbed by varying exterior lighting conditions– and to follow preventive conservation requirements that have become standard in today's artwork conservation practices.

In order to guide these interventions, preservation principles were developed and judiciously implemented (Fig. 4). The aforementioned conservation challenges were met through "progressive authenticity"[13] while acknowledging the "historic fabric vs. design intent" paradigm.[14] These concepts were considered in the context of craftsmanship and mass production, integrity and durability, systems performance and conservation state, original expression and contributing changes. These principles could surely have a wider application in guiding interventions on Modern heritage.

Illustrations

Fig. 1. The streamlined geometry of the Guggenheim Museum shortly after its opening to the public. © William H. Short, the Solomon R Guggenheim Foundation. Depicted here is the Monitor, now known as the Thannhauser galleries.

Fig. 2. Workers complete installation of the structural reinforcement on the interior side of the 6th-floor Rotunda wall. © The Solomon R Guggenheim Foundation.

Fig. 3. Replaced thermally-broken steel-frame glazed enclosure at the Guggenheim Museum's Thannhauser Gallery. © Angel Ayón, WASA/Studio A.

Fig. 4. The Guggenheim after completion of the recent conservation work.
© Angel Ayón, WASA/Studio A.

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THE SLOTERHOF COMPLEX IN AMSTERDAM: A CAREFULLY CONSIDERED DESIGN DESERVES CONSIDERED REFURBISHMENT

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Introduction

Sloterhof was investigated using the ABCD⊕ research method which was modified to suit this case and covered three levels of scale: town planning, architecture and construction engineering.[1] These levels were considered from two time perspectives: during the process of creating of the building (through to the handover) and how it expired after completed(from the handover to the present, and a look towards the future). We drew conclusions about the qualities of the building complex , and potential modifications that would secure its future in the long term.

1.1. Town Planning - Creation

This paper concerns the Sloterhof complex of dwellings, shops and commercial spaces in Amsterdam, on the Comeniusstraat in the Slotervaart district. C. van Eesteren worked on the Amsterdam General Expansion Plan (AUP) from 1928 and the plan was approved in 1939.[2] The plan provided for Amsterdam's expansion from 4,608 to 12,052 hectares, around 120 km². The Garden City Committee appointed in 1923 had a major impact on these plans. The plan aimed to provide both housing and services with a series of buildings set within a green landscaped setting rather than designing separate satellite towns, the plan extended the edge of Amsterdam, with a fair degree of independence and open design.[3] The Slotervaart expansion plan was developed as part of the AUP, following these principles. In 1954, architect J.F. Berghoef was commissioned to design Sloterhof, part of the district of Slotervaart. When the design was completed in 1960, it included 668 dwellings, 21 shops, 2 service stations, lock up garages, a bank and a pub/restaurant.[4]

1.2 Town Planning - Expired

In 2001, Ad Hereijgers and Endry van Velzen assessed Sloterhof in particularly positive terms.[5] In 2001, Sloterhof was described as a "pearl" within the framework of Park City 2015 (Richting Parkstad 2015)[6]. It was also identified as a potential listed building in the study undertaken early in 2008 by Steenhuis & Urban Fabric. In May 2009 it was included among the

Top 100 potential new monuments to be listed in Amsterdam.[7] The comments note that the objects are protected as "cherished rarities" and express surprise that Sloterhof, with its 900 dwellings, was not included among the national Top 100 of state listed monuments in the Netherlands.[8] Current town planning concepts such as those outlined in Parkstad 2015 offer new opportunities to appreciate the original qualities of the Slotervaart district in Amstredam. The aim is to provide a positive residential and work environment, with a diversity of residents and uses. The spaces for the provision of services could be used effectively again, and the public areas should be maintained and repaired to return them to their original condition, after which they might be further optimised. For example, the playgrounds designed by Aldo van Eijck are still there, but better use could be made of them. The potential redevelopment of Slotervaart should be guided by concepts such as the ranking of maximum house rents related to income, residents from different socioeconomic groups, affordability and the garden city concept.

2.1 Architecture - Creation

Sloterhof was built between 1958 and 1960 although the design work started in 1954. Working closely with H. van Saane, director of the Nederlandse Maatschappij van Volkshuisvesting (Nemavo), Berghoef applied the Airey-Nemavo system (NA system) in several projects like Populierenweg (1950, 300 dwellings) and Amstelhof (1952, 350 dwellings and general services).[9] Although he had his doubts about prefabricated structures, he used them shortly after the Second World War. In his view, industrial production restricted architectural expression. Berghoef emphasised the importance of the urban context - public areas had to be incorporated in the design in order to offer a pleasant residential environment.[10] His designs, which were realised using system construction, attempted to strike the right balance between tradition, new technology and public spaces. Based on those principles, his practice, which previously used traditional construction methods, started using system construction. He made a real effort to ensure that the human scale was still paramount in this form of architecture. The mixed uses, carefully designed greenery, playing areas, covered playing galleries, craft rooms, lock up garages and small business units all underline his philosophy.

For Berghoef, the cohesion of the whole provided the basis of design for Sloterhof. Along Lelylaan, there are sevenblocks to the left, and nine to the right, grouped around Huizingalaan at their centre. (Figure 1). The tall blocks(M) extend into the water, they mark the division and frame the development. During the development of the design the tall block envisaged on the Hemsterhuisstraat side was replaced by a square tower block (T) of twelve storeys, which broke the symmetry with a striking final chord. The recessed five-storey blocks (B) flank internal courtyards which are shielded from Comeniusstraat by blocks of lock-up garages (g) and

shops at the ends. Huizingalaan forms the centre, with an urban variation of the low blocks (B) accessed by stairwells. Near Huizingalaan there are two blocks of shops (W) and two service stations (s). On the water side the internal courtyards have pergolas. The courtyards have playing areas for children. All shops have a dwelling for the shop owner. Near the tower there was space for four houses with artist's studios (A). An octagonal pavilion, for a bank, was built on the extensive paved area along Huizingalaan. The restaurant was accommodated in the block on the east side of Huizingalaan, near Lelylaan. Berghoef also designed the electricity substations, using the same precast concrete system. The prefabricated system imposed a pattern of concrete slabs with dimensions of 625 x 375 x 40 mm. Within this pattern variation was provided through the use of materials, detailing and colour. The lower blocks and shops had light grey as the dominant colour, while the taller blocks and the tower were black with prominent white concrete surrounds. (Figure 2.) The garages, electricity substations and dwellings over the shops were striped, dark and light grey, while the houses with the studios were brick red. The two service stations stand out with their gull wing roofs.

The dwellings were finished to a high standard for the time: central heating, hot water, fitted Bruynzeel kitchens, fitted wardrobes, central waste disposal and lifts in the taller buildings. The initial rents ranged from EUR 75 to EUR 84 per month, including maintenance and heating. This was rather expensive that time (1960).[11]

2.2 Architecture – Expired

Sloterhof still has a plan based on the division of the plots into strips. The dwellings still have the original layouts and the local services are effective. Berghoef was fully aware of the duality of the brief. Hence he designed the dwellings so they face two directions. He commented as follows on the Airey-Nemavo system.

> *Strictly speaking, once the width and depth have been chosen, based on the module of the wall slabs, you are free to design the layout. The windows were designed in series: the width and height of each window are a multiple of the wall slab dimensions. There was complete freedom in placing the apertures, as long as the window frames were aligned with the joints in the wall slabs. One of the difficulties is that the elevations are flat, and the building looks like a cardboard cut-out. The recesses at the front doors, a few balconies and the protruding chimneys at the end of the blocks help, but the plasticity is still limited. There are two options for dealing with this: changes, preferably clear ones, in the building line and the introduction of plastic elements in the street profile: posts, hedges, shrubs and trees. Trees, with their colour and irregular shapes, are particularly effective in combination with these light, unfussy houses. The porches associated with the storey*

levels are essential to create a plastic rhythm in the extended facades. It is clear that the street layout, building lines, division into plots and the greenery, i.e. all town planning aspects, are essential to the nature and character of the Nemavo-Airey complexes.[12]

Berghoef used these elements effectively in the Sloterhof development, and they govern its present quality.

3.1 Construction Engineering - Creation

In 1925 H. van Saane set up a construction company in Amsterdam. He specialised in designing and building social housing, rather like project developers these days. His plans for Amsterdam were inspired by residential construction projects in Germany and Austria after the First World War. Before the Second World War, he built Geuzenhof (1933) and Muzenhof (1939), both designed by Berghoef.[13]

In 1946, the Reconstruction Committee asked him to study prefabricated housing systems in the UK and in 1947 Van Saane founded the Nederlandse Maatschappij voor Volkshuisvesting (Nemavo; Dutch Housing Company) . The Dutch government subsidised prefabricated construction as there were shortages of materials and trained workers. Van Saane opted for the system developed by Sir Edward Airey in Leeds and decided to adapt it for the Dutch market. He asked architects Berghoef and H.T. Zwiers to work with De Vries Robbé in Gorinchem (steel structures and windows) and N.V. Betondak in Arkel (concrete roofs) to prepare the system "industrially and architecturally" for series production in the Netherlands, under the name Nemavo-Airey system. However, it never went into real series production and the money subsidised by the goverment was subject to inconsistent government policies. The municipality of Amsterdam decided to use the Nemavo-Airey system in Slotermeer and Watergraafsmeer.

The British Airey system was adapted for use in the Netherlands.[14] The Nemavo-Airey system was based on a table structure. The table top was formed by a wooden floor nailed to steel lattice girders which were rigidly connected to a steel ring beam. The legs of steel were secured to the corners to form a rigid and stable table. Centre beams with legs could be used to obtain a greater span. The advantages over the British system was that the columns could be placed anywhere relative to the horizontal members. There were no restrictions related to the floor joists and the columns could be installed anywhere to obtain reasonably large openings for doors and windows. For multi-storey buildings the tables were placed on top of each other and a steel frame was added inside the construction.

The exterior walls comprised a precast reinforced concrete load-bearing structure of columns connected by steel ring beams at each storey height.

Precast concrete panels were used as the outer cladding and insulating boards were used for the inner cladding and could be finished with gypsum-concrete units. (Figure 3). Berghoef commented on the window openings:

> *At first, the steel window frames were incorporated in special concrete uprights and cills. However, these elements were difficult to produce and heavy and unwieldy during installation on site. After eighteen months we found a solution, by securing a special profile to standard steel window frames. This was an improvement in structural engineering terms. However, aesthetically it was a major disadvantage as the white surround between the grey wall and the steel window frame was lost. This presented the architects with a serious problem: the facades were already flat and now the last bit of plastic expression around the windows as well the added colour were lost. The only compensation was that they now had much more freedom than before in placing the windows.* [15]

However, in Sloterhof we see that Berghoef continued to use an obvious white surround, now made of concrete, into which a steel window frame was fitted in the factory.

3.2 Construction Engineering – Expired

During Sloterhof's existence there have been few construction engineering changes. The surface colours of the smooth concrete elements such as the columns and surrounds of the balconies and window frames have changed several times. Concrete components affected by spalling have been repaired. In some areas the facade panels have been damaged, cracked or broken off. Furthermore, holes have been made in the panels for gratings, cables, and so on.

The recessed window frames of the balconies and porches are made of timber and are easily replaced where necessary. The flush window frames feature the concrete surrounds and have steel frames and steel opening lights. The same construction was used for the window and door frames in the end elevations of the B blocks. These frames have now been replaced by aluminium units fitted to the concrete surround. The original fenestration pattern was lost as a result. Replacement of the steel windows will be difficult, and is architecturally undesirable. They are integral with the concrete surrounds. The walls have 20 mm of insulation in the cavity and the air cavity is 120 mm. The design drawings for the tower block show that the architect considered the use of double glazing. This could still be installed, in the existing frames. However, in that case the overall building physics balance of the wall will need to be considered.

4.1 Conclusions

The Sloterhof complex, designed by Berghoef in the 1950s, is a surprisingly well preserved complex, in a favourable location relative to the centre of Amsterdam. Many of the building details have also been preserved. (Figure 4). Elsewhere complexes of this type have been redeveloped successfully, for both rental and sale. The existing qualities of the complex can be strengthened and used to their best advantage. Sloterhof should be redeveloped as a whole, rather than be split in different parts in order to conserve its integrity as a complex. There are many reasons, at different levels of scale (town planning, architecture and construction engineering) for treating the complex respectfully, from context through to detail. The quality and value of Sloterhof is determined by its details, or the sum of its parts. Hence, Sloterhof deserves a comprehensive well considered refurbishment plan: first from small to large and then from large to small, as Berghoef intended. Hence, the future development of the complex should preserve the town planning, architectural and construction engineering qualities of the complex. In essence this means that the current appearance of the facades should be maintained and that the complex should continue to provide affordable rented housing, for which there is a high demand. This means that it should also be possible to improve the complex. Although some intervention is required, any structural and building physics measures should not detract from its appearance. The measures could add to the complex: restoring the original colour scheme, repairing facade panels and concrete surrounds, fitting internal insulation to exterior walls, installing thermal glazing, insulating the roof and basement and providing energy-efficient building services plant for the whole complex.

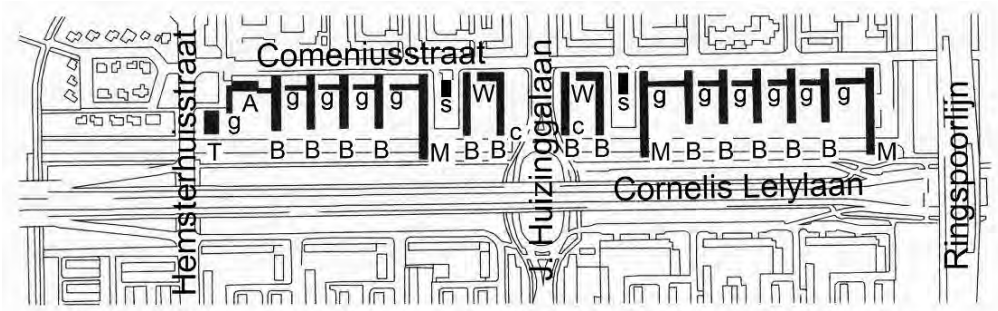

Figure 1. Sloterhof and its boundaries (Hereijgers 2001).

Figure 2. The blocks on the Comeniusstraat (Messcheart 2004)[16].

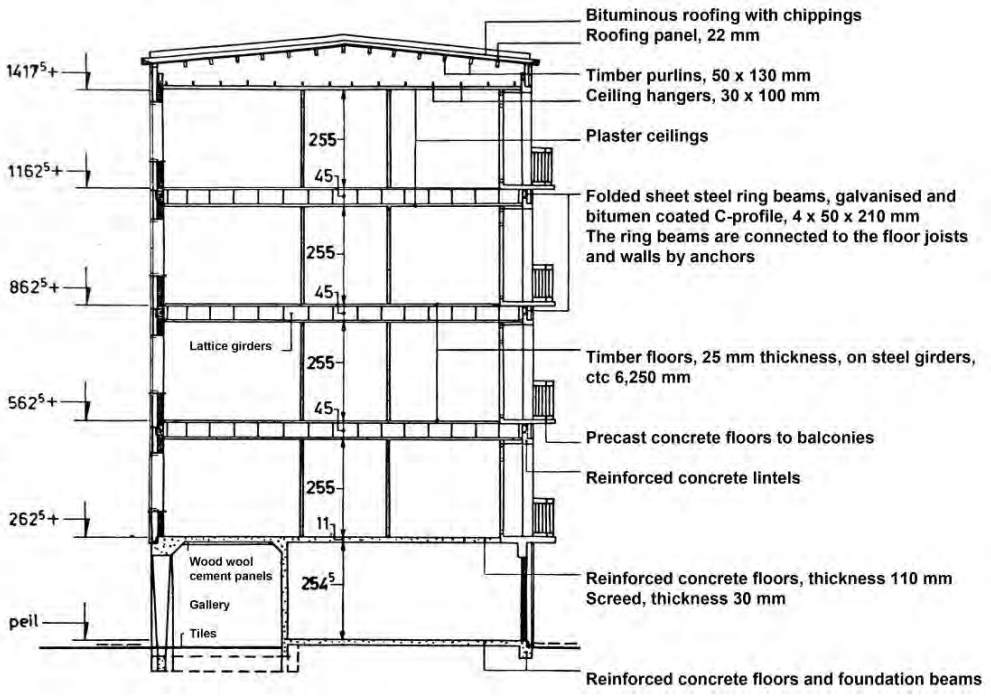

Figure 3: Construction of the Sloterhof B blocks (after Polytechnisch tijdschrift 1959).[17]

Figure 4: Present day situation (H. Zijlstra 2009).

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Technology provided me with the inspiration to develop a more comprehensive research method to assess buildings: Analysing Buildings from Context to Detail in time: ABCD research method. Providing information on practice is a key element in construction engineering, which is a learning process. We are not solely concerned with the end result. Changes are made during the life of a building, and they might be made differently if the history and technical aspects of the building were studied in greater detail. Both maintenance and changes require us to understand the building concerned. All the aspects covered by this research method should be considered. In essence, a building can be described in detail using the ABCD research method. Experience obtained with other buildings can lead to better considered solutions when designing and building new buildings or intervening in existing buildings. We can recognise layers where changes may have led to interventions in what existed at one time. The ABCD research method is an instrument to show us how changes happened, and what the original concepts for the building were. We have to investigate the history of the design and construction of a building to distil this essence. Technology, at academic level, should be considered in the analysis of a building. Here we are concerned with construction engineering, the study of the requirements associated with constructing buildings.
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PRESERVING SOCIAL HOUSING'S FUNCTION AT THE EXPENSE OF MATERIAL AUTHENTICITY

THE CASA BLOC OF BARCELONA AS A CASE STUDY

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GATCPAC and the Second Republic

The social and political context that gave rise to the construction of the Casa Bloc in Barcelona was the Second Spanish Republic (1931-1939). The cultural context was that of the search for solutions that could be provided by architecture for social development promoted by the CIAM and, at the local level, by GATCPAC (Group of Catalan Architects and Technicians for the Progress of Contemporary Architecture), lead by Torres Clavé and Sert.

In 1932 the Workers' Housing Commission was created, made up of, among others, the Catalan Autonomous Government, businessmen, workers and the architects Torres Clavé, Subirana and Sert. Its objective was the extensive construction of cheap housing subject to principles of hygiene and architectural and urban rationality, with the goal of improving living conditions for the working classes. The Casa Bloc with its 207 apartments with shared services was designed as an experimental model that was to lay the foundations for Barcelona's urban development.

GATPAC's proposal gave a comprehensive and synthesized answer to the multiple dimensions of the assignment: the dwelling, services, the city and the economic limitations. The apartments were built as 75m² duplexes, following the guidelines of the "minimal dwelling". The communal services and the green zones fulfilled the role of linking the ground floor areas as transition spaces between the scale of the housing and the urban scale. The complex was finally comprised of five blocks arranged "*a redent*" and joined together by vertical circulation towers. And the urban grid in which it was to be located complied with the *Maciá* Plan for Barcelona, carried out by the GATCPAC in collaboration with Le Corbusier, based on the conjunction of concepts regarding the functional city and the *Cerdá* Plan for the Expansion of Barcelona of 1859.

Original materiality: between technological innovation and traditional building methods

Despite these architects' desire for technological innovation, the possibilities of creating architectural works with totally industrialized or prefabricated constructional systems complied more with a theoretical position rather than a

constructional reality. At that moment both from the technological as well as the economic point of view, the possibilities were limited to the combination of traditional building methods with industrialized and prefabricates systems, or even to the adaptation of traditional materials to new details in order to achieve a new plastic expression. In turn, the new formal and compositional requirements meant the abandoning of traditional weathering details, causing increased wearing out of the traditional materials used.

The structural system was formed by standardized structural steel porches with brick-vaulted ceilings. Both for the beams at the edges of the structural frame as well as for the columns, detailing consisted of rendering the structural steel with cement mortar. The exterior walls were plastered with lime mortar, while the walls of the blocks were clad with prefabricated artificial stone sheets. The stairs of the vertical towers were made of structural steel with prefabricated artificial stone steps. Local traditional techniques in brick construction were used on the *Catalan-style* vaults in the duplex's interior staircases, and on the partition walls, while the traditional detailing of the *Catalan-style* roofs was reinterpreted. On the facades of the houses, the window frames and external blinds were traditional wooden models, while in the vertical towers they were metal.

1939 -1986: the transformation and degradation of the complex

Due to the Civil War (1936-1939) there were several elements that were not carried out in accordance with the original project and the houses were never allocated to the people for whom it was designed.

At the end of the War the complex was taken over by the Franco regime and suffered diverse alterations, lack of maintenance, and even contempt. In turn, the use of the communal areas of the complex was impeded due to various functional alterations and physical compartmentalization. The South patio was occupied by a Police Unit while the North patio and the ground floors of the northern half were occupied by a school. The South block was converted into a Residence for National Army Widows and Orphans, changing its interior layout, and to this day remains isolated from the rest of the complex. In 1943 a sixth block to house police officers' families was constructed, sealing off the South patio.

Over the course of the years, the electrical, plumbing and drainage systems also underwent several precarious modifications, in response to the need for adaption, affecting the communal areas like access corridors and ground floors. Changes made to the dwellings were ad hoc, initiated by individual occupants. Typically these included enlarging the bathroom, by taking space from the laundry, remodeling the kitchen, changing the interior flooring, tiling, and other original finishing. In every case, they involved enlarging the living room by enclosing the balconies, which affected the morphology of the complex. Only the *Residence* conserved the original position of these window frames, although the block's morphology was also altered by the enclosing of the exterior corridors that gave access to the dwellings.

1986-2010: conservation and the intervention criteria applied

After the first failed attempts to list the complex during the 1970s, between 1986 and 1991 a ***first intervention stage*** was undertaken, aimed at restoring the complex. The proposal placed emphasis on reversing the changes that affected the communal areas of the complex and in the recovery of the building's urban dimension, both in its formal aspect –the recovery of the original "*a redent*" configuration– as well as its functional aspect –the communal uses of the ground floors. The police premises and the school were able to be moved out, thereby recovering the two patios, and the connecting porches between them were refurbished. In this way the original visual and spatial relationships of the ground floors were recovered. Despite that, part of the south patio remains privatized by the *Residence* to this day.

As for the buildings themselves, an intervention by successive stages was planned. The first intervention step consisted of the repair of the communal areas and the facades of the North block. The electrical, plumbing, drainage, and gas systems, which ran through the access corridors, were adapted to the requirements and regulations in force at the time and hidden by an added false ceiling.

The 'minimum dwelling' standard set in the 1930's, was no longer considered applicable to the current standards of comfort, so changes were permitted, such as enclosing the semi-covered terraces to gain interior space that the residents had carried out in a disorganized way, although to visually unify the facades, dark-brown PVC window frames and roll-up shutters were installed with the intention of resembling the original wooden frames and blinds.

In 1992 the complex was listed and in 1997 a ***second intervention stage*** commenced, initially as a matter of urgency –due to crumbling of the facades– which went on until 2005. This included the structural repair of the East, Central and West blocks. The damaged mortar rendering the structural steel was removed, the structural steel reinforced and re-rendered. The exterior iron railings were found to be rusted, and they were replaced with galvanized steel versions painted dark grey to match the originals. As for the plastering, this was completely redone, attempting to achieve an approximation to the original colours. Two elevators, which had never been installed in the vertical tower on Lanzarote Street were inserted and the continuity of the corridors between four of the blocks was re-established. Following the criteria of the ***first intervention stage***, in the communal areas the water and gas pipes were placed under the roof -this time exposed- and the electrical cables were put under the floor of the corridors. To unify the facades, dark-brown window frames and blinds were installed, this time using standard aluminium models. On this occasion it was decided to change the rest of the exterior window frames as well.

In a group of unoccupied dwellings it was decided to completely renovate the bathrooms, kitchens, gas, water and electrical installations and original finishing (tilling, flooring, etc.) with materials available on the market at the time. And a second toilet was added at the bedrooms level.

Although in the ***first intervention stage*** demolishing the sixth block had already been considered essential to recover the complex's original plan and form, this was not actually done until 22 years later.

In analyzing the intervention criteria applied up to the present day, even if significant actions to recover the functional and urban integrity of the Casa Bloc have been developed, including social and pedagogical work with its inhabitants, the result has ended up being half-way between meeting the current aspirations of the working classes for enhanced standards of living and fulfilling long-term conservation requirements of a work listed as a *Cultural Asset of National Interest* in the *Monument* category.

The mutation of social housing's original functional programme and material fragility

The direct correspondence between form and function together with the short life span of functional programmes, in some cases has resulted in the abandonment, degradation and even the loss of Modern Movement works. However, there are cases where the function has not changed radically, but rather has evolved over time, as with the Casa Bloc; the function survives but the social parameters that define it have been modified. Therefore in order to preserve the updated functional programme and maintain the social composition of the complex, the building had to be adapted, both to new technical requirements of the regulations, and to new demands imposed by changes in the uses and customs.

As has already been mentioned, this was an experimental prototype – both in its spatial as well as technical conception – which met a circumstantial necessity. This produced a building of great material fragility and with a very limited useful lifespan, giving rise to partial and inadequate changes since its early stages.

To that is added the fact that the different interventions carried out lacked the historical perspective necessary for the acceptance of this architecture as cultural heritage, both on the part of the institutions as well as society. The temporal, cultural and technological proximity of this architecture means there was a lack of conceptual clarity between renovating a contemporary building and conserving it as a cultural heritage monument. This resulted in the alteration of its original morphological and spatial qualities as well as the irreversible loss of original material and surfaces' finishes and their specific qualities.

Preservation as a process

Although the conservation of the Casa Bloc presents special circumstances, it is a process that must be considered within the context of the general problems of the conservation of Mo.Mo. architecture. In this sense, it is important to recognize and follow the evolution of this specific discipline. Today there are

already sufficient examples of interventions in which the appreciation and recovery of the original materiality, the original surfaces, the colour, even the patina has been achieved.

A new phase of intervention: the museum apartment

Coinciding with this tendency, today a new phase in the process of the Casa Bloc's preservation begins, with the preservation of an apartment as a museum. It is a dwelling that to date has had no interventions carried out, as the tenant did not allow access. This was only obtained in 2008, once the uncooperative tenant had passed away. Although this event may appear anecdotal, it is in fact significant for the future of the building's preservation, being one of the best conserved apartments. The original spatial distribution and various original elements remains intact.

The project that is currently being carried out arises from an interest in the values of a comprehensive design. It therefore has as its objective recovery both of the original materials and surfaces, as well as the original spatial qualities, understood as indivisible components of the comprehensive design. In order to achieve this, on the one hand there is a plan for the recovery of the existing elements as well as the restitution or reproduction of lost elements, such as the hydraulic tile paving, the interior stairway railing, the electrical conduits, the colours of the walls, the window frames, the blinds, etc. And on the other hand, the recovery of the original spatial qualities, for example, by means of installing the window frames in their original position on the facade, despite the contrast that his operation could cause to the legibility of the facade as a whole.

The future of the Casa Bloc: the recovery of the complex's original morphology and the material authenticity

The *"museumification"* of this unit represents a unique opportunity that may open, in a future stage, the path towards the recovery of the complex's original morphology and materiality. Evidently, this would imply the reduction of the current surface area of the dwellings, the acceptance of austere materials, and it would even affect conventional levels of comfort. This implies a level of *commitment to the work on the part of the user* which perhaps may only be achieved by reformulating the functional programme and making it more in keeping with the specific limitations of the work that is expected to preserve.

The matter of *adapting the user to the work* has already been fairly well accepted as one of the fundamental pillars of preservation in buildings with diverse functional programmes, but when it comes to the case of social housing, it appears to clash with the right of its residents to a dwelling in decent conditions. Because of that, it is interesting to observe the cases in which the residents intentionally sought to live in those buildings in their original state, adapting to them and valuing the original spaces, details and materiality. This possibility, which until recently seemed improbable, today opens up a possibility

to which we must be attentive, both for future interventions as well as in order to return the austere dignity to some of the works already intervened upon.

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CIVIC AND SOCIAL INFRASTRUCTURE
Building Climates and System Analysis

Original designs of Modern Movement and Postwar buildings has often been compromised by principal changes to buildings and sites which encompass a wide range of upgrades to their climate and ecological program. Of- ten times, these interventions not only change the building program but can also have an impact on the overall building design as a result of newly introduced building systems which are meant to reduce energy consumption levels.

This session will continue to examine current issues in the adaptive reuse of Modern Movement and Postwar buildings and integrate topics of Building Physics, or building science, which are essential to the stewardship of our building heritage. In this session, authors will explore their own design objectives and present the limitations of design intervention required before so that one achieves a balance of preserving the building together with the design intentions of the original architect. Each author will discuss their research and case studies to identify unique climate programs which bring together a series of ecological building technologies that remain part of the building to be maintained or modified.

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CHANDIGARH: THE CENTRAL ROLE OF CLIMATE IN THE PROJECT

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INTRODUCTION:

This research has the following aims:
-to underline the importance of the project for Chandigarh as a whole, formed by the Capitol and residential settlements, capable of summarizing L.C.'s rationalist approach;

-to support the central role of climate in Chandigarh planning, used by LC as a "building material"; precursory evidence for contemporary movements of the so-called "bio-architecture" or "sustainable architecture", starting from the climate changes of the planet to express the imperative necessity to build in harmony with earth and its climate.

The buildings of the Chandigarh monumental complex are "laid out" on the ground after drawing the directions of cardinal points; the north-south axis diagonally crosses the Assembly Palace and on this foundation element, great examples of the past, from Mogul temples to Forbidden City of Beijing, are built and orientations of the other buildings surround the site: the Secretariat, the largest, is oriented along an east-west dyke, and the High Court, is laid out along the same orientation but more open to the easterly winds.

Once the orientations have been chosen, the main instrument of architecture and climatic dosage, the *brise-soleil* is the primary focus of the Chandigarh Capitol scene as well as the residential experience. Shortly following are elements which protect from the sun and heat. will not be added disposals, successive remedies (as experimented in Paris *Armée du Salut*), The brise-soleil elements are xpressive instruments that break, make jagged, and carve the façades not by means of a self referential artistic aspect but through oriented plastic choices which are linked to the geography of places, with the aim to look for shade, to address light and to moderate heat.

Only after the passing of the creator of Chandigarh the Tower of Shadows will be realized, still standing out as an interrupted fragment among Capitol buildings, didactically explaining the climatic sense of the entire operation, like a true catalogue of mono-material sun-breakers (*béton brut*) different in orientation.

"The building is aligned precisely on the north-south axis, so that it agreeably interrupt the severe symmetry of the enormous square. The north side is entirely open, and the other three faces are furnished with brise-soleil. (…) In the Le Corbusier studio in Paris, the track of the sun for all seasons is most precisely recorded for all important buildings, in order to determine the position of the brise-soleil."[1]

In the orientations and buildings the theme of ventilation will also be included, highlighted by L.C. as one of the first foundation acts for each architecture.

Let us try and examine the Capitol elements in detail.

The Assembly Palace
The building may be analyzed and described by the various forming parts:

- The porch with deep pillars, are covered by the out of scale canal that will collect the torrential monsoon rains letting them fall gurgling in the two pools that L.C. calls *rivières*. But besides the role to dispose of rain waters, this singular part, which includes the main entrance to Assembly Hall through the large majolica revolving door, is first of all a screen for the building against the south-east heat;

- the volumes of offices overlooking west show a compact presence of *brise-soleil* forming the expressive grid of the two fronts, rotating in only one direction in order to stop the strong heat of setting sun;

- the north-east side is outlined by vertical *brise-soleil,* perpendicular to the front: between them a hall opens up giving access to members of Parliament and journalists;

- the body of the building is a big parallelepiped box from which first of all arises the large hyperboloid surmounting the Assembly room (Parliament, the heart of the building) and drawing attention from any part of Capitol.

L.C., who wanted to use the emerging volume of the large room as a ventilation chimney, moves from the principle of cooling towers used in industry, altering the ending with an oblique section on which are laid (and shown) overlapped elements in structural steelwork which form an "intelligent" cover.

"This framework will become a veritable physical laboratory destined to ensure the interplay of natural lighting, artificial lighting, ventilation, and acoustic-electronic mechanism. (…) The air-conditioning, necessary here, works under the best conditions since the cool air is introduced from above to below, several meters above the deputies and visitors, and will descend by gravity to breathing level while the warm air will rise and be exhausted by mechanical apparatus installed in the framework of the hall. (…)One of the interesting points to call attention to is the adoption of a circular form for the hall which seems contrary to the development of good acoustic. (…) Hall of Parliament with a precise study of the acoustic: reflexion, absorption, use of electronic devises."[2]

The acoustic problems refer both to the specific characters of reinforced concrete with which the Hyperboloid is built and the circular shape of the hall; a part of the surface of the shell is sound-reflectant, while the other part is sound-absorbent.
The corrections were given an artistic-artisan solution, with social implications: the wool artisans of the territory weave the large tapestries standing out in relief on the internal curve flanks of the large hyperboloid, surmounting the hall.

The Secretariat
The building rejoins seven ministries in what is for L.C. a lying down skyscraper with a great landscape role and whose shape and position are determined by the favourable orientation of sun and prevailing winds.

The ramp, fluid distributing instrument, already in the architect's luggage, is assumed and extended, after verifying the Indians' pleasure to walk on soft external ramps, from where changeable landscapes can be admired.

"The section of this large building is given by the fight against the sun: brise-soleil; against the heat of the air: natural and artificial breathing, finally by a rigorous modulation provided by Modulor, proportioning everything to human size."[3]

It is characterized by points dedicated to climatic adjustment, by double anti-thermal slabs (in the Ministry Hall), by the foresight of conditioners in the Governor's hall).
The two long opposite fronts decline really articulated systems of *brise-soleil*, perpendicular to the building on the south-east side, slightly rotated in the north-west side.
A strong underlining is suggested as far an airing proposal of a ventilation system defined by ventilators and undulating glasses:

"The rough concrete again interposes in the fenestration of the two main façades: more than 10.000 units of a unique design – one stanchion type 27 x 7 cm in section and 366 cm high – constitute the "undulatory glazing". This concerns an application here of the Modulor which permits the stretching of a veil of glass extending the entire length and height of the building, interrupted by elements called "ventilators" which comprise a shutter of sheet-metal pivoting vertically from floor to ceiling across an opening (…) covered, in addition, by a curtain of copper mosquito-netting."[4]

The High Court
The building is a metaphor of the relationship between architecture and water through the instrument of hydraulic engineering: L.C. could not avoid looking at the more consolidated historical experience in this sense, the experience of the Roman Aqueduct.
A large canal for water, at the same time shadow for the sun, rests on a giant order of pillars, among which parasitic volumes are inserted, connoted by *brise-soleil* mostly staggered, arriving at 1.40mt of thickness: when these volumes are missing we see the monumentality of the hall but also the pleasant ventilation of the Hall of Lost Steps which opens on the two opposite fronts.

Within, ventilation air duct are planned from bottom to top, perhaps with Persian reminiscences.

Another physical-technical question is solved by L.C. in an artistic-artisan key, with social implications: 650sq.mt of tapestries are woven by wool artisans in order to compensate the acoustic problems of reinforced concrete.

Public spaces
The large free spaces that put into relationship the realized building are planned by L.C. with great presence of water (the large *rivières*) and innovating ground movements, only in small part realized: the geometrical hill, the artificial mountains, the tree-lined screens and the green rooms, the latter an heritage of the Italian garden tradition.
Water and green should have formed an external micro-climate capable of making the crossing of the large square pleasant.

The current condition and some suggestions
[CARLO: THE PAPER REALLY STARTS HERE - THE PREVIOUS PAGES ARE DESCRIPTIONS OF THE BUILDING COMPLEX WITH UNIQUE FEATURES. IS THERE

MORE INFORMATION ABOUT THE HISTORY AND DEVELOPMENT OF THE CHOICES WHICH L.C. MADE IN THE DESIGN OF THESE BUILDINGS ?]

Arriving at Capitol today first of all you run into protection and control barriers that separate the public spaces of the three buildings in armoured divisions, that continue to look at each other but whose distance has excessively increased.

The water basins next to the High Court are often empty, unlike those of the Assembly.
The introduction of air conditioning systems has dotted *brise-soleil* with extraneous machines, mainly in the Assembly Palace.

We have submitted this extraordinary building to the bio-climatic examinations which are being made during this historical phase thanks to the digital programme “Ecotect”. The result is that due to the north-south diagonal orientation to the protective volumes of *brise-soleil*, to the role of picking up and management of air-light of hyperboloid, the building still turns out to be the “bio-architecture handbook”.

The only weak layer, which evidently caused the insertion of mechanized systems of air conditioning, is the large sunroof from which the coding tower arises and on which L.C. geometrical volumes rest.

A green roof, balancing the tribute to one of the 5 points of architecture much loved by L.C., the roof garden, and with climatic studies that keep into account the new “green technologies” from plant walls to prefabricated gardens, duly sprinkled with part of the water collected during the monsoon by the big canal, might make the covering open to the public with new views of the Himalayas.

The same criteria should be applied to public spaces, with the proposal of ground movements and climatic control of arborisation, today deserted, integrating protection and control barriers in the tree-lined screens and the green rooms taking part in arborisation abacus which shows the various types of trees and their different dispositions.

As for the cooling off offered by water, it should be made less stagnant with new vaporization systems, low clouds floating in air, using this technique also on the covering of the hyperboloid, so increasing the natural freshening already foreseen by L.C.

Residential appendix

In the research proposal appeared the intention to face some examples of residences of the Punjab capital realized by Pierre Jeanneret on rationalist geometry with variations on climatic theme, with façades, verandas and lodges; with the counterpoint between reinforced concrete and bricks, stone, prefabricated elements. Still the question of sun control, humid heat and wind, through thick patterns of *brise-soleil*, “jallis” and pierced walls whose constituting elements, especially of the street fronts, appear today strongly altered: awkward closing of *brise-soleil*, addition of several conditioners.

We refer to the important research by professor Clàudia Estrela Porto (Brasilia) on typological transformations applied to residential blocks 21 and 22, sharing these conclusions:

"Chandigarh was designed for a population of 500.000 inhabitants, but 50 years later it already lodged 900.000 people, almost the double of what was initially predicted. This demographic growth leads people to occupy the streets, build appendixes on the yards, and even transforming their houses in hostels, shops, offices and schools.(…)
The raise of purchasing power changed the lifestyle of the inhabitants. It was long ago when backyards and terraces were used as outdoor dormitories in the hot summer nights and people could sleep under the stars on the lawn in front of their houses. Alleging "security", the users prefer the indoor spaces, "more interesting" with the television and the fans or air-conditioning devices. By the time of Chandigarh's construction, these devices were rare or did not even exist. Nowadays refrigerators, television, home appliances in general are common objects even to the simplest families. They block the beautiful 'jallis' of Jeanneret's façade, avoiding air circulation. The verandas are occupied with the irregular addition of rooms or improvised coverings for car protection."[5]

The climatic research applied only to Capitol, will be extended to some residential sectors chosen as samples not thinking of a conservative restoration, with the making up of a museum "in Péssac style": the Bordeaux quarter realized by LC in 1927 was first rejected by the users because of its modernity, then it is inhabited with kitsch modifications[6]; it was recently been taken back to the original image, with the consequent risk of "freezing" it.

As such, in the residential sectors of Chandigarh will have to be applied a dynamic recovery and transformation project with typological aggregations, new dimensions of lodgings, systems to improve the climatic passiveness (insulation, roof garden), insertion of innovating not invading technologies founded on renewable energies (i.e. sun, aeolian, geothermal).

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Notes

[1] Le Corbusier, Œuvre complète Vol. 8, Les Editions d'Architecture, Zurich, 74
[2] Le Corbusier, Œuvre complète 1952-57, Les Editions d'Architecture, Zurich, 94;
Œuvre complète 1957-65, 91
[3] Le Corbusier, Œuvre complète 1946-52, Les Editions d'Architecture, Zurich, 136
[4] Le Corbusier, Œuvre complète 1957-65, Les Editions d'Architecture, Zurich, 78
[5] C. E. Porto, Typological transformations: blocks 21 and 22 in Chandigarh, 2008
[7] C. Pozzi, Modern Movement clashes over the traditions of building and living, Seventh International DOCOMOMO Conference, 2002, Paris

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HOUSING STOCK RENAISSANCE PLAN
THE MUKOGAOKA HOUSING COMPLEX CASE STUDY

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INTRODUCTION

During Japan's period of rapid economic growth, the massive influx of population to major cities generated severe housing shortages. After 1955, the Urban Renaissance Agency (UR) [1] created high-density housing and communal residential sites and built numerous apartment complexes in order to alleviate these housing shortages. Now, there are about 770,000 properties of rental housing stock and most of them are especially large-scale suburban types where neither room layouts nor facilities are suitable for today's needs.

In recent years, as sustainable developments have been pursued, major shifts in the focus of housing policy and the change from a consumption-oriented society to a stock-oriented society have become required. In the housing sector, this philosophy has been reflected in an emphasis on stock-related priorities, including the construction of quality housing that can be properly maintained and used for many years. Therefore, to make the most of this housing stock, to respond to the global environmental impacts and to improve the overall quality of residential life, the creation of sustainable renovation strategies and technologies has also become necessary.

HOUSING STOCK POLICY IN JAPAN

In 2006, the Japanese Ministry of Land, Infrastructure, Transport and Tourism enforced the Basic Plan for Housing which established targets and basic measures related to the accelerated stabilization and improvement of housing and residential living standards. The aim was to attain the creation of quality housing stocks that can be used by future generations as well as the creation of quality residential environments meeting diversified housing needs. Moreover, in order to promote the popularization of housing renovation and 'Long-life quality Houses', the Act on the Promotion of Dissemination of Long-life quality Houses was enacted in 2008.[2]

As part of these plans, UR announced in December 2007 a new policy to promote the adaptive re-use and renovation of existing rental housing stock.[3] The purpose was to initiate a restructuring process which will lead to a reduction of about 50,000 units by the fiscal year 2018 and about 30 per cent of its total housing stock around 2048. [4] Since then, UR has been undertaking apartment reconstructions and

renewals proposing appropriate countermeasures to meet the diverse needs of Japan's falling birth rate and ageing society. In addition, renovation research and technological development have been conducted and several projects are intended to be carried out under the named 'Renaissance Plan'.

THE RENAISSANCE PLAN

The Renaissance Plan is comprised of making housing spaces barrier-free, converting spatial divisions, re-fitting interiors and providing facilities suitable for the 21st century. It also considers the necessity to develop continual technical advancements to perform an image renovation of the conventional stairway-type buildings creating new and attractive façades and taking into account any possible environmental burden.[5]

In 2008, the Mukogaoka Housing Complex Renovation Trial was announced and public participation for technical proposals and cooperative research with UR were required. The project consisted of applying the Renaissance Plan principles to renovate buildings No. 26, No. 27 and No. 28 of this complex located in the city of Sakai at the Osaka Prefecture in Japan.[6] The aim was to re-organize, remodel and improve the entire buildings' interior and exterior spaces including the surrounding green areas using and mixing different techniques while responding to residents' needs.[7]

The proposals of Toda Corporation Group[8] in association with Osaka Gas Ltd. met the basic requirements. They added the idea to incorporate the existing landscape to the design which gave a significant improvement to the living environment. Therefore, they resulted selected and were nominated as collaborators to develop the project from its conceptualization to its construction as well as to carry on further research.[9]

THE RENOVATION

The fundamental idea was to integrate concepts of 'Technology', 'Function' and 'Space' to develop places where everyone, from elderly to young people, could enjoy a lively life for a long time. As future building renewals need to consider several factors such as energy conservation and resources recycling, coexistence between living and natural environments, economic activities and employment capacity as well as the creation of better societies, the following sustainable measures were assumed as targets in this project:
a) *Environmental sustainability*, considering energy efficiency improvement, waste reduction and resources consumption control.
b) *Social sustainability*, considering social welfare and community regeneration and
c) *Economic sustainability*, considering housing management stability and economy formation and growth.

Working in a parallel way on these three important areas, the proposals aimed to contribute to the creation of social environments ensuring better living conditions for present and future generations. Also, despite the project was designed as a

whole, a particular theme was assigned to each building to give them an own identity. For building No. 26 the renovation was focused on the '*achievement of a sustainable community*', for building No.27 '*quality of life improvement*' was the objective and, for building No. 28 '*harmony between environment and society*' was intended.
Moreover, to make the most of the buildings and to take over the appeal that the apartments had 40 years ago, the policies listed below were also implemented for the renovation of the entire project.[10]

1. To give top priority to the renovation and improvement of basic performances.
2. To recover and improve comfort and quality of life conditions.
3. To establish precise and well-defined renovation techniques.
4. To take advantage of the existing structural qualities of the buildings
5. To propose renovation methods based on residents' needs.
6. To adopt the 'Open Building and Skeleton-Infill' principles as practical methods.
7. To consider all public and private areas as living spaces.
8. To get rid of the conventional box-type apartments.
9. To make economically feasible and profitable renovations.
10. To improve the methods of construction and the construction works.
11. To shape a renovation process and provide a framework for future research.

NEW ADAPTIVE RE-USE DESIGN IMPLEMENTATION AND CHALLENGES

In Japan, the tendency to demolish old buildings and start new ones rather than renovating and reusing them has existed for many years. The typical lifespan for a reinforced concrete building has been calculated about no more than 30 years. However, during the last years building renovation and adaptive re-use design have been adopted as measures to save resources, to reduce waste and to achieve sustainable developments. Therefore, for buildings No. 26, No. 27 and No.28 most of the original structure was preserved and only some improvements in terms of durability and adaptability were done. Also, to meet the requirements listed above, each building suffered specific modifications which will be explained as follows:

□ Building No.26

In order to enable harmonious coexistence among residents and to promote community formation and living environmental health, the creation of a multi-generational building with common spaces was planned

Part of the 4th floor was subtracted to convert it into a common green roof terrace and high-inclined roofs were installed to give thermal and water infiltration protection. The 'Mingle House' was designed considering room-sharing between young people (students or employees) who could give voluntary assistance and support to elderly people living in other apartments. It also included a multipurpose room for meetings, studying or working activities and for recreational purposes.

The 'Maisonnette House' was created by joining two apartments in the 3rd and 4th floors together cutting the slab and using the existing exterior stairs as the interior connection between them. The 'SOHO-Corner House' [11] and the 'Garden Terrace House' were proposed in the 1st floor where rooms and terraces were added to be used as relaxing spaces by residents and where domestic fuel-cell co-generation systems[12] were installed to supply electricity and hot water to the apartments.

In the 2nd floor, the 'Porch House' was planned as a two-space apartment where residents could enjoy their privacy and individuality as rooms were separated by a communal open corridor. The corridor was designed as an extension of the street-connecting exterior stairs and as a bridge leading to the north side of the building. Existent stair halls were preserved and re-adapted as entrances to other apartments while, to make accessibility easier especially for elderly and handicapped people, an elevator was installed in the north façade where pipes were concentrated and maintenance decks were integrated to facilitate equipment care and repair.

□ Building No.27

An improvement in the community-living performance based on the concept of 'Quality of Life' was pursued by the creation of living spaces fully integrated with a comfortable outdoor environment.

As in building No. 26, some slabs were cut and inclined roofs were installed. An elevator as well as maintenance decks were set up in the north façade and an additional space in the 1st floor of the south façade was built. This addition was part of the 'Life Support and Consultation Corner' proposed as an apartment conversion into a community support plaza where residents (from the complex or its surroundings) could receive help and assistance on topics related to child care, elderly care, medical treatment, DIY support and other possible daily life problems. Children indoor playing facilities were also suggested and a community deck was designed to connect all green open areas going through an apartment adapted as a passage between them.

In order to give some variations to the south façade, new balconies were added as extensions to the existent ones in the 3rd and 4th floors. Another 'Maisonnette House' was proposed and, as the elevator was connected to the existent stair halls to access other areas, new inner stairs were built and a different interior configuration was given. Public rooms and offices were also established giving residents the opportunity to relate and share experiences with others.

□ Building No.28

Focused on the idea to create an 'eco-cool' building that helped to reduce the environmental impacts, re-use and recycle concepts were integrated in the proposals.

In order to have a more human-scaled building, the first two upper levels were subtracted and, after structural seismic capacity improvements were done, a rooftop garden was designed and high-inclined roofs with photovoltaic panels were

installed. In the 3rd floor, the 'Eco House' and the 'Re-use House' were planned to enhance energy efficiency in the building. The 'Eco-House' considered a water supply heating system using the collected solar energy combined with special gas equipments as well as a green terrace where rainwater collectors and domestic garbage processors could be set up. The 'Re-use House' was intended to be built re-using and recycling most of the scrap materials that resulted from the renovating works in other apartments.[13]

In the 2nd floor, the 'Healthy House' was designed as a body-and-mind-friendly place where non-chemical materials were used. Thus, paper-covered ceilings and walls, cork-tile flooring and a ventilation unit with humidifying and air-cleaning functions were proposed. In the east side of the 1st floor, the 'Garden House' including a little vegetable garden was established and, to improve the image of the south façade, a wood deck and a pergola corridor built with the concrete and wood waste materials generated during the renewal process were planned. A massive green-wall was also considered for the east façade to increase acoustic and thermal insulation and to reduce the necessity of air-conditioning equipments.

□ Green open areas

Landscape design principles were considered to give continuity and integration between the surrounding open areas and the buildings. Preserving the existent vegetation, comfortable spaces where people could enjoy nature while doing other activities were proposed. Public benches and tables were suggested for the deck between buildings No.26 and No. 27 to promote and enhance communication among residents. In front of the west façade of building No.27 the 'Playing Plaza' was designed as a place where children could play safely and inside the complex. Moreover, along the north side of building No. 28 the 'Shade Garden' was proposed as a tall-tree area where people could have a walk or take a rest especially during sunny days.

VERIFICATION POINTS

Since July 2009, the construction has been underway and it is expected to be concluded by March next year. After the completion, monitoring and research are planned in order to verify whether the renovation has helped to achieve the intended improvements. For this purpose, UR in cooperation with the Kyoto Institute of Technology are currently assembling and establishing a verification plan which will include the following points:

1. Cost performance and structure reinforcement methods proposed to remove slabs and walls.
2. Cost efficiency and construction method used for the elevators' addition.
3. Design and earthquake resistance methods employed for the levels' subtraction.
4. Maintenance and management methods planned for pipe equipments.
5. Design, durability and insulation efficiency methods applied on the façades.
6. Attractiveness and indoor-outdoor relations between green areas and buildings.
7. Sustainable living conditions advantages and benefits.

8. Residents' opinion on living comfort and renovation results.

Once the verification concludes, the design criteria presented above will be evaluated. The complex will be open to the public and visits to the apartments will be organized. Continuous evaluations will be held to find a way to achieve the most optimum living environment and to make future improvements if required.

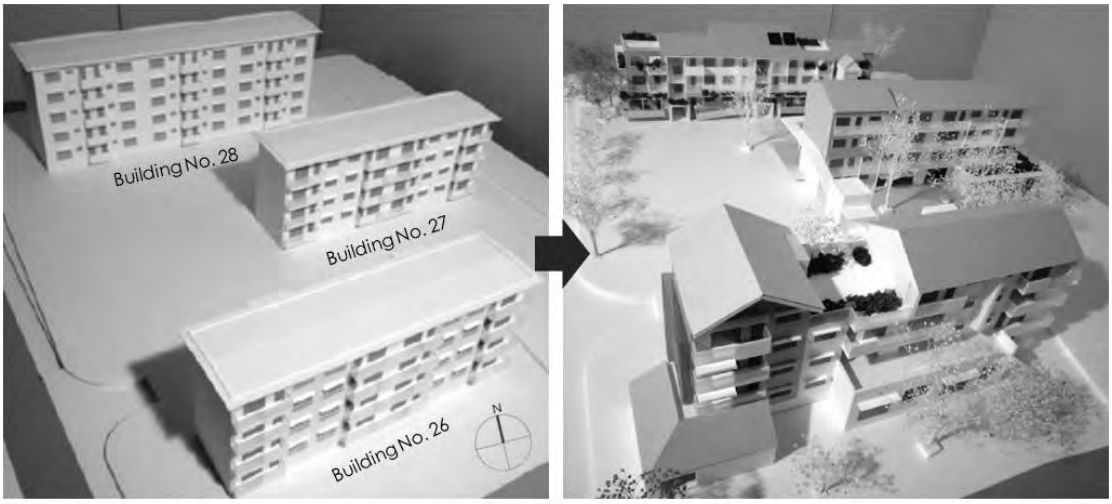
CONCLUSION

Housing developments are facing many challenges and specific actions should be taken to make them suitable for the new and different lifestyles, including various types of family structures and occupancy patterns expected for the coming years.

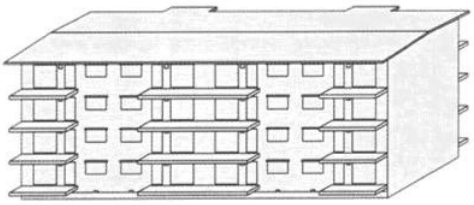
The renovated Mukogaoka Housing Complex is a comprehensive project that demonstrates and experiments with adaptive re-use and sustainable design programs which can improve and extend the life of existing buildings from this period. Through the process of design, construction, operation and maintenance it illustrates how design guidelines and renovation practice (compared with all new housing construction) can be achieved. Principles used in the Renaissance Plan provide viable options which can be achieved to sustain cities and societies in the future. Finally, through these measures, we can also protect and enhance our environment, to provide better living conditions and to meet the future by maintaining our past.

The proposals and technologies used in this project should be considered as examples for future housing renewals and new approaches should be combined with the traditional techniques to achieve a harmonious coexistence between man, nature and architecture.

Illustrations



Building No.26



Building No.27

NOTES

1 The Japan Housing Corporation and the Land Development Corporation merged in 1981 to form the Housing and Urban Development Corporation. In 2004, it merged with the Regional City Development Division of the Japan Regional Development Corporation to form the Urban Renaissance Agency, best known as UR

2Ministry of Land, Infrastructure, Transport and Tourism, 2008, “White Paper on Land, Infraestructure, Transport and Tourism in Japan”, http://www.mlit.go.jp/hakusyo/mlit/hakusho/h20/html/j1221000.html (accessed February 2010)

3 Urban Renaissance Agency, 2007, “Rental Housing Stock Renovation and Reutilization Policy”, http://www.ur-net.go.jp/stock/ (accessed February 2010)

4 The Building Center of Japan, et al., 2008, “A Quick Look at Housing in Japan”, 6th ed., The Building Center of Japan, Tokyo

5 Urban Renaissance Agency, 2009, “The Renaissance Plan: Building Renovation Technology Development”, http://www.ur-net.go.jp/rd/rn1/technical/pdf/01.pdf (accessed February 2010)

6 The complex consisted of 38 buildings built between 1960 and 1965. During the last years, some of them have been demolished or rebuilt and others, as buildings No. 26, No. 27 and No. 28, still remain. Buildings No.26 and No. 27 were originally four-storey buildings with 16 apartments and reinforced concrete box frame structures each one. Building No. 28 was a five-storey building with 30 apartments and a reinforced concrete frame structure. None of them had an elevator installed

7 The Renaissance Plan proposals are based on results obtained from questionnaire surveys conducted to residents in other UR complexes with similar characteristics to the Mukogaoka Housing Complex
8 Toda Corporation Group is formed by: Toda Corporation Ltd., Wakachiku Corporation, Ltd., Kyoto Institute of Technology Suzuki Laboratory, Itsuro Hoshida Urban Research Institute, Maitani Yoshiaki Design Studio and Wada Structural Engineer Consultants
9 Urban Renaissance Agency, 2008, “Competition Overview and Selection Results”, http://www.ur-net.go.jp/west/Renaissance/result.html (accessed February 2010)
10 Toda Corporation Group, 2008, “Building Renovation Proposals for the Mukogaoka Renovation Trial”, Toda Corporation Group, Osaka
11 Based on the ‘Small Office, Home Office’ concept
12 The ENE-FARM® co-generation system was proposed for this project by Osaka Gas Ltd. http://www.ene-farm.info/en/about/
13 Some of the winning design proposals submitted for the Re-use Idea Competition, carried out in 2007 by the UR Agency, were considered for the realization of this project. http://www.ur-net.go.jp/reusecompe/index.html

A FACTORY FOR WELL-BEING", INNOVATION IN THE HEATING SYSTEM AND THE CURTAIN-WALL IN LE CORBUSIER'S SALVATION ARMY "CITY OF REFUGE", PARIS 1933.

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The Salvation Army's "City of Refuge", built in Paris in 1933 by Le Corbusier, materialized a social utopia. Conceived as an airtight controlled environment, this building introduced into a socially aware context the technological systems later found in upscale building and system programs such as luxury hotels and cruise ships.

Le Corbusier wanted to implement two theories he developed at that time: the "neutralizing wall" (a double-glazed façade with an air cavity that can be heated or cooled) and the "exact breathing" system (a purified circulating air system at constant temperature), in what was planned to be a "factory for well-being." [1] As demonstrated in our research, the "neutralizing wall" was never truly considered for this project. The architect quickly replaced it with a single curtain wall, one the first built in Europe. On the other hand, he maintained a reduced version of the "exact breathing" system. The logic of these systems remained mostly coherent in spite of the budgetary cuts.

On the occasion of a forthcoming restoration, we had the opportunity to carefully study the technical aspects of the design, especially the glass façade and the heating system, by searching the building and the archives building on the research made by B. B. Taylor[2]. Our conviction is that the building conservation programme should not only concern the visible aspect of architecture but also the conception of the environment and its control. In other words, the devices and machines that enabled the building to function are also worth preserving. This paper will examine the heating and ventilating systems in conjunction with that of the glazed envelope, as they reveal the social, financial, and technical limits of the building's design and help highlight its transformation.

Le Corbusier developed several utopian urban projects between 1922 and 1935 based on multistory blocks disposed on open ground such as the "project for a contemporary city", the "plan Voisin" for Paris, and the "linear city". In all of them, he imagined glazed buildings facing all orientations except North. To him, the glass façade enabled one to triple the width of the building and thus open up ground distribution and networks: it was the key element of the contemporary city. Adapting this conception to the Parisian context, he disposed the different parts and functions of the City of Refuge in a very original manner. He implemented the main block perpendicularly to the street, clearing a complete glass façade facing South. This unique envelope sheltered various functions, such as a childcare center, individual

rooms, and dormitories, linked by a very efficient circulation. The idea of multi-purpose buildings, that he will develop later in his work, found here one of its first expressions. At the lower levels, the succession of low volumes, the porch, the rotunda, and the annexes, are articulated along the sequence of entry, spanning the passage between interior and exterior. They contrasted with the vertical mass of the dormitories.

The glass façade

The large glass membrane (1,000 m²) accentuated the contrast between the different parts of the program. The choice of an airtight glass wall can be easily explained in the context of the 1930s, when the search for hygiene and the fascination for the machine were prominent[3]. Thanks to the greenhouse effect, the glass façade was an easy way to provide thermal comfort and save energy - the shortage of fuel during WWI was still in mind - as well as maximizing daylight. Eliminating the operable windows was a means to protect the interior of the building from atmospheric pollution due to the coal coming from the nearby railways, to prevent residents with fragile health from air draughts by keeping the inside warm. Glass was also considered a clean material. A kind of morality and social control was associated to transparency, which enabled sight of the interior of the building from the exterior. It provided little intimacy to residents, in spite of the different types of glass: frosted or clear in the central part of each floor depending on the program and the altitude, wired glass for the sills, and patterned glass for the clerestory. This monumental glass wall was technically possible thanks to the recent innovations in glass fabrication such as the Slinguff and Bicheroux process and the inauguration of a new Saint-Gobain factory near Paris in 1920[4].

As we mentioned above, no traces of a double glass membrane can be found in the archives, since the solution was probably eliminated for financial reasons. The curtain wall technology, chosen instead, was not developed in France at that time. Until then, it had been only used for department stores (notably in Nantes by Henri Sauvage in 1925) or workshops. Based on summary sketches made by the office in 1931, several firms tended for the construction. Two of them were retained, Menuiseries Métalliques Modernes (MMM) and Dubois & Lepeu (D&L), the latter in charge of the glass façade of the Swiss Pavilion in Paris. The fenestration contract was split into two: on one hand, “the large frame” attributed to MMM, on the other, the façade on Chevaleret Street, given to D&L.

The main difference between the two contractors laid in the profiles they used: the standard U, L, T and Z steel profiles for D&L, and a special steel drawn profile for MMM. The windows and locksmith elements were pragmatically distributed between the two enterprises, following imperatives of visual unity and cheapest cost, in spite of their apparent randomness. Originally developed for smaller windows, these profiles were adapted to the height of 3.20 m thanks to a frame of vertical steel stiffeners, distributed every 3.80 m. Each unit was divided twice vertically to match the 1.90 m width of each room and three times horizontally in modules of 1.06 m. The system is held at each floor by embedded bracket and covered by a sheet-metal coffer. Adding complexity, the curtain wall was inclined to respect the urban planning bylaws. Apparently, this curtain wall met the expectations of the users in terms of

solidity and protection against air and water, since no complaint appears in the archives, contrary to the D&L's frame, which had to be stiffened afterwards.

The solar and light protection was added after the client's complaints. Wooden sliding shutters, similar to those of the Swiss Pavilion, were implemented in the interior of the dormitories, and curtains were installed in the other rooms. The efficiency of these devices in terms of solar protection were insufficient. In 1944, a bomb destroyed the glass façade completely, giving way to a new façade project, made by Le Corbusier in 1950-52.

The heating system

In 1931, several companies, Leroy, Sulzer, Tunzini, Zaniroli, Castiaux, explored solutions for the central heating and cooling systems. Construction having already begun by this date, the location and size of the service spaces were fixed, including that of the two chimney flues and of the six ventilation ducts. Sulzer, Leroy and Tunzini proposed four different solutions, from traditional radiator heating to complete air conditioning systems[5]. In this last, very detailed proposal, the firm hoped to place a heating and cooling source in the basement, to filter the air coming from the roof, and to dispatch the warmed or cooled air throughout the building using ducts[6]. Air conditioning was rare in France before the war, and the attention given to the proposal reveals the firm's determination to implement its system[7]. The architect and the client chose at first Zaniroli and Castiaux[8]. They finally selected Castiaux, probably because the simplified system it proposed, at 470.000 francs, was the least expensive. By contrast, for their air conditioning systems, Sulzer had asked for 1.640.000 francs, Leroy 1.250.000 francs and Tunzini 978.000 francs. As B. B. Taylor pointed out in his study on the building, these figures were out of proportion with the building budget that oscillated between 4 and 5 million francs[9]. After Castiaux faced financial difficulties, the Compagnie de Chauffage par le Vide, or CCV, took over the project[10]. It implemented a sensible solution that privileged mixed heating: a vacuum-driven, low pressure steam circuit fed cast iron radiators directly and, indirectly, forced air heaters. Although known in France, vacuum-driven low pressure steam heating, common in tall buildings in the United States, was rarely used[11]. Mechanical hot air heating deployed at the Salvation Army was unusual in French residential buildings, even if it had been known since the eighteenth century, although one did find it in factories[12].

Le Corbusier's idea of heating his building with warm air at a constant temperature in order to minimize cold drafts also originated in France. In 1777, Jean-Simon Bonnemain, the inventor of hot water heating system, had first implemented this system for hatching eggs and rearing chickens in all seasons, a task that required constant temperatures. Le Corbusier apparently followed the recommendations of the marquis de Chabannes who, in his first book on heating of 1815, stressed "the purification of the air, the prevention of dampness, the equality of temperature and suppression of draughts of air"[13].

At the City of Refuge, eight steam heating circuits were planned but only four were implemented. Three oil burning boilers, a vacuum pump, and hot water tanks occupied the basement. The fresh air coming from the roof, after being filtered, was distributed by forced air heaters into the rooms. The larger spaces in the building (the

dormitories, the dining room, the hallways, the meeting room) were also heated by forced air heaters. The blowers were located either inside the space to be heated or underneath the floor with registers, as was the case in the circular entrance pavillon, the hall at the pilotis level, the meeting room, and the elderly women dormitory. The staircase was heated by two blowers placed on the first floor. The individual rooms for mothers and their children and the childcare centre were heated by blowers located at both ends of the corridors. The ducts were inserted into a counterceiling along the corridors and registers were placed in the wall above the door in the rooms. The offices, apartments, the room for supervisors, the room dedicated to the princess of Polignac (the principal donator) were equiped with standard cast iron radiators heated directly by steam. Most of these small spaces had opening windows.[14] The heating system seemed to function properly, even if the Salvation Army thought the consumption of oil and electricity was too important. Most of the issues, however, occurred during the Summer. [SHOULD INCLUDE REFERENCE TO AN ILLUSTRATION HERE]

The Problems

In the Summer, blowers disconnected from the heating system provided ventilation. Rooms were thus given fresh air, although Le Corbusier suspected that the Salvation Army saved electricity by shutting down the blowers. It remains unclear how the air circulated in the large spaces, such as the dormitories. On floors 3 to 6, the individual rooms serviced by a corridor were ventilated by registers above the doors, creating a slight overpressure. The air left the room underneath the door to the corridor and exited the building through grilles set in the breast walls of the small courtyards. This system was apparently not sufficient. In the childcare centre on the 5th floor which, unlike the dormitories, operated during the day, the temperature could rise to 33°C. The replacement of the air conditioning system by forced air ventilation may have made sense financially but certainly did not technically.

Beyond technical issues, the negative reception of the hermetic wall can be explained from social and cultural points of view: the possibility of opening windows appeared necessary for some residents as it did to the administration. It might have been an expression of what is called now the sick building syndrome. Furthermore, one can easily imagine the problems that people with fragile mental states faced in airtight spaces.

The Salvation Army complained bitterly to Le Corbusier about the excessive heat, each party supported by its own team of experts. After numerous exchanges they decided to find a solution, consulting engineers proposed a water cooling system that unfortunately proved to be too expensive[15]. In the end, as claimed by B. B. Taylor, forty sliding Windows were opened in the glass wall[16].

The transformations

In 1950-52, Le Corbusier offered to repair the façade destroyed by the bombing, and designed a new façade were he experimented with concrete sunshades or “brise-soleil” that he developed notably in India. The frames were replaced by wooden windows with a small operable piece and a masonry sill. Disheartened by the choice of the façade colors made by the Salvation Army, Le Corbusier resigned from his

consulting position in 1952. Slightly modified during the 1975 renovation, the wooden frames were replaced by aluminum in 1988, and the sills were covered with aluminum sheet panning.
The original heating plant and the distribution networks have been totally destroyed at an unknown date. The implementation of the current radiator system negated the architectural qualities of the building. Since 1994, the City of Refuge is heated by the Parisian district heating system (CPCU) using low pressure steam . This technology might facilitate the return to a system closer to that used originally. Despite the destructions, it is still possible to find significant traces of the ventilation ducts around the building such as filled-up floors openings, grilles, and registers[17]. Those traces confirm that the original system was close to the technical specifications and the few changes described in the letters exchanged between the architect and the CCV. They point to a captivating history of technical innovation.

We hope that a better understanding of the innovative qualities of the original thermal conception of the City of Refuge will not only enhance our understanding of Le Corbusier as a master of Modern Architecture but also make apparent the necessity of a sensitive restoration of this important work to make available to future generations the architect's utopian vision.

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[1] Justin Godart (FLC J1-20-20)
[2] Brian Brice Taylor, *Le Corbusier, the City of Refuge Paris 1929-1933*, University of Chicago Press, Chicago, 1987
[3] Traisnel Jean-Pierre, *Le métal et le verre dans l'architecture en France, du mur à la façade légère*, Thèse de doctorat, Paris 8, 1997.
[4] Carré-cousaris Anne-Laure, *Construire en verre : de nouveaux matériaux pour l'architecture, 1881-1937*, Thèse de doctorat, Paris 4, 1998.
[5] Those three firms were very well known at that time, there were member of the Union Chamber of heating system manufacturers
[6] Technical specifications and plans describing the different projects are stored in Le Corbusier Fondation
[7] The studies required to answer the invitation to render were important and must have cost money to the firms.
[8] Zaniroli worked previously for the Salvation Army on a female shelter in Paris, and Castiaux was in charged of the heating of the Pessac Le Corbusier's housing estate
[9] B. B. Taylor, p. 96

[11] Missenard André, *Chauffage et ventilation* (handwritten), 1932, 166 p. (Archives AICVF). Charlent Charles, Bourcier Lucien, *La pratique du chauffage central*, Garnier Frères, 1928, p. 219-220
[12] The Glass House by Pierre Chareau (1883-1950) in Paris (1928-1931) used also a mechanical hot air heating system, a direct one. Le Corbusier was often visiting the construction site
[13] Chabannes Jean-Baptiste marquis de, *Explanations of a new method for warming and purifying the air in private houses and public buildings*, Schulze & Dean, London, 1815, p. 5-8
[14] B.B. Taylor, on the contrary, claims that all rooms equipped with radiators had opening windows
[15] More than 100.000 francs
[16] p. 123, any how we have not found any evidences of that choice
[17] Successives visits to the archives and the building allowed to find those traces

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RECYCLE H_2O : THE FUTURE OF THE WATER PURIFICATION PLANT IN GENEVA, SWITZERLAND (1964-1967): HERITAGE AS A TEACHING RESOURCE

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Rise of the modern city: sanitation and "grands projets" in post-war Geneva

Geneva, 1962: the earliest satellite suburbs are rising - the Cité Meyrin [1], Cité du Lignon[2] and the new Cité nouvelle d'Onex[3]; a massive sanitary engineering campaign begins as the city, its population (optimistically) predicted to reach 800'000 in the long term, nursing international aspirations and the desire to forge a modern identity, tackles the demands of rapid growth. In tandem with new road traffic schemes and air transport development, sanitation - from refuse treatment to wastewater purification – had been high on the agenda in the immediate post-war years. In the 1960s, after nearly twenty years in the making, a system sizeable enough to match the scale of the conurbation finally materialized [4]. The *Programme d'assainissement du Canton de Genève,* developed by the Public Works Branch (Département des Travaux Publics), was officially adopted in November 1962. In the report, by a team of specialists led by the canton's clear-sighted engineer, Yves Maystre, a complex and ambitious system of sanitary engineering infrastructure for the canton was plotted out.

The environmental theme – notably the protection of the aquatic landscape – was regarded as just as important to the scheme as urban planning. As Maystre's engineers emphasised, the two imperatives had to be treated in parallel: the wastewater treatment system scaled according to demographic forecasts, and the siting of infrastructure in the future conurbation thought through on a large scale, basic requirements for any public infrastructure project[5]. A vast programme of industrial building was therefore mapped out. Capitalising on the major works under way for the new residential districts[6], the sites were located throughout the canton, shared among communes according to the first absolutes of Geneva governance. Fifteen pumping stations, three refuse treatment factories and nine organic wastewater treatment plants, linked by a network of over 65 kilometres of primary drains: a huge complex of sanitation infrastructure was created for waste processing and for the treatment of wastewater prior to its release into the Rhône.

Of the network's numerous elements, the Station d'épuration des eaux usées d'Aïre (STEP for short) was to be the main treatment plant. The STEP d'Aïre was sited at a bend in the Rhône in the west of the canton, where the topography was best suited, the " nearest point downstream of the conurbation with the required elevation»[7] and designed to be the collection point for the main drain system. Following an international competition launched in 1962, the scheme was awarded to the engineers Heinz Weisz, who were tasked with designing the plant's technical facilities. Opened in 1967, the site comprised several structures, among them the spectacular

flight of reservoirs, its area determined by hydraulic calculation. In addition to its perfect mastery of water purification technology through the use of the latest international advances in the field, the STEP d'Aïre is also remarkable for its architectural quality, both in terms of general layout and expression of the different volumes. Designed by the office of Geneva architect Georges Brera, with young associate Peter Böcklin[8] in charge of the project, the STEP site, with its exceptionally fine setting, is in fact a cluster of remarkable architectural set-pieces. Of the main structures, the administration building, the maintenance sheds and the sludge treatment facility, known as 'Porteous', are the most striking. All are executed in a very clean sculptural language, maximising the expressive qualities of bare, form-finished concrete, in clear and confident reference to Le Corbusier.

From functional infrastructure to heritage at risk

Fast-forward to 1997: by the late 1990s, although originally the question of population growth in the Geneva basin clearly featured in the designers' calculations, the STEP d'Aïre was inadequate. Its outdated "first generation" filtration and treatment technology was no longer in step with environmental protection requirements. Enlargement and modernisation became necessary and a new purification plant was erected on the same Aïre River site, upstream of the 1960s complex, but showing scant regard for the modular grid-based concept of the original[9].
The landscape east of the old STEP became a chequerboard of new ponds; the new buildings, with all the charm of industrial prefabs, were conceived as nothing more than functional sheds, far removed from the plastic inventions of Brera and Böcklin. The new STEP was completed in September 2003.

The original buildings still occupied strategically important sites in terms of the plant's configuration, but were gradually disinvested of their role. One by one the three main volumes became redundant; *Porteous,* meanwhile, was clumsily altered, as were the maintenance sheds that currently serve as reception buildings for the new plant, or temporary accommodation for Geneva City services which rent the admin block while awaiting transfer to a better location.
Their heritage value is recognised informally by the heritage authorities, but the original STEP d'Aïre buildings are all but abandoned, disused or gnawed away by small yet invasive and uncontrolled maintenance and re-use interventions, and there is no planned maintenance programme aimed at safeguarding their original spatial and material character. The question now is: what will become of them? How can we rehabilitate this specimen of industrial heritage, this key witness to the period of post-war urban growth known as the "Trente glorieuses", and one of the most striking examples of "brutalist" architecture in Switzerland? How do we reconcile the functional and environmental demands of the new STEP, which has swallowed up its 1960s predecessor, to enhance and display the whole as it should be seen? What programme, and what strategy, will we adopt in its transformation? These were the questions that architecture degree students in the third year studio practice class at the Ecole Polytechnique Fédérale de Lausanne were asked to answer over two semesters in 2007-2008[10].

STEP heritage as a teaching tool

The answers lie primarily in an exhaustive understanding of the built objects, the admin block and the Porteous. An initial phase, coupled with historical documentation, involving a detailed survey – a physical endeavour that requires lengthy contact with the building– allowed us to grasp its character, identify its constructional logic and correctly define a diagnostic approach. Drawn up in the form of axonometric details, the survey should be seen as an essential tool,

forming a sound basis for the repairs that will be fleshed out in a second phase, and helping us to put in place a strategy for the site's conservation.

In addition to precise and painstaking survey work, we need to extend our understanding across the site as a whole, and comprehend the logic that has dictated the disposition of the component volumes, how they relate to the natural setting and the quality of their integration. These issues have a special importance for the two objects under scrutiny: in the skilful articulation of the admin block in the slope of the bank, or the spectacular projection of the Porteous over the river below – designed for the fluvial discharge of sludge treatment products for transfer towards the incineration plant, sited further downstream on the Rhône – the above aspects are extremely well handled. On a larger scale, taking in the project's urban dimension and its relation to the conurbation, we are able to home in on a primary and fundamental problem affecting the STEP d'Aïre site, namely its poor access from the city. The STEP was originally almost the nerve centre of an extensive network, punctuated by industrial features that were carefully controlled not just at the level of technical functionality but also in terms of architectural treatment, as with the Saint-Jean Pumping Station, an immensely expressive piece of brutalism, also by Brera. Though now incorporated within the new plant – a working industrial site with all the obvious nuisance that this entails – Brera and Böcklin's STEP d'Aïre has itself become, functionally speaking, an isolated object. Any new scheme is inseparable from the problem of access and how to resolve it.

The existing route following the course of the Rhône, connecting the city of Geneva with the Cité de Lignon site further away, allows access to the buildings by means of a landscaped path. But the students propose to bring back the site's fluvial character by following the original water course, reconstructed from original documentary evidence and those material remains of the industrial landscape that can still be found at the site. Access by boat, from the city along a river trail of exceptional natural beauty, is by way of the Porteous. This was originally conceived as a focal unloading point in the network of treatment facilities and is therefore restored to the heart of the scheme - the gateway, so to speak, of an essentially public programme. The students propose to make the Porteous the centrepiece of the STEP, with the aim of increasing public sensibility towards the environmental challenges of our century. The scheme groups together the public functions (visitor reception, temporary exhibitions, conferences, centre, cafeteria, etc), which are also meant to serve the users of the industrial facility (cafeteria, auditorium, lecture rooms, etc). While not the main item, this is a realistic idea, in tune with Geneva city's main agenda, and this makes it especially rich even in the context of an academic project[11]. Although the scheme calls for some sizeable components, the expressive power and mammoth dimensions of the Porteous create certain problems (in the positive sense of the term) and constraints in terms of the integration of units: it's dominance demands a strategy of counterpoint and compromise that goes beyond the mere assigning of functional roles. Nor is it a question of inserting an autonomous form within a covered, enclosed space, the Porteous being not a large building so much as a precise arrangement of spaces configured around an industrial process. So as not to encumber the machine hall with troublesome supports, and to achieve the overhang above the Rhône, five bays of reinforced concrete beams extend across a three-stepped roofline: elongated U-sections providing a suspension point for machinery and allowing natural light into the spaces, projecting the structure towards the river and creating an readable feature within the landscape. The projects take this peculiarity into account, some of them extending a landscape sequence into empty volumes, where internal and external spaces, cleared of their machinery, have now merged. Ramps and stairs are used to organise the functional units - auditorium, exhibition space – in an open-sided environment. Some of the projects acknowledge their similarity with reactors and other heat exchangers, with curved forms

and using special new materials like GRC. They perch them on the reinforced concrete cubes and drums that make up the bumps and folds of the uneven floor. They hang them from the ceiling, like filter-presses once were, and organise library and seminar rooms by modelling natural light, the project's primary material. Obviously materials are also defined, those retained in order to invoke industry, or introduced to create the Aïre « Environment Centre ». Rooms are individually temperature controlled, insulation provided where necessary. Horizontal and vertical fluidity, a key structural component in any public utility project but lacking in the original industrial structure, is recovered by the systematic removal of certain infill elements from the discontinuous, pier-supported frame, and unwrapping the STEP's fundamental gridlines. Though the spaces required under the programme are largely contained within the volume of the building, some projects make use of the roof, as an observation point for the meandering river banks below; others target the subterranean tunnels and galleries, reconstruct the cylindrical forms of demolished silos; still others try to create a more welcoming point of entry for the riverside trail along the Rhône, and, especially, the entry point to the raw bulk of the Porteous. Ample and imposing, the Porteous guides and inspires the projects, offering qualities of space, light and structure that are rarely encountered in the western Swiss cantons.

To the horizontal of the Porteous, suspended over the river, the admin building counters with its vertical thrust, a blade-like silhouette planted into the bank. If the Porteous is the unique feature of the STEP's function and situation, it is no less tied to the geometry of the whole, whereas the admin building rises obliquely from that geometry, parallel with the Rhône, a transitional nod towards the Lignon towers built soon afterwards. Access is from the entrance esplanade, which is also a carpark, by means of a footbridge overlooking an empty void, a sort of belvedere over the river, partly enclosed by corrugated glass and traversed by the cylindrical and cubic volumes of the vertical circulations. Service access is at a lower level, between the esplanade and the building's lower structure. The generous height of the belvedere creates a space between pilotis supporting two floors of offices and laboratories, glazed for the most part, and crowned by a roof terrace cleverly furnished with solid concrete forms. The lower level stretches out lengthwise, leaving pillars advancing towards the natural terrain of the bank. Add the brise soleil on the south facade, supporting structure in board-finished shuttered concrete with white infill « à la chaux » and you have an eminently successful interpretation of Le Corbusier's 1950s architecture. The architects, with the full confidence of engineer Heinz Weisz, the project's main contractor, wanted, for this building especially, to create an architecture of real worth and dignity for the enjoyment of men engaged in the daily grind of their labour. Partitions and interior fittings in varnished wood, neat indirect lighting and surfaces in clean green create a sober interior counterpoint to the lush landscape and woody banks of the Rhône.

However, where Geneva's great masterpiece, Le Corbusier's Immeuble Clarté, has been restored – and was visited by students during the semester on the occasion of an ICOMOS colloquium - the admin building at the STEP faces an uncertain fate. The rehabilitation programme adopted includes the conservation of the existing fabric and repair of the most degraded elements, spatial and material – along with an extension of offices and laboratories, an auditorium and other annexes over roughly one third of the existing site. Again, the scheme is plausible, and the Water Authority currently located there could be called upon to centralize all its offices in the canton at the site. But the scale of the transplant alone will make a low-key intervention all but impossible, and the project strategy plainly goes against the grain of the site's « weiterbauen », both volumetrically and in terms of architectural language. Only one scheme can foresee burying the programme into the southern esplanade, organising spaces under the plinth and around a courtyard, where the auditorium emerges and affirms a built presence above ground. Another project has radically pushed back the esplanade to allow a

southward expansion of the building's lower ranges, producing a horizontal development that is not currently there. The access bridge is lengthened, crossing a mainly glazed and planted roof, a fifth façade like a hanging garden, as it were, enclosing comfortable interior volumes. Several projects have tried to continue the existing range, turning it at right angles to the esplanade to produce a less than convincing hybrid, or lengthwise in its volume, to the west, but without overcoming the pitfall involved in transforming the supporting structure by having an auditorium in the lower area, nor the problem of formal mimetics, which is always going to be difficult due to the codes required for new building. One project[12], smart and well-reasoned, plans to double up the lower ranges onto two levels, towards the river, proposing in turn an interpretation of Corbusian motifs that unifies the old and the new. A key element of the project is the transformation of the glazed hall into access point at lower level, becoming a reference level for the distribution of the principal spaces, including the auditorium. The roof terrace volumes make a respectful elevation of the roofline somewhat unlikely, yet a glazed, double height steel-framed structure, beyond the superstructures, conserving them while introducing a new use, is rather convincing. The building thus becomes a three-part entity riven by habitable voids which contain architecture on a smaller scale. The project's author, by the way, has made a detailed survey of the roof and this kind of close observation is often the starting point for an alteration that can only be yielded through an excellent appreciation of the material. Two other projects play on the idea of doubling up: the one extending the lower volume like a plinth on which the Brera building will sit alongside a new laboratory tower, square on to the Lignon site; the other, rather more complicatedly, extending the esplanade-belvedere out over the river bank, putting offices in it and crowning it with an opaque auditorium on pilotis in sharp contrast to the existing glazed volumes.

It is striking and extremely stimulating to note how the rehabilitation projects, in using the STEP heritage as a tool for learning, starting from a single, unique building of undoubted heritage value, and from a single, highly constrained programme, (conservation + new build), developed by students during their studio practice module, deliver an extraordinary diversity and quality of architectural solutions, each planned according to its own logic and with the utmost respect for the existing site. If their work on the STEP, which has brought together the history of contemporary architecture, knowledge and technology of twentieth century building methods, strategic planning for heritage sites conservation, etc., succeeds in opening the eyes of architects on the ground to a new approach to practice, let us hope that their ideas also serve to nourish future deliberations over the future of the facility in general and over the fate of the admin building and the *Porteous* in particular.

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[1] Georges Addor, Louis Payot, Jacques Bolliger, architects, Honneger Frères builders, 1960-1964.
[2] Georges Addor, Dominique Julliard, Louis Payot, architects Heinz Weisz engineer, 1962-1973
[3] André Gaillard, Maurice Cailler, architects, Honneger Frères builders, 1960-1965
[4] After the fashion of other major Swiss cities, the centrality of the sanitation question was already a priority concern for the *Programme genevois des grands travaux* of 1944. Louis CASAÏ, Conseiller d'Etat (representative of the cantonal government), head of the Public Works Department for the Canton of Geneva, « Le programme genevois des grands travaux », address delivered 27 March 1944, full transcription published in *Bulletin Technique de la Suisse Romande*, vol. 70, n° 11, 27 May 1944, pp. 144-148.
[5] Yves MAYSTRE, « L'épuration des eaux usées dans le cadre de l'urbanisme », in *Bulletin Technique de la Suisse Romande*, vol. 84, 1958, pp. 241-242.
[6] In this sense, we should mention the important public infrastructure projects that precede the buiding of Cité Meyrin, the (extermely modern) layout concept of which was devised in parallel with the mapping out of the canton's primary drainage network. Yves MAYSTRE, « Les premiers collecteurs d'égouts de Meyrin », in *Bulletin Technique de la Suisse Romande*, vol. 87, n° 7, 8 avril 1961.
[7] Yves MAYSTRE, « Les grands travaux d'assainissement de Genève », in *Bulletin Technique de la Suisse Romande*, vol. 90, n° 7, 4 avril 1964, pp. 141-147 : 143.

[8] Georges Brera (1919-2000), architect and graduate of the Ecole des Beaux Arts de Genève, played a part in Geneva's boldest postwar operations, including the Carouge Towers (1959-1965). The STEP d'Aïre project was entrusted to his accomplice Peter Böcklin (1935), a recent graduate of the Ecole Polytechnique de Zurich.

[9] « The water purification plant is initially constructed for 400'000 inhabitants and supporting industries, but is designed for expansion in units of 50'000 inhabitants. The orthogonal structure will allow ponds of varying dimensions to be adopted, where purification technology justifies it». The question of gradual enlargement of the facility was one of the canton's primary demands. To meet this requirement, Brera and Böcklin developed an extendable, modular layout, based on an orthogonal grid system, which suggested the best manner of extending buildings that they imagined as «large, open structures». Yves MAYSTRE, *Conception du traitement des eaux usées et des boues*, in *Aïre, Station d'épuration des eaux usées de Genève*, brochure published by the Canton of Geneva – Département des Travaux Publics, Geneva 1967, pp. 18-19. See also Georges BRERA*, Le parti architectural*, ibidem, pp. 54-55.

[10] Project theory and criticism studio, semesters BA5 and BA6, 2007-2008 : Franz Graf architect, professor ; Christian Bischoff, Giulia Marino, Michael Wyss architects, assistants.

[11] The atelier group has been working thematically on the imminent conversion of industrial buildings: in 2007-08 the STEP à Genève (1964-67), in 2008-09 the Ivrea thermoelectric plant (1956-1959) in 2009-10 the Geneva municipal centre (1964-67), in 2010-11, the CERN site in Geneva (1954-1962).

[12] The scheme by Laetitia Bernasconi was awarded first prize by the Specialist Group for Conservation of Engineering Structures of the Société Suisse des Ingénieurs et des Architectes in February 2008. See special issue of the SIA publications Tec21/Tracés/Archi, GCO, 2008 prize winners, February 2008, p. 4-5.

UNIVERSITY CITY
Evolution and University

In the fifties of the twentieth century a worldwide impulse was given to higher education: science was the ultimate expression of the progressive, modern nation. The university campus, mostly planned on a tabula rasa apart from existing urban areas, gave a perfect opportunity to create a new environment according to the latest modern principles. Inspired by Le Corbusier and CIAM, the focus was shifted from the architecture to the urban form. Besides exceptional pieces of architecture, the quality of the university city as a typology can mostly be found in the urban form and landscape. Examples of the modern university campus are found throughout the world; some unknown examples in Africa included. Previous International DOCOMOMO conferences were organized at marvelous sites like the university of Delft in the Netherlands and the university of Ankara in Turkey. It is a great opportunity to visit the unique World Heritage National University of Mexico City.

Many of the university complexes are now outdated and ready for renovation and transformation. Plans are made for restructuring the university campus throughout the world. For DOCOMOMO it is necessary to study the successes and failures of the renovation and intervention plans.

Roberto Segre and José Barki will give an overview of the history of university cities with a focus on Moreira's campus on the Ilha do Fundao in Brasil. The problematic connection between the city and the university, that exists in a lot of towns, is extreme in Rio de Janeiro because of its location on an island. Arie Sivan explains the historic evolution of the university of Jerusalem. Constant transformation did not lead to a clear organization – the original urban quality was destroyed. Chiara Visentin will focus on the interconnectivity of the public space of the urban campus and the university as a complex urban organism. Ana Bela de Araujo will give an overview of August Perret's work for the centre of nuclear studies in France as a symbol of French scientific and architectural excellence. The quality of the landscape often plays an important role in the valuation of the Modern Movement campus, especially now, 50 or 60 years after completion. In this sense the landscape architecture of Marcel Zaborski is highly appreciated in the centre of nuclear studies. Erick Abdel Figueroa Pereira, who will focus on the university city of Valle in Cali, Columbia, also highly values the landscape between the buildings. In many university complexes, this quality has been partially disappeared because of poor maintenance.

The architecture of the buildings forms an important part of the quality of the Modern Movement university complexes. André Leal will explain that the quality of the University of Sao Paulo lies mainly in the architecture of individual buildings. Careful renovation is necessary to preserve the specific modern heritage.

The papers of Erick Abdel Figueroa Pereira and Andre Leal are not included in the proceedings.

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THE UNIVERSIDADE FEDERAL DO RIO DE JANEIRO CAMPUS: AN ENDLESS STORY.

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"Islands" of knowledge

With the end of World War II, the campus for the *Universidade do Brasil* followed the impulse given to university education in many Latin American countries. This process had a hesitant start at the beginning of the twentieth century, when the administrative structures of those governments were consolidated with the adoption of political systems framed by the idea of a democratic republic. This political change was also reflected in the urban and architectural representation.

Until the thirties, before Le Corbusier's arrival to South America, local oligarchies adopted French academicism to improve the image of Capital-Cities. It is the Greco-Roman style that will identify the first two campuses in the Caribbean and South America: Havana, Cuba, inserted within Vedado neighborhood in 1902, and Concepcion, Chile, sited in the center of the city in 1919 (ARANGO 44:2002). In Rio de Janeiro, the monumental representation of knowledge came up with the proposal of the city master plan by Donat Alfred Agache locating a University Campus in Praia Vermelha (1927-1930), and in the project for a University Campus in Quinta da Boa Vista by the Italian architects Marcello Piacentini and Vittorio Morpurgo (1932-1938). These formal solutions were proposed to fit the urban structure and merge with the existing monumental arrangement. In Havana, a grand staircase related the campus to the road network of Vedado. In Rio de Janeiro, the main axis from the square of the Academic Administration was established in the same alignment of the future Avenida Presidente Vargas.

The planning criteria of Le Corbusier and CIAM rejected the permanence and continuity of the traditional city. Thus were created the utopian visions for Corbusier's 3 million inhabitants city, or Hilberseimer's abstract spatial compositions. The idea was to insert "islands" within the traditional urban structure: examples are *Plan Voisin* and *îlots insalubres* in Paris, both designed by Le Corbusier. In Latin America, in the thirties, with the definition of new urban typologies, the subject of the University Campus gained a renewed significance. This theme echoed, on smaller scale, new urban concepts. In 1937, three examples applied Modern Movement principles: the Campus of Bogota, by Fritz

Karsen and Leopoldo Rother and the two versions for the Campus of Rio de Janeiro at *Quinta da Boa Vista* commissioned by the government, one by Le Corbusier and another by Lucio Costa leading a team of Brazilian architects. The common point was the autonomy from the urban and landscape context, particularly in the Rio de Janeiro plan: the typology of individual blocks, the presence of axial composition systems and a certain spatial freedom in Corbusier's plan. The spatial tradition that epitomized Anglo-American campuses, formally arranging buildings around squares, was rejected.

Certain features were common in these projects. The distribution of the buildings was made according to the significance attributed to certain uses: the civic square which brought together the Academic Administration, Library, Auditorium and Museum; the Medical Center and an area for sports facilities. In the example of Bogotá, these elements had special attention, given that the 1938 Bolivarian Games justified the campus construction. In Rio de Janeiro as the sponsoring institution was the Ministry of Education and Health, in Corbusier's proposal the University Hospital dominated the organization establishing a dialogue with the Academic Administration and the Auditorium — similar to the *Palais des Soviets* —; the Museum — similar to the *museé de croissance illimité* — served as the center piece of the composition; and Lucio Costa's alternative had similar elements. While Le Corbusier structured an open arrangement with large green spaces, Costa designed a homogeneous system of buildings along a main axis where there were different colleges culminating with the Hospital (GOROVITZ 134:2002). Unlike the Piacentini project, both Corbusier and Costa did not take into account *Quinta da Boa Vista* topography and the presence of the Imperial Palace, important elements of the landscape. In these modernist proposals the concept of "island" had been radically applied.

The language of Modern Movement: an utopian dimension

In the late forties, three major initiatives were developed in Latin America: Caracas (1944-52), Mexico (1949-52) and Rio de Janeiro (1949-1957). For the Central University of Venezuela Campus, architect Carlos Raúl Villanueva developed the project in two stages: the first, up to 1947, had as its main core the Hospital, designed with the formal principles of rationalism; the second, during the fifties, Villanueva radically changed his language, assimilating the plastic freedom of "Brutalism." The new icons were the *Aula Magna* and the Olympic Stadium, distributed freely on the site, linked by pedestrian covered galleries and integrated to public space with art works by local and foreign artists. In Mexico, the project was carried out by a team of architects under the direction of Mario Pani and Enrique del Moral. The proposed goal was to transform the campus into a representation of modern culture by integrating the historical past with a future vision for the nation. Codes of the Modern Movement were mixed with references from Maya and Aztec civilizations; aesthetic issues were dealt with traditional materials. The key symbols were the Olympic Stadium, conceived like a volcano crater, and the Mexican history mythically described in the Library facades (SEGAWA 58: 2001). For the *Universidade do Brasil* project, Jorge Machado Moreira followed Le Corbusier's rigid orthodoxy.

In 1938, a committee of professors rejected Le Corbusier's and Costa's designs and approved the Piacentini and Morpurgo proposals. Capanema, Minister of Education and Health, who was developing the headquarters for the Ministry with a team of leading modernist architects, did not accept this decision and Piacentini could not start working. In 1939 the Committee for the University of Brazil Plan was created, with a group of modernist architects to initiate the future campus buildings projects (MELLO JR. 64:1985). After *Quinta da Boa Vista's* dismissal, a number of alternative options were presented. In 1945 the federal government approved the landfill of a complex of eight small islands close to *Ilha do Governador* in *Baia da Guanabara* totaling a continuous surface of 5,9 million square meters: 4,5 km in length and an average width of 1 km. On this new island — *Ilha do Fundão* —the future *Universidade do Brasil* campus had to be created. With the end of the *Estado Novo*, the new government decided to appoint in 1949 Jorge Machado Moreira — who had participated in the MES design — as team leader of the Technical Office for *Universidade do Brasil* (ETUB), and therefore launch the Campus project. This design opportunity stirred the encounter of a metaphorical "island" with a real one.

The fifties were a period of euphoria in Brazil. It began with the opening of *Maracanã*, a giant soccer stadium (1950) and culminating with the VW Beetle local production (1959) and the Brasília inauguration (1960). The largest country in Latin America, which had started its industrialization during Vargas government, enthusiastically embraced modern technology without giving up cultural traditions, especially the hedonistic character of Rio de Janeiro. In architecture, Oscar Niemeyer became the expression of *"national creativity,"* interpreting with his personal genius the legacy of Corbusier's principles and adapting it to Brazilian conditions. Machado Moreira fitted into this aesthetic line with a restrained language and proposed for the University building complex a sort of "uniformity without monotony" (CONDURU 20:1999).

In an island shaped like a crescent, Machado Moreira organized ten major centers along a linear axis: 1) administration, 2) philosophy, science, literature and education, 3) social sciences, political sciences and economy; 4) Medical Center, 5) engineering, chemistry, physics and technology, 6) fine arts and architecture; 7) physical education; 8) housing; 9) additional services and 10) Botanical Garden. At one end stood a huge building complex for the University Hospital and on the other end, the Astronomical Observatory in front of the Botanical Garden. Student housing was located in a smaller portion of the island. Two bridges gave access to the island, the first, linked to the Medical Center and to the Olympic Stadium, and another connected with the Civic Center, which contained the Academic Administration, Auditorium, Library and the Museum, a *musée de croissance illimité* look-alike. The memory of Le Corbusier loomed in the Hospital, with a scale that is related to *Ville Radieuse* (SEGRE 20: 2004) and in the Architecture School, inspired by the MES design for *Praia de Santa Luzia*. Besides the main central axis, a perimeter road surrounded the whole island. As for the landscaping, Burle Marx conceived the design of all green areas The building concentration foreseen in the plan was articulated taking into account pedestrian circulation. The presence of courtyards in the Medical Center created quaint and intimate environments. The *pilotis* of covered galleries allowed the circulation of students and teachers

protected from hot and humid climate. Overall, medical and technological study centers, which constituted the vanguard of scientific development, were privileged. The architectural image had a strong homogeneity, based on a sober language, identified by the arrangement of volumes: blocks, towers and flat buildings, free plans and the consistent use of *pilotis* and *brise-soleils*. Even though Machado Moreira opted for a moderate scheme, the Civic Center received a monumental treatment.

The move of the capital city to Brasilia (1960) emptied the significance of Rio de Janeiro. The work in the campus gradually lost its driving force and the project was left unfinished. In 1960, only the Architecture School, the Engineering School, the University Hospital — with merely half of the building occupied — and the Institute of Child Care were completed.

Heritage and future proposals: a complex dialogue

The quality of the Campus urban design and of its buildings was recognized and received the Gold Medal award at the Brussels Universal and International Exposition (1958). The Institute of Child Care and the Architecture School received, respectively, the first prize in the *II* and in the *IV Bienal Internacional de São Paulo* (1953-1957). The military dictatorship period (1964-1984), did not favor the development of the plan and the campus isolation from its urban context was intensified. Without considering Moreira's project, Sérgio Bernardes designed in 1969 the *Petrobrás* Research Center (CENPES) and, subsequently, the College of Letters was built with an insipid design.

The campus had become a huge emptiness, with buildings scattered and isolated, "islands" within an island, with poor maintenance — referred as "modernist ruins" (JAGUARIBE 131:1998) — and no relation with the bay. Essentially, a fragmented social space was created, functionally incompatible with its urban context. The situation turned out to be worsened by the contrast between the campus and the cluster of *favelas* — *Complexo da Maré* — which emerged in the near surrounds, and the constant traffic of *Avenida Brasil* and two imposing highways. Ultimately, this would lead to the expansion of existing bridges, but in any case the traffic flow between island and the city became denser. Still, the overestimated size of buildings was able to accommodate, fifty years later, the growth of the university population.

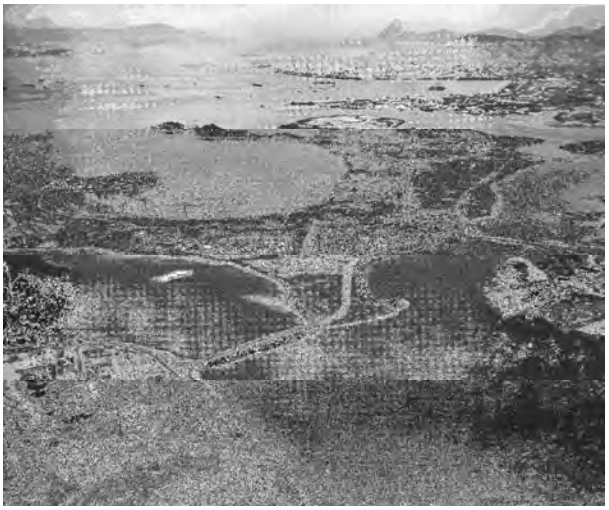
Successive plans were developed for restructuring of site. Finally, the authorities of the UFRJ decided to radically change these circumstances preparing a new Master Plan. This project is developed in order to give a new urban quality to the campus and focusing its future evolution to 2020 (UFRJ 2020:2009). The main goal is to overcome the existing isolation from its urban context and the fragmentation of functions, strengthening the link with the surrounding context to generate the essential "city effect" that would invigorate social life. The main idea is to convert the existing building complexes in neighborhood centers and improve the urban connection through various public transport systems, together with a third bridge. It was proposed the creation of six "convergence centers" designed as new centralities. In addition to the activities of teaching and research, these centers would accommodate housing

units, commercial and cultural facilities. Moreover, because of its particular location, the master plan encourages the settlement of specific scientific and technological research centers, funded by the state or by private ventures, which would define the island as a new regional center for innovation. Lastly, the landscape design would recognize the connection to the bay. The main goal would be to double the population of the campus, until in 2020, to about 100 thousand inhabitants.

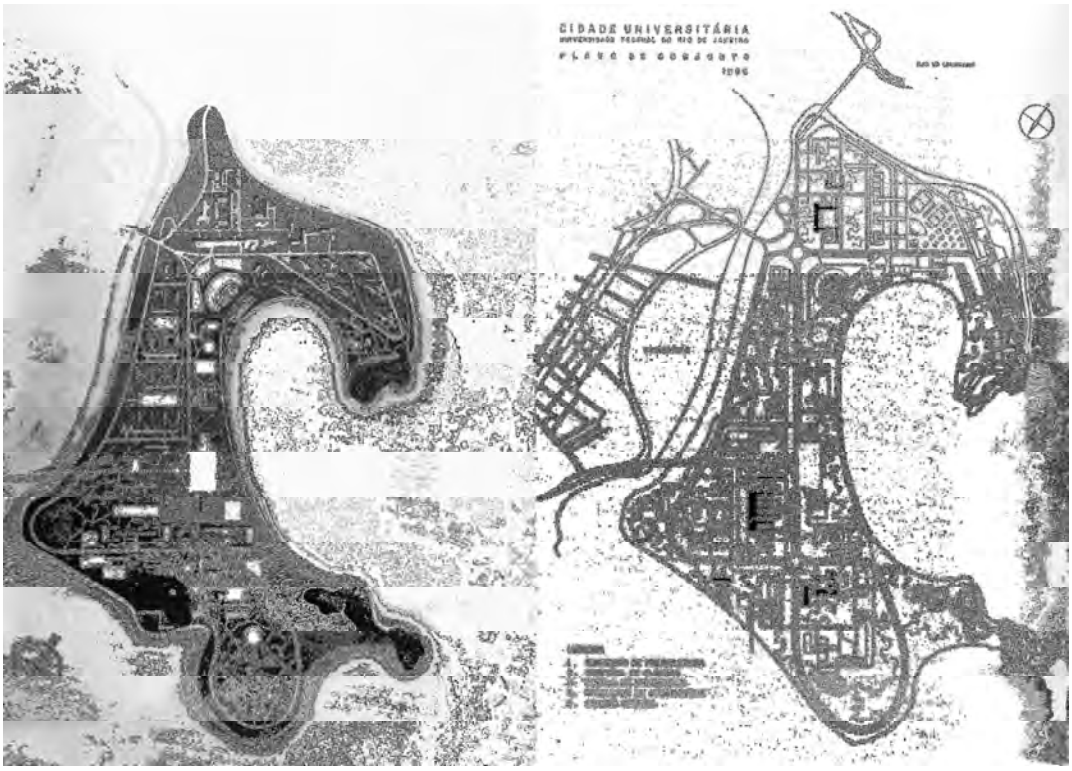
The doubt about the proposal is whether it will maintain the "essence" of the original design, or whether these new actions will create a spatial quality away from the vision treasured by Moreira Machado. In the University Campuses of Mexico or Caracas, new insertions did not alter the basic configuration. That was the reason for the inclusion of both campuses in UNESCO World Heritage List. Unfortunately, the initial deployment of the buildings in the campus did not favor the definition of a consistent urban form. The problem now remains in attempting to establish an alternative "architectural personality" to those "convergence centers." To integrate new insertions with the formal and spatial language from the fifties will not be easy. Considering that buildings since the nineties have been developed with a variety of formal concepts, the idea of overcoming fragmentation and dispersion could boast an appalling result. Further, the strong image of the linear axis along the island, which was the main integration element of the original project, is minimized. Regrettably, the civic center, which should be a focal point for the development of a recognizable urban structure, does not have a particular formal identification in the new master plan.

Possibly the new Master Plan is trying to repair what might have been an original mistake: the choice of an island. The project, however well intentioned, cannot guarantee the urban quality desired, indeed, one could even ask: is it really necessary that kind of “urban environment” on campus? Or simply solving the problems of connection would remedy the problem?

Illustrations



Aerial view of *Fundão* island, where is situated the UFRJ Campus, 1958. In the island it is possible to see, near, the Child Care Institute and the University Hospital; and in the back the Faculty of Engineering.

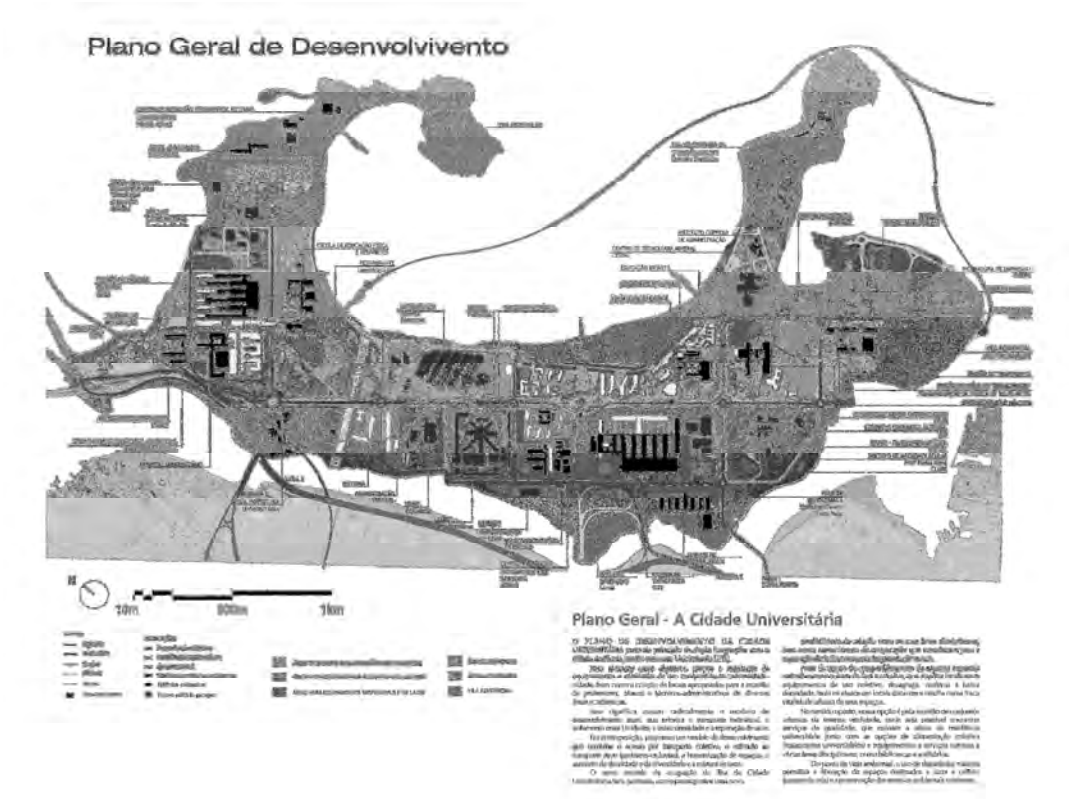


Two versions of the General Plan of UFRJ Campus (1949-1957). Arch. Jorge Machado Moreira. At right the definitive project. In black, are identified the buildings of the first stage: the Child Care Institute, University Hospital, Faculty of Engineering and the National Faculty of Architecture.

National Faculty of Architecture. UFRJ Campus. Arch. Jorge Machado Moreira.

Child Care Institute. UFRJ Campus. Arch. Jorge Machado Moreira.

UFRJ Campus. Master Plan, 2010- 2020. Arch. Pablo Benetti. Technical Office of Master Plan.



UFRJ Campus. Master Plan. 2010- 2020. Arch. Pablo Benetti. Technical Office of Master Plan. Color version.

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FROM A PALACE OF KNOWLEDGE TO A DEGREES MACHINE. 1925-1975: FIFTY YEARS OF THE HEBREW UNIVERSITY OF JERUSALEM

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Background

For 2,900 years until the year 1860, the City of Jerusalem was an enclosed prescient comprised of about one square. With a population of 15,510 inhabitants in 1844 [1] and growing fast, there was intense overcrowding and poor sanitation inside the city. By the middle of the 19th century, the Ottoman Empire had a need for cash and as a consequence approved the 1858 Ottoman Land Code, which required land owners to register ownership and allowed foreigners to register land if they paid in cash. It was then that European Christians and Jews bought land in Palestine, building the first neighborhoods in 1860 outside the city walls, beginning the process of expansion.

Private owners acquired estates even further away, and in 1889, Sir John Gray Hill and his wife, Lady Caroline Emily Gray Hill *"acquired a tract of land on Mt. Scopus, and there they built their home….."* [2]

By the end of the century, massive waves of Jewish immigration had made their way to Palestine, and during the First Zionist Congress in Basel (1897), the idea of establishing a Jewish institute of higher education was proposed. In 1902, Martin Buber, Chaim Weizmann and Berthold Feivel prepared a detailed proposal for its establishment, and practical measures were taken at the 1913 Zionist Congress in Vienna.

It took only one year to fulfill the decision and purchase the Sir John Gray Hill estate together with the mansion on May 4, 1914. Arthur Rupin writes in his diary: *"Today I succeeded in buying his large and magnificently situated property on Mount Scopus, thus acquiring the first piece of ground for the Jewish University in Jerusalem."* [3]

Fulfilling the Dream

The land was located on an extended ridge of Mount Scopus overlooking the Old City located two kilometers away and the Judean Desert situated in a completely isolated environment.

Dr. David Elder proposed to Weizmann that Sir Patrick Geddes, a famous Scottish sociologist, biologist and town planner affiliated with the Garden City movement in Britain, would plan the University because: "*Prof. Geddes knows how to maintain what is traditional and beautiful in the past while combining it with all the necessary requirements in the way of sanitation and modern requirements."*[4]

The cornerstone for the university was laid in 1918. Geddes arrived in Palestine in August 1919 and assisted by the architect Frank Mears, presented his master plan in December. The plan related to the site – a mountain ridge overlooking two sides, the Old City and the Desert – and to his personal educational understanding.

It created an oriental palace, as seen in Mears' overall view (Fig. 1-A), around a central domed Great Hall (Fig. 1-B) surrounded by a hexagon with a terrace facing the Old City on both sides, a Reading Room that turned to be the National Library (Fig. 4-A – 3), and a dining room, combining materiality and spirituality. On the opposite side facing the desert is the Philosophy Building to the left and the Music and Mathematics Building to the right, actually built as a small independent building in the same area.

From the three fields of knowledge developed by the University's faculties respecting topography and overlapping built and open spaces, Geddes had two concerns: the intrinsic value of the site *("this site, with its panoramic prospect, second to none in the world….*)[5] and secondly, the "*need of relating the general aspect of the university to be viewed from the city,*"[6] which is somewhat of a Panopticonal relation.

In 1925, the University opened with microbiology and chemistry research institutes located in the Gray Hill Mansion (Fig. 4A–1), not according to Geddes plan, and a Jewish Studies institute housed temporarily in a rented building owned by arabs and close to the Campus. Three buildings were actually designed by Geddes, Mears and their partner in Palestine, Benjamin Chaikin: the national Wolfson Library 1926-28 (Fig. 1-C) (Fig. 4A–3) in its original location exhibiting an architectural language having oriental elements; the Mathematics Institute that opened in 1930 (Fig. 4A-2); and the Physics Institute 1928-1930 (Fig. 4A-4) having a completely different style, the latter two located in the original area but with a different configuration. The never-approved plan was finally rejected in 1929, without a clear reason.

In 1936, Erich Mendelsohn devised a new master plan (Fig. 2-A) that took into consideration the British war cemetery, the existing buildings and a future hospital complex.(Fig 4A-9)

One element common to the Geddes-Mears plan is the sensitivity to topography. Mendelsohn created a city with buildings perpendicular to the ridge, integrating the existing six buildings. This orientation allowed viewing both sides of the ridge but also "*while Mount Scopus must be, I think one of the windiest places in the world the rooms had to be designed so as to catch*

the late afternoon sunlight only, and the angles of the building calculated so as to avoid the buffetings of the wind."[7]

The plan lacked a philosophy regarding education but had a deep climatic and cultural concern: "*The geography of a country, that is to say its geological and climatic peculiarities, determines not only its character and that of its inhabitants; they are also important facts in shaping architecture."*[8]

Mendelsohn introduced a new architectural syntax and his own formal approach, conscious that "*We are on Mount Scopus in Jerusalem looking down to villages 3 thousand years old or is it 6 thousand, who knows? Everywhere little domed stone houses. So I adopted the form of the dome…"*[9] referring to the domes in the Hospital. The buildings designed by Mendelsohn – the Hadassah University Hospital, the Schools of Nursing and Medicine and the University Club (Fig. 2-B) (Fig.4A-7) – responded to his multifaceted approach: the site's limitations and advantages, the autochthonous built environment and also his time: "…*plan and building follow the fundamental principles, i.e., the principles of Mediterranean tradition, the concrete realization of these principles must be in harmony with the spirit of our own epoch. The creative form is permanent; all stylish imitation is dead from the sunset*:"[10]

In 1940 opened a large building designed by J.D. Weiss and R. Kauffman (Fig. 4A-8) that housed the Institute of Jewish Studies, the School of Oriental Studies and the Faculty of Human Studies. Later in 1941 the Museum of Jewish Antiquities (Fig. 4A-5) by K.Rubin and J. Jabecz opened adjacent to Mendelsohn's Faculty Club very much respecting its architectural language.

Ten years later in 1945, Richard Kauffman prepared a third master plan. Based on Mendelsohn's plan, he enlarged the structures, returned to Geddes principles of enclosed gardens and a main central building facing the Old City.

"*By 1947 the University had grown to a large, well-established research and teaching institution, encompassing humanities, science, medicine, education and agriculture (the last at a campus in Rehovot); the Jewish National and University Library; a University press; and an adult education center. Student enrollment exceeded 1,000 and there were some 200 faculty members."*[11]

The 1948 War of Independence cut off Mount Scopus from Israel's West Jerusalem, turning it into an isolated island under Israeli surveillance and leaving an open wound, and the University was housed temporarily in West Jerusalem buildings. By that time the University had already 7 buildings and the Medical complex upmentioned.

The West Jerusalem Givat Ram Campus

In 1949, the decision to find land for a national compound was made according to two directives: for security reasons, located far away from the Jordanian border and large enough to house all government institutions, ministries, the Parliament, the National Bank, the Supreme Court of Justice,

"Congress House" (the meeting place for national and international events), and cultural institutes such as the university and museums. Symbolically, the idea was to create a meeting point between power, culture and the nation. Givat Ram was found to be suitable, having all the above-mentioned qualities and a level topography that would make construction easy.

The master plan team (Fig. 3-A), coordinated by Kauffman-Rauch-Klarwein, took as a departure point the schemes of American universities. The result was a university city that included learning and research facilities, the National Library and student housing, much in the spirit of a suburban garden city. At the center was an extended asymmetrical lawn, articulating the entire complex, containing the National Library in a central location, and the Hebrew Language Academy and synagogue in the back. Vehicular circulation was based on a peripheral road, and the main area was left for pedestrians. The buildings were modern with stone-clad walls according to Jerusalem building regulations. The National Library (Fig. 3-B) was a type of monumental building facing the entrance at the end of the lawn. The simplicity of the buildings, the clear structure of the circulation, as well as the quality of the open spaces turned it not only into a university city but also into an urban park (Fig. 3-C) loved by students and citizens in which its main lawn was the subject of many of Jerusalem's urban legends, many love stories and an excellent example of Utopian MoMo architecture. Criticized years afterwards, as many MoMo examples were as a place of isolated buildings, it is now considered by many professionals and citizens worthy to be declared a National Registered Site, with the highest conservation defense.

Back to Mount Scopus

Following the 1967 Six-Day War, territorial continuity returned, and the decision to return to Mount Scopus was taken. Architects Reznik, Shaked-Karmi and Katzef were chosen together to this end, with Reznik serving as the main architect for the new master plan. The proposed solution proposed (fig. 4-A) is based on a " …*compact mega-structure where all the functions are frantically jammed into a continuous building*"[12], an approach taken because of the same climatic conditions already mentioned by Mendelsohn.

Ram Karmi, who was involved in the master plan and who was the architect of the Faculty of Humanities building, said that in his first meeting with the professors he had asked them what the campus should have that was lacking in Givat Ram. Their answer was: "*We want a campus full with life, to Givat Ram we went to lecture…….We want a campus that will be a 'home' for the professors that will provide a study and not an office..."*[13] The architect's intention was to create on the ground level *"the life of a street: a row of buildings close to each other… students will become a* flâneur *that strolls between windows of knowledge and stops here and there for* window shopping*..."*[14] It is clear today that none of these intentions were achieved.

Contrary to Geddes approach, which visually linked the Old City to the campus, an extended wall (Fig. 4-B) faced the Old CIty creating a new "walled city" to protect the campus from the 1948 trauma. The interior street did not

function as such, and instead of window shopping, people got lost: the joke that "*you obtain that BA if after 3 years you find your way out*" is *vox populi* today. Architectural elements, such as the amphitheaters, the tribunes with marked seats covered with rugs and windows in the back, are inhuman. The bright Jerusalem light is not filtered and non-existent and all of the spaces are artificially illuminated: "*It was deemed a neo-Crusader structure that turns its back on the landscape, infused with megalomania and insensitive to its surroundings and its complex construction, the orientation difficulties and the sense of claustrophobia…*"[15] The response to the critique was "*Mount Scopus campus was built as a stronghold for climatic and topographical reasons… It is a campus that conveys alienation and instrumental functionality*"[16] that does not change the critique.

It became a place in which students arrived via an underground bus station to the "street" by an escalator (Fig. 4-C), which served as the umbilical cord linking the city to the University, where money is drawn from automatic machines in walls, a place in which obtaining education was changed by obtaining knowledge, and also where architecture satisfies the creators and not the users, contrary to MoMo's basic intentions.

Illustrations

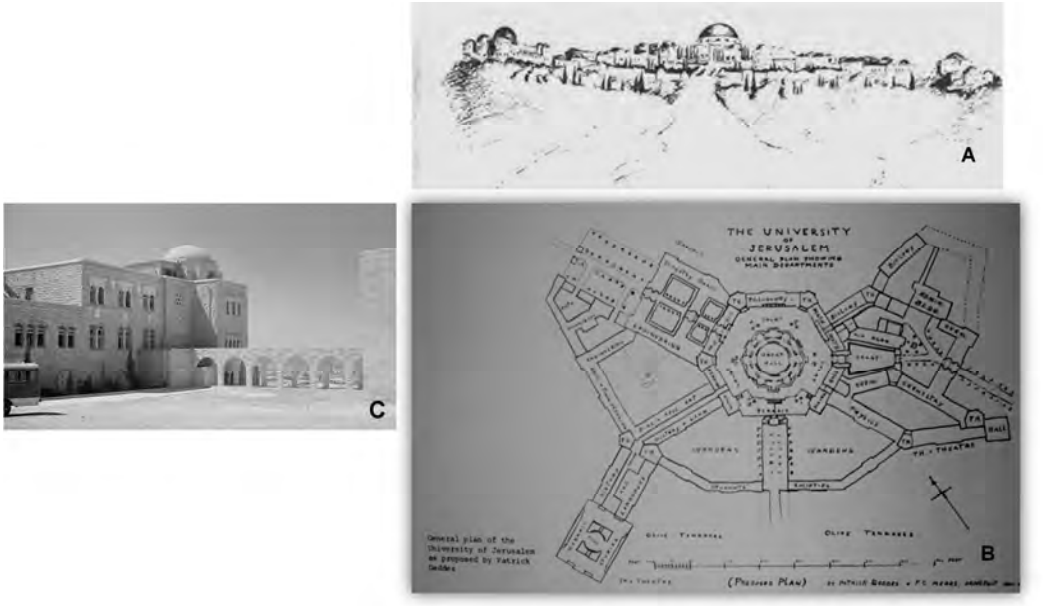

Fig. 1
Geddes-Mears 1919 Master Plan. B- General View towards the Old City C- The Library

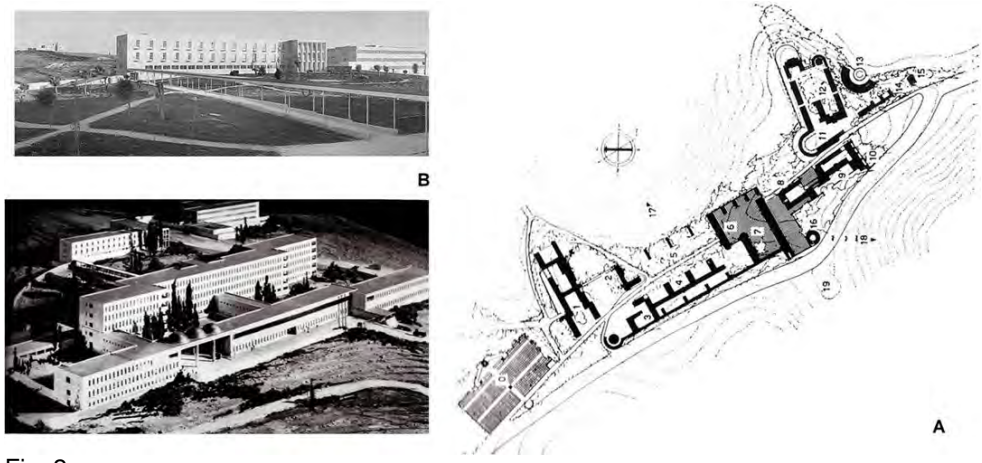

Fig. 2
Mendelsohn Master Plan 1936. B – The Hadassah University Hospital.

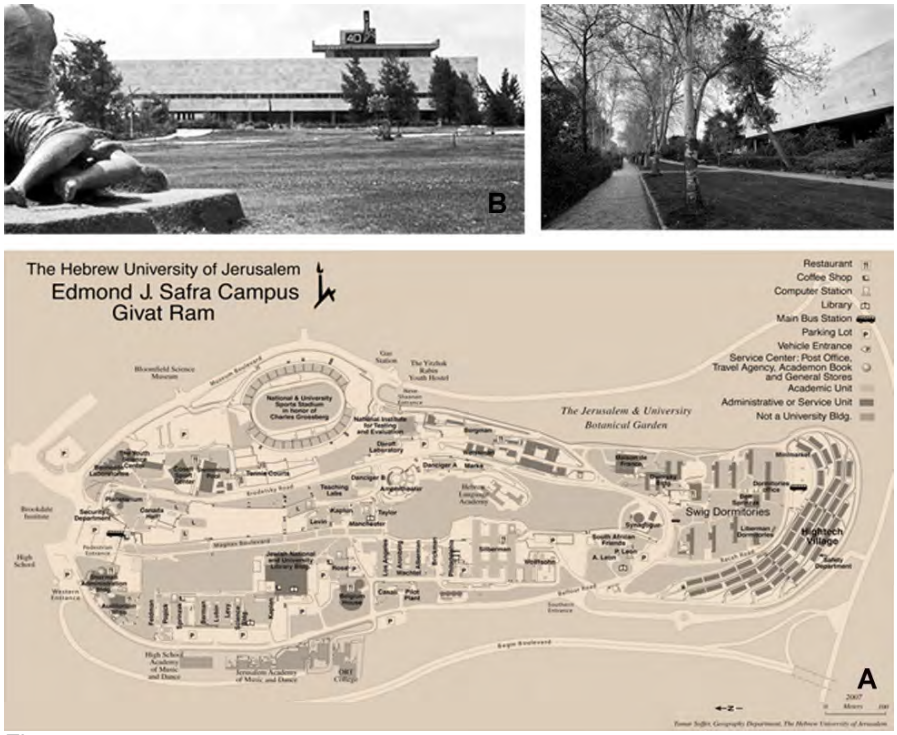

Fig. 3
Givat Ram Campus, General Plan. B- The National Library. C – View of the Gardens.

Fig. 4
Mount Scopus, Aerial.View B – General view from the Old City C- The connector with the city.

Notes

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[4] Letter signed by Dr. Eder, sent by the Zionist on May 1919, Central Zionist Archive.

[5] Geddes 1919 mentioned by Diana Dolev 1990 in *Architectural Orientalism in the Hebrew University – The Patrick Geddes and Frank Mears Master Plan*.

[6] Ibid 5

[7] Palestine Review 20/8/1937. The New Architecture in Palestine. An interview with Mr. Erich Mendelsohn.

[8] Erich Mendelsohn, *Building on Mt. Scopus*, The Palestine Post, May 9, 1939, page 5.

[9] Interview with Prof. J. Murphy (Washington University School of Architecture) and E. Mendelsohn in the City Art Museum, St. Louis on 13.3.1944, Manuskript KB B IV 4 from Ita Heinze-Muhleib, Erich Mendelsohn, Bauted und Projekte in Palastina (1934-1941) Scaneg, Munche1986

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[12] Shitz D. "A Tale of Two Universities," Iton Yerushala'im 15.4.98 (in Hebrew) mentioned by Sophia Dekel-Caspi in *David Reznik: A Retrospective*, catalogue of an exhibition, 1985, Tel Aviv University.

[13] Ram Karmi, *Lyric Architecture,* 2001, Ministry of Defense, Israel

[14] Ibid 13

[15] Sophia Dekel-Caspi in *David Reznik: A Retrospective,* 2005, Tel Aviv University, page 208.

[16] Gabriel Salomon, *The Mount of Evil Advice* at Kol Ha Ir 6.11.1981 (in Hebrew) included by Sophia Dekel-Caspi in *David Reznik: A Retrospective*, catalogue of an exhibition, 1985, Tel Aviv University.

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THE DESTINY OF THE HIDDEN ARCHITECTURAL MASTERPIECE OF AUGUSTE PERRET: THE "CENTRE D'ÉTUDES NUCLÉAIRES" (CENTER FOR NUCLEAR STUDIES) IN SACLAY, FRANCE (1948-1954)

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In 1948, the architect Auguste Perret (1874-1954) was chosen by the French Commission for Atomic Energy (CEA) as their chief architectural counselor. This newly-created government agency immediately put the know-how of this "master of reinforced concrete" to work on a project of national priority and scale: the construction of the "Centre d'Études Nucléaires," a large center for nuclear studies in Saclay, located thirty kilometers to the south of the city of Paris. This "palace of atoms" was the last large-scale architectural/urbanistic project created by Perret. Nonetheless, this Center has remained largely unknown to the general public because of the confidential nature of its subject of study, dedicated solely to scientific and technical research with the aim of the utilization of atomic energy in the domains of science, industry, and national defense.

Concealed by the surrounding vegetation and surrounded by barbed-wire fencing, the Center for Nuclear Studies still bears the mark of its original architect, Perret. As the chief architect of the CEA's Architectural Agency from 1948 until his death in 1954, he was able to provide the main impetus for the construction of the site by defining its dominating architectural lines.
The Center appears at first glance to be a well-ordered collection of buildings, within a lovely green space. Those privileged few who have entered and really observed the center have seen an urban construction that is as complex as a small city. This "atomic village", which is still growing today, has experienced an increasingly disordered growth similar to that of an urban area. The heart of the complex is formed by the initial buildings, but with time and the progressive addition of structures that harmonize more or less with the original center, the outside edges are currently made up of dissonant elements that diminish the order and unity of the whole. How did Auguste Perret, who created only the historical heart of the Center from 1948 to 1954, manage to transmit an aura of architectural unity which even today is capable of absorbing subsequent architectural gaffes?

This monumental construction, set into motion by the Master of French architecture, was the expression of the will of the founders of the CEA [1] to create a center that would be an institution worthy of this new science. For the architect, the stakes were high and the challenge nearly insurmountable, as, while today's architectural solutions seem coherent and obvious, they were a response to a paradoxical directive. Auguste Perret was aware of the important stakes in the construction of the Saclay center. He himself was caught up in the spiral of urgency, novelty, and versatility inherent to a scientific program. He had to plan a nuclear center before it had even been clearly defined, as the scientific program was being created at the same time as the buildings. He had to imagine tool-structures that he knew would be obsolete as he was

building them. Most importantly, he had to design a city that would be capable of self-regeneration and development.
In 1945, the first task of the CEA was to find the ideal plot of land, which would be big enough to contain the traditional, space-consuming instruments of atomic study and sufficiently far away from inhabited areas, for fear of radioactive contamination, but close enough to Paris for easy access by scientists. The chosen terrain was a windy, cold farming plateau in Saclay. The plot was relatively flat and slightly rhomboid, measuring roughly 1000m by 1500m, with a perimeter of 4500m and an area of 127 hectares. It became government property in April 1947 upon expropriation.

In 1948, the CEA's Architectural Agency was formed, composed of Urbain Cassan, Robert Chevalier, and Auguste Perret. In 1948, the fame of Perret, at the time 74 years old, was undeniable. Since the beginning of the 1940s, his official celebrity was built via his institutional titles: President of the Order of Architects, member of the Institute, member of the National Urbanism Committee, etc. Additionally, the Master of Architecture had proven, through the medium of large-scale industrial and military orders, his mastery of the technique of reinforced concrete, also the center of expertise of his own firm. Perret's principles would be indisputably used at Saclay, as he was the chief architect with authority over the other two.

In order to respond to a changeable scientific program, one of the proposals would have been to build lightweight, temporary buildings. But the order was categorical: "It was necessary […] to include all [categories of workers] in the same architectural unit where beauty and especially harmony of (very diverse) edifices would come together to serve this new queen we call Science." The initial plan would therefore include the structures that would be in constant use and indispensable to the community: the cafeteria, administration space, areas used for manufacturing (workshops, foyers, storage, etc), laboratories for chemistry, physics, and biology, and finally machine-buildings: two reactors each built at the center of a protective, 300m-radius circle, a Cyclotron accelerator, and a Van de Graaff generator.

As in modern cities, Auguste Perret organized the street plan along perpendicular thoroughfares with two main axes: Main Street (north-south) and Cyclotron Avenue (east-west). One of the rare diagonal roads links the south entrance with the administration building, passing through the water tower roundabout. The subdivisions created by these thoroughfares and their prolongations define the borders of regular intermediary spaces, with gardens and buildings or sometimes just gardens. Perret concentrated next on the building structures, which only take up about 15 of the total 127 hectares of the site. The urban grid thereby formed and the large quantity of unused terrain allowed for future extension to the south. In the overall pattern of the built spaces, one can find widely varying volumes that all nevertheless keep to a low average height, and whose silhouettes, contours, and ornamentation remain at the level of the human observer.

The original street plan clearly delineated several zones: administration, research, tool storage, and laboratories. However, one gets an impression of unity and homogeneity from the ensemble of the original buildings. This is because the main grid animates the buildings and organizes the structures, the open spaces and the closed. This grid is still visible today. It can be seen in the carefully made frameworks made from concrete, whether reinforced, unsurfaced exposed, or bush-hammered. They are made up of posts, beams, epistyles, and cornices, with considerable offsets and depths in relation to the filling base or to windows. The corner posts are always doubled, similar to classical pilasters. Sometimes, the posts are topped by a small capital, which is typical of Perret's

work. The cornices are rather large, assuming the role of protection for the top of the building, with gutters, ogees, and moldings. The structural grid of the façade creates a distribution of open and closed spaces for each bay. The windows are always surrounded by a reinforced concrete frame with very thick intermediary mullions (~40 cm) which protect from sun and rain. On both sides of the frame and as a beam, the cladding material made of pink-colored concrete flagstones emphasizes the interior filling. Outside of the lines created by the window-lightened façades, one finds the filled spaces of the gables of these buildings, or those of the blind walls of the halls or the piles. These filled spaces are always expressed in an appreciable way; the fillings emphasized by the prefabricated pink reinforced concrete flagstones are framed by reinforced concrete stiffeners which are distributed in relation to the grid of the exposed structure. The appearance of the roof structures is very particular, expressing Perret's quest for a quality of natural light in the work spaces. In this way, the cafeteria and the library are illuminated by small gradated windows systematically oriented to the north. Similarly, the large manufacturing halls and the atomic pile include large gradated north-facing windows, joined by a regulated ventilation system. Additionally, there are very characteristic cupolas that supplement the light inside certain buildings. An aerial photograph of the site confirms this impression of almost-living roof structures.
The restrained geometric lines of Auguste Perret's architecture are ordered along a definite architectural grid, characteristic of his work. The main lines of his composition, the grid of the construction, maintain the monumental spirit of the great classical buildings. The play of colors, pink and gray, in his buildings, alongside the various and harmonious natural colors of the gardens, avoid the feeling of weight in the ensemble. A certain strength, but at the same time a certain serenity, a stateliness, is given off by a space that cannot be reduced to a single, one-dimensional use.

From its inauguration in December 1951 up to the present day, the Center at Saclay has never stopped growing, starting with 24 agents and attaining 700 in 1954, 1300 in 1955, and 5000 in 1965. Architecturally, 1954 was a turning point for the creation of buildings that would now assure the positions of the architects that would follow Auguste Perret, who died in February 1954. At this point, he had built 55,000m^2 of floor space. In 1975, this number would grow to 330,000m^2, six times the original area. His successors, Urbain Cassan, Jean Philippot, and Claude Vasconi, largely pursued the Master's line, drifting progressively over time.

The transformation of the historical center was inevitable. The new demands on the site, due to the diversification of activity and necessary adaptation of the edifices to new functions or technical modifications, caused the construction of annexes, additions, and new equipment that diminished the unity and the order of the initial buildings. In its evolution, the street plan didn't maintain its organization, either; offices and laboratories were scattered throughout the zones initially created by Perret. It seems that, after an initially favorable economic period, the first serious limitations on cash flow appeared in 1960. Cost constraints caused the favoring of limited extensions, upper additions, and basement extensions. It even seems that the restructuring of the establishment itself into very hierarchical and specialized groups was unfavorable to the identification of common needs, inciting individuals to look for local solutions to limited problems. This appeared as an altered and inefficient use of certain structures, and in the form of multiple but limited extensions.

In 1976, in an inquiry report on the Center, the architect Paul Andreu delineated its zones as a function of the degree of structures' architectural unity. The first zone included buildings built by Perret or those imitating his style, a fairly homogeneous ensemble.

These were original structures designed by Perret, in the historical heart of the Center, all striking in the consistency of their expression and the generosity of their proportions, joined by those later buildings which imitated their predecessors. These edifices were characterized by a slow degradation of the architectural line: the reinforced concrete structural elements were still apparent, and the colors persisted; but the cornices were more meager, and the relief of the façades became thinner. The second zone was made up of buildings that interpreted, transposed, or reflected the original architectural line. The differences compared to the original lines were more striking. The concrete structural elements were sometimes partially hidden by cladding; the cornices were much smaller; the reliefs of the façades were limited to the window frames; and the original colors of the materials, gray and pink, were represented in different quantities. A certain relationship with the historical buildings could be seen. The third zone had a highly simplified expression: the structural elements were completely covered by the cladding, the cornices disappeared, the façades were flattened and their filled spaces pierced by framed windows; the original architectural line could only be seen in the pink tint of the now-dominant cladding materials and in the frames of the windows.

The fourth zone of coated masonry buildings were built during different eras. These buildings constitute the first real break with the original architectural plan, as they resemble industrial or warehouse buildings. Only the color of the masonry coating paint reflects the past, as it is pink on some buildings. A fifth zone of buildings, constructed with metallic structural elements or brick and exterior siding, and situated at the periphery of the Center, constituted a second rupture in relation to the original plans. The third break is embodied by the proliferation of prefabricated sheds at the edges of the Center, which constitute the sixth zone.

This apportionment reveals that the post-Perret attempts seem minor, often isolated and disparate. A new architectural trend that might have established a distinction between the historical and the modern did not come forward and, indeed, does not exist. From this point, the discernable variations appear rather to be accidental or exceptions, and not the result of a new architectural intention.

When they entrusted Auguste Perret with the creation of the Center for Nuclear Studies, the CEA was expecting the creation of a showcase for French scientific research, an ideal city whose monumental size would satisfy the needs of the institution for visibility without disturbing the industry that it would be housing. The Commission has inherited a city which, in the power of its monumental and ordered architectural response, is still the symbol of postbellum French scientific excellence.

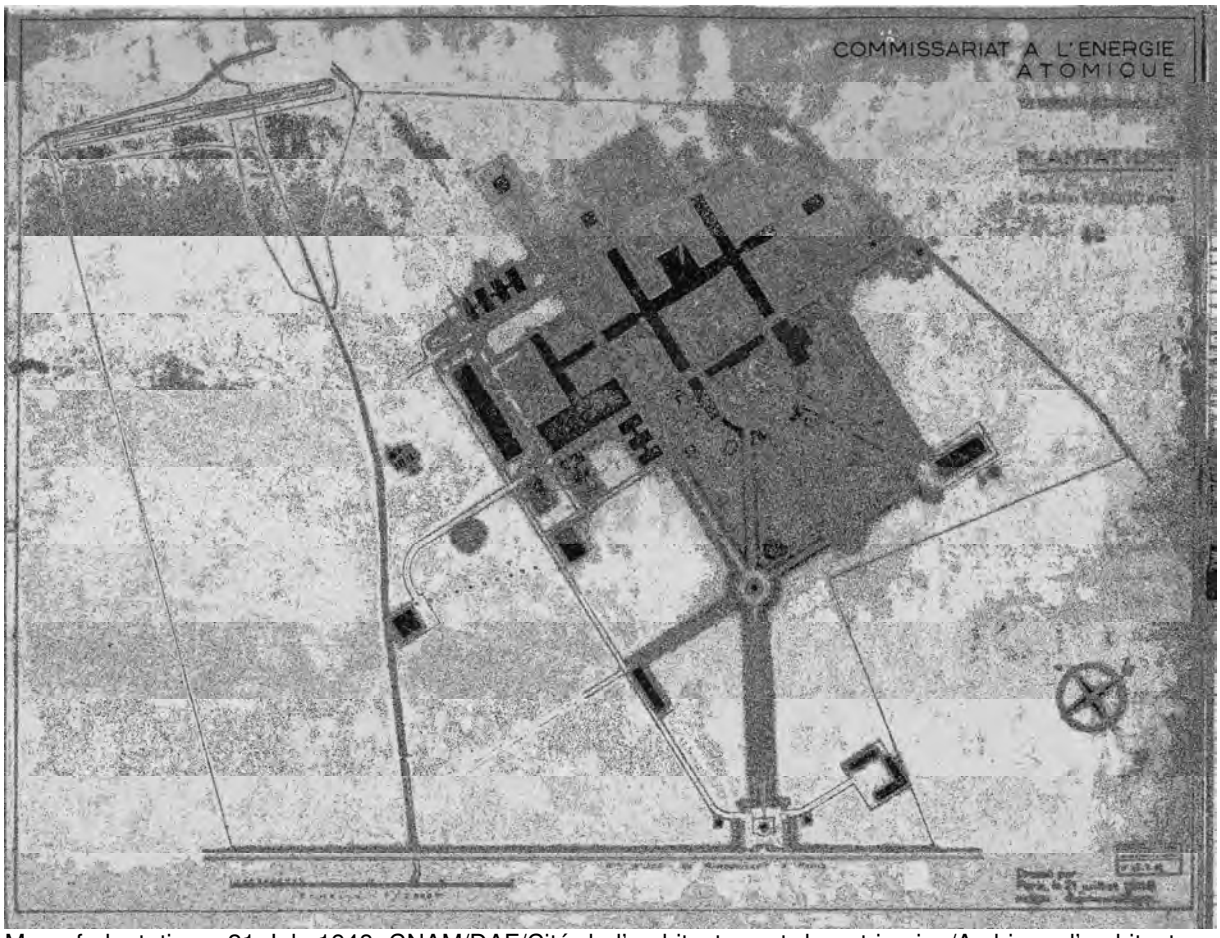
Saclay still provides an almost romantic atmosphere which is favorable to creation and research. The park at Saclay,[2] which was part of the plan from the very beginning, is a major heritage element of the Center. The dominant work of Auguste Perret appears as the only cohesive element and the unique reference point still valid today. The certainty and maturity of his architectural doctrine was certainly a positive alternative in the face of the doubt of a new science under construction.

However, in spite of the new state of awareness of the current directors concerning the cultural heritage value of the Center, none of the buildings is being protected in any way. The cited reason is the incompatibility of the idea of preservation with the evolutionary character of a site involved in industrial activities. This remarkable contribution of Auguste Perret to the architectural heritage of France has yet to be truly recognized or protected,

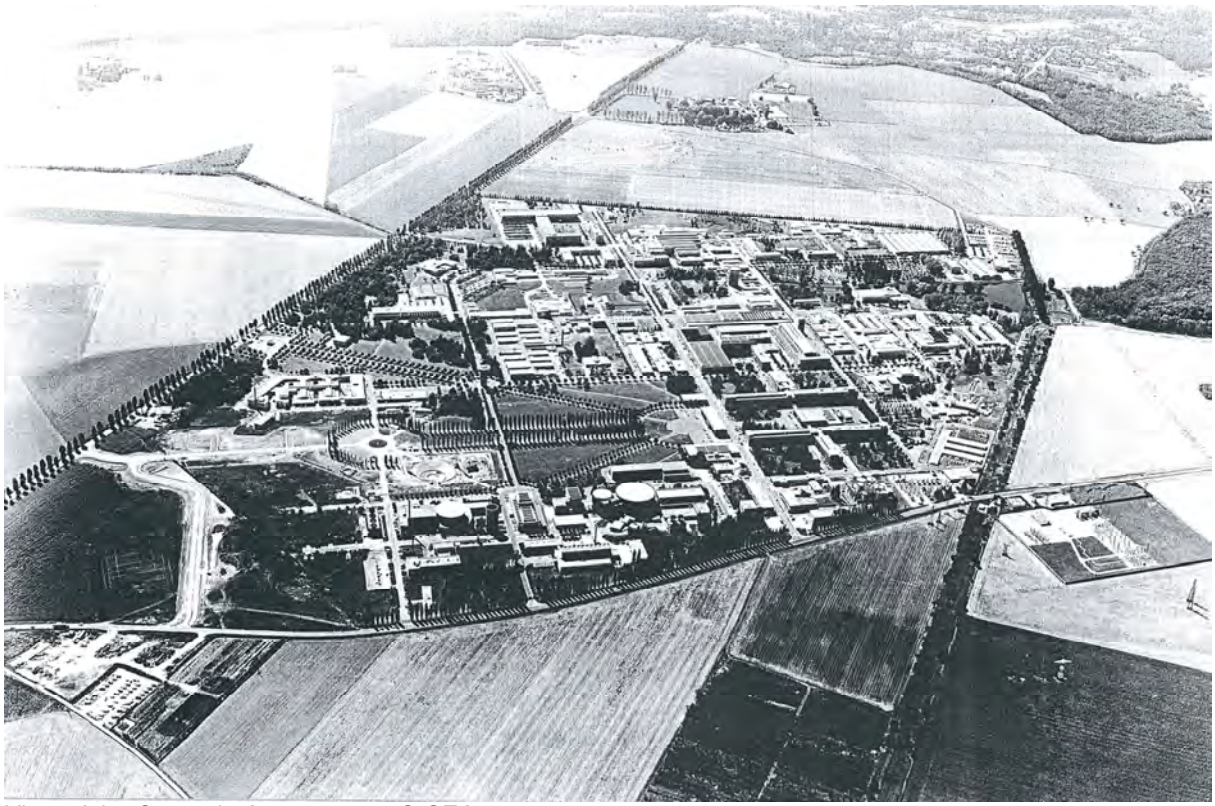
while another of his master works, the rebuilt center of the city of Le Havre, was recognized as a world heritage site by UNESCO in 2005.

Illustrations

View of the library and the laboratories, undated photo. CNAM/DAF/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle, fonds Perret frères © UFSE-SAIF



Map of plantations, 21 July 1948. CNAM/DAF/Cité de l'architecture et du patrimoine/Archives d'architecture du XXe siècle, fonds Perret frères © UFSE-SAIF



View of the Center in August 1976, © CEA

View of the Center, 2006 © DeAraujo

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Notes

[1] Frédéric Joliot-Curie, the famous physician, and polytechnician Raoul Dautry
[2] The park was created in 1950 by the landscape architect Marcel Zaborski, also technical chief of gardens and walkways in Morocco.

UNIVERSITY CITY
The University and the City

The relationship between the university and the city where it is located has been a relevant topic all along the 20th century and particularly during the period of the Modern Movement. More specifically, the post-war years saw the emergence of a great amount of new campuses –many of them in Latin-American countries— that opened new possibilities as well as new conflicts: not always the urban and architectural features of these new "cities" have been a welcomed addition to the environmental pre-existences, a continuation of the built quality previously achieved, or even better, an improvement of the elements and characteristics that made a city a desirable location to establish a new academic center. But at the same time, in some other cases, what has been done has such a high quality in terms of concepts, design and construction, that it is widely recognized as a model, as a masterpiece that deserve the highest level of appraisal and protection, as in the cases of the university cities of Mexico and Caracas, both of them classified as World Heritage Sites by UNESCO. In this sense, it is tempting perhaps to discuss some notions that sustain the love-hate relationship between the place for academia –the university city- and the place for real life- the actual city.

We should recognize, as a starting point, the fact that strictly speaking, the university city is not a real city, or at least, it is a city with very particular characteristics and aspects that set it apart from the traditional city even if it is located inside one of them. Probably too often it is more like an enclosed academic ghetto, secluded from the real city, with no positive physical or functional connection to it. At some other instances, it can be the raison d'être of small urban enclaves which daily dynamics in social, economic, cultural and, very important, political terms, depend entirely on the presence of the university. In this sense, many topics could be addressed: again, an important one would be related to the appropriateness to consider as a real city a cluster of facilities (including not just those for studying and learning but also those for daily living) that by its intrinsic functional structure, has to remain empty several months every year, and whose prevalent population is a temporary one limited to an specific and unique age range, something that strongly determines the character of the events to be hold on its premises, and by extension, the character of the architecture intended to be the scenario for those events.

In the best of cases, the university city –even the modern one— can be an educational acropolis regarding the quality of its content –the courses taught there— as well as its architecture and urban layout. These cases are the ones which bring about some of the most important issues to discuss today, above all, the ever-present conflict between the necessity to preserve the heritage

values of those university campuses, against the necessity to trans- form them in order to accommodate the always growing needs of higher level education.

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THE CAMPUS OF THE UNIVERSITY OF BUENOS AIRES: MODERN HERITAGE AS A DIDACTICAL EXPERIENCE TO EXPLORE CRITERIA FOR INTERVENTION

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The University of Buenos Aires was created on 1821. It was an initiative of the government of the province of Buenos Aires and became a national university six decades later. The idea of a university campus arose in the mid-1950s in response to the expansion of the institution and the necessity to integrate the schools, laboratories and institutes that were located in different buildings in the city. The university authorities designated a team of architects to propose the possible location, and after evaluating several alternatives they selected a green area at the northern edge of the city, next to the *Río de la Plata* (literally, River of Silver) because of its natural environment and easy accessibility. The national government transferred the property of this land to the University of Buenos Aires in 1958.

It is worth mentioning that the origin of the university campus, known as *Ciudad Universitaria,* was present in the urban ideas for Buenos Aires exposed by Le Corbusier during his visit to the city in 1929. And it was also considered in the Regulating Plan for Buenos Aires, developed by the municipality planning office in 1958.

Horacio Caminos, Eduardo Catalano, Eduardo Sacriste and Carlos M. Picarel won the international contest to develop the project. This team was integrated by well recognized practitioners and professors involved with the Modern Movement ideas. Caminos and Sacriste were teachers in the University of Tucumán and Catalano, who studied with Walter Gropius, taught at the Technical Institute of Massachusetts. They all had a previous experience in designing the National University of Tucumán campus, a remarkable example of the application of modern principles in educational architecture on a great scale (1).

In their plan for the new campus of Buenos Aires, they continued developing those modern ideas: functional rationality, synthesis, formal abstraction and the combination of nature and architecture as the appropriate environment for the educational activities. The original master plan included a multiplicity of programs: university schools, museum, theater, libraries and residential and sports facilities. It was adapted by the architects for its realization by phases (2). The construction started in 1959. The area by the river was chosen for the

location of the schools buildings and a second area with sport facilities was set behind the highway that connects the complex to town. Due to the unstable political and economical conditions of the country, the construction work was interrupted when only blocks had been built and the foundations for other two of the four planned school buildings had been completed.

In the following decades several new plans were subsequently developed for the area. The Secretary of Habitat of the University stimulated the rehabilitation of the riverside as a public space for inhabitants of the city in 1986. The ambitious plan included auditoriums, swimming pools and a sailing port, but only the improvement of the entrance and the parking were approved (3). A public contest, won by Baudizzone, Lestard and Varas architects in 1988 aimed at reorganizing circulations and green areas (4); and a competition for a new psychology school building was held in 2004.

The School of Architecture and the School of Sciences are the most significant modern buildings in the complex, both similarly conceived as two pure 75.00 x 150.00 meter volumes with a central clear space. The main idea of the brief was to design a flexible building that could be easily adaptable to new functions. A regular grid organized the structural columns and a system of independent, non constructive walls. The basement concentrated the auditoriums and halls, the ground floor provided space for shops and offices, and the three upper levels hosted classrooms. The design of the concrete structure explored the aesthetic and economical capacities of this material. The façade's theme was developed with a vertical prefab concrete grid as a device control light and it gave the buildings its expression and identity.

The growing number of students, the curricular changes and the technological needs forced the buildings to go under permanent modifications. In the 80's the School of Architecture incorporated five new design careers – industrial, textile, landscape, image and graphic- which required room in the existing building. It was resolved by adding a mezzanine to first floor and subdividing the administrative existing areas. The intensive use, the lack of maintenance and the absence of an integral rehabilitation plan are factors that are deeply affecting the building. As a consequence, inappropriate interventions like the removal of the *brise soleil* of the façade in 1990 had dramatically impacted the image of the buildings.

The future of the campus as a teaching experience

Along with research and professional practice, education is one of the main interests of the Argentine working group of Docomomo. The unfinished condition of the campus offers the didactical opportunity to explore the relationship between inheritance and contemporary design. The present work was carried out with undergraduate students from the School of Architecture of the University of

Buenos Aires. Its aim has been the appraisal and evaluation of the different levels and complexities concerning the modern heritage's intervention.

On the urban scale, the complex allowed fruitful thinking and debate about possible decisions with regard to its rehabilitation and enhancement. The campus, which goes under continuous transformation, is still requiring an update in order to respond to the current demands on the cultural and academic life. Thus, it is a perfect 1:1 scale model laboratory to develop strategies for the design of new facilities, infrastructure and public areas. To analyze the original design's criteria and their modifications makes it possible to experiment on the morphologic articulation between the existing and the new buildings.

The campus is also a potential area in the future development of a city that faces the usual big metropolis' problems: uncontrolled density, insufficient places for open air activities, deficient infrastructure and mobility, among others. Within this context, the campus sector plays an important role in the urban planning: it remains as one of the few places where Buenos Aires is visually and physically connected to the river and it is the end point of a sequence of parks designed in the 19th century. A future network of parks, green spaces and river connecting urban areas find in the campus a significant modern landscape.

Another stage on preservation training and education can be carried out by working on proposals for the School of Architecture and the School of Sciences. Their correct rehabilitation demands the development of particular intervention criteria. It is necessary to have a systematic and methodological approach to the project, one capable of clarifying the conceptual and technical values and critically analyzing the pathologies and modifications.

Both blocks allow the students to reflect and research about possible actions involved in their intervention:

- Technical aspects: renovation of the deteriorated pieces by defining theoretical criteria and technical possibilities for the concrete structure, the steel façade and the conditioning systems.
- Functional aspects: adaptive re-use of the floors investigating the concept of flexibility in the original layout. A significant issue with regard to the redesign proposals is the central court's ceiling could be suppressed or relocated to another position.
- Addition of new levels: extension on the terrace by using the buildings' structures that were designed to incorporate another level. To locate functions in the roofs allows designing spaces and technologies that complement the existing buildings.
- Insertion of new volumes: addition of new construction by recovering the underlying idea of the original layout that comprehended new rooms in the middle of the blocks. This intervention allows exploring the morphological and aesthetic relation between the modern and contemporary architecture.

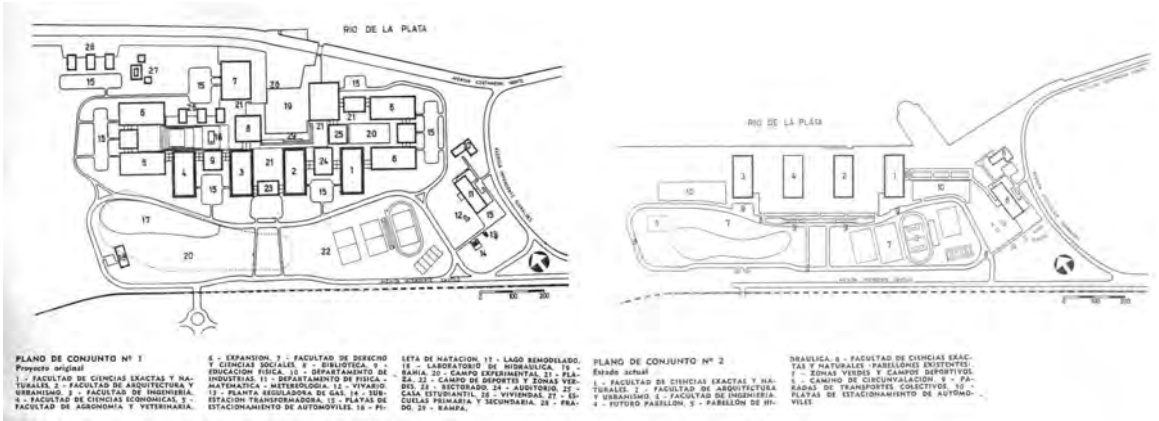
- Construction aspects: proposal of a systematic maintenance plan to coordinate the actions to preserve the buildings in a respectful way.

It is particularly important for the students to understand that designing in existent building is not a design limitation. On the opposite, to harness the strengths of the inherited architecture and experiment solutions for their weaknesses demands a good amount of creativity. "*Every enhancement project constitutes a specific problem and also requires specific solutions*" (5). A faithful subordination or the complete distortion of the building's original characteristics, are extreme answers that invalidate the possibility of experimenting among the articulations and interstices that can organically integrate the contemporary and modern design.

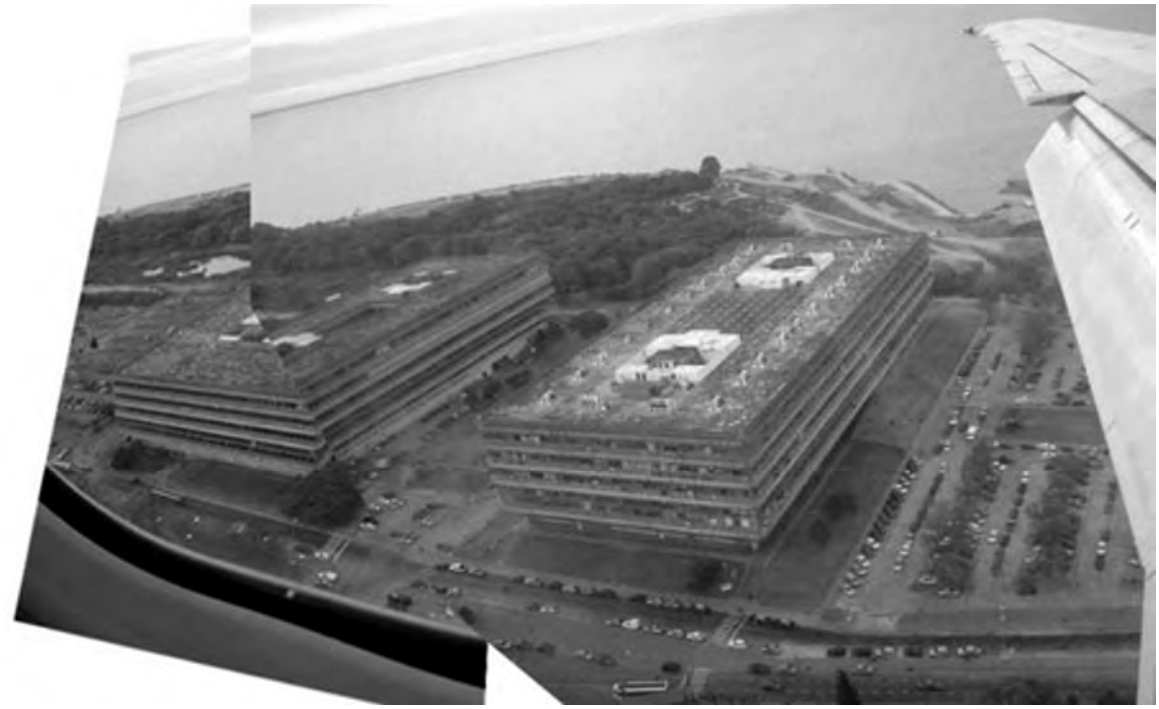
The present scenarios of accelerated processes and new paradigms transform the architectural theory, practice and education. It is necessary to develop a critical view towards certain emergent conflicts. One of the key issues to install in the community and fundamentally, in the educative institutions is the sustainable use of the natural and cultural resources. In this sense the testimonies of the Modern Movement are active participants in the social gear. The multiplicity of their functional, programmatic and symbolic capacities is a valuable resource to integrate in the cultural, economic and productive life of the cities.

"The architectural heritage will survive only if it is appreciated by the public and in particular by the younger generation. Educational programs for all ages should, therefore, give increased attention to this subject" (6). To accept the challenge of dealing with the modern heritage's values in the different levels of architectural education may allow professionals to better understand the social role of the discipline while reasoning about identity, culture and the development of the context.

Illustrations:



The Campus of the University of Buenos Aires. Masterplan by H. Caminos, E. Catalano, E. Sacriste and C.M. Picarel. Ref Pic: Revista Construcciones 219, Buenos Aires. 1969.



The Campus of the University of Buenos Aires. Aerial view. Ref Pic: Mariana Quiroga 2007.

The Campus of the University of Buenos Aires. School of Sciences. Ref Pic: Carolina Quiroga 2009.

The Campus of the University of Buenos Aires. School of Architecture. Ref Pic: Carolina Quiroga 2009.

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FROM INTRAMURAL COLLEGE TO EXTRAMURAL CAMPUS AND BACK: THE CHANGING LINK BETWEEN *TOWN AND GOWN* IN ISRAEL'S MAJOR CITIES

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Background

Town and *gown* are two separate communities in any university city; "town" denoting the non-academic residents while "gown" represents the university community. This expression alludes to the black gown worn by students in medieval universities, and is widely used in urban higher education literature; the authors use it here to discuss the *places* where these communities link, looking for spatial correlations between the development of the city and the planning of its university.

Twelfth-century Europe witnessed the birth of the first predecessors of the modern university, whereas American universities are the outcome of Eighteenth-century Enlightenment; universities in Israel, however, are much younger organizations. Even though religious colleges such as Christian clerical seminars, Islamic *madrases* and Jewish yeshivas had existed in the Holy Land since late Antiquity, modern laic higher education institutions and universities, unlike in Europe and in the Americas, only developed during the Twentieth century. The first art and engineering schools date from about a century ago, instituted by the end of Ottoman rule under sultans Abdul Hamid II and Mehmed V. In 1906 the Bezalel Academy was founded, originally as a school of arts and crafts and in 1912 the Technion, as an institute to train engineers, followed by the Hebrew University in Jerusalem in 1924. After the creation of the State of Israel, the city universities of Tel Aviv (1953) and Haifa (1970) were established.

World-renowned figures were invited to participate in their planning and design, testing and implementing innovative architectural ideas, including Patrick Geddes, Eric Mendelsohn, Louis Kahn, Oscar Niemeyer and Mario Botta, together with prominent local architects, such as Arie Sharon and Ram Carmi, to name only a few.

A tale of three cities

The planning of academic institutions in Israel reveals an ongoing process of conceptual transition on the desired relationship between the urban and academic communities. This process started with single-building colleges located in the centre of town, which eventually outgrew their first facilities; it continued, mostly in the second half of the last century, with new large-scale campuses on the outskirts of cities. Presently, a piecemeal return back to downtown has begun, planners regarding the university as an

instrument for urban revitalization of dilapidated and neglected areas. Observing these stages, new understanding emerges for the future of the relationship between *town* and *gown*, the physical link between the city and its university.

1 The case of Haifa

Considered capital of the North, the port city of Haifa holds at present the largest student population in Israel, enrolled at the Technion, Haifa University and other independent colleges. The Orientalist Beaux-Arts Technion Historic Building designed by Alexander Baerwald in 1912 was its first academic building, presently housing the National Museum of Science. In the 1950s a new campus was built on Mount Carmel by Bauhaus graduate Arie Sharon flanking Patrick Geddes' Newe-Shaanan garden village. Sharon, disciple and collaborator of Hannes Meier, designed the Forum of the new suburban campus, with the Main Library, Churchill Auditorium, and the Senate Building surrounding a sunken central square. The Institute moved to this location from 1953, eventually forming the Technion City, now with 110 acres of built-up area.

Haifa of the 1960s was a predominantly Socialist workers' town when legendary mayor Abba Hushi invited Oscar Niemeyer, just after building Brasilia, to erect a new university atop Mount Carmel. A city known as "red" appealed to Niemeyer's own political sympathies; he devised a monumental scheme to include all the University of Haifa in one complex, with a dominating 30-storey skyscraper embedded in the Carmel Forest national park, towering as a crown over the Carmel ridge. The idea for this vertical campus -a regional landmark offering panoramic views of the city- probably stemmed from an unbuilt proposal designed forty years earlier by Eric Mendelsohn for a site nearby. It was a tower planned as the focus of Carmelstadt garden village, one abortive Haifa venture of Bauhaus patron Adolf Sommerfeld. Apparently, Niemeyer was aware of Mendelsohn's project and followed its guidelines; via Niemeyer, the university Eshkol tower is a tribute to Mendelsohn's intended Carmel Crown. In 1966 the University moved to Niemeyer's iconic vertical campus, where it seats today.

New academic institutions have developed in Haifa besides the Technion and the University. Especially noteworthy is the downtown college of the WIZO School of Design which, together with its urban square, is bound to grow into a minor campus. Located near the port in an award-winning transformation by Popper & Hirsch of a derelict 1960's primary school, it has become a positive downtown addition to the simultaneously renovated German Colony quarter.

During the 1930s, the British selected Haifa's natural harbor as Israel's main seaport, reclaimed the neighbouring area and erected a new business district. Foremost achievement in this plan was A.C. Holliday's ambitious "mile-long building", a major feature in Haifa's MoMo's heritage. For decades the port area's tree-lined thoroughfare boasted thriving businesses and shops; ultimately however the area declined sorely. To revitalize the 1930s downtown, Haifa municipality just promoted the "Port Campus", a higher education-based project of urban renewal. It sets up an academic complex by the port with colleges and faculties, students' dormitories, commercial and leisure

facilities, re-connecting students to the city and cementing a better town and gown partnership.

2 The case of Tel Aviv

Founded in 1956 by the merger of three research institutes, the development of Tel Aviv University followed and affected the rise of its city as main metropolitan center of Israel. Initially operated by the municipality, the university was granted autonomy in 1963. Establishing the campus in close proximity to Ramat-Aviv -a major northward extension of Tel Aviv- aimed to integrate academic and urban life*, i.e.,* a campus in town. Planned as an orderly, orthogonal pattern of buildings loosely defining public areas, the master plan and its successive adjustments represent the dominant modernist conceptions, a relatively open-ended system akin to the adjacent Ramat-Aviv neighbourhood, which simultaneously developed as an updated local version of European *siedlungen*.

Five decades on, the campus comprises an outstanding assembly of buildings. Most remarkable are Louis Kahn's Mechanical Engineering building, an idiosyncratic interpretation of the courtyard typology in exposed concrete, the clearly Corbusian Main Library by Nadler & Bixon, and Mario Botta's Cymbalista Synagogue, which refined materiality and spatial dichotomy have created a breakthrough in synagogue design.
Security considerations, however, demanded from the beginning a fenced precinct accessed only through controlled gates. By the late 1980s a critical assessment of this situation resulted in the re-design of the campus main entrance as an open plaza, shared by town and gown, defined by the university's art gallery and student services' buildings; a symbolic yet significant connection with the flow of daily life.
3 The case of Jerusalem

Two academic institutions have set their mark on the city of Jerusalem: Bezalel and the Hebrew University. The Bezalel Academy of Art and Design was founded in 1906 by the artist and educator Boris Schatz, to be the focus of a Jewish arts and crafts renaissance. The peripatetic trajectory of Bezalel bears evidence to historical events, but also to changing conceptions on the role of art in society and its relation to the urban milieu. The first college stood on the premises of two 1880s stone *liwan* houses looking out to the Old City. A third building, "the factory" was added in 1910 for the production and sale of objects designed by the school, a way of fostering close contact with the community. Schatz even proposed a row of shops (unbuilt) along the streets, to establish an academy that dwells in the city.

During the British Mandate Bezalel expanded by haphazard additions and rented buildings; by the late 1950s lack of space and the need to reunite scattered academic units prompted a protracted debate on the character and location of a new campus and on the perils of "distance or loss of connection with the lifelines of the city". The controversy was resolved in 1979 by the then head of Bezalel, artist, historian and theoretician Ran Schori who, farthest away from Schatz's vision, saw the peripheral campus as a manifestation of modernism. He consequently decided to transfer the academy to the Hebrew University on Mount Scopus, where it seats now.

The historic buildings of the initial college were declared national patrimony, yet by 2000 public criticism on their abandonment, symptom of a decaying city center, as well as students' discontent with their lack of urban amenities resulted in a movement to return to the old headquarters. Under the motto of "architecture returns to the city", the Architecture Department moved back into town. The renewal and extension project, designed by Sivan & Schwartz strikes a balance between conservation and new addition as a continuum of interrelated spaces, clearly rooted in the Modernist tradition.

Furthermore, Bezalel announced in 2006 an international architects' competition "to design the future campus in downtown Jerusalem". The relocation of the national art and design academy to the Russian Compound, in the heart of the city's urban life is expected to promote interaction between the students and the surrounding activities. Proposals from 34 countries were submitted; out of these the Turkish firm Studyo Architects was chosen. From the town's point of view "it would mean adopting a young, creative and vibrant [gown] community in its midst, infusing it with fresh vitality".

The Hebrew University in Jerusalem was planned on Mount Scopus by Professor Patrick Geddes, with Frank Mears and Benjamin Chaikin, on "a location dominating the ancient city, the valley of Jordan and the Dead Sea". Three different master plans were prepared during the British Mandate: Geddes' in the 1920s, Mendelsohn's in the 1930s and Kaufmann's in the forties. Geddes' University of Jerusalem exemplifies the quest for an architectural language befitting the Holy Land, a design combining Beaux-Arts layout with Orientalist elements and his own "Tree of Knowledge" symbolism. Both Geddes' and Mendelsohn's plans relate to the city visually and symbolically. Mt. Scopus looks out over Old Jerusalem from without, yet while Geddes' idea was to design a monumental scheme with a central building shining as a beacon to be seen from the city, Erich Mendelsohn's plan is an integrated urban complex that looks out at the city, "a modern city of science… nonetheless [with] abstracted features of the Old City not far away" (Curtis). Only partially implemented, Mendelsohn's proposal is designed in the best 1930s Modernist language, yet simultaneously draws from the vernacular Mediterranean courtyard tradition. His vision attempted to create a synthesis between MoMo and the locus, generating a proto-critical regionalist design.

Following the 1948 War, Mt. Scopus remained separated from Jerusalem, which raised the need for building another campus in Western Jerusalem. The new Givat–Ram HU campus reflected the then strong local influence of Le Corbusier, as seen in the Main Administrative Building by Dov and Ram Carmi, which echoes the Rio de Janeiro Ministry of Education, and most remarkably in the National Library by Yaski, Armoni, Alexandroni *et al*. After the reunification of Jerusalem following the Six-Day War, the Hebrew University returned to and further expanded the Mt. Scopus campus. Ram Carmi planned a Late-Modernist fortress-like academic megastructure, complete with underground access tunnel, while Yaacov Rechter successfully rehabilitated and renewed Mendelsohn's Hadassa University Hospital.

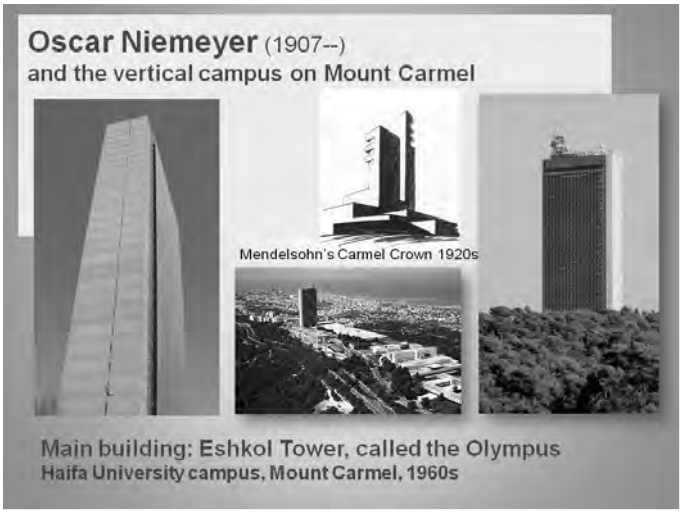
Concluding remarks

Regarding Israel's major cities, the relationship between town and gown has remained ambivalent over the years: at times the university provided a focus for the city's cultural life; at others, it has withdrawn into itself undermining urban culture. While originally the university was placed in the heart of the city, the growth of the academic institutions vis-a-vis the growth of their cities produced a dialectic process, following a systolic/diastolic pattern. The dilation of the urban heart forced the academic facilities out of town, in turn its contraction produced a driving-in surge to (re)ingrain these facilities within the urban fabric; this process can be regarded as a three-stage progression.

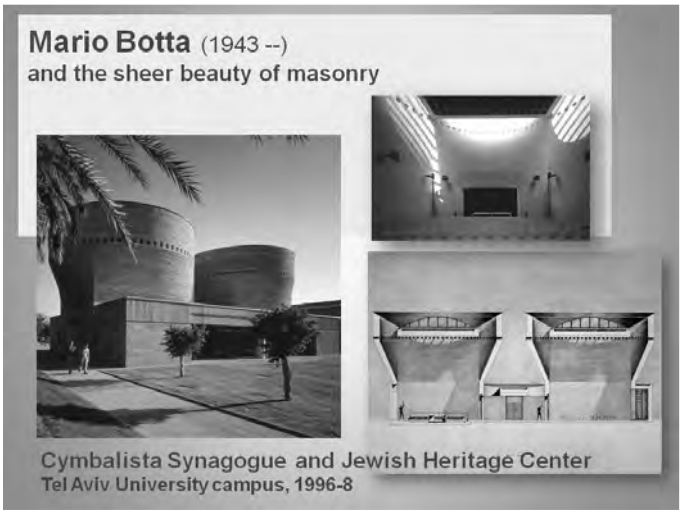
Initially, the intramural urban college was imbedded in the urban fabric, as most academic institutions started with small single-building colleges located in the centre of town. Subsequently these facilities were outgrown, bringing forth the extramural campus. Changing values and the requirements of mass education prompted decision-makers to purchase land in the urban periphery, creating ideal academic precincts: self-contained campuses, large-scale complexes featuring iconic buildings erected on the urban edges. Finally, a new pattern emerged: the return back to *intramuros.* By the reinsertion of academic departments and/or the relocation of new colleges in dilapidated, neglected or vacant areas, re-using and renovating rundown MoMo buildings. Art and architecture schools have led the way back, because of their traditional interest in a wider involvement with the city and its people. Moreover, the return downtown also stems from the convergence of two contemporary trends: life-long-learning, the mounting awareness of the need for ongoing education for the wider public, and the will of the university to reinstate its presence in the city.

The expansion of higher education has been a major cause for urban development, offering opportunities to experiment with the latest thinking on planning, technology and architectural design. The development of academic facilities reflects the succession of mindsets and conceptions in twentieth-century architecture, thus becoming a significant factor in the local architectural history and heritage; it also reveals an array of ideas on the desired link between the urban community and its academia, the proverbially problematic issue of *town and gown*, city and university. The authors believe that time is ripe to prepare a comprehensive plan of documentation and preservation of the cultural legacy of 20th century structures for higher education. Modern universities embody the social and political ideals of their time and predict, as the conveners stated, "the challenges of conserving their rich repository of buildings, artworks and designed landscapes". This stands as an essential future task of the DoCoMoMo working parties.

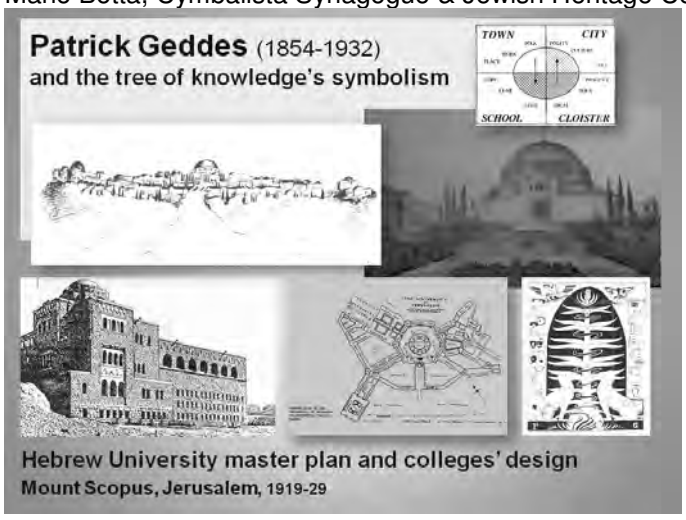
Illustrations



Oscar Niemeyer, Haifa University vertical campus, Eshkol tower, nicknamed ‘Olympus’, 1960s.



Mario Botta, Cymbalista Synagogue & Jewish Heritage Center, Tel Aviv University, 1996-8.



Patrick Geddes' plan for the Hebrew University and colleges' design, 1919-29.

Erich Mendelsohn's plan for the Hebrew University and Hadassah University Hospital, 1936-8.
(All the illustrations are collages assembled by author Raquel Rapaport from research material)

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THE NEW UNIVERSITIES IN BRITAIN: PRESERVING A SOCIAL EXPERIMENT

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Between 1960 and 1970, university undergraduate (degree student) enrolment in Britain rose from 108 000 to 228 000. Between 1958 and 1961 the foundation of seven new universities was announced and by 1967 all seven had begun to enrol students. The connection between these events is indirect. Registered students in the new universities amounted to fewer than 10 000 in 1970 but it was generally accepted that expansion in existing universities had severe limits, imposed in part by their structure and location. To the medieval foundations -Oxford and Cambridge- a number of "civic" and "redbrick" universities had been added in the nineteenth century. Many of these occupied city centre sites and were, thus, expensive and difficult to expand. Others, such as Oxford and Cambridge, depended on elitist traditions (the personal tutorial, residence in colleges) which could not be extended *ad infinitum*. It was generally agreed in Britain that existing universities should not be allowed to expand beyond 4 500 students. Nevertheless, the bulk of expansion was accommodated in the existing universities, and some of the architectural competitions for these developments provided key ideas for the new universities.
Nor was the new university movement determined by the Robbins Report, published in 1963, although this report, and more importantly the thinking behind it, was highly influential on the concept and shape of the new university.

The founding, design and implementation of the new university programme attracted worldwide attention because it seemed to have implications far beyond the sphere of university education. The post-war monster campuses (10 000 students) of the United States were imitated across the world and had an indirect influence in Europe, where numbers of around 3000-4000 were preferred. The new university had become a *"projet-type"* of international Modernism. The university allowed architects to tackle the major social, political and ethical issues of modern urbanism without the inexorable obstacles of transportation, demographic mobility and macroeconomics. The university campus was thus literally a utopia, at least in theory. And the political and administrative structure of university patronage was uncannily reminiscent of Plato's Republic. The University Grants Committee (UGC), [1] which acted as the liaison between the Treasury and the universities, was run by university professors and vice-chancellors (presidents), mostly Oxford and Cambridge trained, and many of them were philosophers. Having acquired agreement on certain basic principles, the UGC was able to respond to appeals to found a new university at its own pace and with a considerable degree of urgency. From the announcement of the go-ahead to beginning of construction rarely took more than two years, and the first students were enrolled two years after that. Architects were appointed by a mysterious process characteristic of the patrician methods of the UGC, rather than resorting to competitions, usually based on proven

experience in earlier projects or competitions. Although “young Turks” such as the Smithsons or Stirling and Gowan, missed out, many top flight British modern architects were employed in the new universities. And great freedom was given to each vice-chancellor and his building committee to shape the campus according to their own ideas. The result is a fascinating range of urban and intellectual solutions, constructed quickly and on spectacular sites. As Gerhard Hess, founder Rector of the University at Konstanz said: “England, du hast es besser.”[2]

To set the British new universities in context, we need to understand the solutions on offer by 1958 in North America, Britain and elsewhere and some of the educational and sociological issues of university education, as they were understood in the 1960s. A foundation document for the notion of mass higher education was *The Higher Education Report for American Democracy* (1947-8), the product of a Presidential Commission. The debate in America turned around trying to maintain some of the social characteristics of the elite British Universities with the specialisation and efficiency of the German system, focused on research. Despite the independent status of American colleges and universities, Federal and State aid rose to 71% by 1970, almost as high as in Britain (87%).[3] Expansion in America to meet the needs of returning veterans and the baby boom took the form of doubling the number of institutions, from 1963 to 1975 (many in the form of small colleges) and more than doubling the number of students (2.7 million in 1955 to 7 million by 1970), reaching a total participation figure of around 50%. In the same period, women students reached parity with men. The situation in Britain was very different. Even in 1970, only 14% of the age group enrolled in higher education and the proportion of women remained at 34% in 1973.

From an architectural point of view, much attention was given in Europe to the new “multiversity” state campuses planned and built in the United States in the 1950s, such as the State University of New York at Albany by Edward Durrell Stone. With the strong patronage of Nelson Rockefeller, Stone had been given *carte blanche* to design a concentrated, car-free campus on a green field site for 10 000 students and the project was rushed through in seven years from the presentation of the model in 1962. The 500 metre long rectangle, with its colonnades and courts framing high towers, concentrated all the living and teaching functions of the university in one massive structure. Projects like this set the tone for urgent, concerted action. Many European universities followed the megastructure trend, as Bochum and the Free University of Berlin, to give just two German examples of the 1960s. These universities belonged to the “technical” tradition of focusing attention on the hard facts of education: laboratories, lecture halls, libraries and functional accommodation. A diametrical different option was presented by the new colleges and residential halls planned in Oxford and Cambridge in the late 1950s and 1960s. In the context of established elite universities, these projects attracted the cream of British modern architecture. The Sidgwick Avenue site Arts Centre at Cambridge, built by Casson and Conder in 1953, demonstrated the university’s willingness to follow the model of the sciences and engineering laboratories and plan centralised teaching rooms outside the control of the individual colleges.[4] Their elegant block combines the structural metaphors of Le Corbusier with a traditional Cambridge court structure and a ‘respectful’ use of materials. In particular, the competition for Churchill College, Cambridge proved to be a laboratory for conceptual planning. Twenty architects were invited to present plans (unpaid) for a new college, to be

partly funded by donations, intended to boost the teaching of the sciences at Cambridge. Some architects, such as Chamberlin Powell and Bon, opted to maximise the monumental effect, while others studied the typological possibilities of courtyard arrangements (Howard Killick Partridge and Amis), tower blocks (The Architects Co-Partnership), standardised blocks (Yorke Rosenberg and Mardell) or a linear pinwheel arrangement around a central space (Fry, Drew, Drake and Lasdun).

Most of these architects were subsequently offered new university buildings to design. The winning scheme, by Richard Sheppard, Robson and Partners, was the most traditional, in fusing together a large number of small courtyards, to the scale of the traditional college court around a central spine of social buildings. From the project to the execution, the scheme became more traditional still in its materials, adopting brick and concrete with oak window frames as its medium. Meanwhile, the Smithsons, who also competed for Churchill College, had submitted a highly influential scheme for the expansion of Sheffield University which adapted the idea of the single building university to the language of their Golden Lane estate competition design, complete with streets in the sky connecting the different functions. Thus, by the time the chance to design the seven new universities came about, in 1958, universities, with their complex functions, had come to be seen as a metaphor of urban design. Furthermore, the design of universities was clearly established as what Pierre Bourdieu described as a “field”. It benefited from a relative autonomy from other kinds of design and other conditions of architectural production. For example, the first ideas about residential accommodation for students did not begin with the cost yardsticks of conventional housing, but with a range of concepts (study bedrooms, work rooms, etc) for which no cost yardsticks existed. A relatively autonomous system of commission had been established, whereby the University Grants Committee handed over to newly appointed vice-chancellors and their building committees a more or less fixed sum of money to deliver plans to build higher education environments for around 3 000 students. The history of the new universities is partly one in which the free rein given to the seven vice-chancellors around 1960 was quickly called back and squeezed by increasingly tight cost standards. Those architects capable of building their projects quickly escaped some of the worst of these consequences, but those sites, such as the University of East Anglia, where construction slowed down, suffered by being left unfinished and subsequently modified by different teams of architects.

One of the significant ingredients of the new university movement was the re-conceptualisation of higher education. Again, this process had begun before 1960. In particular, the foundation of Keele University, on the site of a country house in the Black Country near Stoke-on-Trent, incorporated a number of radical new ideas. Like the Scottish Universities, Keele was to offer a four year undergraduate programme, with the first year given over to an innovative foundation year, in which all students would be exposed to both scientific and humanities subjects. This was meant to provide science and technology students with a cultural base not provided by the British secondary educational system, in which specialisation happens very young while encouraging some arts students to take up the sciences. It addressed directly the “two cultures” debate prompted by C.P. Snow. The rest of the curriculum also placed great emphasis on interdisciplinary study. Although the architectural provision at Keele lacked originality, the pedagogic example set prompted all the new vice-chancellors to adopt a range of innovative approaches to the curriculum. Some

opted for a dual allegiance for all students: that of a traditional department (history, modern languages) and that of a School (British and American Studies). The function of the latter was to give students a social and intellectual identity outside their area of specialisation. Other Universities chose the traditional Oxbridge model of the College, where students would not only reside but also carry out part of their learning, with college libraries and seminar rooms. In every case, however, architects were faced with the challenge to provide plans in which students could find their way from one teaching room to another in around ten minutes.

Behind these different options lay a debate about what universities were for. Most Oxbridge-trained professors understood university life as a formation of character as well as learning, in which the social activities were almost as important as the educational ones. Behind this idea was a great apprehension about what working class students, who were presumed to lack the support of a home culture, would make of university life. Social interaction, debate, regular informal contact with teaching staff (all of which were seen as the advantages of the Oxbridge residential college) would be required to form the next generation of graduates. The close proximity of sports fields, the availability of common rooms and joint study areas (sometimes called 'halls') were all geared to avoid the spectre of the 9-5 university, in which students would arrive for lectures and to read in the library and would disappear into anonymous lodgings at night. A rapid evolution in this thinking went on while the new universities were being designed. By 1970, few vice-chancellors would speak publicly about the formation of character. It was becoming recognised that students were adults, that no-one really knew what they wanted or how best to enable them to study. In all the new universities, elements of the Oxbridge model of residential interaction survives, but in radically different forms.

By the time the Treasury had given the UGC outline approval to build seven new universities in 1958, a number of basic principles had been agreed. The sites must be in open country not too far from a town big enough to accommodate a significant proportion of students in lodgings. This argued in favour of locations close to seaside resorts, where summer season digs became available in term time. Sussex University, near Brighton on the South Coast, was thus the first to be given approval. The sites were to incorporate at least 200 acres; the consequence of this was that most of the new universities were located on country house estates, often with well landscaped parks. All the new universities were co-educational, with around 50% women from the outset, and all were committed to a measure of interdisciplinary "new" subjects and to the integration, where possible, of science and arts teaching. Where the new universities differed from each, apart from in the choice of using a collegial structure, was in the degree of monumentality sought for. Did it matter whether the university had a memorable identity, or was its purpose to provide a range of functions at cost and to time?

Illustrations

Lasdun & Partners, University of East Anglia, Norwich, 1963-70 © Caroline Maniaque-Benton

Lasdun & Partners, University of East Anglia, Norwich, 1963-70 © Caroline Maniaque-Benton

University of Essex, Colchester, 1963-70 © Caroline Maniaque-Benton

Kenneth Capon (Architects' Co-partnership), University of Essex, Colchester, England, 1963-70 © Caroline Maniaque-Bento

Notes

[1] Founded in 1919

2 Cited in Muthesius, S. (2000) The postwar university : utopianist campus and college. New Haven ; London, Published for the Paul Mellon Centre for Studies in British Art by Yale University Press , p. 94.

3Ibid, p. 13

4 Hugh Casson had won significant renown in Britain for his coordination of the Festival of Britain in 1951.

African Modernity, Modern Movement Architecture in Sub-Saharan Africa

The Modern Movement Architecture in Sub-Saharan Africa is an important research issue for DOCOMOMO.

The aim of this round table is to exchange visions and work on the stage of buildings identification, register, description and analyze in order to bring Sub-Saharan Africa geography, places, cities and regions to discuss on modern as heritage in this universe.

Several researchers dealing specially with the case of Maputo in Mozambique have been collected to participate with their knowledge but we wish to do a deeper and larger discussion. It is very important to have the contribution of researchers who have been working on other cities and regions mainly South Africa, Tanzania, Zimbabwe, Malawi, Ghana, Zambia, Angola, and Kenya. We wish to identify and realize documentation work but also go further than description and reflect as far as modern heritage is concerned as re-use and restoration for the people and community.

Ana Tostoes
Chair Docomomo Internacional
Department of Architecture and Civil Engineering, Technical University of Lisboa (Portugal)

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Brasilia: Limits of the Urban Project

Inaugurated fifty years ago, Brasilia is now a burgeoning metropolis of 2 million people, 350 000 of which live in the Pilot Plan conceived by Lucio Costa in 1957-58 for 500 000.

The Pilot Plan can be said to revisit the City Beautiful of Burnham, McKim or Agache in the light of the Linear City of Soria y Mata, the Futurist City of Sant'Elia, the Contemporary and Radiant Cities of Le Corbusier, the Functional City of the 1933 CIAM and very old Chinese settlements- as well as garden suburbs, shopping centers,plazas open on one side, Piccadilly Circus, Times Square, Champs Elysées Avenue. Costa's Brasilia rivals and pays homage to slightly older Le Corbusier's Chandigarh. As Stanislaus von Moos and Maristella Casciatto suggested recently, both capitals herald the twilight of the comprehensive plan and the rise of the urban project as the mandatory tool for urban transformation. Indeed, the Pilot Plan can be described as a omposition of functionallydifferentiated and formally articulated urban projects, many nested inside larger ones.

Documentation about the development over time of these urban projects is now becoming available. Archival research is disclosing fascinating data about the residential superblocks and the civic-administrative center, wellpublicized features of Brasilia that have not been studied diachronically. At the same time, it is calling attention to features that are seldom talked about but are equally characteristic, such as the University of Brasilia campus.

Pertinent issues raised by such research include the way urban projects give shape to and are shaped by modern conceptions of monumentality and domesticity, craftwork and prefabrication, repetitiveness and singularity, foresight and improvisation, mobility and quiet, activity and contemplation, publicness and privacy and the fit between function and form- as well as the way urban projects relate to an unstable, uncertainty-ridden context that limits them and is in turn redefined by them. The Brasilia experiment is worth studying in depth because it corresponds to a particular way of living in the urban modernity of yesterday that is not yet obsolete both in established and emerging economies. Both unique and exemplary, it may even spark discussion on ideas for living in the urban modernity of tomorrow.

Three case studies - the University City, the National Congress and Superblock Living- will be the point of departure of the proposed round table, presented respectively by Andrey Rosenthal Schlee, Danilo Matoso Macedo and Francisco Leitão (Brazil). Coordinators Carlos Eduardo Comas (Brazil) and Sylvia Ficher (Brazil).

Carlos Eduardo Comas
Universidade Federal do Rio Grande do Sul Porto Alegre (Brazil)

The Architectural Journals, Documentary Support of Modern Heritage

At the moment of analising the development of the Modern Movement in the latinamerican continent it is imperative to consider, as a documental source, the architectural journals in the study of the arquitecture of the twenty century. Architectural journals were important not only as a phenomenon of the written press, but also because of their capacity for disemination.

The journals evolved at the same time with the modernization of the society and were imposed as an important source for the updated of knowledge. Its incidence in the cultural spheres provides an intellectual dimension in the analysis of Latin American Modern Movement and the study of its pages, from a critical view, gives us various aspects of publishing production. All the diversity of journals adapted to the market demands, either the ones tied to editors criteria or the comercial ones more flexibles. All were able to spread their particular positions, including those that constituted in the voice of arquitectural tendencies or the ones that constituted in the expresion of marketing for the bufets of arquitecture, or others belonging to student or professional bodies. In all this pages it is clear the effectiveness and speed of the ideological transmission they produced, especialy the impact of new ideas in the professional practicies.

Often considered as “guides”, the architectural journals published during the twentieth century allows to see not only what has been built, but also to learn about projects that were never build, giving another critical undestanding of the arquitectural ideas in force at that time.

In most of our countries, during the 1920s, the press reinforced the seed of the generation that turned to the “modern.” Almost simultaneously with the implementation of Walter Gropius proposals at the *Bauhaus*, same issues circulated with the publication of the new ideas and also with the publication of opinions as “manifesto” that took even greater force in the interwar period and finally influence hardly at the end of the second world war.

In a quick review, among the journals that were registered with these characteristics, we can find *Nuestra Arquitectura* (1929) in Argentina, first publishing local proposals and then foreign ones; in 1937 appeared *El Arquitecto Peruano*. About the 40s in Mexico, appeared *Arquitectura Mexico* by Mario Pani’s hand and from 1948 on *Espacios* that integrate the architecture with visual arts, planning and engineering, besides the transgressive *Arquitectura y lo demás*. By 1946, *Proa* was edited in Colombia and about ten years later it appeared in Caracas the journal *Taller*. In Brazil, arosed *Modulo* –from 1955 on- containing in their pages the personal promotion of Oscar Niemeyer and *Brasilia* that documented effectively the construction process of that city. Another existing issues were then added to these titles, mainly those in which the process of the discourse supported by union groups were linked to the existing terms of modernity following a certain ideology (such as Magazine *Revista de Arquitectura* –Argentina-; *Arquitectura* –Uruguay-, or the chilean *Arquitectura y Construcción* y *Arquitectura*; among others).

Facing the 21st century, analizyng this issues we offers the opportunity to review the catalogs of works and ideas that were developed during the different stages of our architectural evolution. This is the reason why this proposal that revalorizate the modern architectural heritage, aims to consider these issues as an essential document and indispensable testimony of an important period of our historiography of architecture.

Patricia Méndez
Centro de Documentación de Arquitectura Latinoamericana (Argentina)

Movie Theaters, a Modern Heritage to Rescue

If there was an architectural genre that was representative of the twentieth century, it was that of movie theaters. These were developed around almost the entire world, between the years that compound the end of World War I and the mid-sixties. Their evolution, from the small halls with architectural solutions resembling those of theaters, to the great movie palace with capacity to hold from 2,500 to 6,000 seats reflects an architectural standard that was consolidated since the thirties and had a leading role in architectonic modernity. Nevertheless, because of the tendency, in certain moments and places, of these buildings to take exotic or picturesque languages, their architecture was mostly ignored by the historic literary production when it was not totally discredited, being qualified as a *kitsch* and anachronic expression of architecture.

Various studies carried out in different countries such as Canada, United States of America, México, Cuba, Venezuela, Brasil, Perú, Argentina, Spain, Germany and the United Kingdom, among others, treat the importance of movie theaters as cultural and architectural heritage and have proven that the previous disqualification has been completely subjective and without solid grounds. In spite of these studies, which vindicate a forgotten architectural manifestation, it has not been possible to stop the extinction process that the old movie theaters have been exposed to since the sixties, which is due more to economic factors rather than to lack of architectonic merits.

Their location in urban decadent environments, their lack of parking lots, the insecurity revolving the place, and the irruption of new concepts of cinematographic exhibition, such as the multiplex complexes, have resulted in the becoming obsolete of the original concept of those old palaces of social recreation.

Due to all this, a collective consideration is needed in the framework of an international do.co.mo.mo congress, among the specialists of and those interested in the subject, in search of the exchange of methodological investigative experiences as well as the possibility to analyze works and specific projects for the conservation of these buildings. The cultural, urban, architectural and, for some generations affective, legacy of the old palaces of movies is undeniable, therefore, the idea is to highlight, in the do.co.mo.mo congress, the case in search of promoting a record, more data and possible safeguard, as well as shaping a network of scholars regarding the subject.

The topics to discuss:

The movie theaters as twentieth century architectonic heritage
1. The place of art in worldwide historic investigation of movie theaters.
2. Paradigmatic examples of intervention and rescue of movie theaters.

Alejandro Ochoa Vega
CYAD, Universidad Autónoma Metropolitana - Xochimilco (México)

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