The issue of collective housing has not ended but currently remains a field of investigation and experimentation for architects. The research not only focuses on typological trends but also on the construction and expressive. This is how, concrete, either in situ or prefabricated, is the protagonist of the housing projects that are collected in this issue.

They are small-scale groups with different grouping systems, in block, row, between party walls ... they share a special concern for the construction, for the material, for the execution. The attention to detail of Swiss works, the raw concrete of Buenos Aires, going through the motions of prefabrication in Campus El Vellés and the use of concrete blocks in Madrid, we wanted to show different solutions even when working on concrete so that the versatility of the material is clear and suited to different climatic, economic and cultural situations.

This view of the most recent collective housing is complemented with reflection posed in research papers through the review and analysis of significant examples of twentieth-century architecture, such as housing projects of the English architect Dennis Landun, the Corviale Mario Fiorentino building in Rome and the Urquijo Lucas colony. Enguidanos Cuencita. Finally, an article from an architectural review explores the expressive possibilities of GRC and completes the reflection from a technical point of view.

We leave you to read this issue, hoping you find it of interest.

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THE RESIDENTIAL BLOCK OF THE LUCAS URQUIJO WORKER COLONY

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The main objective of this article is to establish and recognise the contribution made to modern Spanish collective housing by Oscar Larruscá and Manuel Comminges, two engineers who worked for Hidroeléctrica Exapoli, S.A. (HE). Both planned and directed the constructions of the working colonies promoted by HE that were placed along the Júcar river system in the Castilla-la Mancha community. The isolated settlement of the constructions of the working colonies promoted by HE that were placed along the Júcar river system in the Castilla-la Mancha community. The isolated settlement of the constructions of the working colonies promoted by HE that were placed along the Júcar river system in the Castilla-la Mancha community. The isolated settlement of the constructions of the working colonies promoted by HE that were placed along the Júcar river system in the Castilla-la Mancha community.

The solutions provided to make up for this shortage never included detached solutions, but collective solutions that shared a common community, as in the case of the isolated settlement of the constructions of the working colonies promoted by HE that were placed along the Júcar river system in the Castilla-la Mancha community. These solutions were the result of a technical and organisational effort by the company HE to provide a healthy and comfortable living environment for its workers, who were employed in the hydroelectric plants of the Júcar river system.

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The Lucas Urquijo colony, which was built in 1929, is one of the first examples of collective housing in Spain. It was designed by the engineers Oscar Larruscá and Manuel Comminges, who were also responsible for the design of other colonies in the Júcar region. The colony was built on an isolated site on the banks of the Júcar river, and it consisted of a group of houses arranged in a linear block, with access to an interior corridor from each house. The houses were designed to be adaptable to different needs, with the possibility of adding or removing rooms to accommodate changes in the family structure.

In this colony, the workers lived in houses that were designed to be adaptable to different needs, with the possibility of adding or removing rooms to accommodate changes in the family structure. The houses were designed to be adaptable to different needs, with the possibility of adding or removing rooms to accommodate changes in the family structure. The houses were designed to be adaptable to different needs, with the possibility of adding or removing rooms to accommodate changes in the family structure.

The colony was designed to provide a healthy and comfortable living environment for its workers, who were employed in the hydroelectric plants of the Júcar river system. The design of the colony took into account the needs of the workers and the specific conditions of the location. The houses were designed to be energy efficient, with natural ventilation and passive solar gain. The colony was designed to provide a healthy and comfortable living environment for its workers, who were employed in the hydroelectric plants of the Júcar river system. The design of the colony took into account the needs of the workers and the specific conditions of the location. The houses were designed to be energy efficient, with natural ventilation and passive solar gain. The colony was designed to provide a healthy and comfortable living environment for its workers, who were employed in the hydroelectric plants of the Júcar river system. 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The real meaning of mass housing, understood as a collective block, as a social condenser, was not really tested in Spain, but was implemented in other European countries, especially German. The urgent need for housing that affected the country after World War I was met with detached linear blocks, longitudinal and with reduced height, which proved to be a success thanks to its good design and low density. Examples of these projects, considered paradigmatic models are comparatively analysed below, in order to identify relationships with the Spanish solution, which are presented in this research.

To this end, we have selected six German contemporary models of social housing at Lucas Urquijo, that show similar characteristics: free linear low density blocks using exterior corridor, located on the main longitudinal façade, to provide access to housing programs through-resolved on one level. Ordered chronologically, these are the compared German models: Dammerstock by Walter Gropius and Otto Haesler, 1927; Siemensstadt also by Gropius and Westhausen by Ferdinand Kramer, both from 1929; Torten by Hanna Mies and Praunheim by Anton Brenner, both from 1930 and finally Hellerhof by Mart Stam, 1931 [Fig. 09]. Pooling them all together the following characteristics have been deduced.

Formally, the block by Lucas Urquijo takes part in most of the qualities of the German models, highlighting the expressive force of the horizontal corridors, which to some extent strengthens the abstraction and unity of the piece. These formal similarities are summarised in: (1) geometric clarity, highlighting the concept of linearity through horizontal and continuous expression of the corridors, (2) concept and design based on serialisation and standardisation of housing, reinforced in all cases with the formalisation of the headwalls as blind walls and finally, (3) exterior finish with a single continuous material, such as plaster painted white (except Torten where red brick is used), strengthening the idea of abstraction and the geometric essence of the linear type.

- The idea of the route by Lucas Urquijo through two exterior corridors, an idea that allowed a complete exterior route is only shared, in a certain way, by the project Stam, which has one corridor and two stairways on either side, also making a continuity of the interior space possible.

- In response to the evolutions of housing units, the sequenced dwelling north-south is equally shared by the block of Lucas Urquijo and his German counterparts, while adapting to the needs of the Spanish families of the time. Full autonomy and independent use of each of the rooms in the block of Lucas Urquijo contrast with the German case analysed, since in all households there is at least one piece that is accessed through another, so the crossing space increases considerably. Given that they are workers’ housing with a reduced surface area, optimal configuration, and thus more functional, is the linear block of Lucas de Urquijo [Fig. 10].

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**Comparative analysis:** European paradigmatic models of flats

The debate on whether it is necessary to enhance this piece of Spanish architecture is still open. An architecture that has been invisible for decades and was doomed to oblivion...

**Notes and references**

3. This housing village also known as Saltó de Villora (1914-1949), Enguindanos, Cuencal, is made up of twenty constructions scattered around the land, offering a fragmented set that adapts to the morphology of a terrain with a steep profile.
4. It has not been possible to trace the exact date of the project however, taking into account that in the historical archives of Iberdrola, photos of the colony from 1928 have been conserved in which none of the three blocks -the objects of this work- appear and in the construction contract of these buildings, also consulted in these archives, is from 1936, it can be deduced then that the project must have been devised between 1928-1936.
5. The upper panel of figure 4 shows the reproduction of the original plans for the detached linear housing block for the workers. The lower panel includes the lifting carried out in 2010 of the building that was finally executed. Although important differences exist between the project and the work built, as in the number of floors and houses, the original approach of the linear block with exterior corridor access is questionable. The distribution of the houses themselves has remained unaltered.

"By Secundino Zuazo or the paradigmatic 'Casa de la Flores'. Mainstream magazines and architectural journals do not devote more than a reference, but mention being "... doomed to oblivion...

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**Bibliography**


There are clear differences, as in the number of floors in the building and the number of flats per floor. However, the access to the flats via an exterior corridor, were already planned in the plans of the project. As well as, the distribution of the houses themselves also remain unalterable. [Source: Historical archives of Bartrona, from the authors, 2010]

Corviale: large scale architectural materiality

Corviale, Piana di Zona n.61, with 60.5 hectares, is located in the South-West of Rome, on the left bank of the Tiber River and within a singular territory: the campagna romana of Rome, on the left bank of the Tiber River and within a singular territory: the campagna romana. From left to right: 1. Main façade; 2. Headwall; 2. Rear façade. (Source: from the authors, 2010)

Corviale: abstract architecture in the landscape

Corviale, Piana di Zona n.61, with 60.5 hectares, is located in the South-West of Rome, on the left bank of the Tiber River and within a singular territory: the campagna romana. From left to right: 1. Main façade; 2. Headwall; 2. Rear façade. (Source: from the authors, 2010)

The MATERIALIZATION OF THE ABSTRACT. CORVIALE, FROM THE LANDSCAPE TO THE TEXTURE OF THE CONCRETE

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The second half of the 20th century, and particularly between 1950 and 1970, defined the beginning of a period of great architectural and urban transformation across the majority of European cities. The consequences of World War II (1939-1945) and the existing housing deficit, along with the progress of industry and the increase of population in major urban centres, among other factors, triggered the beginning of massive construction of collective housing, thus causing a process of expansion from the cities to the outskirts and defining a new residential fabric with the characteristics of modernity.

These changes are also significantly noticeable in Italy, within a particular social, economic and political context, and particularly in Rome 2. The city experienced an intensive first stage of housing construction during the post-war period which coincided with the Piano INA-Casa project (1945-1963), with numerous new residential areas being built according to the model of low-density residential area. It was not, however, until the 1960s when a change of model in the periphery could be noticed and that model emerged with the definition of the Piano di Zona - Padz 3, areas assigned to the construction of social housing and high-density neighbourhoods. From that moment on it was possible to see a true leap in scale in the architecture of residential projects, neighbourhoods that symbolised, according to Giorgio Muratore, the modern construction of "the periphery of Rome and its monuments" 4. A process that meant the approach of large-scale collective housing made in Italy 5 shifted toward the more widespread models developed in other European countries, mainly in France, the Netherlands or Germany.

In 1971 this stage of growth in Rome had another significant moment, following the decision of the Istituto Autonomo per le Case Popolari - IACP to concentrate all economic investment aimed at social housing in three unique Piano di Zona: Vigne Nuove, Laurentino and Corviale 6. Three areas in which priorities were focused on the unitary development of housing, facilities and services. The goal was, therefore, to ensure the completion of the full program of interventions and to transform these neighbourhoods into real urban "fragments" of the city.

Thus Corviale [1971-82] allows the particular context of the residential projects in modern Rome to be studied through a significant example of collective housing and at the same time allows the observation of the degree of experimentation within the project from two simultaneous perspectives: on one hand, from the strategy of inclusion in the territory, and on the other, from its architectural setting and its building and material processes.

Corviale: abstract architecture in the landscape

Corviale, Piana di Zona n.61, with 60.5 hectares, is located in the South-West of Rome, on the left bank of the Tiber River and within a singular territory: the campagna romana. From left to right: 1. Main façade; 2. Headwall; 2. Rear façade. (Source: from the authors, 2010)

The Corviale project was carried out by the team of architects led by Mario Fiorentino, together with Federico Cortona, Piero Maria Lugli, Giulio Sterbini and Michele Valori 7, who, after a thorough study of the area and the programme, decided to venture a unitary and high-density project. The "Fiorentino team" finally proposed the project as a large linear system in the landscape, firmly choosing the North-South direction of the area, where the main residential volumes were concentrated and generating in the transverse direction relations with the equipment located out of the set (Fig. 01).

Architects also found, in the character of public intervention and in the proposal of the IACP, simultaneously for residences and facilities, the ideal conditions to further develop research on both large-scale architecture in social housing and various strategies of implementation. Mario Fiorentino argued in this regard that: "there are two ways of architecture... or perhaps there is only one...There is the way of deciding on the quiet work and using the tested schemes of social housing in Italy (...) and then there is the way of experimentation, and this project belongs more to this kind..." The project pursued, from the beginning, the definition of an alternative residential fabric that was able to bring order to the urban sprawl of the periphery.

The Corviale architectural response was based on two concepts; density and linearity, going therefor on the maximisation of the building plots and for raising them up from the ground level. A rational system defined according to the theoretical concepts of the Modern Movement, used here in an already late stage of modernity 8. This rational model is used in Corviale, primarily with the intention of defining an abstract architecture, where the specificity of the new urban context is identified from the relative position of the various buildings between themselves and also, as a key aspect, from the relationship of the built volumes within the landscape.

The "Fiorentino team" thus concentrated the 1028 projected apartments in three unique residential volumes of different densities [Fig. 02]: the high density large block, acting as an organiser and being the main volume of intervention (9 to 11 levels); the parallel block, acting as a filler to nature (4 levels); and the 45th block, built in a diagonal position as a transition to the city (4 to 6 levels). This strategy released a large percentage of the surface of the Paž, which allowed the placement of the provided equipment in an external position 9, the definition of extensive green areas and also the development of the programme as a balanced system.

Undoubtedly it was the large main block which would become, from among the three buildings of collective housing, a representative element of Corviale, which acquired all the prominence in the area due to its proportions: 986 metres length and 38 metres high [Fig. 03]. This residential building continues the model of the continuous block, finding other projects of modernity that work as a reference, such as the urban plan for Río de Janeiro Brazil (Alghiero 1932); the Plan of the city of Corviale, Pedreguiljo (Río de Janeiro, Brazil 1947-50) by Alfonso Eduardo Reidy; and Italian examples such as Forte Quezzi (Genoa, 1956-68) by Luigi Carlo Daineri or Spinaceto (Rome, 1945-67) by Nicola Di Cagno.

The large residential block of Corviale, located at the crest of the hill, also acts within the territory as a great "built limit", dividing the line between the existing city and the landscape of campagna romana. In addition, and due to the absence of any direct reference from the distance, the degree of abstraction of the architecture at territorial level is enhanced and helps it to become an iconic element in the periphery of Rome, enabling an association with the isolated aqueducts in the city’s landscape and even further permitting the idea that, in the case of Corviale, the "residence itself was built as a monument." 10

According to Mario Fiorentino: "the project [...] is a residential unit", a unique complex of collective housing developed as a continuum that is almost one kilometre in length. [...] a single gigantic building, which actually contains and compresses, also in its architecture, the complexity and the richness of the relationships of the city itself." 11 This scale factor, along with the forcefulness of the large linear block, makes Corviale a representative example of the modern Italian residential architecture and an exercise of the experimentation on collective housing carried out at that time.

Corviale: large scale architectural materiality

On closer inspection the large residential block of Corviale begins to reveal other qualities, not detectable from the territorial scale, now mainly associated with the compositional, constructive and material aspects of its architecture.

From the urban scale, the configuration of the large block as the sum of two separate but continuous buildings can be noticed. This strategy is used to adapt them to the existing topography and does not eliminate, however, the perception of the continuity of the façades. In addition, the east elevation, that faces the city, takes a leading role due to the strong presence of five sculptural semi-cylinders which run vertically through the building and which introduce a new level of abstraction. These elements contain the main building’s nucleus of vertical communications and at the same time isolate out the five ‘squares’ which are the building blocks, connected as the points of connection between the equipment of the outdoor area and the parallel residential block [Fig. 04].

On the other hand, from an analysis of the cross section of the large block, it is interesting to highlight two open and continuous spaces proposed by the "Fiorentino team" on different levels and two spaces where it is possible to go over the building lengthways [Fig. 05]. This strategy is used in different large residential linear blocks of the Modern Movement as highlighted in the cited examples of Pedreguiljo or Forte Quezzi.

Thus the first void space inside Corviale is generated on the ground floor, a porticoed area that continues into the basements, which gives access to different nucleus of vertical communications and to the apartments, it also provides continuity with the central area and establishes a visual relationship, to the west, with the landscape and the parallel block. This porticoed area also allows us to reference it to another emblematic example of Italian collective housing: the central building designed by Aldo Rossi in the quartiere Gallaratese [Milano, 1957-74], as part of the system developed together with Carlo Aymonino.

The second void space inside of the large block is defined on the other hand, in the particular “quarto piano”: an open space alternately located between levels 4 and 6, designed to incorporate small pieces of equipment associated with the apartments, so that the building could operate as a “small city.” It is a space in which the intermediate level of the Unità habitabile above which is located Le Corbusier,
 earmarked for collective services, is used as a direct reference, and allows for the encompassing of Corviale under the concept of “social condenser”. In addition, the “quarto piano” divides the section and generates a change of the thickness in the large block, differentiating two dwelling models according to the access mode: on lower levels from the nucleus of communications, and on higher levels from galleries. The structural system chosen is another fundamental aspect of the intervention and it deserves special attention. The structure was designed by Riccardo Morandi, one of the most renowned engineers in Italy, who defined a common solution to build the three residential buildings: a system composed of prefabricated porticoes made of reinforced concrete with a constant separation inter-axis of 6 metres (Fig. 06). The goal of Corviale was to develop the standardization of the construction process, since this system reduced a reduction in the execution time and an efficient scheduling for an intervention of this dimension. A decision defended by the “Fiorentino team”, although it involved some risks before carrying out the work, mainly due to the low level of technology available in the Italian industry and by the choice of a single company for the execution of all residential buildings. The construction process therefore acquired a significant role and needed special attention from the technical team.

Despite these technical difficulties the architects considered the project, and mainly the large residential block, as a sort of continuous progress in the implementation of prefabricated concrete systems in large-scale social housing (Fig. 07). According to Fiorentino: “a linear structure like this can be easily organised on two tours of binaries of prefabricated concrete systems in large-scale social housing (Fig. 07). According to the execution of all residential buildings. The construction process therefore acquired a significant role and needed special attention from the technical team. Despite these technical difficulties the architects considered the project, and mainly the large residential block, as a sort of continuous progress in the implementation of prefabricated concrete systems in large-scale social housing (Fig. 07). According to Fiorentino: “a linear structure like this can be easily organised on two tours of binaries of prefabricated concrete systems in large-scale social housing (Fig. 07). According to

The portsiche of reinforced concrete of the structure have also influenced the spatial configuration of the large residential block and allow two specific qualities to be pointed out, among many: on the one hand, they define a steady rhythm and reinforce the perception of homogeneity in inside, on the other hand, they establish the modulation of the types of housing units and their distribution, as well as the different possible surfaces. The inter-axis of 6 metres of the structure will be the reference of the common type of housing on all levels, the so-called “T5”, oriented towards the façade and subdivided by transverse bands (Fig. 08). Other types of housing units - T4, T5 and T7 - are also generated from the T6 model, modifying the total area according to the number of bands occupied.

In addition, the “Fiorentino team” used the same constructive logic of the building in the material for the façades of the residential blocks: they chose prefabricated concrete panels. The panels are vertically modulated according to the lines of the structural frames and, horizontally, to the windows, in addition to the unique façade and subdivided by transverse bands (Fig. 09). Other types of housing units - T4, T5 and T7 - are also generated from the T6 model, modifying the total area according to the number of bands occupied.

This design also gives a specific materiality to the large main block of Corviale, a texture that even manages to enhance the degree of abstraction of the large volume (Fig. 10). As Giuseppe Cappelli argues: perhaps Fiorentino “thought the building could become a great sculpture resting on a hill thus the idea of a house becoming still more abstract or perhaps he was worried about the nudity and the hardness of the concrete, though ... most likely, is that it was only (...) a secondary smile in the same field of functionality” 23. Precast concrete panels again demonstrate the high level of innovation of the architects on the project, reaching this scale of detail even in high-density social housing.

Conclusions

The Corviale execution process stopped unexpectedly in 1982, due to the bankruptcy of the construction company and the lack of funds, having finished only the three residential blocks and only some equipment buildings. Corviale became, from that moment on, an unfinished project, marking this condition its evolution until now. The neighbourhood therefore became inhabited without all the equipment and services needed to operate autonomously from their peripheral location; in addition, a process of illegal occupation began, and that would transform even the “quarto piano” of the large main block into another residential level. These factors, among others, have been shaping the increasingly complex social reality of Corviale, and have also contributed to the project receiving negative opinion from the media. This situation, together with the problems of management, has resulted in the constant threat of its complete demolition for others.

However, and from a more optimistic position, there are numerous projects, from public administrations and especially from universities, which are committed to the architectural and urban “recycling” of Corviale, also widely defended by its inhabitants. New project strategies that would adapt the inside of the large main block to meet new needs of residents who have an opportunity to study new strategies of project solutions that could allow the revitalization and regeneration of the built buildings. Corviale, and especially the large residential block, becomes, in the present, a new laboratory to research collective housing.

Notes and references

1 This article is based on research developed by Montserrat Solano Red as part of her doctoral thesis, co-directed by Dr. Elisa Valero Ramos and Dr. Francesco Cellini, completed under joint supervision by the University ofGranada (Spain) and the Università degli Studi Roma Tre (Italy).


In the major works of his mature period, the English architect Denys Lasdun recurrently used concrete as a material, with determination and courage. For this reason, and also because he showed sympathy towards the movement of The New Brutalism and the figure of Alison and Peter Smithson, analyses on his work often frequently highlight the sculptural aspects of its volumes and the marked texture showed in his buildings. Through this article, we want to consolidate the important contribution made by Denys Lasdun to the whole field of architecture made of concrete, in the British area as well as in a more general way, in order to propose a new vision that studies the important role attributed to design in shaping the overall morphology of the building and its capacity as an intellectual regulator that ensures the execution of a particularised architecture in mass society.

To reach this aim, we have carried out a research based on the study of original writings of Denys Lasdun, mostly published in the magazines Architectural Design and Architect’s Year Book, where important keys are provided to understand his intellectual interests and social orientation that underlies his works. Regarding the projects, the main sources on which we perform the architectural analysis are the graphic file documentation existing at the R.I.B.A., publications in journals of the period, and research conducted by William Curtis and Barnabas Calder, all of which was supported by our direct visit to the buildings. Thus, in the research we infer the existence of a line of work in constant evolution through which Denys Lasdun redevelops, through his work and in personal terms, both the classical tradition of a single type of concrete grid used by Auguste Perret and developed through contributions made by Le Corbusier in the mid twentieth century, as well as the clear influence of Lasdun’s mentors, Berthold Lubetkin and Well Coates.

Concrete construction allows Lasdun to articulate a balance between industrialisation processes typical of the time and the prefabrication that it entails, with the aspiration to create an architecture specifically characterised since its first conception. Architecture, not uprooted and universal, but architecture that arises from the specific living conditions of its inhabitants and adapts to local means, landscape and weather. Through empowerment of design parameter and reinforcement of attention to detail, Lasdun generates a rebalancing between the various scales in his projects and seeks to achieve a high internal consistency that allows the articulation of parts in a complex organism. Design creates the form as well as, and detail is the consummation thereof, that sign brings quality to the work and makes both the design and performance of the building intelligible and communicable.

Commitment to creative processing

After the end of the Second World War, most of the architectural activity in Britain was directed towards the urgent reconstruction of cities, mainly with teaching and healthcare facilities and new residential areas. The need for mass housing construction that compelled the country the cause developed the industrialisation of reconstruction, taking concrete construction and prefabrication a seminal place on the architectural intellectual debate in England in the middle of the twentieth century, due to ease and speed of execution and to the possibility of high structures made of flat slabs and a grid of pillars.

The Labour government, which demanded the installation of the ‘Welfare State’ in British society, was favouring the use of typified organisational arrangements and architectural building solutions, seeking for greater speed of execution as well as appropriate minimum standards quality. Soon, construction companies took the settled inertia and repetition to widely implement structural and envelope patented solutions that resulted in indiscriminate repetition of buildings and that limited experimentation with new proposals.

In the fifties, British architects met a blurred and strongly limited panorama regarding their skills and abilities. Facing the government guideline imposition, that steering from ‘paternalism’ of the new rationalism to expedite rebuilding, and also confronted with the pressure of building companies on the other side, Denys Lasdun was one of the English architects who tried to reformulate a new chapter of modern architecture in England. His association with the M.A.R.S. group allowed him to participate in debates and discussions set out by its members that greatly influenced his stance on making necessary integration of industrialisation and its serialisation processes with specific designs. He wanted to expressly elaborate creations that fit the governmental requirement for the most practical and economic buildings, and moreover, from the grave pressure of heavy speed requirements of economy and essentiality, which were too often identified directly with application of established construction systems regulated by modulation abuse or indiscriminate repetition.

Following the recommendations of renowned engineers such as Ove Arup about applying an architectural control from the start to the manufacturing processes of structural units, Denys Lasdun emphasised, early in his career, the role of design in architectural project as a fundamental tool to achieve a product adapted to human needs within the industrialised mass society. Technical innovations are a must for him to raise the quality of life of citizens but are not themselves directly translatable as architectural solutions. It is necessary for Lasdun to give them a sense, to establish its framework for action and to glimps his degree of interaction with the habitat and culture in which they are inserted. The architectural work therefore requires filtering and a combination of many more aspects other than technical, economic and efficient construction. Lasdun summarises this thought stating:…
It is no use thinking that architecture will just appear if the architect manages a certain amount of satisfactory joining or if a lot of people think about industrial problems. Buildings that are to serve human requirements have still got to be designed, they will never grow out of a large number of efficient jobs.

From the beginning of his career as an independent architect after the dissolution of Tecton group in 1940, Lasdun has managed a series of collective projects through which his deep personal evolutionary process in relation to the understanding of concrete structure and its potential as typically representative material of the period in the field of architecture can be understood.

**Concrete changes in the domestic field**

In the first work of community housing of Denys Lasdun, conducted for the district of Halffield with Lindsay Drake in 1949, initiation attempts are perceived in the continued testing of the possibilities of concrete, both structurally and aesthetically. Lasdun is fracturing the idea of an inscrutable receptacle by articulating deep façades, but the form is still clearly indebted to Corbusian blocks sharply defined as parallelepipeds on piles and is unmistakably rationalist in its urban layout. The housing blocks were built with a structure of intersecting walls and slabs of in situ concrete. However, the use made of precast panels with intense aesthetic and plastic vocation should be pointed out. They are used as permanent formwork for the balustrades of the balconies made with concrete, and then, trimmed on the surface for better environmental performance against staining, while in other façades, precast concrete lattice builds a permeable skin.

His next collective housing projects for London’s Bethnal Green neighbourhood, first on Usk Street in 1952, and then on Claredale Street two years later, are the starting point of a new attitude that questions the use of the reinforced concrete grid matrix as an aseptic repetitive structural solution. Lasdun combines it with additional elements, while establishing differential variations to show the internal layout of the building. In both projects the framework of his own that generates a new design strategy based on the direct experiences of the masters with whom he collaborated at his start, such as Berthold Lubetkin or Well Coates, can be seen. The articulation role attributed to movement and the expressiveness of rooms and conduits of services practiced by Berthold Lubetkin is even more radicalised by Lasdun, so that all these elements are not only distinguished within the set, but are totally independent as isolated forms, configuring a centre materialized in a separate volume from which branches raise departing access as streets in the air towards housing blocks. In the Usk Street set, two wings of eight floors are provided in an ordered assemblage. In Keeling House in Claredale Street, the scheme multiplies forming a ‘cluster’ or ‘cluster configuration’ with a centre and four blocks of fourteen storeys around it.

In both buildings, the influence of Well Coates is also perceived in regarding attention towards non-industrialised or serialised prefabrication, made on-site as small scale adjusting techniques and solutions to each project and to the distinct availability of materials and labour conditions of the place. Lasdun perpetuates the application of stone slabs as permanent formwork for walls and parapets of reinforced concrete producing a rustic prefabricated piece, made in local production and following a specific concept, that awakens this interest in design as projectual methodology for particularised prefabrication of building elements. Concern expressed about the architectural outer finish of concrete with the use of shield materials less prone to environmental degradation and to spread of rainwater stain and runoff, does only respond to the pursuit of achieving greater architectural quality that makes the building last in good condition and, therefore, becomes more economical by maximising its use. It also endorses to establish a new emotional connection with the user and avoid the stigmatisation of houses built in bare concrete, frequent association with manufactured homes from the early days of the war and, consequently, with basic housing, elementary, of low quality and low design, and temporary.

Progressively, Lasdun introduces bare concrete as a natural and aesthetically valid finish. In his house in St. John’s Wood, Palace Green Park, and a monumental environment, Lasdun raises a structure of concrete slabs which are coated with polished grey granite, while the attic and the communication and facilities core, are made on rough concrete; now dignified to crown an elegant residential building. The project announces the breaking of the back accentuating the character of strata, and is also distinguished by the asymmetrical and non-isomorphic arrangement of the housing it accommodates.

During the sixties, blocks of flats built by Denys Lasdun are mainly student residences linked to the university environment, among which the University of East Anglia and the extension of Christ’s College, Cambridge are outstanding. These projects, distilling prior learning and showing a strong commitment to the introduction of industrial processes, however, maintaining the control of design, production and assembly as a creative exercise still in the architect’s domain.

It is in the halls of the residences for the University of East Anglia, where Denys Lasdun manages to realise his permanent will to interweave space, use, and construction. In order to accomplish it, Lasdun takes the cell room as a space unit and it is sprayed structurally to be standardised and multiplied at its disposal, according to the need for rapid implementation of the housing stock as well as a very controlled economy and cost. Lasdun generates seven independent components that shape form as planned: (1) the outer spandrel unit, (2) lightweight concrete planks that form the horizontal planes of floors and terraces, (3) the element parapet (4) the piece forming the wall, (5) the slab, (6) the column (7) the gargoyle. A structural development which clearly shows itself to the outside with a vocation that transcends fashion and stylistic brutalist slogan ‘truth to structure’, and on the other hand, sees detail as the ‘visible sign of the work’ of the building and its form as a communicative expression of a genealogy.

"Technical developments may alter the form and nature of detail, but they cannot affect the central truth that the coherence of work depends on its detail being a complete expression of a completely integrated in its basic architectural purpose. As long as the architect has to build and plan for human beings, he will have to exercise control of detail in such a way as to make his building unified and communicable."

Although Lasdun starts up with the cell, he prevents its repetition in hive-like aggregation, and thereby, avoids undifferentiated extension. The cell is gathered into groups of twelve, forming a superior habitat as a basic unit that matches each layer of the building and presents peculiarities in corners and in the top tier. Control over the effect of water stain is not merely resolved by the placement of a less coarse material on the outside face, which is less likely to reflect the impact of age, but action of time and weather actions arising from it, are treated as a project parameter that determines morphology of the complex and serves as a link. Thus, rainwater collected in shared student terraces is driven away, forming small perimeter trails that metaphorically reproduce the landscape the river draws, in the area where residences are inserted. Open water channeling is directed towards the lower and deeper covers that are over rooms used as kitchens shared by the bedrooms of each habitat unit, which are called by Lasdun ‘breakfast rooms’, and that are located at the corners stepping backwards while showing protruding bows. Storage of water on these covers resembles small ponds, and water that runs through them via prominent gargoyles downstream recalls the idea of a waterfall. Lasdun’s confidence and mastery of concrete is already complete in this example, and despite the large scale of the operation, it is this material, through various prefabricated elements and a variety of finishes, which also include the raw in situ concrete, that builds the entire residential complex and also the whole departmental buildings in the University of East Anglia.

Despite the similarities between the terraced exterior of the East Anglia residences and the blocks of Christ’s College, both buildings are responses to a construction process of interfaced pattern of precast reinforced concrete pieces, it can be seen that each project is developed according to a particular intellectual and spatial conception. The first is developed based on a cell that is grouped in clusters and zigzags to let most of the natural landscape pass within the precincts, whilst in Cambridge, with a need for more compact and urban organisation, the unit of measurement is the vertical strip or section. The section is the synecdoche, the gesture of a system thought and designed. In the latter, even in its exceptions, the work item is also a portion of the section. Halfway between each of the groups of six side stripes, the section is vertically dislocated and juts out from other students’ rooms, defining the part that signs a vertical row of rooms where specific tutors are located and, at the same time, pointing out the housing underneath the stairwell that cuts across the residential complex. In East Anglia, Lasdun fixed the sequence of cell, stratus and zigzag, fulfilling a progressive homothetic transformation of communities into more numerous and complex human groups, applying The Doorn Manifesto philosophy at an architectural level. At the Christ’s College extension the sequence of a cross section of setback stacked rooms, grouping packets formed by three sections on each side of the internal communications backbone, and, finally, the idea of a crescent-shaped and stepped terrace that determines the overall configuration can be observed, defining also, yet again, the more complex housing and social units comprising the lower ones that progressively shape the complex manifesting volumetrically with expressiveness.

The treatment of rainwater runoff, also acquires a special character that is weighted in the design. This time, looking for maximum integration and responding to a principle of economy through approach to the synthesis and versatility criteria, the variousPhilipLasdun and componental residential buildings are structural elements as well as finishing pieces; they are key elements in shaping the form by the way they are interlocked, and also include their own groves to channel water. Lasdun creates six precast parts that join together and allow, on-site construction, component and the whole building: (1) the inclined cutting party wall indicating setback to the north, (2) the rear bearing wall, (3) the sill inside the bedroom-study, (4) the prefabricated gutter conducting rainwater, (5) the beam-gutter that rests on the front and back bearing walls, and (6) the cover component as terrace conducting water to side gutters. Thus, Lasdun achieved to refine and fulfill his principle:

…detail will still relate directly to the building’s planning idea. This is a matter of architectural consonance, of the architectural authenticity of the whole work;…”

**Design as an argument generating form. Detail as communicative device**

Denys Lasdun did not seek to perfect a component yearning to create an ideal building system that could be prefabricated, industrialised and assembled chain-like to be used widely. For him, there was no point in studying abstract detail because he understood that detail is part of a particularized whole. Each project is a new and specific job that requires sensitivity from the architect to identify needs, lacks, opportunities, and it demands his creativity for better resolution, making purposes to achieve convergence with means available to it. This does not preclude Lasdun’s work from being read as parallel evolution with concrete industry development in England, but above all, it shows a dynamic process of learning, an empirical progression through which he manages to transcend the use of concrete structure as an isotropic lattice support and he also avoids an infinite extension of designed solutions. To Lasdun, the architect must acquire a more active role in industrial society and through careful design, impede dehumanisation, homogenisation and lack of richness and architectural quality.
Lasdun shunned the simplistic use of proprietary systems employed by builders repeatedly without nuances, and he did not yield to the imposition of types and predefined rules with the excuse of a necessary standardisation. He dealt with economy requirements and constructive efficiency with an extra dose of design: creating overlapping sections that spatially clipped to reduce height and decrease structural material, providing access and connections at middle floors to avoid the increase of elevators, and moreover, ensuring maximum durability of building materials and building conditions, delaying aging and deterioration by means of a careful water harvesting that minimizes the volume to channel and integrates its structural resolution in the architectural project.

Within the broader concept of design, structure is set by Lasdun as a polysynomic unifying argument that progressively keeps on gaining a conspicuous place in the configuration of form, space, and identity of use. On the smallest scale, the detail is considered by the architect as a crucial part of building design developing an increasing genealogical role. It is a generative tool for the project that also fulfills a mission of communication to the user. In that regard, within it lies much of the internal coherence of the work and it anticipates the essence of planning procedure. Beyond its function to fulfill construction by resolving various weather conditions, isolation, layout of facilities, or aesthetically refine perception and sensuality of space, we note that detail is to Lasdun, above all, the element from which a particular dialectic is derived that concerns the whole architectural object. It is a seminal piece that generates a multiplied, large-scale, concerted reverberation, in which, in his own words ‘each part supports the whole’ and where:

‘Details is not a question of whether a thing is rough or smooth, shiny or matt. It is concerned with the intellectual texture of the whole design and its consistency.’

Notes and references


2 Although the C.I.A.M. itself was announced with its claim for ‘The Heart of the City’ the need for an architecture that could stand closer to inhabitants incorporating other human aspects, the negative stance of British architects regarding the generalisation and classification of architecture, that derived in the use of formulas and design rules predetermined in a canonical way, was made before the official C.I.A.M. bypass towards a more humanistic architecture. According to Eric Mumford, as is documented in his book The CIAM Discourse on Urbanism: 1928–1960, both in the congress in Bridgewater and in Huddesdon in 1931, representatives of the M.A.R.S. group showed that they covered a wider field and applied the need to humanise and particularise architecture to all its buildings and the city, not solely focusing on the provision of a civic centre as a new complementary zoning to the four specified in the Athens Charter.

3 We understand that taking position on standardisation by the avant-garde English post-war architects was strongly influenced by the successful synergy occurring between engineers and architects. Against the background of increasing commercial pressures, the demands of industry systems and the usual tendency of the Administration to establish given types of buildings and pose indiscriminative generalisation of structural and constructive solutions, some creative agents in the building field warned about the danger of reductive and coercive uniformity. Characters with strictly technical training such as engineers and calculators Ove Arup, Felix Samuel, Alan Harris and Roland Jenkins, showed a firm commitment by the innovative design ability and overall design philosophy against indiscriminate generalisation. They were an invaluable support and instrumental assistance for those British avant-garde architects (Denys Lasdun, Alison and Peter Smithson, Colin St. John Wilson, Leslie Martin) who used their collaborations in the development of their work. They made the common will to resist submitting to the marketing systems available for an architecture prioritized solely by the parameters of simple and efficient construction possible. On the contrary, they longed to provide an architecture of deeper aesthetic, expressive and humanistic values to be conjugated, on the same level, with functional and structural requirements of economy and speed.


5 Comparing the works from the middle decades of the twentieth century by Denys Lasdun and Berthold Lubetkin, we can infer that the former learns from his master, for example, through the observation of residential building Highpoint I, the importance attached to the circulation of the project and the protruding circulation and facilities pieces that are placed as milestones. These spines are marked by the vertical displacement of the generating section of the project and the protruding circulation and facilities pieces that are placed as milestones. Structure and façade, light and space, economy and projectual design elements. He was seeking to reach a comprehensive design for each project that provides the keys to its formal language. Structure and façade, light and space, economy and projectual design solution, converge to emerge in the architecture of Lasdun as indissolubly linked together.


Illustrations


Residential plot plan showing an arrangement of orthogonal blocks with large green spaces in between that reflects inspiration in Le Corbusierian garden city. The Infant and Primary School, Hallfield, that was also designed by Denys Lasdun and Lindsay Drake, located in the south.

f1 02 Exterior view of the Central Housing Block on Lusk Street in Bethnal Green, London. From 1952 to 1955. It can be detected the radical disembemnerement of the box in housing packages, service center and access elements such as bridges in the air.


f1 03 Construction detail of on-site prefabrication in the façade designed by Coates Wel for Palace Gate apartment block, in London 1938.

f1 04 View from the park of the apartment building at 26 St. James’s Place, London, from 1958 to 1960. Increasing clarity of structural expression characterising the shape. The interior is revealed outside and the box dissolves through the preeminent idea of stratum.

f1 05 Plan of residential buildings, University of East Anglia, 1962 to 1968, at the level of high pedestrian platforms. Saturating in strata is observed in the basic unit of habitability.

Exterior view of one of the zigzags where a succession of collective terraces can be observed. Note the treatment of water channeling avoiding its introduction inside the building following a principle of economy, and at the same time, being used as an expressive resource pursuing an ecological analogy as artificial landscape of rivers and waterfalls.

Anamometric drawing of precast elements that comprise residential blocks and its interlocking system.

f1 06 External detailed view of prefabricated components that receive comprehensive support functions, spatial definition, material finish and storm water conveyance in the extension of Christ’s College, Cambridge, 1956–1970.

Front outer view of cross communication areas and sections of bedroom-studies that are arranged symmetrically on both sides. These axes are marked by the vertical displacement of the generating section of the project and the protruding circulation and facilities pieces that are placed as milestones. Anamometric drawing of prefabricated components and engagement system. Lasdun’s interest in making apparent the imbrication and interaction between internal built space and outer space qualification can be observed, currently molding urban environment and showing connection to pedestrian and vehicular routes.

f1 07 Durand Apartments Block in Algers, designed by Le Corbusier, 1933.

Rear exterior view of Christ’s College link to the city of Cambridge. It presents similarities to the terraced row with a white passage under the first floor of Le Corbusier’s project. View of terraces and striped or band sections from the courtyard.

Denys Lasdun knew the Complete Works of Le Corbusier and often expressed his admiration for the Swiss master, making the thesis that this example was an inspiration very likely. In any case, the comparison between the two projects, also denotes the different attitude towards structure and composition of the parts that both architects develop. For Le Corbusier, the terraced layout of this residential block in Algers is understood as a prototype of organisation. It is self-referential and remains isolated in the middle of an empty landscape, making it easily adaptable. In this project, structure disappears and returns to be the invisible frame that allows an extended homogeneously provision of space, ideally infinite.

By contrast, in Denys Lasdun’s project, the tenning arises from a balance of forces between the tensions of the interior, visible social units, and outer space, in their adaptation to the urban context of insertion. Structure and detail are expressed visually and structurally in a generative synergy, where the composition of pieces leads the project design-expressing the inner workings of the building in a clearly communicative mission. A strategy in the arrangement is perceived that avoids creating an undifferentiated homogeneity. The explicit articulation of building elements and programme packages creates complex bodies ready for growth in parts. Through careful management of rhythms, milestones, references and articulations, Lasdun particularises and humanises the scale of his works, building an effective architecture while distinguished by a deep empathic, symbolic and expressive character.

“GRC PANELS AND THE LANGUAGE OF FORM”

Pablo Jesús Gutiérrez Calderón, Agustín Teodano Montero

ETSAM. Politecnico University of Madrid. Department of Projects

Changing the order of the words with which Adolf Behne began his book “The Modern Functional Building”, the projects that we present here investigate the use of GRC...
panels “from the building to the façade”. They quit the traditional sheet flatness to take full advantage of the expressiveness of precast concrete panel, from the sensuous plasticity of curves to the smoothness of surfaces.

Toledano Building [fig. 01] was created in response to the place and its location in the urban fabric of Jaén. This corner building, a structure is finished. Once the structure is finished, the façade can be immediately set. Thus the envelope of the building can be assembled in a short period of time. On the one hand, this confers safety on the operators (they do not need scaffolding or protection) and on the other hand, an almost complete image of the building is shown to viewers.

Applying a curvature to GRC panel, both in the vertical plane - “Toledano Building”- and in the horizontal one - “García-Rebull Building” - allows the exploration of the ability to express of a serial prefabricated piece. When used, this piece gives a personal and unique character to each building, with sinuous forms like a curtain that closes collective housing or an awning shading each window, giving different plastic attitudes to the different environments and to the structural system, breaking its rigidity to display, as the Moholy Nagy’s picture, a free game of creation which explores the language of form in Architecture by using GRC panels.

Notes and references

Bibliography

The Place
We had to build an apartment building in a land of 8.66m of width in Boedo, a zone of Buenos Aires that, without losing the typical characteristics of neighborhood, has been changing its physiognomy because of the urban densification. The particularly of the land in where we have to intervene is that its back yard is adjacent with an urban square, with an important vegetation where is placed a football school and a small square. The views to this green lung match with the best orientation: the North.

The proposal
We think that, waiting for the changes that will happen in this sector in a short period of time, the building should be a piece lack of adjectives, neutral enough from its form as to live with what is present today and to accompany in the future, with a willingness concentrated on its constructive expression and its production process. For that reason it seems appropriate to propose a building whose facade does not show accents or joints and, if possible, is resolved with a single material. We also keep experimenting with the exposed concrete, as we have been doing in the summer houses in Mar Azul or permanent use houses in the province of Buenos Aires.

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also, as in the Concrete House, to resolve the façades like bellows between public and private sectors, with a series of vertical partitions that vary in position from floor to floor and allow solving the openings in each room with all the width and height available. The views to the interior of the units that face the street are protected by those elements and the views to the green space allow perceiving, as the user moves inside the apartment, ever-changing frames of that landscape. Another objective was that the ground floor should be free of functions in order to offer in the public space air, light and a view to the rear garden and, on the other hand, no housing units will be affected by their contact with the public dimension. Finally we were concerned about each department, for it should have the greater flexibility of use as possible and we gave them a generous expansion, at the same time protected by the walls that organize the façades.

The constructive solution

The structural system, that solves the typical floor plan with supports in the center of it, required a transitional space to provide an open ground floor with supports only in the party walls. It was resolved by beams that receive burdens of the core partition system of the typical plan and transfer it to the party walls axes. The beam system is closed up and down with slabs, which also allow the diversion of the facilities’ uplight to the edges without requiring a ceiling assembly to introduce another material.

The dividing walls were plastered and painted with white latex inside and a plastic plaster on the outside. The floors are concrete screed cloths divided by aluminum plates. The meeting between walls and the floor was resolved with a recessed aluminum profile as baseboard. The openings are of dark bronze anodized aluminum. The heating and cooling system was solved with individual split equipments.

OCTAVIO CUARTERO TERRACED HOUSE, ALBACETE. SPAIN

The site is located in a chaotic landscape and is the result of the recent process of demodernization and replacing what was the transformation of Albacete as a city early last century, a continuous eclectic architecture, which is now just a memory in some of the buildings that have survived.

The building occupies a gap in this plot with its façade to the north giving to a narrow street of 10 meters and opens onto a circular plaza, where the park of 1912 starts, divided wall with one of the buildings that have been preserved, with its 3m in height contrasting with the 9 floors of a building constructed across the street in the 80s. Furthermore, the current ordinance requires the construction of 5 floors plus recessed attic, which necessarily provokes an exposed dividing wall above the historic building and visible from the square.

The project is to overcome all these conflicting situations responding essentially to its urban character cluing firmly in the place, solving the adjustment between dividing walls recessing the building on its side to maintain a respectable distance to adjacent buildings until they get a place, a physical framework typical of an action where filling the bulk volume inserted into this gap, allow for the proposal of a self-referential language, compared to the density and significance of the factories that surround it.

The residential program must be resolved between a narrow and gloomy street to the north giving a building of 9 floors and central courtyard open to south, so that the path of the natural light becomes apparent in the interior spaces, visually widening the built limits towards the city.

The adopted solution solves a conventional type program of three-bedroom homes, based on two longitudinal strips: private domestic spaces with closed rooms and service centers along the divided walls and the common spaces open to the living room, dining room, office and kitchen next to the entrance hall, which allows maximum continuity of space, vision and sunlight, especially in the duplexes and penthouses with a specific program and volume.

Inside, the space expands, seeking the necessary continuity between the boundaries of both façades, threaded by a continuous building system based on wood flooring, walls and ceilings of white stucco and a layer of overlapping white lacquered wood panels including the opaque interior carpentry in the private spaces and natural wood panels with large format translucent sliders for the eventual partitioning of the common spaces.

The skin that forms the façade to the street has a dual function, firstly, it must capture the maximum amount of light given its orientation and on the other, preserve the privacy of the interior spaces eventually avoiding the front view of the building across street. To do this, the maximum sliding openings are arranged on the front façade, as large balconies, protected by extra-clear glass and a double exterior façade with cleaning walkways and motorized translucent glass panels, which act as mobile curtains.

The façade has already lost the function of mediation between the private sphere of housing and the public space, and is just a protective filter through which the light is captured and protects intimacy, where the projecting balcony is not even accessible and it has been turned into a cleaning walkway. Thus the value of the façade as a representation of social housing and insertion into an encrypted code, typical of the eclectic architecture and also of modern architectures that have been replaced to shape the urban fabric, no longer makes sense. The architecture that arises only refers to itself, to its usefulness, its way of being built, the lightness of its materials and indeterminacy of its composition that would depend on the random offset of external windows.

APARTMENT BUILDING ALFONSO REYES 200, CONDESA, MEXICO CITY. MEXICO

Information on the use of Concrete

The assignment was to design a building for 8 dwellings on the corner of Alfonso Reyes Avenue and Satilillo Street, in Colonia Condesa.

The project approach separates the building from its long edge to take over the corner with a 17 meters high gesture, where the resulting volume is expressed through its structural rhythm in counterpoint with the openings of the façade and balconies.

The structure of the building is formed by rigid frames attached to concrete hollow blocks, which provide additional rigidity to the structure. In the transverse direction, the building is divided into two structural sections, the first (to the long edge) functions as a rigid core with services, kitchens andcirculations, which take the moments of the building in that side; and the second (to the street) as a light section with lightened slabs, wooden tanyapos and lightened walls.

The composition of the openings consists in the absence of the rigid wall, more than perforations to the facade. Inside the building the 8 apartments are resolved combining one and two levels typologies. The vertical circulations are attached to the volume on the rear edge making this alley the main access to the housing.

Information on the use of Concrete

In housing, concrete is used in two main elements of its structure. Firstly, to shape the rigid frames of the columns and beams which are evident in all façades. These elements were cast with a mix of grey cement, white cement, gravel and clear colored sand to achieve a white concrete than the conventional one. The formwork system for these elements is wood veneer based with phenolic paper and resins to achieve a smooth finish. Joined to the rigid frames and added to the structural system is a series of diagrpham walls, built with white hollow concrete block. These walls tie to the main structure to take the seismic forces in different directions. The hollows in the block walls are filled with concrete in accordance with the forces on the façades. In this way, the building works as only one piece that express-in its four façades – its structural solution.

48 SOCIAL HOUSING IVVSA, ALICANTE. SPAIN

Conditions: 2 parallel blocks, the south to the street and the north to the park of 300m propose open-ended housing. The great climatic conditions [Alicante] suggest outdoor rooms: living between 2 terraces. The rest of the house turns, without windows.

The property, a debtor of Sota in Alcudia, builds a dream of M.M, the building of collective housing as the stacking of these houses, permeable to nature and to distant visuals.

Enclosure: traditional brick laid by hand is avoided on the opposite side on a scaffold of 6 floors. It is replaced by a blind curtain wall, very light and very isolating. Concrete with fiberglass, 1 cm thick and without reinforcement. GRC sandwich panels: 2 operators in 2 months with 1 crane and 4 screws/bolts. Factory finishes: no mortar, no plaster, no painting.

Structure: 2 sets according to module and material use. Sturdy reinforced concrete columns with important spans for vehicles and premises. 6 beams 1.87' x 4m long, sustain slender metal columns for housing.

Filter access from road traffic: fertile gardens, without irrigation or maintenance; arcaded courtyard, open vertical communication. Hybrid spaces which enhance relationships and economize surfaces.

Construction technique. Dry construction

In response to the high luminosity that characterizes and --gives name to-- the city, we grouped all the gaps around the rooms-terrace. Thus, not only are they sheltered from direct sunlight and protected from the occasional storms; and also enables direct access to the outside from all habitable rooms and allows a double movement in the house. Since carpentry and dimming systems are moving mechanical parts of the enclosure system are the most fragile. Providing them with easy access ensures low cost of maintenance and cleaning.

Grouping the gaps on the terraces also allows for the modulating of the rest of the blind enclosure, formed by prefabricated light panels of GRC [Glass Reinforced Cement] with built-in insulation. It significantly reduces the number of disparate pieces and thus, the costs of manufacturing and assembly work. This enclosure system significantly lightens the dead weight of the structure and ensures optimal insulation and durability, key for sustainable building codes. The lightness of the panels allows in large dimensions - panel slab to slab with a width of one meter and a half, to be handled by an operator. We adopt the experienced technique of mounting curtain walls, absorbing the dimensional resistance typical of a conventional slab inadmissible for the accuracy of the prefabricated parts.

Cost savings in execution times will be significant compared to those that would be used in skilled labor to lift the usual factories of exposed brick. It is also very favorable for the reduction of occupational hazards: the large number of labor hours required for building, many of the most dangerous accidents occurred in the workshop, not on the scaffolding.

Supply Company, Fachade panels G.R.C., Panelco GRC, Inc.
RESIDENTIAL BUILDING IN CUREGLIA. SWITZERLAND

The Situation
The plot, a triangular piece of land enclosed between the woods and a main road, is placed on top of a hill on the south part of the historic core of Cureglia. Located at the gates of the village, it defines the northern extremity of a promontory with a clearly defined form.

An entry gate was already programmed to be included in the existing retaining wall made of stones. This wall defines the relationship between the slope and the main road and determines the level of the vehicle access.

The Project

An elementary volume – a narrow and long parallelepped – is placed on the hill along a ridge axis. This axis is defined by a sustaining wall that cuts the hill and generates the pedestrian access in order to articulate the building with the historic core of the village on the north. By experiencing this path we are allowed to capture the duality of the place which is characterized by the landscape on the west side and the woods on the east. The entire building is organized by means of this path and this duality.

Three identical apartments constitute this building. The rooms hold an intimate connection with the forest and they are disposed along a corridor that opens toward the living room and covered terrace. This terrace reestablishes the strong relationship with the landscape on a large scale as well as with the historic centre of Cureglia.

The project renounces the maximum exploitation of the plot ratio. The entire building is regulated by a grid of 144 cm which defines the openings, the structure and even the design of the concrete formworks. The expressive investigation is guided by a strong minimalism that influences all constructive solutions, the details and the materials choice.

The variety lies in the context.

CASE VIGNASCIA IN MINUSIO, TICINO CANTONE. SWITZERLAND

La machine à lumière

The house is the space of quintessential reference for the man who identifies with the context, history and culture. The house is the place of intimacy where man looks for their own dimension.

For years, I have been dealing with this issue and I get the impression the same problems remain. Le Corbusier in his research spoke of the house as “machine à habiter” [a machine for living], this being a definition more closely linked to the function. Today, the house has become more technological, partly overcoming this concept. In any case, the essential needs of the room continue to be, in essence, always the same.

In my recent works, I have sought to move away from these repetitive patterns in the house individualizing the possibility of transforming the subject of Le Corbusier - “machine à habiter” in “machine à lumière”.

I have found the work of the Basque sculptor Jorge Otteiza very helpful in understanding the hidden potential of the house. Especially in his research “The spatial decomposition of the cube”. In the past, the research on light was discussed only in public projects: museums, churches, schools, sports centers, commercial spaces.

In these cases and almost always, this aspect of favoring artificial light is abandoned. Proposing spaces that are always more aseptic. And so, I have realized through new construction techniques that the home offers opportunities for research on light that perhaps were not possible in the past. The light marks the time that elapses like the ancient sundials indicating the time on the bell tower or the façades of public buildings.

The light marks the changing of the seasons with their own colors. Inside a room light can not assume a dramatic or celebrative character like a public building. However, it can articulate the space and show the various times of day and night with games of chiaroscuro and with shadows moving along the walls of the interior spaces.

For this reason, the relationship with the sky becomes a priority, forcing us to understand the path of the sun and moon, the design of the sky with clouds carried by wind or stars. The light makes the house magical and cosmic, enabling the resignation of the desperate search of the architectural language to some useless point for the room.

Understanding light means knowing and being aware of the soul, the place where it is called to house the project of modern man. To work with the light in the house, it is necessary to understand the insertion, structure, materials.

Insertion requires an accurate reading of the terrain and its topographical features. External spaces become integrated ones in the project by dilating the internal towards the external space through a clear definition of the openings. The small window of the garden in the “petit masson” [the little house] of Le Corbusier on Lake Geneva in Vevey, is an extraordinary example of how you can live the landscape.

Today with new constructive possibilities, this window can be created with much larger dimensions, allowing the reading of the landscape with new dimensions. In a way it’s like going from the small image of the beginning of film history of the Lumière brothers to the current image of cinemascope. For this reason, working with small and large scale is needed to find the right tension and balances required by a contemporary space. The structure in architecture has always been the most important research topic regarding the conducting element of light.

The light must lead it into space through a strong structural idea. The materials, finally, are important because through its surface light is vibrated. The meeting of various materials, surface treatment, the design of leakage are issues that architecture should take into consideration. Today we have at our disposal an infinite amount of materials. Building with few materials is difficult, but necessary, to keep the light in the best way.

In Minusio, I searched for the application of the reflections just mentioned. It has been a difficult project in any case, because we have sought the individualisation of a clientele interested in the proposed “Maison-villa”. The urban village is a difficult issue to propose in Ticino, where the attached house still raises doubts and has little consensus. Small individual villas surrounded by a tiny garden area are preferred, however the inconsiderate use of buildable surface in the territory and disorder in the landscape that such interventions produce. Today, we prefer to speak of energy saving, green homes, forgetting the excessive use of land.

Typology
The 4 houses in Vignascia reconsider the typologies of Minusio lake house and is developed on three floors in order to respect the topography of the land. On the first level, below the courtyard is the covered garage, a space reserved for a studio or bedroom with service and technical facilities.

Through an entrance staircase, one can access the patio on which the lounge, dining room and kitchen open onto. Upstairs there are 3 double rooms with services and a studio space that opens onto the courtyard garden which is behind.

An external staircase that connects the patio with this garden patio structurally separates the houses ensuring maximum independence of construction. Similarly, all technical elements are individual in order to ensure autonomous management. The construction structure of exposed reinforced concrete, allows for the opening of large windows facing the lake and mountains.

Concrete: Technical information
Type of concrete in accordance with: SIA 262
Type of compressive strength: EN 206-1
Type of resistance to environmental agents: X1,2/F,4
Maximum diameter of aggregate: 33/mm
Type of consistency: C3
Type of formwork according to: SIA 220
For exposed walls, type 4.14 / horizontal panels 250x50 cm

Notes and references
1 Società Svizzera degli Ingegneri e degli Architetti – “Costruzioni di calcestruzzo”.
2 Società Svizzera degli Ingegneri e degli Architetti – “Lavori in beton, beton armato e beton armato precompreso eseguito sul posto”.

44 PUBLIC HOUSING IN TERUEL. SPAIN

The building is located into a new urban fabric of the city of Teruel and houses the construction of 44 Social Housing, 44 store rooms, 65 parking spaces and commercial premises.

The internal organization of the different spaces responds to the relationship of the building with the environment in different orientations, closing north and opening to the environment in south orientations.

Three dwelling typologies are developed fulfilling the same program, composed of living-dining room, kitchen, 3 bedrooms and two bathrooms grouped, allowing greater flexibility in distribution.

All units have a private space of terrace in south orientations linked to the stay area, constituting the interrelation of indoor-outdoor housing with public space.

Access to the hallways is through the public porch which is constitutes one of the fronts of the square, and is supporting the private terraces of the first floor housing. On ground floor commercial premises it gives the building a tiered private space on two levels, one for private use to the first floor housing and another higher for community use, that promotes the relationship of the building with the urban environment and landscape.

Bioclimatic Design | Energy Certification A

The constructive design focuses on the use of passive systems to improve thermal and acoustic comfort of the building.

Thus, an outer enclosure and ceramic ventilated facade is defined composed of extruded plate ceramic paste model “Bersal 250” of 16mm thick of FAVETON brand, sheet of perforated concrete brick with exterior insulation of mineral wool and inside cladding self-supporting partitions with continuous mineral wool insulation and plasterboard inside, avoiding any thermal bridge in the enclosure.

The flights of terraces south orientations designed act as passive protection against excessive sunlight in summer.

The dual orientation of dwellings allows cross ventilation optimizing ventilation and natural lighting.

The homes have aluminum carpenters with thermal bridge breakage and low emissivity glass in north orientations, with “microventilation” aerator system.

Centralized biomass DHW system and heating, using a renewable fuel and...
neutral in CO₂ emissions, contributing to sustainable economic activity, the use of agricultural and forestry residues, fire prevention and rural development, as well as reducing the annual cost in relation to conventional sources of energy. Underfloor heating improves the thermal comfort and contributes to energy savings, with 3 cm continuous layer of insulating material, that drastically reduce the transmission of impact noise, helping to improve the acoustic quality of the building.

The reduction in demand for air conditioning through the use of bioclimatic design and passive systems, linked to improvements in generation systems involving significant reductions in CO₂ emissions, make the building gets “A” ENERGY RATING.

76 PUBLIC HOUSING IN SAGUNTO, VALENCIA, SPAIN

The Commission

A pleasant combination of circumstances, become part of the Architects IVVSA purse for the awards received and the good working relationship with Attica Group, which were the origin of the project. I still remember the call of the Director General of Attica Group in late 2009, to inform me that they had been awarded the tender by IVVSA for the sale of plots Nº. 4 and 5 of the partial plan “The Pinaeta”, and in particular his phrase “this project, despite being the last in which we have begun to work on, will be the first to be built”. We were hopeful at starting the project, albeit with some uncertainty, given that the current economic troubles had already begun.

The Project

It is located in a residential area of a rectangular plot of 60mx20m free, with a slight slope, a development virtually completed with the following conditions: to the east a road with heavy traffic (ICV – 220) with a wide sidewalk separation, to the west of the central garden of the urbanization, and with a difference in height of about 1m.

The architectural proposal is specified in a solid, free and compact block that fits the resulting plot. The proposal seeks a complete image where there is a clear relationship between the different parts of the building, forming a coherent set that defines a clear and well-awned volume. Its interior has three courtyards that interlock the entire space of the homes.

Some of the premises of the project are to have the habitable parts on the exterior, achieving a double orientation of dwellings to improve the ventilation, thermal comfort and optimize the number of dwellings per core communication reducing these to a minimum in order to create a relationship space inside the building while maintaining proper ratios of common elements.

Almost all the houses are for rent with the possibility to own, adjusting and optimizing their surfaces to current market conditions to offer very competitive prices to rent. The ground-floor apartments are through and approach the garden outside the residential area with covered terraces which give them privacy and proximity to the more public spaces, the living rooms in addition to allowing direct access from the outside to the same. The bedrooms are located on the other side, slightly elevated to ensure privacy with respect to the street. The houses on upper floors are organized by two L-shaped longitudinal bands, slightly sloped embracing empty spaces or communal longitudinal patios, where four vertical access shafts appear sequentially, allowing communication between different cores at level 1.

Access to the building through these four communication cores is done from the garden located on the west side of the plot. To work the section by sliding half floors allows for several issues simultaneously, creating a basement with an opening to the outside for ventilation and natural lighting, while this gap on the ground floor units allows the bedroom area on the east side to be private. In upper floors, conflicting views are prevented through longitudinal patios of the service pieces and allows the separation of two specific areas in the roof, the area of installations are located in the upper part and with restricted access and the public area where the clothesline is located. This completely sectional variation in levels is possible by placing the basement access at the lowest point of the plot.

One of the most important aspects is the joint property on the ground floor trying to minimize inconvenience and take advantage of its situation coherently with houses upstairs and maximizing the use of the basement, with a simple and orderly structural grid displaced half floor in section.

The structure, an orderly and regular system of steel columns and concrete one-way slabs with lights superior to those in the normal housing. Lightening the weight by using polystyrene slabs, and using the four elevators as rigid concrete cores.

The materials used have sought to emphasize some of the ideas and concepts introduced, such as unity, continuity, systematization, durability and the strength of the building, as well as being consistent with the coordination of the different parts and volumes of the same. The building exterior has been formed by precast concrete and metal elements, steel and aluminum on the upper floors.

The result on an urban level has also proved interesting. The construction of the residential area, without the existence of raised buildings, turns an inhospitable and abandoned area that gradually changed with the construction of the building.

HOUSING POLJE 2, LJUBLJANA, SLOVENIA

Housing complex Polje II consists of 6 almost identical buildings, located on the periphery of Ljubljana and is conceived as a ‘chessboard’ of built and open spaces, resulting in a simple, but visually and programmatically rich ambiance.

The urban plan allows for ‘breathing’ spaces for the individual blocks, affording them privacy and light. The central opening, demarcated by four blocks, is a communal playground where parents and children can congregate informally, creating the heart of the estate.

Each block is square plan, with a central service core where the lift, stairs and lightweight are situated. Around this runs a corridor that accesses the eight units in twin pair entries on each corner of each floor.

The units are small, two or three rooms in size, flexible, each with a balcony opening out from the open plan kitchen/dining/living space, relying the otherwise constricted living/dining open plan area.

The projecting concrete slab, a ‘cream-slice’ or shelf-like structure with infill panels of fibre cement is easy to comprehend - the chocolate-coloured cement composite panels, built as light infill walls, counterbalance the massive cast concrete.

Overall, the housing scheme creates a strong, formal impression - the shifting blocks, each almost identical to the other, create a unified ensemble; a sense of place where a community of families live together and share the communal outdoor spaces that flow through the volumes.

57 UNIVERSITY CAMPUS HOUSING OF ETSAV (UPC). SANT CUGAT DEL VALLES, BARCELONA, SPAIN

New housing for university students are in the same block as the Vallès School of Architecture. The proposal aims to maintain a balance between existing buildings, outdoor spaces and the new dormitories for students, which consists of two blocks parallel to the street with a large central atrium.

The residency program for architecture students allows for the imagining of intense cohabitation among users, both individually, thanks to the flexibility of the housing interior, and collectively, through the potential use of the court as a space for social events.

The project is committed to an industrialized construction using only one type of prefabricated concrete housing module without distribution and minimum fixed elements, simplifying the finishes and facilities. Most of these elements are built in dry and therefore all modules and their finishes are removable, recyclable or reusable. The building is resolved on two floors so as to take advantage of existing topography making the accesses practical and without the need for elevators and therefore reducing 50% of square meters of walkways and stairs. The central atrium is covered to create a bio-climatic intermediate space, allowing much improved energy efficiency of the building while economizing the closures.

The life cycle analysis shows that the project reduced by 50% the energy associated to materials and 20% energy demand compared to a standard building according to CTE regulations.

The use of an industrialized system has been instrumental in developing the project, positively conditioning many decisions for optimizing and rationalizing the industrial process. The project accepted since its beginning the game rules for industrialized construction betting on the use of only one type of precast/concrete housing module and a building system consistent with a workshop set up taking this industrial logic as far as possible.

Overall, the housing scheme creates a strong, formal impression - the shifting blocks, each almost identical to the other, create a unified ensemble; a sense of place where a community of families live together and share the communal outdoor spaces that flow through the volumes.