

# ENGLISH

English translation by Paula Olmos

## To build the Paradise

Miguel Ángel Baldellou

From Adam and Eve's expel from Paradise, our banishment from such a place has filled us with eternal nostalgia.

The dream of their descendants is return to it. And architects have tried, since then, to rebuild it, in their own image and resemblance. Have tried to reflect, in everything they build, their own idea of Paradise, according to their own imagination (that is, according to what they already know).

If it is an imaginary place and, therefore, conceived according to an idea, its materialization is the ideal of an architect. With different results, each one of our works frustrates, to a certain degree, this generic aspiration. But, nevertheless, there is always the possibility of such an achievement left.

It is in the house, the family residence, that this ambition is revealed in a most clear way. That is why some of them present their forms as representations of Paradise. We can even consider them as projects for its construction. In these cases, the architect is mediator and party. But the attitudes in front of this particular ambition are rather different among our professionals. Some "with cold brains and hot heart" involve themselves in a human and professional commitment, others, with both brains and heart similarly cold, just try to solve an interesting professional problem. There are even some who think that this job is something psychologically profound and devote their lives to it.

The role of the user can be that of a client, a friend or even the other face of the architect himself.

It is a question of distance. At a long, middle or short distance, the architect's risk becomes rather different.

The recent history has left us some magnificent examples of all this levels of proximity. Some of them are really unrepeatable due to their extraordinary circumstances, the conditions of the site, the programme or just the intensity of the architect's response. This last factor is precisely the one which makes of a project a unique and unrepeatable one. The most "normal" commissions, from which we never expected an exciting response, have, nevertheless, filled some fundamental pages of our most dear memory. Sometimes, the architect himself assumes the double role of designer and client. Is it a general aspiration among us? To build our own house is for us something inseparable from our own construction of a family? How is, or how should be, the house of an architect? And his family? If "Home" was E.T.'s own regret (not his Phone), could it be architects reveal theirs in every home they build? My master maintained that an architect should never build his own

house. I add that, even if he does it, as he would share it, as life itself, with his family, it would never be entirely his own. When this has not been the case (as in the Barragan House, for example) we get the suspicion that it is not a house, but a thing, something like a museum, leaving aside its formal excellence, just an altar in which to display our own virtual image.

In any case, the aspiration to build our own house and display our own world of ideas, our own particular paradise, is something that is clearly legitimate and which has produced really beautiful examples.

There is, besides, the circumstance of the shortest distance between architect and client which results in the most complete commitment. Last september, after a post-graduate course in Mexico, when I thought there were no more surprises left for me, I visited the house a local architect had erected for himself in a most unpolluted place. As unpolluted was the house, and the author and contractor himself. As unpolluted were the workers. The house was so appropriate in dimension and conditions that the ideal was fused with the material response. It was built as a vessel containing life, and it was something so different from our models, our conventions and ways of thinking that trying to judge it from such points of view becomes almost insolent. It was something original, anyway, in Gaudi's sense. Its author, Danilo Veras has some things in common with our master from Reus, and with Jujol, according to his own words. And with Dalí, I should add. Surrealism: dream and reality all mixed up. Similarly nature and architecture. Built clay, worked by hands, as a potter without his wheel, far from geometry, with a logic that is previous to any reasoning, as powerful as necessity itself.

It is made of the same earth on which it is erected, to which it belongs. Hand-modelled, it is a representation of the dimensions of a body and its possible extensions in a most natural, unconstrained way. Its organic character defines its spatial articulation and growing possibilities, which are not unlimited but determined by economy.

Staying in such a house was for me a rather remarkable experience. It was precisely adapted to the movement of its author within it. The house embraced, enclosed and directed its own inner life (without forcing any definite action). Its dwellers seemed to belong to it, they were part of it. Everything seemed to have been there before its erection, or before its flourishing. I also thought that everything would be there after its destruction. It was a cradle-house, a residence-house and a coffin-house. Curiously enough, dream seemed to govern the slow rhythm of time and probably

announced its unrepeatable character. There was a current of so far dormant sensations inside me. It was as if I had already been there in some lost occasion. I thought I had known it by means of some illiterate procedure.

From its interior, one could perceive, feel the exterior. I tried to analyze it as the result of its unitary outer wall, which had no inner face, no folding. Unlike our culture, which has tried to rationalize and differentiate our screens, to make them less complex, less unitary and their interior less coherent. I asked the author for the house's plans. There were none. It had been designed along with its own doing. He had guessed directions, surfaces, measures, textures and details by intuition. He had to draw the house on purpose for us.

This work was something so different from

a pre-determined project that it is difficult to consider it thus. I think it is better to conceive it as a material sediment of the action of building. It is so far away from the physical necessity of popular production as from the artist's idea. Neither it is metaphysical.

Its cultural precedents, which can be easily traced, can nevertheless confuse us. Jujol and Gaudi's lectures and visions were the result of just an approximate and not definitive method. But Veras' procedure is not manierist. He has no method at all if we consider thus a previous regulation. He simply discovers his intuition with time, answering an inner call and with the calm of one who does not want to finish his labor. I understood, then, that Paradise cannot be build but from its interior, when one is already inside it. ■

## HOUSE OF THE LIZARD. LA PITAYA HOUSE

The house is located in a glen formed by the Delta of the river Pixquiac (between the cities of Xalapa and Coatepec, in a place called La Pitaya), trying to counterfeit and respect its own environment, the woods developed in a temperate climate.

As imitating the natural profile of the land, the design is a rotating spiral around differentiated functional spaces, each one in its own level and with its own kind of roofing but unified by a same transparency and atmosphere. The design of the doors harmonizes in forms and colors with the surrounding landscape allowing the views of vegetation to penetrate the house.

The walls are build with the native soil, as continuations of the ground in which they are erected and the finishes go from the chiselled blocks which reveal the textures of the building materials, to polished clay. The interior decoration makes use of the pre-hispanic range of colors, greens and blues, present in the Bonampak and Cacaxtla mural paintings. The timber rafters have the traditional sections of local architecture and are finished with polished clay, lime rendering or glazed "manzanín" trying to achieve an identity based on this regional architectural language. This rafters advance towards the outside, creating, along with the clay tiles covering, an amiable corridor which is rather useful in the humid and raining local climate. From the exterior, most roofs are made of old tiles, although some are of polished clay or "manzanín".

The rustic conditions characteristic of the area in which the house is located, made possible the use of an alternative sustainable technology: a channelled water supply system with a decantation sink and a storage tank (40000 liters) to recover rain water and a sewage system based on the principle of the root net.

Danilo Veras

## Longleat's "strange modernity"

Manuel de Prada

Ever since the fifties, it has been common to analyze the architecture from the first half of the 20th century in terms of its capacity for assuming two possible and opposed aims: the ideal of the closed work or that of the open work, order against freedom. This opposed attitudes can be traced in any architecture from any time, as it is always necessary to take some kind of decision before the humanly logical tendencies of stability and innovation.

The 16th century civil architecture in

France and England had to face a similar problem as it came to assume the classical order as a foreign influence within the forms of its own medieval tradition. The result was an inversion of terms: in Italy, this order had sprung out of individual experience, but in France and England, this same ideal was received as the fruit of a foreign and collective labor that should be assumed as own. In this way, the ideal of the closed and ordered work was not embraced as a radical alternative, as it



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English Architecture by Peter Dinklage

had been the case in Italy, but even came to coexist with the open conception of the local buildings.

The aim was rather simple: by making use of the style and ornamental motifs brought from Northern Italy, both countries tried to solve the problem of their outdated civil architecture.

But the process by which this intention was put into practice was not such a simple one. Architectural methods were indeed rather dissimilar and this did not facilitate the assumption of the novelties. While in Italy the building process was really subordinated to a previous project, in France and England, a strong building tradition succeeded in controlling the final form of the construction. Moreover, the continuous changes and corrections established during the building process restricted the possibilities of anticipation of the final result.

The encounter between such conflicting attitudes gave place to a most curious situation. Italian models and methods were superimposed to local traditions but did not vanquish them. As a result of this fact, we can count a handful of singular and unrepeatable buildings considered, even nowadays, as "strangely modern".

The idea behind these buildings is the consequence of a forced opposition between the two main architectural traditions in Europe's context: medieval and classical cultures. Their strange modernity is probably due as much to this necessity of meeting the ideals of both traditions as to the designers' lack of prejudice in giving a solution to compositional and construction conflicts.

In the well known Elizabethan "prodigy houses", or in the earlier buildings of Francis the First's Reign, it is easy to notice how the abstract classical order, which in Italy was a device to obtain harmonic, standardized and rigorously geometrical plans and elevations, was affected by the utilitarian way in which local building traditions tended to solve any conflict.

In Chambord or Blois, as well as in Longleat or Wollaton, order was present side by side with deviation creating a unit which showed diverse elements selected from both the medieval and classical traditions. The elements were, obviously, different in each of the buildings.

In Chambord, for example, the builders decided to erect a courtyard when one of the apartments' wings was already begun what forced them to change the rest of the quadrants' orientation. The first quadrant was, therefore, the only one to keep the original orientation what forced an unconventional asymmetry. The skylights and chimneys on the roof, though crowned by Italian ornaments, were also irregularly located giving a somewhat gothic aspect to the otherwise relatively ordered apartments' wing.

In the case of the Blois' facade, though, the undesired errors (probably due to the irregular rock which supported it or to the



addition of the old tower) were carefully concealed by means of sophisticated compositional devices. The solution was the division of the facade into autonomous parts in such a way that the local equilibrium was combined with a rhythmic acceleration of the whole towards the tower.

In England, it was in Longleat that this organic sense inherited from the medieval construction was combined with a superimposed classical order.

Wollaton, on the other hand, maintained the characteristics of the great medieval "halls" inside a symmetric and ordered building. The access to the Hall is located, as tradition demands, in one of its short sides and on an axis perpendicular to the private rooms' entrance. This arrangement required the construction of a series of intermediate pieces that were not at all suspected from the geometry and exterior appearance of the building.

Many of these compositional devices have been used in modern architecture and it is, therefore, possible to make a comparative study of their use in both cases. But, before beginning such a risky task, it is essential to make a close analysis of the compositional problems that demanded such a kind of solutions.

### LONGLEAT'S EVOLUTION

Longleat's case was, undoubtedly, among the most complex and, although it has been the theme of many studies, most of them rather scholarly, it remains an attractive issue for any researcher. Longleat, as most of the Elizabethan architecture, remains an enigma.

According to Mark Girouard "Longleat grew as a pearl" ... "the grain of sand being, in this case, a group of small monastic dependencies". This comparison, perhaps a little bit forced, is essentially correct: Longleat grew, along 30 years, by means of surrounding once and again its previous state which originally was an old medieval construction.

Girouard, after examining abundant documentation, came to reconstruct all these stages. His articles "New light on Longleat", published by the Country Life Magazine in 1956, and "The development of Longleat

House", published by the Archaeological Journal six years later, were the first essays on one of the buildings that so far had been considered just as architectural aberrations of a darker age.

M. Girouard's articles on Longleat were also his first steps in what was to be a twenty years long research on Elizabethan architecture which would finish, in 1983, with his publication of the book "Robert Smythson and the Elizabethan country house".

The story of Longleat can be briefly narrated thus:

In 1539, John Horsey, taking advantage of the Dissolution process, bought at a ridiculous price a small residency of Carthusian monks. A year later it was acquired by John Thynne.

Between 1547 and 1553, Thynne undertook some improvements in the buildings in order to make them his current residency. This works, though, maintained the medieval structure.

Between 1553 and 1558, Thynne added some new dependencies to the West and South of the estate and, in 1562, he completed the first "ring" by means of new constructions to the East and North.

His strategy in this refurbishment project (what Girouard calls "the second Longleat") was rather clear: Thynne required larger and more ceremonial rooms. By placing them around the old nucleus, he could take advantage of the already built parts, he just needed to change the function of these original inner dependencies. Thus, the exterior ring would be used as a new residential area while the inner old rooms, surrounding several uneven courts, would be dedicated to various facilities. This project initiated what Summerson called Longleat's "complete extroversion" process.

It is rather significant that, while the facade of this "second Longleat" was already finished in 1562, works continued in the interior up to 1567. The outer skin was, therefore, conceived as an autonomous composition and project.

In 1567, Longleat was burnt by fire. But this same year, Thynne began the reconstruction works and, to this purpose, he asked a French "master" (Adrian Gaunt) to build a wood model. According to Girouard

this was the first scale model known to be built in England.

In March 1568, Robert Smythson arrived in Longleat to direct the reconstruction works according to the wood model. This would be the origin of the third Longleat.

According to Girouard's data, this third Longleat was rather similar in size and organization to the extant structure. If this is true, it should be assumed that the model already contained the new inner court, almost a regular one, as a counterpoint (placed to the West) to the heap of little courts occupying the opposite side. The North and South facades were, undoubtedly, symmetric and uniform as they had to match the new axis that permitted to double in size the house.

Thynne made use again, in this reconstruction, of the device consisting in enlarging the outer ring in order to increase the number of rooms while taking advantage of the built parts. He also achieved the regularization of the outer skin endowing it with a new magnificence.

The third Longleat was never accomplished because the large gallery, on the North facade, was never built. This gallery was just begun at the beginning of the 19th century as part of an extensive and unfortunate interior renovation for which J. Wyattville was commissioned. Wyattville regularized the small courts, built interior corridors and a large staircase on the access' axis in such a way that the most characteristic features of the original arrangement were destroyed.

The third "uncompleted" Longleat and Wyattville's renovation were compared by Robert Kerr in his book "The Gentleman's house", published in 1865 (Figs. 1 and 2).

In 1572, Thynne decided to undertake a new restoration that would almost exclusively affect the facade. Although Girouard supposes the third Longleat's facade was probably finished by 1570, it is difficult to assume that, within just three years, 300 meters of a 15 m. high facade were built, destroyed and rebuilt.

In any case, the new facade, three storey high and with large windows placed following a uniform pattern, surrounded the whole building as if it were an enormous scenery just built to conceal the faults of the previous constructions.



We can have a rather accurate idea of how the fourth Longleat was by consulting the plans preserved at the Hatfield House. It was from them that Summerson reconstructed a plan of Longleat that, although it substantially differs from the original, came to be published in all specialized studies (as Girouard's) and Histories of Architecture (P. Murray's, etc...)

The Hatfield plans contain too many anomalies. After studying them, Summerson asserted that "the first thing to be noticed in Longleat is its absolute symmetry with reference to two different axes". This statement, though, is not completely true. The western and eastern facades are not completely symmetric.

Girouard had already pointed out that the Southern bay window was located at six feet and eight inches from its nearby corner while the Northern one was at two feet and eight inches from its. But this clarification was not at all necessary as the asymmetry is evident just looking at the real plan.

A less evident fact is the location of the facade's axis which is not midway between the two bay windows; what means that the windows between them are not homogeneously placed. In fact, the four facades of Longleat are different.

One of the sources for anomalous solutions in this fourth Longleat is the discrepancy between its almost regular exterior and an irregular inner distribution. Thus, some partitions come across the windows, there are partial or incomplete symmetries (sometimes of exterior elements, sometimes of interior elements), there are strange differences between motifs that should, reasonably, be identical, etc.

Other inner peculiarities are more difficult to justify. As the bearing walls displaced from their axis, the inner rooms with no possible access, the blind windows etc.

Many of them can be explained if we take into account that the Hatfield plans are not exactly a project but just a reproduction of a "present state" in order to facilitate the erection of the new facade. Some elements of a previous facade, moreover, seem to have been embodied within the new one. This would explain the oddities of the western facade.

Just a shallow analysis of the Hatfield plans should make us understand that the criteria according to which they were made were those traditionally used in building works: that is, problems are solved by parts.

In the building site, each "master artificier" was in charge of one of these parts; each of them should be responsible for just one building detail, but nobody attended to the whole unit. There are working details of the facade attributed to Smythson and others to Allen Maynard, a French "master" that surely knew about Italian ornament. Although some drawn details refer to the same elements, they present different criteria and, at the end, none of them were built.

The overall idea behind the Fourth

Longleat could just belong to a person with much more information than these "master artificiers", with sufficient capacity and authority to guide the whole process. This person could be no more than the owner of the house, John Thynne.

Thynne had been a secretary to Lord Somerset, a nobleman that even came to lead the country when Henry the Eighth died and who, at the time when Longleat's first renovation was taking place, was building in London the "first classical facade in British architecture".

The Somerset House facade was a clear reference for Thynne's reformation projects. It was symmetric and well ordered, it had bay windows along several storeys and a flat roof.

But Longleat's singularity was also due to other circumstances:

1.- Elizabethan fondness of ingenious formal "Devices". This liking came to be present, at the end of the 16th century, in all cultural realms. In literature, there were poems written in geometric forms, acrostic poems that could be read horizontally or vertically, column shaped poems, etc. And in architecture there were proposals of buildings with the same overall form as some ornamental element, letter shaped buildings, etc.

2.- The application of the technical advancement made in the Perpendicular Gothic to residential buildings. Many Elizabethan residencies became glass boxes as the load applied to the wall came to be divided into a high number of stone supports.

3.- The nonchalant use of ornament. According to Girouard "Elizabethan people found out the "classical treasure" with more the spirit of a pirate than that of a disciple... Their attitude was not that of worshipping the foreign taste, they were not conscious about the fact that the classical style was a discipline that should be learnt or the highest expression of rationality". Many Elizabethan buildings had no ornament on their facade.

4.- The complex rituals that gave sense to the house arrangement. The flat roofs of Elizabethan residencies can be explained by taking into account the use they were intended for. The "Banquet", according to Girouard, "was a common affair in 16th century social life, and it was not a banquet in the modern sense of the word, but the serving of fruit, sweets and wine before or immediately after the meals, generally in places with pleasant views as terrace roofs or towers built in gardens... one can easily imagine Thynne's guests, in the fresh evenings, lost about Longleat's terraces, split into groups in order to enjoy the views of the surrounding park and nearby hills from those lovely pavilions so similar to doll's houses."

Those lovely pavilions, in the words of Girouard, were designed by Robert Smythson to crown the staircases over the inner courts.

It is easy to understand how all these circumstances influenced the architectural forms experimentally used in the construction

of new residencies. The result was the adoption of peculiar forms in special elements that should be perceived as unusual.

Elizabethan people were possibly not completely conscious about these processes, but the stress caused by this unnatural adoption made possible for these buildings to become "isles of sense" capable of combining tradition and innovation.

It is not by chance that the compositional devices used in those "ingenious forms", those oppositions of order and irregularity, the immaterial facades, the nonchalant use of ornament or the apparition of flat roofs (in such a rainy country as England), have been

recuperated some centuries later when architecture came to have similar ends.

In both cases, classical order was reinterpreted in order to accept the irregular forms of medieval tradition; a current one in the case of Elizabethan times and recovered by the "modern" architecture.

Now, when these European 16th century houses are not considered anymore as deviations from an Italian model, it is possible to talk about their "strange modernity", forgetting the prejudices of "vertical Histories". Finally they can be understood as one of the most impressive and bold attempts in the whole History of European Architecture. ■

## Alvar Aalto's Villa Mairea. 1937-1939

For the Aalto couple, this was a fruitful and busy period: they were widely and internationally renowned, and this fact encouraged them to continue their labor in search of new proposals that would enrich and give a new turn to the architecture developed in Europe in those days. Their clients, the Gullichsens, were the owners of the country's greatest timber company (1), they were also fervent supporters of the arts with a family tradition of maecenas. Maire Gullichsen commissioned the architects to design for them "a modern and experimental house concerned with twentieth century design". According to Pallasmaa: "the architect and his clients tried to demonstrate how the industrial development and the improvements in the production processes could result in a greater flexibility of architectural solutions. There were new possibilities in housing that would be available to everyone. They had confidence in the democratic and egalitarian movement taking place in Finland in those days. The house is, therefore, a kind of laboratory whose results are intended to be used in more modest dwellings." (Pallasmaa, 1985). Together with the house, the clients wanted a painting studio for Mrs. Gullichsen. In the project's dossier, the Aaltos wrote: "Although the conventional way of collecting art is something that has not been questioned, we have tried to express our client's personal relationship with painting. We have abandoned the idea of an art gallery and have replaced it with a unique space, with just a few movable partitions, in which painting and everyday life blend together." (Aino and Alvar Aalto, 1939). And they add: "The formal ideas employed in the architecture of such a special house are closely connected with modern painting. We think that modern painting provides our project with a deeper formalistic significance

and a more human appearance and meaning than any sculptural ornament conceived as an appendage to architecture. Because modern painting seems to be involved with a formal universe which is rather close to that of architecture and is currently encouraging individual experimentation instead of being a prestigious ornament, as in the past". (Aino and Alvar Aalto, 1939). So the relation of our building with the latest European avant-garde is made clear. Along with this concern about the search for new possibilities in housing, and the aspiration to connect with Avant-garde ideals, the third fundamental notion behind this work would be the importance of nature in human life (and also in architecture, as our architect had been trying to demonstrate).

In Villa Mairea, Aalto tries to achieve an emotional and suggestive, but also rational architecture, that would answer the client's demands. So he employs compositive concepts that would reveal new expressive ways for architecture. As in the best Finnish architecture of the time, the Villa Mairea remains midway between the old and the new, the genuinely Finnish and the foreign influences. Its relations with the vernacular are evident, but also its avant-garde references (cubism, expressionism, etc...) and its connections with other not-finnish architectures. This dilemma, is something present along the whole process of design and building: the functionalist machine before nature. This dialectic (2) between different ideals becomes the source of new possibilities and formal concepts for architecture (the oppositions: organic-orthogonal, freedom-formal geometry, natural-artificial, servant-served, topological-geometric, etc...), which is another characteristic feature of our work. We can perceive something of the kind in the use of collage and free-addition in the composition



of many aspects of the Villa. Because in Villa Mairea the point of view and the emotional movement of the observer is something added to the Cartesian and Rational Functionalism and the Objective Cubism. Aalto suggests routes, surprises, movement, views, textures and chromatic effects and will make use of light as one of the main elements in his design.

According to García Ríos (3), it should be necessary to investigate certain aspects of the work that will reveal us the architect's intentions and make us understand his solutions.

### The exterior arrangement and the plan's general composition

The villa is located within a rather extensive plot in which there previously were two old residences belonging to the Ahlström family (4). According to Pallasmaa: "The two previous mansions represented the image of the power and the hierarchic status of the Finnish factory owners in the days of the first capitalism and the industrialization" (Pallasmaa, 1985). Villa Mairea, instead, represents the progression of Finland towards a socially concerned capitalism. While those first villas occupied the land dominating their natural environment by means of an orthogonal and cartesian geometry in which the carefully delineated gardens provoked axial relationships, Villa Mairea is opened towards virgin nature and merges with it, creating routes and walks. The lateral way in which the villa is encountered avoids any direct contact with it and results in a greater sense of isolation in relation to the old villas. The aim is surprise and, thus, everything is arranged in such a way that the first thing one perceives is the most striking and most remarkable corner of the building (1). The pergola over the main entrance and the rotated bedroom windows are the elements which welcome us anticipating an image of the villa.

Leaving aside the location, over an elevated clearing within the woods, the architect was completely free to design the building's configuration. The first idea was an o-shaped scheme (2); an element which isolated itself from its environment and which was intended to define an inner space as the villa's court. In the second stage (3), the villa became more permeable and there was a clear relationship established between the inner court, the house's interior and the outside natural environment; thus, nature began to take part in the building's definition. The surrounding conditions, sunlight requirements and other compositive reasons which we will see later, determined that the different sides of the Villa began to be conceived as more and more permeable according to a certain hierarchy. In the third and last scheme, the integration between the house and its surroundings became radical and even determined the replacement of some of the elements of the O-shaped design with wild nature (4).

If the first idea was the arrangement of the construction around an inner court, the progressive growth of certain parts of the building became the second axis of the composition. The two main functions contained within the ground floor (communal and service areas) define the formal arrangement of the spaces (5): the common rooms (a self-sufficient square), opened to every dweller of the house, are organized in a single and undivided space. The perimeter, though, presents an irregular composition in which the particular functions of each portion are clearly expressed. The services area (a clearly directional rectangle) is a closed element, instead. A completely regular prism with the necessary partitions in which the relations between the different rooms themselves and those of the rooms with the exterior space are entirely independent. The functions filled by these service rooms are conceived as complementary to those represented by the rest of the house, so their relations with the outer nature become secondary. The plan was, therefore, developed according to the pairs of opposed elements which are so present in Alvar Aalto's works: open-closed, organic-geometric, servant-served, etc. The mentioned two parts of the ground floor are shifted and relocated in order to open a gap for the house's entrance, create an inner court, reinforce the main axis of communication and articulate a L-shaped plan (6). A rectangular pillar is the sign of the end of geometric space and the beginning of freedom, nature and Finnish design represented by the sauna room. So the C-shaped scheme is complemented by two final elements (7): the porch and the sauna. And the primary and original "O" is completed by means of the swimming-pool, the almost unapparent lateral steps and a screen of trees which tend to close this virtual court (8).

The architecture of the house is intended to force the observer to merge with nature after going through it. From the visibly marked entrance, the visitor enters the residential private space (the heart of the building) and proceeds along a sheltered porch towards the sauna room which is the symbol of the meeting of a naked man with nature. And then he will go out towards the woods and the outer nature to dive in the lake (swimming-pool), now completely unprotected and unaware.

### The generation of a communal space.

The real entrance hall of the house is gained from a small windbreak illuminated by means of a circular skylight. You are now inside the villa. From this very vestibule we can apprehend the house's intentions (9). We see the two hot nuclei of a Finnish house: the main chimney (chimney-fire-cold) and the sauna (sauna-vapor-cold). They are the shelter within the house. We see a curved, textured wall just in front of us which divides the hall from the rest of the dining and living room which is

placed some steps above the entrance's height. So the vestibule is a perfect square secluded from its surrounding spaces by means of its different height and floor finishing. From it, we can gain the rest of the house by means of the lateral stair (10). The L-shaped scheme of the house is represented by two different axes which converge here. There are two complementary elements which are accessory to this basic cellule of the house. The square-shaped dining-room and the conservatory (with their respective compositional value) which are placed at the end of both wings (11).

Finally, we meet the main character in the house's design: its heart (12). The chimney and the sauna become the end of the two possible routes suggested in the vestibule. From both spaces we can control the building and the surrounding nature. The change of materials and floor finishes within the living room and the last step of the main staircase which is rotated in order to face this area are a response to the potency of the chimney space. Through a sliding glass panel, we gain the outer court and through the stairs, the rest of rooms located in the first floor and the terraces. From this point we can, therefore, supervise all the interior, exterior and vertical circulations.

### The spatial composition

Taking into account the vertical growth of the different volumes, from the sauna to the studio, Villa Mairea seems like a climbing spiral which is the generating curve of its composition (13).

The Villa is erected over a wild land which is not supposed to become an artificial garden. This virgin ground is the soil of the court and the sinuous swimming pool just by the sauna. The "Finnish lake" and the low stone wall closing the court and sheltering the rear side of the sauna become part of this untouched nature. Vegetation, water and rock are the first elements employed in the Villa's composition. We find these, as recurrent elements of the Finnish architecture, even in works completely conceived in the most orthodox Functionalism. These three elements are repeated in the sauna, which is a simple volume under a living vegetable roof: the wood is burnt in the stove, the stones are placed over it and the water is poured over them to generate vapor. The Finnish character of the house is not just represented by these three elements, the origins of the Finnish architecture (the sauna and the vernacular building techniques) are also present in the house conception. The porch, under which the very sauna and the barbecue are placed, works like a connecting element between the vernacular sauna room and the modern house (14). Its living vegetable covering is like part of the ground itself which has been raised to a certain height. In this porch, we find the above mentioned rectangular pillar which closes the linear route towards the sauna from the dining room. We also find the

exterior chimney of the villa rotated towards the sauna and pointing out the traditionally Finnish location of the barbecue, just by the sauna: after a refreshing sauna bath, you must take something to eat and drink in order to recover the lost liquids. These relaxed moments before the fire and after the sauna are one of the most exquisite pleasures of the Finnish tradition. Aalto made a careful analysis of the possible routes within these exterior spaces (a real "promenade architecturale") in order to complete the design of the house itself. One of the routes begins in the court's virgin ground and climbs the stone stairs over the porch chimney ascending towards the dining-room wooden-plank terrace and passing by the living vegetable covering of the porch. Here again, we find the natural materials: the railing is made of wood. We can even say that this terrace is, in fact, another piece of elevated "natural" ground which is even terraced as if it had a natural profile. This terraced floor and the very pitch of the chimney's flue mark the direction of the following step. A boat's ladder climbs up to the last flat roof whose space is defined by means of a metal curved railing which encloses an area used as solarium: it is the roof's garden. Although in this roof there is no wood, we can feel that nature is still there. The contour of the Finnish lakes is present in the curves of the metal railing. It is a living manifest in favor of the freedom of nature over the restrictions of geometry. Finally, in one of the extremes of the house's roof, and completing the ascending spiral, we find the painting studio. The building grows from nature to this painting workshop. Art, which is born from pure nature, is the summit of the work.

In Villa Mairea, the curved forms (which become rather significant in the composition of the building as they are always present in the most representative points) give us the key to understand the project as a whole (15). The swimming-pool and the painting workshop are, along with the main entrance's canopy the most essential elements in the design. The first one, the swimming pool, has a sinuous and apparently capricious perimeter. But, if we take a careful look at it, we will realize that one of its sides is straight and parallel to the low stone wall: this side introduces geometry into nature. The swimming-pool (the lake) works as a ball and socket joint which solves the confrontation between the freedom of virgin nature and the constraints of architectural geometry. The swimming-pool is therefore an approach from nature towards architecture. The second element, and the last one in the plan's composition, the studio, is, again, enclosed within a curved wall; it is an approach from architecture towards nature. Its pitched roof (the only one in the whole composition) invites us to see a possible continuation of the spiral growth towards the sky itself. The painting studio can be considered as the building's beacon which sheds its profile on the boundary lines of the court and the plot. The court's boundary on the



South is an almost imperceptible bank which seems rather natural. The power of art has modeled the virgin ground in which the work will grow. So, from the studio, we have reached the sky and the ground. The studio is, therefore, the end/beginning of the circular composition generating the whole design. The idea of the architect was not only show how architecture may be developed from nature but also the reverse; that in a creative process, nature and art work together nourishing each other indefinitely. The architect and nature seem to design together. Aalto lets nature talk and he completes its sayings; nature waits for the architect to finish his work in order to integrate the building and finish it up. The volume of the work is broken in order to force a certain route which would foster perception. Aalto tries to achieve a building which cannot be seen at one sight. He creates a dynamic sense around it as an inescapable condition for its interpretation, voluntarily avoiding the static character of an architecture constrained within its own compositional axis. The total volume of the building is dissolved into a series of plans, as if it were a pictorial collage. The perception of the outer side of the building is something rather related to Cubism, something which is not a really common characteristic in architecture. "Villa Mairea is a hybrid between French Cubism and the customs of the inhabitants of the Finnish woods" (Gullichsen, 1993:65)

In order to achieve this singular way of perception, the corners become rather significant points of the building. In the South-Eastern corner of the house, the first floor is recessed in relation to the ground one, thus breaking the perfect volume at this point. The North-Eastern corner is solved by means of a succession of wooden vertical planks which cover the facade. At the North-Western corner, we find a pergola which creates a distortion effect in the perception of the straight angle. The North-Western corner of the sauna presents a rupture in the vegetable covering of the porch. This rupture effect is reinforced in the dining-room's corner by means of the particular design of the railing, the terraced roof, the stairs, the chimney and the ceramic tiles finishing. Finally, the South-Western corner is broken by the curved wall of the workshop and its complex meetings with the rest of the building's elements.

### The elevations.

The movement, a concept so important to avant-garde, is revealed as the main principle employed, not only in the outer appearance of the building but also in its whole design (5). The corners and the elevations of this work are broken as the volumes in a Cubist painting. The planes which compose a Cubist work are the same planes, each one with its own texture and treatment, which break up the building and block our clear perception of the forms.

There is no main elevation. It seems rather evident that it would have no sense in it. We can also affirm that the view which tells us more about the building is the that from the South-Eastern corner, when we approach the villa. The round character of the building, related to the already mentioned spiral generation of its volumes, is something that is rather clear.

But it is probably the South elevation which can tell us more about the designing process which ended up with such facades (16). The different elements which organize the building are clearly visible in it as well as some of the contradictions between them all. The opposed principles present in the plans can be again recognized: organic-geometric, open-closed, private-public, ground floor-first floor, etc. The analysis of such an elevation results in two possible interpretations which can be related to the double vertical and horizontal division of the plane into two similar parts. The first one is that determined by the vertical division. We see two parts of the architectural work, the organic and the geometric one which do not exactly coincide with the ones defined in the plans but reveal the use of this dual aspect as a generating principle in the whole design. While the right part of the elevation is more or less that of the already mentioned service area contained within a closed and geometric volume, the left one corresponds to the common rooms, a much more open and organic part of the building. The second line of interpretation is related to the horizontal division between the ground and first floors: the geometric arrangement of the children bedrooms' windows is in clear opposition to the free fenestration of the ground floor below: the sliding continuous window of the living room and the library are opposed to the diverse openings in the parents bedroom and those in the studio above advancing over the ground floor.

Perhaps Aalto was not conscious about it, but the only frontal elevation is, in fact, that of the Villa's main entrance. If we observe the stratified arrangement of the different elements, we will realize how, from this main entrance, they tend to spread out towards both sides. The reason of such a disposition seems to be the already mentioned principle of design: architecture opens itself towards nature till dissolution.

The outer appearance of the building, its textures, colors and materials are the fundamental ingredients of the composition: are the colors of the collage suggested by the architect: the pieces of "papier collé" modifying the real relations between the volumes and creating new ones. The wall renderings and finishes are tremendously varied. The wood screen and the white cement rendering are the principal ones, though. The artisan woodwork, vernacular and natural against the functionalist and cold white rendering: these are the two poles of the work. Most of the ground floor tends to integrate within nature, within the woods and vegetation. It is finished in wood.

The upper volumes, elevated over the ground are white as snow. Villa Mairea's collage is completed when the parts of the building which are really covered by the snow are mistaken for the white rendered ones and the woodwork on its facades mistaken for real trees. Its colors (brown and white) and textures (smooth as snow and rough as wood) are clearly related to the main elements in the surrounding landscape. Architecture is lost in the winter scene covered by the snow. Everything is part of the collage: you can never discern the boundaries of the villa from those of the nature.

But it is in the interior of the house where the architect reveals us, at last, the key to the comprehension of the whole building which is in a detail that is the real heart of the house. Over the fire, the main chimney's flue is rendered with an immaculate white and smooth cement. In its meeting with the exterior

window, Aalto designed a recession on the masonry work which seems to be the print of an absent object. The white flue of the chimney is folded and refolded as the snow blanket over the Finnish homes, is curved as the pool in the court, adopts the form of the frozen lakes, of the melting rests of snow at the beginning of the spring. It tries to create a gap through which it approaches the outer nature to which it belongs.

The architect Kristian Gullichsen, son to Maire Gullichsen, has written about Villa Mairea: "Although Villa Mairea, with its many original details, cannot be related to any definite epoch, history would soon make an antique of it. Just a few months after its conclusion, the war began and the society and the way of life for which it had been designed would return no more after the fight." (Gullichsen, 1993: 66) ■

## NOTES

- 1.- Harry Gullichsen was the General Manager of the A.Ahlström Company. His wife, Maire Gullichsen, was, along with Alvar Aalto, co-founder of ARTEK (a company dedicated to the production and distribution of the architect's furniture).
- 2.- "While the Modern Movement tried to develop, in a firm and rather logical way, the concept of a unique design principle, Aalto is consciously creating discontinuities: he seems always to jump towards new rhythms, measures and melodies. He makes contraries meet: romantic-rational, modern-popular, new-traditional, natural-artificial, freedom-geometric form. He manipulates the requirements of logic and architectural orthodoxy in order to create an atmosphere of poetic expectation, of discovering, of adventure, of secret intimacy. Villa Mairea is composed of diverse thematic fragments in the same way as a theatrical piece might be composed of different scenes or a symphony of different movements." (Pallasmaa, 1993: 44).
- 3.- See "La Villa Mairea. 1938-1939. Alvar

Aalto", doctoral thesis by García Ríos, 1996. Pages 215-264.

4.- "Maire Gullichsen's grandfather, the founder of the Ahlström Company, had built in 1877 a Victorian like mansion for his residence in Noormarkku, just by the company's first sawing mills. Her father, on his part, had commissioned a romantic and nationalistic castle for this same location at the beginning of the century." (Pallasmaa, 1985).

5.- The way we approach and meet the house is based in the same principle as Cubism. This movement renounced to traditional perspective claiming the multiplicity of points of view as the best way to know the exterior reality. This succession of perspectives of a unique object generated by the movement of the observer around it provides us with much more information than the frontal view. The time factor materialized in a surprising simultaneity is something inescapably present in this work of architecture which was designed as an itinerary.

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## The Luis Barragán house in black and white

*The art of Luis Barragán is an example of an intelligent use of our popular past, of the traditions of our Mexican people; it is something similar to what other contemporary Mexican artists as novelists, poets and painters have done, each one in its own sphere. Our politicians and educators should try to follow such an inspiration. Our incipient Democracy can and must nourish itself with the examples of solidarity and social cooperation invented by our own people and which are still alive. These traditions are a political and moral legacy which we must preserve, renovate and adapt to the conditions of our modern life. The option chosen by our contemporary art and literature is rather clear: in order to become really modern, we must first reconcile ourselves with our traditions.*

Octavio Paz

### The protest

Nowadays, when the work of Luis Barragán is being so much appraised, it becomes rather difficult to comment his masterwork, which is his own house. The architect Barragán worked on it for more than forty years, trying to create the appropriate subtle spaces and atmosphere for himself and his closest friends.

And this task of speaking about the house has become difficult because much has already been said about it, much of it has already been showed and also because the Vitra Museum has recently and unfortunately acquired the famous collection of photographs of the house made by Armando Salas Portugal. The Museum had already acquired the whole archive of plans of the projects designed in Luis Barragán's studio. So now, it has become almost impossible to show, in an adequate way, the changes suffered by the house and its project in the mentioned forty years. Our professionals have said nothing about this terrible loss. And this is the second time something similar happens. For, some years ago, the University of Texas acquired a significant number of plans and drawings of the projects designed by the architect Juan O'Gorman.

It is a rather remarkable fact that an institution like the Vitra should have showed so much interest in the legacy of our master Luis Barragán while we seem not to care at all about it. We must think that his work was firstly noticed and appraised abroad while Mexicans had showed themselves rather short-sighted. We own the physical patrimony of Luis Barragán's legacy, as most of his works are in fact in Mexico. But the state of this heritage is really preoccupying. His public works (fountains and walks), as well as other interventions in private properties, are being disintegrated, day by day, while our myopic authorities, which are responsible for the maintenance of our architectural heritage, do nothing about it and our indolent and apathetic colleagues seem not to care at all about them, proving their complete lack of self-respect.

I really feel embarrassed when some foreign colleague asks me to show him Barragán's works on site. They have become real junkyards. This is the interest showed by

our authorities. His works in Mexico City as well as those located in his native land Guadalajara are in a complete state of dereliction. When one pays a visit to the districts of "Jardines del Bosque" and "Capilla del Calvario", one finds the monument that was erected in Barragán's honor, not only abandoned but transformed into the landmark indicating the district's rubbish dump. That is the respect we show for our worldwide admired architect, who was accorded the Pritzker Prize in 1980.

### The History

In 1939, the President of our Republic, Lázaro Cárdenas del Río, decided not to occupy anymore the Chapultepec Castle as the Official Residence of the Presidents of Mexico. So the Mansion of Pinos, placed between the Madereros and Parque Lira avenues, became then the new official presidential residence. Mexico City was then growing towards the West and Luis Barragán decided to acquire a piece of land between the Madereros avenue and the General Francisco Ramírez Street. This plot was just two blocks away the Presidential Residence of Los Pinos. As we know of Luis Barragán's eye for the real estate business, we must think that he had decided to establish himself in this plot in a definitive way.

The significant dimension of the plot suggested him the design of a garden extension which, in some way or another, was to be realized later on in "Pedregal de San Ángel". So it was in this parcel that he designed his first house in 1940. He devised then some spatial solutions that would be subsequently applied in later projects. The materials used in this house, nowadays the Ortega House, are rather traditional ones: adobe, masonry partitions, stone, clay floorings and large areas of cement rendering. We can notice some details in the house which would be used again in the definitive one in 1947. The new plot would be the adjacent one to the Ortega house at its North side.

We must now point out the origin of the famous stairs of the library at Luis Barragán's house. The terrace of the Ortega House presents a similar concrete stair which climbs up to the



flat roof. It has the same number of steps, the same width and the way it is embedded in the wall on its right side is more or less the same (see the picture by Juan de Dios Hernández and the famous one by Armando Salas Portugal). The only variant is the accordion solution realized with wood planks.

This is a rather significant work, and even more if we think that, in the previous four years, our architect had designed about twenty rather functionalist apartment blocks. The change was radical and this was, precisely, the origin of the definitively personal Barragán style and his marvelous symbiosis of garden and housing.

Even before the erection of this first Barragán House, he had already designed four private gardens which showed the influence of Ferdinand Bac and of his great friend Eduardo Rendón, who was an architect who had not studied in the Academy and who transmitted Barragán the simple beauty of the Mexican popular constructions, and his like for well arranged and masterly disposed flowerpots. Both thought that houses should be carefully designed in order to create comfortable homes for their dwellers. They learnt from the nice simplicity of modest rural houses and their refined use of traditional materials. (See "Arquitectura" No.18, July 1945. It published the projects for two gardens, the Ortega House garden and that for San Ángel (pages 148 to 155). Also see pages 156 to 161 for three other gardens by Eduardo Rendón in Cuernavaca).

### The Studio-House

In 1951, Barragán drew three alternative plans for his house which differ from what we can see now in the following details. The library window, on the main facade, is integrated within the wall; Luis Barragán would subsequently decide to create a volumetric effect with this window, using for it a structural frame of 30x30 studs. The living room and the library are, in these drawings, a unique space with no partitions, and we can notice in them a traditional arrangement of furniture including a grand piano which appears in the pictures by Armando Salas Portugal and which Barragán had acquired in the days of his first house. This grand piano would disappear.

He would also divide this space into library and living room by means of a sliding screen, an element which he really knew how

to manage as we can see in his masterly use of it in interior and exterior positions (see Gálvez House). The house was then completely painted in white.

His famous terrace just had then a wood parapet. This would be replaced by a masonry one which would grow up to conceal the outer vegetation, just leaving the contrast between the blue sky and the white wall to see, as in a painting by Giorgio de Chirico. In this same terrace he would subsequently make some experiences with different textures and colors which he had never used before, (see the book by Armando Salas Portugal-Gustavo Gili, pages 52, 53 and 60 to 65 and the book "Barragán, obra completa", by the MOPTMA, pages 122, 113, 120, 122 and 123).

The stair ascended towards a mezzanine level which was a kind of family room laterally lighted from a terrace located over the garage. This terrace would become a guests bedroom.

On the upper floor, there were two bedrooms, of which the larger one was Luis Barragán's chamber. The arrangement of this room was rather simple, and its furniture seemed to belong to a Franciscan monk. He had an individual bed and a wooden wardrobe with the traditional outfit he wore.

In those days, the full-height window of the living room was cross-shaped. It was realized with a tubular frame and the glass was embedded in the cement rendering reinforcing the image of the cross. In the pictures taken in those days we can appreciate the garden with a perfectly mown English lawn. Later on, the architect Barragán would prefer his garden to grow as a wilderness.

The architectural studio-workshop occupied a single level and presented a large window from which the garden and the fountain were visible. He would close this window and open skylights on the roof. He would also erect a second storey to fit more office space (see "Arquitectura México", No 34, pages 285, 287, 288).

The fountain was almost a basin which would be redesigned as a ground level pool. The garden was decorated with earthenware flowerpots and jars, showing the influence of Eduardo Rendón.

The most famous spaces and ambiances, those which would be so much photographed, were slowly defined and transformed along the years, creating a scene of serene beauty.

As we all know, Chucho Reyes Ferreira was another influential personage in Luis Barragán's



life. He persuaded him to use colors, showing him how the Mexican popular architecture had beautifully done it, and how color could expand and contract space. We do not have to mention his masterly use of color. In his house, he employed it in an almost ritualistic way, in order to create subsequent colorful skins for the retina's and the heart's delight.

Clara Porcet designed the furniture for his house and other projects. We can see her work in the archives of the School of Architecture, at the UNAM. When she died, the architect Barragán called on Eleuterio Cortés for all the carpentry work he needed. He understood him rather well. His carpentry workshop, now managed by his son, continues to produce Barragán style furniture. The master could never forget the marvelous rustic furniture of the Mexican traditional mansions and, in his works, he always tried to make use of wood and leather as in the, so called, "Miguelito" armchairs.

In his drawings for one of his latter designs, the furniture for the Gilardi House, we can notice how the master was not really skilled in drawing. But he always designed the adequate furniture for the appropriate space.

He also selected religious wooden and gilded images for his own house and other projects. He placed them over wooden pedestals and illuminated them with acrylic lamps covered with parchment, which produced a tenuous and golden light. This is one of the reasons why someone as the architect Alvaro Siza has repeatedly said that the dominant color in Barragán's house is gold. Barragán also placed some paintings realized with gold leaf in strategic points of the house which, when illuminated, filled the atmosphere with a marvelous golden shade. The living room and the library, which are triple height spaces with timber beams on the ceiling and a traditional wood plank flooring, are the most agreeable rooms in the house. Here, Barragán received every kind of people, but mainly his friends as Diego Rivera, José Clemente Orozco, Eduardo Murillo, Frida Kahlo, Edmundo O'Gorman, Chucho Reyes Ferreira, Mathías Goeritz, Miguel and Rosa Covarrubias and a few architect friends, as well as important Mexican and foreign personalities who came to pay a visit to the famous master. ■

## Commentaries on Luis Barragán and his house by Louis Kahn(\*)

I met an architect in Mexico; Luis Barragán. His colleagues tell me that he is a man who belongs to his land and I will not say anything else about him. He likes wood and other things which are a kind of discreet assertions. I discovered that he is a really remarkable man. Someone who does not express himself in many works and, in the house I visited, every single feature of himself seemed to be visible. His gardens are nothing else but a small water basin; they are, nevertheless so immense that no sophisticated landscaping design in the world could ever improve them.

I must tell you about my meeting with a man, a marvelous architect from Mexico. While I walked about his house, I felt the character of the house: adequate for him and appropriate for any man at any time of his life. The house affirms that an artist just looks for truth, and that what should be considered traditional or contemporary is something that has no meaning for him. Its gardens are conceived as individualized, impossible to duplicate spaces. One feels that, when the garden is already built, all the drawings used in the process should be destroyed. The garden itself would remain as the only authentic reality, which must await till its own maturity in order to realize the spirit of its creation.

In Mexico, I met the architect Barragán. I was impressed by his work so close to Nature. His garden is contained within a wall; the ground and the vegetation remain untouched, as he met them. There is a fountain in the garden which has a water spray in which water pours, drop by drop, from a wooden stick and falls into a black stone basin, full to the brim. Each drop was like a filament which formed silver rings which overflowed the surface and were spilled onto the ground. The water over the black basin was like a portion of a mountain creek, spilling over the rock to reach the profound solitude in which its silver quality is at last revealed. Barragán learnt about water and choose of it what he liked best.

His house is not simply a house, but the house itself. Anyone can feel it as his own. Its materials are traditional, its character, eternal. We talk about traditions as if they were just golden dust heaps of human nature, from which circumstances were distilled. While man walks along his road to experience, man learns. Everything he learns falls from him like golden dust, which, if touched, gives the power of future vision. The artist has such power and knows the world even before it began. He expresses himself in terms of psychologic truths.

In his late visit to the Luis Barragán House in Mexico City (3/1/1994), Sir Richard Rogers, the internationally renowned English architect, wrote in the visitors book the following paragraph: Thanks for being permitted to visit this beautiful house, one of the greatest of the twentieth century. I hope that it will be preserved in the way it was originally used because it constitutes a real celebration of man and quality life as well as of building itself.

(\*) Louis I. Kahn Writings, lectures, interviews. Rizzoli, New York, 1991. (The garden behind the window - Catalogue for the Inauguration of the Jalisco Cultural Center in Mexico City, by Luis Barragán)

## The Japanese House

The traditional Japanese house is the likeness of the Shinto paradise, that is, a paradise which is not placed in another world nor beyond the sunset. The Shinto paradise is in Nature itself; it is located in the impenetrable darkness of the woods. Japan's damp climate produces intricate and nearly always misty forests. Thus, the Shinto paradise is a dark and shadowy world; darkness is the place to perceive the beauty of things. This point of view is reflected by the traditional house in which the rooms are not conceived as illuminated spaces but as successive layers of shadow which represent the woods's vapours.

The fact that the main object of design should be shadow instead of light, determines certain architectural features characteristic of the traditional Japanese house. First of all, we have the large eaves obstructing the direct sun rays to penetrate the house. The aim is shadow, but not darkness; thus, the walls, called shoji, are not masonry, but paper elements; are not opaque, but translucent. The house is divided by means of vertical, also paper, elements which are called fusuma. In this way, the vertical planes are successive filters of light which define the privacy of the different spaces in terms of their respective degree of darkness. The rooms are not determined by their geometry but by the depth of their shadows. The house is, therefore, a flood of shades floating in an empty space.

Buddhism was another factor in the development of the Japanese residential architecture. The Buddhist belief in a Universe which is a growing entity without a beginning or an end was also reflected in the spatial structure of the traditional house. The traditional house presents an horizontal growth by means the addition of new rooms without a definite axis nor growing direction. The new rooms are incorporated within a kind of infinite net without another design intention but that of showing a process of organic growth. The construction of the house is never finished in theory.

This continuous growth of the house is just possible thanks to the building system employed, consisting of posts and beams, with no bearing nor party walls. The location of the posts is determined by the rectangular arrangement of the room, the only plan which easily admits additions. In the summer, the paper screens can be removed and the skeleton of the house appears; a series of posts emerging from a horizontal plane suggesting the image of the forest. The horizontal quality and the absence of walls allow a continuous flood between the outside and the inside of the house in such a way that the limit between both remains undefined. This effect is strengthened by the

to find out, because they are not really

Félix Ruiz de la Puerta

intermediate space under the eaves, called engawa. The engawa is a kind of exterior corridor which is located at an intermediate height between the house and the garden. This gallery surrounding the whole house is a dual space. It can be either considered an extension of the house itself or part of the garden, depending on the point of view of the observer. If one looks at the garden from the inside of the house, the engawa seems a prolongation of the house's interior towards Nature. But seen from the garden, it looks like a prolongation of the latter towards the inner space of the house.

While time comes in which they will enjoy the permanent paradise, Japanese people try to live a kind of anticipation of this state in their buildings connected with Nature. Thus, the animist character of the Shinto religion has been even strengthened. Nature is nothing opposed to man; the environment must not be conquered by him; man plays not here the main character before Nature but tries to live in harmony with it. Thus, the role of man is not anymore that of conqueror and controller of the natural world; he is another element within it. Just one of its elements, which means that he has lost his objectivity and self-centeredness.

This form of relation with Nature has important consequences for art and, above all, for architecture. The systems of representation employed in painting and architecture are not based in geometry. Perspective presupposes a separated and independent observer of the world through whom it becomes an organized item. In this way, the concept of space becomes more of an imaginary notion than a real thing. The world begins to be perceived with different features than those selected by perspective and architecture is built without recourse to the kind of space generated by it. We must remember that a space is not only defined by the figures in it, but also by the way this figures are seen.

The Paradise, as Nature itself, is, for the Japanese people, a world without perspective; the house, the image of paradise, should observe this rule. Houses and the rooms are, in the Western as well as the Eastern world, rectangular boxes; but the rectangle is an static form which cannot be found in Nature. Japanese invented a system of representation called okoshiezu which operates with the geometric transformation of the cube. This implies the lost of the volume in which the space appears as a conjunction of planes. Thus, the space of the house is not three-dimensional but multi-dimensional, resulting from the combination of two-dimensional surfaces. It is rather obvious that the Japanese house is a combination of planes. This sensation is strengthened by the sliding



operation of doors and windows. This kind of construction facilitates the frontal instead of the angular view of the space. If an angular view implies a sense of power over the physical world and is the expression of man as the Lord of creation, the frontal view represents the search of equilibrium between man and his environment.

The perception of the space as a combination of two-dimensional planes is not a just a thing of the past, a traditional idea; most of the contemporary Japanese architects have designed their buildings according to this principle. Tadao Ando has explained it in several occasions. One of the most recent ones occurred in the Yale University where he expressed himself thus: "The Japanese spatial system is two-dimensional; the relative distance between the observer and his object is the main reference. With the cumulative results of these references we create a total image. This method transcends the measurable quality of physical space in such a way that space becomes a "vital" and "spiritual" concept. While in the Western world, perception is three-dimensional, sculptural and direct, in Japan, it is two-dimensional, picture like and implicit". In the conceptual dossier included in the documentation of Ando's Okusu House, we can see how the architect suggests the likeness of depth by means of parallel planes.

It is rather frequent in Japan to design the area surrounding the house taking into account the view from the inside. This enveloping space (in most cases, but not necessarily, a garden) is built according to the model of the natural landscape, incorporating one of its most remarkable features: change. Change is one of the basic concepts of Buddhism. This religion affirms that there is nothing permanent, *mujo*, nothing fixed, everything is continuously changing.

*Mujo* is the change suffered by Nature and represented by a type of housing in which spaces have no fixed function. Flexibility of space is one of the most fundamental characteristics of Japanese houses. Most of the rooms in it are designed in such a way as to suit different functions. The bedroom, for example, can sometimes be used as a living room and even become a dining room or study room later in the day. The rooms in a Japanese house are multi-functional, their role is changed along the day or along the year and, in each case, they are used in a rather different way. The space in a Japanese house is something connected with time, there is a constant change of space as there is in time. This is the origin of the *mao* or space-time concept, the seat of continuous change and transformation which symbolizes the relationship between man and Nature.

The different spaces within the house try not to express anything permanent. The same happens with Japanese painting or poetry. Japanese aesthetic is, therefore, based on change. The word they use to express this



concept is *chirari* which originally meant glimpse, flash. Aesthetic is connected with something occurring in a certain moment. In order to enhance the aesthetic value of space, Japanese architects introduce certain objects in it, as folding screens, partitions or walls obstructing the view beyond the room. This is the aesthetic value of change as totally opposed to the aesthetic of permanence so essential to the Western world.

We can find a clue for this kind of aesthetics in the access to the House of Tea. The House is located in the middle of a garden and cannot be seen from the gate. It is hidden in a certain corner among the trees and nothing reveals its presence except a meandering path paved with stone. While the visitor approaches the house, the scene gradually changes. Some things are hidden and some emerge. There is a continuous development of space in time. Our visitor will never have a complete perspective of the garden; he will just enjoy partial and continuously changing views which will serve him to construe an image of the whole.

The Metabolist movement developed during the sixties decade picked up many of these traditional ideas and adapted them to the new circumstances. Kisho Kurokawa, one of the key architects of this Metabolist Movement, designed the "architectural capsule", a house unit of 2.5m X 4.0m X 2.5m which, in spite of its scarce dimensions, maintains the idea of change and spatial flexibility.

The Japanese modernization process,

which began in 1868 with the Meiji Era, did not bring with it the abandonment of the traditional thought; it was a transformation which preserved tradition. So we should not be deceived by the paradoxical aspect of contemporary Japanese architecture, by its use

of new materials and forms. Beyond those strange artifacts occupying the streets and squares of the Japanese cities, which are used as offices, warehouses or housing blocks, we can trace the spirit of traditional Japan. Paper and wood are not anymore the main building materials. They have been replaced by concrete, steel and glass, which are used to erect buildings as well as to arrange gardens. The Paradise is still located in these sculptural elements, because the concept of space has not changed. Neither has the way in which man and Nature are related. The changeable, unsteady, ephemeral is still looked for. This characteristic of the new Japan was not accepted by someone as Yukio Mishima who finally committed suicide. In his novel "Runaway Horses", he comments this situation when he says: "Just imagine I prepare some rice balls to offer His Imperial Majesty... If His Majesty rejects them, I have to withdraw and immediately slash my belly... if he accepts them, I will be forced to slash my belly too, out of gratitude."

If we assume this contradictory character, we will understand how the "Holly City" of Kyoto has been able to accept, without regret, the architectural artifacts designed by Shin Takamatsu; or how Takamatsu's Kunibiki Messe Building presents an interior garden with spheres, cones and cylinders breaking with the geometrical structure of space; or how the strange Aura House, by K. Umehayashi, has a roof which is a translucent strip introducing, within the urban environment, the nostalgic image of the deepest forest.

This might be all that can be said or might not. But I still wonder why I always take off my shoes when I enter a Japanese house, be it in Japan or in any other place around the world. ■

## A pre-fab building venture: the Usonian Houses

Candelaria Alarcón Reyero

The term Usonian, the mix of U.S.A. and Utopia, was invented by Wright to define a prototype of suburban low-budget housing conceived as part of his overall design for Broadacre City. He would subsequently build, from 1936 until his death in 1959, an approximate number of 140 houses according to this concept. The acquirers of this new type of house were members of a new social class of advanced ideals and taste. The main aim of the design was to offer the possible client more for his money and, although not all of the houses were really small properties -the original model contemplated 1 acre (approximately 4000 m<sup>2</sup>) plots with a single family house- and, although not all of them were really low-budget buildings, they all

incorporated prefabricated and standardized components.

Around the same period, European architects were also trying to design new types of housing units in order to solve the lack of housing, a problem aggravated after the Second World War. The Usonian houses, built in the U.S.A., were, in this context, a clearly advanced solution in the search for 0000000000 appropriate, reasonable and expressive housing systems. That is the reason why some researchers (1) have considered them a kind of suburban alternative to Le Corbusier's Citrohan type houses. The contemporary European architecture of the time (developed by the followers of the International Style) was designated by Wright as the "box-



like houses" architecture, that is, producing rigid boxes ...straight walls which were real straitjackets... (2), which did not have any respect for men or their environment. His Usonian houses, as opposed to these European models, were based on the development of large suburban areas, occupied by buildings which would represent the Architecture of Nature: organic, flexible, free.

In fact, this concept of Usonian House could be considered a modernization of the old Prairie Houses designed by Wright between 1901 and 1910. The Usonian residences reproduced some aspects of those Prairie Houses, for example: the use of a module generating the form, the sense of scaling, the careful detailing, the subtle transition between different spaces, their flexibility, the growth of the plan starting from the nucleus of the chimney, the respect for the aspect and characteristics of natural materials and for the surrounding landscape, among others. But we can also observe the many differences between both types of housing, mainly due to the different origin of their occupiers. For example: the general simplification and modernization, the low-budget conception of many components as the car-port and the underfloor heating slab, the built-in furniture, the integrated kitchen and the existence of a nucleus of facilities. But, unlike the Prairie Houses, which seem to have been designed as different results of a same formal scheme, the Usonian Houses are all rather different, due to the enormous variety of materials, geometric patterns and sites selected (as varied as promontories dominating vast neighborhoods, riverside woods, terraced plots by natural lakes...), in spite of the fact that all of them are built by means of an standardized and pre-fabricated system of components.

The main features of this Usonian System were described in the, so called, Usonian Manifest, firstly published in 1938 by the Architectural Forum Magazine (3) and then reproduced, in 1954, in the book "The Natural House".

Wright thought that this type of low-budget housing built by means of factory-based systems answered the needs of the American population, so much affected by the conflict of the Second World War. In fact, during the war, the U.S.A. government had undertaken a National Building Programme which permitted the erection of factories, houses and whole cities around the whole country. The most striking characteristic of these buildings was the innovative use of quick assembly building systems. At the same time, the extensive collaboration between the army and the scientists had, as a result, the development of new materials, like the Styrofoam, the Saram, the plywood panels, the moulded components, etc... and the capacities of other, already existing, materials, as fiberglass and aluminum, were thoroughly analyzed. This progressive research would be industrially applied, after the war, within the

building sector. These pre-fab systems became the main hope of manufacturers as they seemed to be the most appropriate solution for the enormous demand of housing developed in those days around the whole country. It was a widespread idea that pre-fabrication would make depression sink and solve the housing problems of America (5).

It is in relation with this context that we must consider the different solutions and building systems based on prefabrication processes developed by Wright. Because he considered that the moderate-budget house was not only the most urgent demand for the American architecture but even one of the most difficult problems architects had ever met with (4). From the first period of his professional career, he faced this problem trying to produce new solutions: in 1915, he designed the, so called, American Ready-Cut System, based in simple soft wood components assembled and erected on site. Most of the houses built with this system were located in Milwaukee, Wisconsin. Later on, around 1920, he investigated the use of concrete masonry units in housing, but this method came out to be too expensive. Most of the houses were erected in California. In 1937, he developed a complete pre-fab system for the, so called, All Steel houses and, from 1950 on, he continued working in a new scheme which he called Usonian Automatic System. By Automatic, he meant "easy to assemble" and he was even thinking on self-construction.

He considered that, with his Usonian System (which he began to conceive in 1939), he would be able to erect houses using methods and production processes which were completely different from those employed by his contemporaries and better adapted to the real circumstances, excelling, thus, those who were offering old housing types just built with new methods whose results he contemplated as rather inconsistent. The Usonian System allowed him to undertake a profound investigation of an structural concept and develop a building method in which materials were used according to their own nature.

The key factor in most of these pre-fab systems consists of the achievement of factory-produced wall sections. This is also the main feature of the Usonian System along with other innovative aspects, as the under-floor heating system integrated in the foundation slab (most of the times colored in reddish hues and finished with polished wax); the use of a pre-fabricated facilities nucleus (the kitchen-heater-bathroom block) located between the living room and the bedrooms which separates the damp construction areas from the assembled ones; the characteristic flat roofs made of light-weight slabs and regulated according to the same module used in plans and elevations, etc...

These are the main characteristics of the Usonian houses. But as the real houses were erected according to the method devised, the system was improved and simplified. This was

the origin of a series of serviceable building details compiled in a leaflet entitled "Standard Usonian Details", which included particular data related to the different projects undertaken and to the very clients themselves. On the elevation plans of the Theodore Baird House, which we will subsequently describe, we can see annotations referring to this leaflet's details.

The houses we will now analyze are clear examples of the formal variety obtained by Wright in his use of the Usonian System.

- Lloyd Lewis House (1939 - Libertyville, Illinois)
- Theodore Baird House (1940 - Ahmerst, Massachusetts)
- Isadore J. Zimmerman House (1950 - Manchester, New Hampshire)
- Toufic H. Kalil House (1955 - Manchester, New Hampshire).

In the first one, we can contemplate one of the best interiors designed by Wright in his Usonian type projects. The main quality of the third one is its similarity with the Prairie Houses. And the last one is an example of the innovative use of concrete masonry units within the Usonian Automatic System.

#### Lloyd Lewis House and Farm Unit (1939)

This house was built in Libertyville, a residential high-class suburb located in Illinois. It was erected in a rather separated plot, in the middle of an intricate forest, just by the Desplaines River.

The client was Lloyd Lewis, a friend of Wright who wanted to have a house which would create the same warm atmosphere as the architect's own residence in Taliesin. This aim was, in fact, thoroughly accomplished, as the house's interior is considered among the most beautiful of all the finally built Usonian houses.

The scheme is developed according to an L-shaped plan, which is placed in a direction perpendicular to that of the river course in order to take advantage of sunlight conditions. The front and rear facades look North and South, respectively. As in the rest of the Usonian projects, the orientation of the house is something carefully taken into account in order to place as many South looking rooms (bedrooms, living room) as possible. The result is a permeable South facade, open towards the landscape.

In one of the extremes of the North facade, that nearest to the riverside, the roof is prolonged over the entrance, creating a kind of porch which is conceived as a shelter for cars (the, so called, car-port). This element will become a visible characteristic of all these houses.

The interior design is based on the continuous contrast of opposed concepts which tend to individualize the different spaces: broad-narrow, high-low, light-darkness, open-closed... all these produce visual compression and expansion effects in the transition between the differentiated areas.

The main room is the living room. It is located just in the junction between the

bedrooms area and the kitchen and dining room block (this is, in fact, the basic arrangement of most of the Usonian houses). It is a rather large space around a magnificent masonry chimney which (as in other Usonian houses) is the nucleus of the masonry built services area, which is, along with the foundation slab, the only damp construction element of the whole house.

A series of "French Doors" (full-height glass panels, laterally secured, present in most Usonian houses) make visible and enjoyable the surrounding landscape and its sunlight.

Towards the rear of the house, we have the kitchen, connected with the dining room. It is a rather small space which receives sunlight from a window placed on the West facade, looking towards the Desplaines river.

As in most Usonian houses, the interior design and furniture is an integral part of the project. It is realized according to the same principles as the rest of the building: using the same language, the same materials, the same module which has been used in the generation of the plans and elevations. The general use of woodwork in ceilings, furniture and floorings, and the colors selected, mainly yellows and oranges, produces a warm and cozy sensation. The final result is an architecture concerned with homely comfort and serviceability. This shows how the main interest of the architect was building for man and his scale.

#### Theodore Baird House (1949)

It was erected in Ahmerst, in a place called Berkshires, a place with a magnificent landscape to the West of Massachusetts. The site is located in a suburban, middle-income area and the house diverges from the general design of its neighbours, traditional Shingle Style houses with pitched roofs. It dominates a promontory over a large lawn extension. Towards the rear, a line of trees and a river draw the plot's boundary line.

The plan is T-shaped. The main axis of this T contains the bedrooms and living room while the perpendicular section creates an open court and includes a secondary space secluded from the rest of the house. The entrance is located at the junction between both sections. One of the main features of the house is the different principles applied in the facades' design; while the South one, in the main section, is rather permeable in order to facilitate sunlight, the North one is blind and rather sober.

On the South facade we can see again the series of full-height wood framed glass doors which create a rather large glazed surface. Thanks to the heating system employed by Wright in these houses (gravity heat, he called it), consisting of a foundation slab under which the heating pipes are placed within a gravel bed, the Usonian houses can enjoy the mentioned glazed surfaces and interconnected interior spaces without great losses in comfort and energy, even during the most severe winters.



The materials used in the facades are wood and brick masonry, mainly the first one. The wood prefabricated panels are made of a plywood core wrapped in two sheets of insulation and finished with weatherboard. The unit is screwed together and finished to be used on site. It is a unique wall system with the same finish on the outside and the inside of the construction, thus becoming the most visible and recognizable characteristic of the Usonian System. These prefabricated wall sections are finally screwed on site to a wood frame of vertical posts.

The roof is designed according to a rectangular module of 2 x 4 feet (60 x 120 cm.) which is also used in the composition of the plans and elevations. It consists of a flat roof made with light-weight pieces in which certain perforations create a curious grid shedding shadows over the vertical planes.

It is, in fact, a multiple roof system, made up by various horizontal planes placed at different heights. This solution allows sunlight to penetrate the house by means of the intermediate space between these horizontal planes. One of them, prolonged over the entrance, becomes the car shelter or car-port which, unlike the traditional detached garages, is conceived as part of the house.

The whole composition is based on the use of horizontal planes (this effect is reinforced by the flat roof and other smaller details as the horizontal joints in the wood panelled walls and masonry ones). The result is a horizontally developed plan in which the building seems to be continuously linked to the ground (the cornice height over the ground is related to the human scale). The fusion between both makes their respective limits disappear.

#### Isadore J. Zimmerman House (1950)

This house presents a series of particularities which make of it a somewhat different example in relation to the rest of the Usonian Houses. The reduction of the building budget was a main aim in those, but here, expensive materials and finishes were specified as cypress wood or red-glazed brick (as clearly detailed in the Usonian leaflet), among others. Although, the plan is undoubtedly Usonian, its significant pitched roof and its brick masonry walls make us recall the old Prairie Houses.

It is located in the same neighbourhood as the Toufic H. Kalil House (which we will subsequently describe), in a suburban area in Ahmerst. The site is profusely covered with vegetation and the house remains invisible from the outside. It is placed in the plot's diagonal and composes a linear and compact block rather different to the characteristic L-shaped and T-shaped Usonian schemes.

The rear facade, looking South, is the most permeable, being almost totally glazed. It looks over the garden which is, as in the rest of Wright's houses, as carefully designed as the house itself and its interior decoration and furniture.

The ceramic flat tile pitched roof presents



a wide eaves with a wood soffit in which the wood planks draw a geometric pattern with diagonal joints. Rather simple lights are drilled in this soffit.

In one of the extremes of this linear block which is the house, the roof is prolonged by means of an spectacular cantilever which seems to come into the earth, due to the scarce height of the cornice. This element reinforces the horizontal quality of the design and its close relation with the ground.

This horizontal quality is also present in the North facade (more blind and sober) on which we can see the entrance to the house. The effect is achieved by means of long layers of white concrete masonry units (perforated according to a determined pattern) which are placed over a red brick masonry socle. The wonderful chromatic contrast between the white and pale shade of the concrete units and the red hues which dominate the composition is clearly visible on this facade.

Nowadays, the house is considered a historical site, it belongs to the Curier Art Gallery which just permits restricted visits to the interior at certain hours.

#### Toufic H. Kalil House (1955)

As we have already said, this is the only one among the four houses we will describe which was built according to the "Usonian Automatic Houses" model. Its walls are entirely made of perforated concrete masonry units whose cavities are now and then covered with glass pieces.

It is located at a place rather near the Isadore J. Zimmerman House, over a bare and treeless hill, that makes of it a quite visible object in the distance. This is precisely one of its particularities among the Usonian Houses which tend to be concealed by a luxuriant vegetation.

Its plan is an L-shaped scheme. In one of the sections, we can find the most intimate rooms (bedrooms), while the more public areas and the entrance are located in the other.

As in the rest of the Usonian Houses, the orientation of the bedrooms and living room is conceived in order to take advantage of sunlight and landscape views. We can see the clear contrast between the front facade (North), more blind and somber, and the rear, permeable and warm, South facade.

The flat roof, which is also made of prefabricated pieces, is prolonged over a kind of porch in order to create a shelter for the car, just at the entrance point which is at the vertex of the L.

There are different prefabricated wall units depending on their relative position in the house. Those used at the eaves, the corners, the facades and the exterior barriers are quite different between them. They consist of oblong pieces about seven inches high with perforations on their central section. The observer perceives an apparently light-weight architecture, cold and serene which could even seem rather intangible if it were not for the visible width of the concrete pieces.

Its surrounding constructions are rather conservative. So this house, presents a clear contrast with its neighbors which, nevertheless, belong to the same period although they were built according to the traditional balloon frame system. The modernity of the Usonian system and the particular solution achieved is, thus, clearly visible.

It is a perfectly balanced composition in which the contrast with its natural medium is marvelously achieved; a perfect juxtaposition in which the house is so much blended with the landscape that it seems impossible to imagine it in other location.

#### Conclusions

With the development of the Usonian System, Wright tried to offer his possible clients, more

for less money. But it was not only a question of budget. This economy was conceived by Wright as a concept which included the client's involvement in an easy construction process, the perfect link established between the house and the natural landscape in which it was erected and the attention paid to the dignity and quality of life offered by the design to men and to their surrounding environment.

The current dwellers of these houses, some of them descendants from Wright's original clients, have learnt to grow with their houses and they show themselves really proud of them, of their innovative design, of their perfect behavior in relation to weather conditions (rather severe, in some cases), of the comfortable and qualified life they offer and of the good results of the building system employed.

The, so called, Frank Lloyd Wright Building Conservancy Foundation, organizes many conferences on Wright's works which are not only attended by architects, students or other people related to the world of design, but also by many of the owners of his houses who are not at all reluctant to offer them as assembly halls for the celebration of such acts.

We must, nevertheless, mention that, during the post-war period, the public showed a scarce interest in the innovative prefabricated building systems based on standardization (including Wright's ones), in spite of their clear advantages and of their economical and rapid erection. We can mention some of the reasons for this failure as the widespread idea which associated this type of construction to the provisional wartime structures, or the rigorous building code of the time (7), the difficulties find in their production, distribution and funding, etc... That is, certain conditions determined the lack of an initial demand, which would have been essential for the development of a mass production in this sector. ■

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