

UNITE D'HABITATION Marseille

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Le Corbusier

L'essai qui suit a été rédigé pour le cours "théorie de l'architecture du 20^e siècle" offert à l'université McGill. L'Unité d'habitation de Marseille y est analysé selon une méthode établie par le professeur Radoslav Zuk.

The following essay, written for a twentieth century architectural theory course at McGill, is an attempt to analyze Le Corbusier's Unité d'habitation at Marseille. In our analysis, I will first look at the image which the Unité projects. That is, the idea which underlies the building, the symbols it contains and the experience of the building as a whole. I will then look at the space organization of the Unité and, finally, discuss its nine systems. The nine systems are: movement, space type, growth and change, space and volume, geometry, enclosure, services, structure and materials. I am entirely indebted to Professor Radoslav Zuk for the method of analysis which I have employed.

"Le Corbusier viewed housing and urban planning as a single problem—the problem of human shelter..."¹ The Unité, which is a response to this housing problem, "contained within it and in its extensions all the services necessary to complete family life; parking spaces, shops, a day nursery, a laundry, space for recreation and physical exercise."² A town planning programme is implicit in the wholistic approach Le Corbusier takes in the Unité. Hence, the city is the source from which Le Corbusier drew the idea for this building.

The underlying message in Le Corbusier's *Towards a New Architecture* is that "each previous generation whose architecture is admired had developed an architecture appropriate to the times, whereas the buildings in which most people were living in the 1920's were totally unsuited to their age."³ Le Corbusier was preoccupied with the search for an architecture that symbolized its epoch. He anticipated, reacted to and influenced the rapidly changing social, eco-

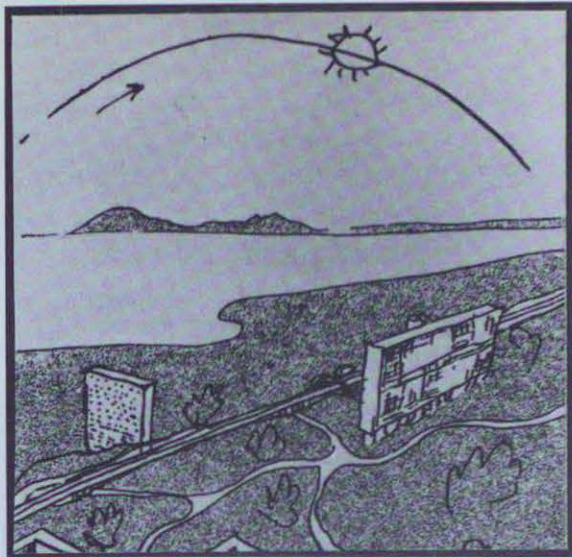
nomic, and political forces of his century. His genius lies primarily in this and in the consequent broadness of his vision of architecture. *Towards a New Architecture* is full of excited and optimistic statements such as, "A great epoch has begun. There exists a new spirit."⁴ Or, "Industry, overwhelming us like a flood which rolls on towards its destined ends, has furnished us with new tools adapted to this new epoch, animated by the new spirit."⁵ He appeals to technology to create a new and healthier way of life by creating an architecture that is born out of the machine age. "The Engineer's Aesthetic, and Architecture," he writes, "are two things that march together and follow one from the other: the one being now at its full height, the other in an unhappy state of retrogression."⁶ Le Corbusier evolved an association between ships, i.e. the fruits of technology that belong to the "Engineer's Aesthetic," and an architectural system. "For him that association was a reflection of a new morality, new creative potentials, and above all a new way of life that was machine-oriented and machine based."⁷ A specific aspect of technology which excited and absorbed Le Corbusier was mass-production.

He writes:

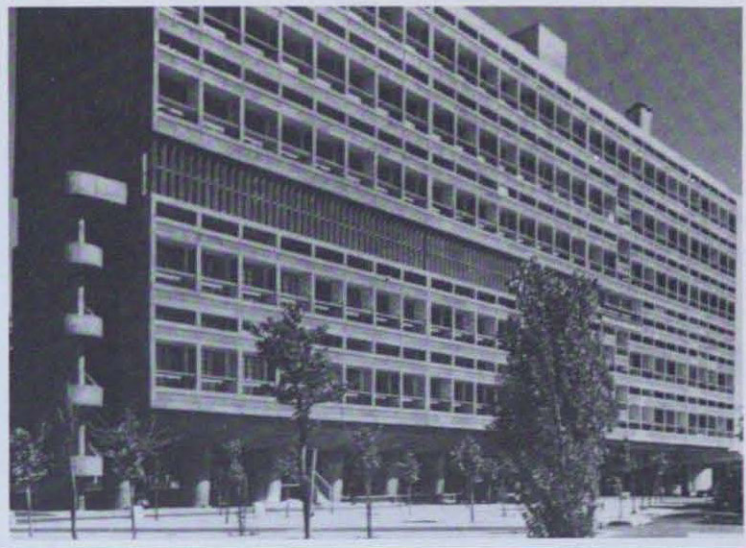
Architecture has for its first duty, in this period of renewal, that of bringing about a revision of values, a revision of the constituent elements of the house.⁸

He continues:

If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the "House-Machine," the mass-produced house, healthy, (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful.⁹



Sketch by Le Corbusier



Unité d'habitation

Le Corbusier wanted to free the house from all superfluous things in order to make mass-production possible. "To this end he designed a prototype house..., which he christened 'Citrohan'."¹⁰ The Citrohan House later evolved into the Unité d'habitation. Hence, the Unité stands, in a symbolic way, as a proud monument to technology. It expresses, in its Mediterranean setting, resolute and profound optimism in the new creative potentials of this century.

Vincent Scully, referring to the Unité, writes:

It can be seen primarily in neither structural, spatial, nor abstractly massive terms—neither as a mountain, nor a cage, nor a box—but only as an articulated, unified sculptural body.¹¹

In other words, like a Greek temple, the Unité is experienced only as a sculpture, i.e. as a thing in itself, and it does not spark an analogue in the observer's mind.

The highly organized and controlled quality of the Unité exerts a strong influence on its environment. Le Corbusier's conception of nature is central to understanding his architecture, which resembles, in its relation to nature, more to Hellenic than to Medieval architecture. Scully refers to Le Corbusier when he writes:

"The axis of the Acropolis," he wrote in his *Vers une Architecture*, of 1923, "runs...from the sea to the mountain." He went on: "The Greeks on the Acropolis set up temples which are animated by a single thought, drawing around them the desolate landscape and gathering it into the composition."¹²

He then refers to the Unité when he writes:

It is in relation to the mountains and the sea that the building as a whole should be seen. This is the larger, Hellenic environment that it creates.¹³

The organization of the Unité should be seen, as

Scully suggests, in broad terms to include the Mediterranean to its West and the mountains to its East. By looking at the Unité in such broad terms, we learn something of Le Corbusier's intention. His building stands in nature, confronts it and tries to order its intrinsic chaos.

Le Corbusier writes "Time, duration, sequence, and continuity are constituent elements of architecture..."¹⁴ He also writes, referring to his Villa Savoie, that "...This house is a real architectural walk that offers a series of constantly varied, unexpected, sometimes astonishing views."¹⁵ These ideas are clearly drawn from cubism. When one looks at the movement system of the Unité, one is struck by its straightforwardness in plan. To grasp the nature of this system, one must consider the following idea, which will also emerge in our discussion of the services system. The success of Le Corbusier's buildings must be ascribed, in large measure, to his brilliant blend of poetry and pragmatism. In other words, the circulation is straightforward, because this is most appropriate to the building type, but the opportunity is not missed to imbue it with poetry and raise it to an important position in the building. This occurs in the link between the seventeenth floor and the roof terrace and in the sculptural fire stair on the North side. As Scully points out, Le Corbusier's buildings are a stage for action; movement and action are highly valued by Le Corbusier and this finds strong expression in the Unité by the mentioned fire stair and by the running track which graces the top of the building. Le Corbusier writes:

Architecture can be seen only by a walking man...so much so that when it comes to the test, buildings can be classified as alive or dead according to whether the rule of movement has been applied or not.¹⁶

Hence, although the Unité does not offer an architectural walk to the same degree as the Villa

Savoie, the Capitol of Chandigarh or the Carpenter Centre, it is nonetheless a living building.

The Unité has twenty three different types in its 337 apartment units. But as Giedion points out, "Le Corbusier had two great gifts: he could reduce a complicated problem to astonishingly simple basic elements, and he could summarize these results in formulas of lapidary clearness."¹⁷ The twenty three different apartment types in the Unité can be reduced to five space types. These five space types are in turn composed of only two elemental space types. Let us call these two generic types A and B. Type A is one by two grid modules in area and is one floor in height. The grid is based on square modules of approximately four by four metres. Type B is one by two and a half grid modules in area and is again one floor in height. The circulation is one module in width, one floor in height and stretches almost the entire length of the building.

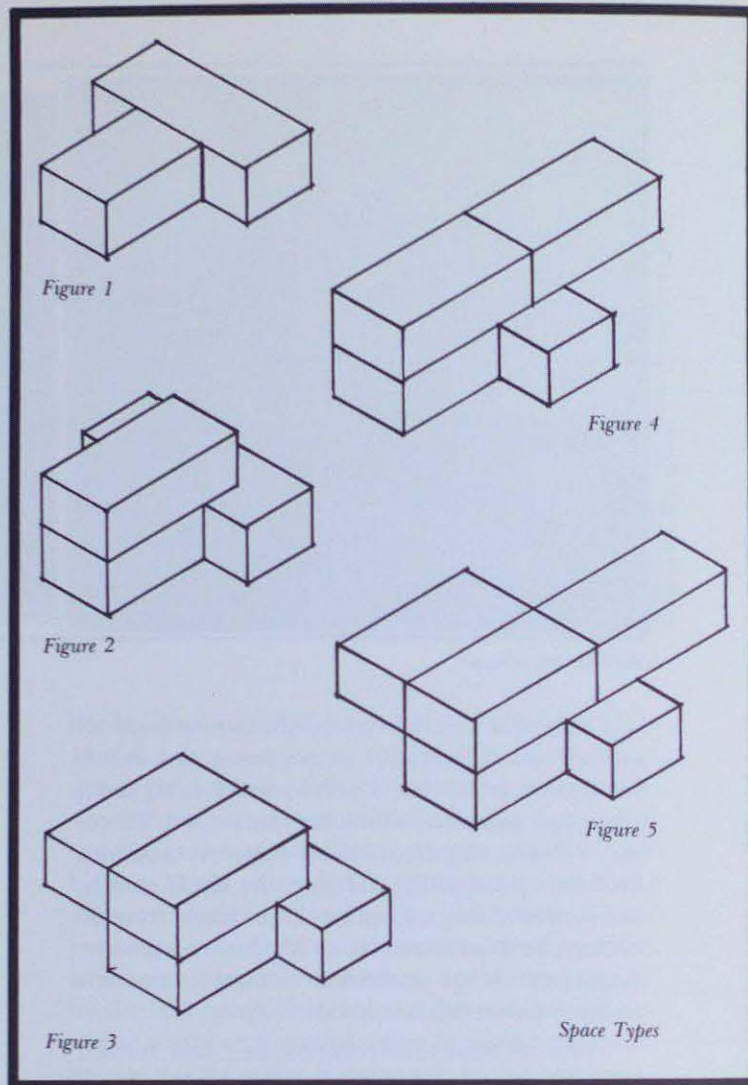
The simplest space type is itself elemental and consists only of generic type A. You will note that type A is always on the same level as the circulation and the two together form a T (see figure 1). The second space type, slightly more complicated, is composed of the vertical stacking of a type A and B (see figure 2). Type B is never on the same level as the circulation. The third space type is composed by the addition of another B to the side of the previous space type (see figure 3). Wherever a vertical stacking occurs, as in types two and three, a double height space is created. The fourth is again an addition of a type B to space type two, but now the two B's are connected at their ends (see figure 4). The fifth space type is composed by an addition of a type B to the latter, in the manner shown (see figure 5).

The clarity and the simplicity of this system is stunning and the efficient packing of the space types reduces interior circulation to every third floor. The shopping floors, seven and eight, are the only exception to this.

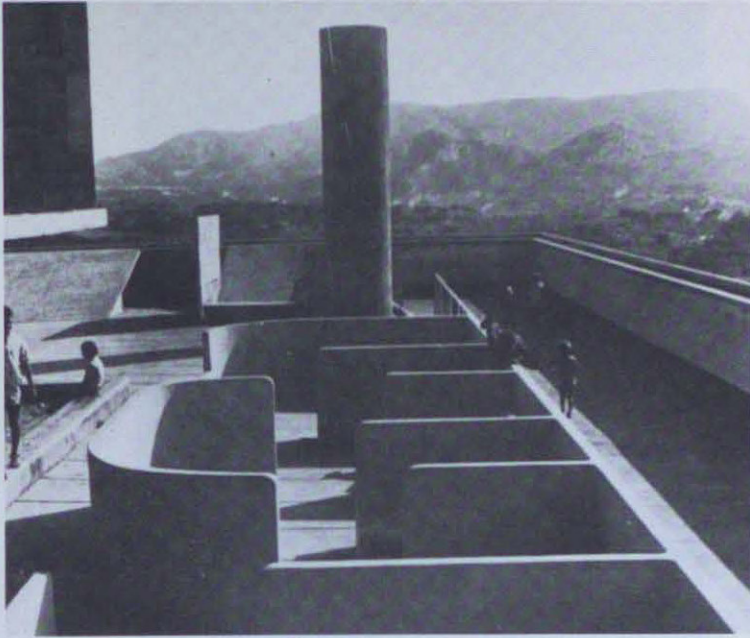
The necessity for the inherent capacity of growth and change, within a building, is a difficult idea to grasp. Its premise, however, is fundamental to the natural world. Heraclitus claimed that everything is in a state of flux and that never can we step in the same river twice; he also, claimed that even the unchanging hills change, but more slowly than other things. Serge Chermayeff brings this idea closer to us, i.e. to architecture, when he puts it in this way:

We are beginning to abandon the notion of creating "complete" things. We are recognizing that we are participants in a process of evolution: "change and growth."¹⁸

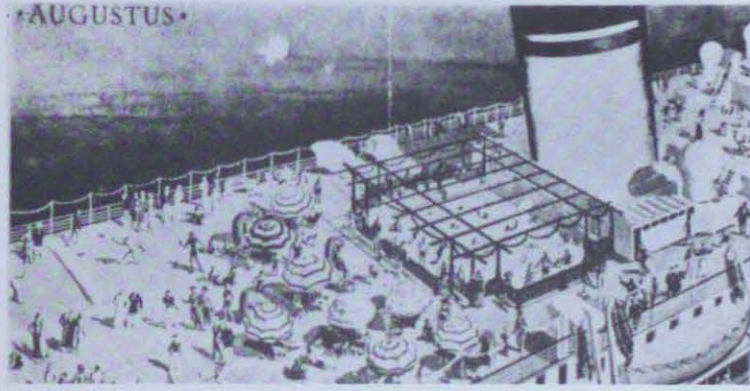
The needs of an occupant of a house do not undergo substantial qualitative changes over time. In other words, we will always need toilets, unless an unlikely evolutionary mutation makes this unnecessary one day, and the standard of the toilets at the Unité will probably remain ade-



Detail of Unité d'habitation



Part of roof garden above Marseille apartments



View at the deck of the Italian liner Augustus



Le Corbusier at Marseille

quate for a long time. The concept of growth and change does not have as much significance to the Unité as it would to a factory where changing methods of production, changing products, expanding markets and countless other forces may require an internal reorganization or expansion of the facility. Growth and change would be important to an institutional building as well. It is true, however, that the spatial requirements of a family change. When a home becomes too small, two things may happen: i) move to a larger home, or ii) acquire the adjacent home and link the two. The former normally transpires. However, it should be said that, due to the inherent quality of the structure and services of the Unité, change in the form of the latter can conceivably take place without any difficulty.

Whereas the Unité can easily accommodate internal change, it is a different matter when it comes to growth. Any kind of exterior addition to the Unité will enormously compromise the geometry and mass of the building, thus, making it absolutely undesirable.

Let us now discuss the spaces of the living units and then the volume or sculptural form of the Unité as a whole. Giedion explains that:

All of Le Corbusier's houses attack the same problem. He was always endeavoring to open up the house, to create new possibilities for connections between its interior and exterior and within the interior itself. We want rooms which can be thrown open or enclosed at will, rooms whose outer partitions fall away when we wish.¹⁹

This description applies also to Le Corbusier's apartment units in the Unité where spaces blend into one another. The parents' bedroom borrows from the living room, the dining room borrows from the kitchen and the play room flows into the children's bedrooms. This occurs both horizontally and vertically. The latter often occurs between the living room and the dining room. All the units, except for the bachelors and hotel rooms, have a double height living room. This high ceiling within the two storey apartments creates a tension and performs what Le Corbusier sets out to do as a cubist painter, produce spatial ambiguity. The result is what Giedion calls a construction in space-time. The double height living room also provides other benefits. It gives the living room the dignity of a high space and permits light to penetrate deeper into the dwelling unit.

Space types four and five, described earlier, constitute over two thirds of the apartment units in the Unité. An important feature of these two types is that they extend the entire width of the building. Their sides are closed, as in the other unit types, but are open at the front and rear which in combination with the open plan, allows cross-ventilation and creates a strong link with the exterior.

The following quote, also from Giedion, relates to the volume of the Unité.

At one period in his development Frank Lloyd Wright used to employ the smallest crevices in the rocks to help bind his house still more closely to the earth. In the Savoie house Le Corbusier did exactly the opposite. The city-dweller for whom it was designed wanted to look out over the countryside rather than to be set down amongst trees and meadows. He wanted to enjoy the view, the breezes, and the sun—to experience that unhurried natural freedom which his work deprived him of. This is another instance of opposed responses to nature: a contemporary reflection of the difference between the Greek temple, sharply outlined against its background, and the medieval town, attached like a plant to the site on which it stands.²⁰

These two diametrically opposed responses to nature must stem from equally dissimilar conceptions of nature. Le Corbusier's Unité stands over and above the natural landscape. Nature, one is tempted to conclude, is perhaps seen by Le Corbusier as an alien and hostile force, a constant source of anxiety to man and a thing that must be overcome. Such an attitude towards nature might be the source for the highly ordered space organization of this building. Similarly, it might be the source for the volume, created by Le Corbusier, which stands in such sharp contrast to its background. Both might be attempts at overcoming nature.

Geometry is given a great deal of importance by Le Corbusier. He writes:

I built my first house when I was seventeen; it was covered with decorations. I was twenty-four when I built my second house; it was white and bare; I had traveled in the meantime. The plans of this second house were lying on my drafting board. The year was 1911. I was suddenly struck by the arbitrary placing of the openings on the façade. I blacked them in with a piece of charcoal; the black spots now spoke some kind of language. Again I was struck by the absence of a rule or law. Appalled, I realized that I was working in utter chaos. And I then discovered, for my own purposes the need for a regulating device. This obsession would henceforth occupy a corner of my mind.²¹

The idea of harmony and regulating diagrams plays an important role in Le Corbusier's theory of architectural design. He writes:

A regulating diagram is a way of ensuring ourselves against what is arbitrary: it is a testing device to check a work that has been conceived with passion.²²

He points to the engineer while praising him for achieving harmony by obeying the law of economy and by letting himself be governed by mathematics. Unlike the engineer, Le Corbusier used regulating diagrams, the Golden Section and his Modulor to attain harmonious proportions. He explains that such methods were used in great periods of architecture up to and including the Renaissance and regrets strongly their



Detail of Unité d'habitation

Unité d'habitation de Marseille

subsequent neglect and disappearance. Le Corbusier developed the Modulor through his study of the Golden Section. He believed that the measures of the Modulor, which related directly to the human body, would make structures better adapted to human requirements, and thus create harmony. Unfortunately, Le Corbusier's methods of attaining harmony are widely misunderstood. "Many people believe that he was talking about ready-made formulas when he was talking about tools that like any tools, are effective when used effectively."²³ He is absolutely clear about the limitations of the Modulor or of the regulating diagrams when he writes:

The Modulor is a working tool, a precision tool. You could think of it as a keyboard, a piano that has been tuned. The piano is in tune; how well you play on it depends on you, and you alone. The Modulor does not give talent, or still less, genius. It does not sharpen dull wits. It gives its user the satisfaction of working with well-founded measurements. But out of the unlimited supply of Modulor combinations you are the one who has to make the choice.²⁴

Similarly, he warns that:

The regulating process, based on a geometric equilibrium, thus merely orders, clarifies, and

purifies a design that has already been drawn up. A regulating diagram does not supply poetic or lyrical ideas, it does not inspire themes, and it does not create. It is a source of equilibrium. It is a tool for solving plastic problems.²⁵

Le Corbusier continues to say "I am, generally speaking opposed to modules when they get in the way of the imagination, and in pursuing absolutes, end up by paralyzing invention."²⁶ In *The Modulor* he writes: "Your eyes are your judges, the only ones you should know."²⁷ The Unité was, for Le Corbusier, the first experiment in applying the Modulor. All its proportions are based on the Modulor scale and the Golden Section. Geometry permeates every aspect of the building, from its overall form down to its cabinetwork. The grids, which generate the building both in plan and in section, are also based on the Modulor. The surprising thing about all this is that a sensitive observer of the Unité can feel the harmonious and mysterious presence of Le Corbusier's careful geometry.

"Around 1910 Picasso and Braque, as the consequence of a new conception of space, exhibited the interiors and exteriors of objects simultaneously. In architecture Le Corbusier developed, on the same principle, the interpenetration of inner and outer space."²⁸ By 1918, Le Corbusier and Ozenfant, who was an influence on Le Corbusier's work, had published their tract *Après le Cubisme* in which they argued against the decorative aspects of cubism and put forward a new art, purism. "Purism had taught Le Corbusier the merits of clarity of outline and geometric order combined with an ambiguity of spatial arrangement, of transparency in the service of dematerialization and of a restricted palette of broken pastel hues."²⁹ We find these elements in Le Corbusier's architecture and I will now try to relate them to the enclosure of the Unité.

The Unité, as mentioned above, resembles a Greek temple in the way it stands with its profile sharply outlined against the background. The pilotis, by lifting the building into the air, make it more plainly visible and heighten one's experience of the building's outline against its surround. Hence, the pilotis here serve as a device to achieve a compositional syntax taken over from painting.

Three of the four façades on the Unité are dematerialized. They are reduced to a transparent layer of *brise soleil* and balcony railings over an inner skin of glass. As a result, an ambiguity is created between the interior and exterior. The apartments spill into the exterior space since there is almost nothing to contain them.

All the façades retain a strong geometric order. This order is expressed on the three dematerialized façades by the *brise-soleil* and balcony railings. On its North façade, the only one that is left entirely intact, geometry is expressed

by the construction joints between the precast concrete panels.

The strong primary colours of the Unité are different from the hues characteristic of his pre-war schemes. Colour enlivens the façades and corridors of the Unité. Its polychrome façade, however, was the result of an accidental event. A mistake was made in some of the window divisions and in the modules used to cast panels. Le Corbusier writes: "I was so distressed by this off-hand treatment of measurements in the midst of the Modulor harmonies that, in a fit of exasperation, I hit on the idea of a polychrome façade. But the polychromy would be so dazzling that it would wrench the mind away from the dissonances by an irresistible torrent of major colour sensations...Had it not been for those mistakes, the Marseille building would perhaps not have had a polychrome exterior."³⁰

Le Corbusier writes: "the elements of architecture are light and shade, walls and space."³¹ Unlike the smooth white surfaces of his buildings of a decade earlier, the Unité plays on light and shade by its strong surface articulations and rough concrete treatment. This rough concrete treatment of the Unité provided inspiration, in the 1960's, to the school of thought called New Brutalism.

The following quote I think describes perfectly, though not entirely, the genius of Le Corbusier and at the same time it discloses one of the reasons the Unité enjoys such success. Referring to Le Corbusier, the author writes: "The particularity of his contribution is due to a characteristic blend of poetry and pragmatism that all his projects reveal."³² The Unité is indeed a very sober building while being exciting and lyrical as well. When one looks at its services system, the point the author is making is brought home in full force.

The distribution of services is very pragmatic and intelligently solved by containing it in the transversal masonry partitions between each apartment unit. Hence, a multitude of vertical risers reduces horizontal distribution enormously and makes clever use of the construction. The services play no aesthetic role within the building. However, the genius of Le Corbusier does not miss the opportunity to blend poetry in the required air exhaust chimney which rises above the roof terrace. In doing so, "...a purely utilitarian development is transmuted into an expressive means."³³ Thus, by transcending a purely utilitarian need, architecture is created.

Le Corbusier's Unité, as Scully explains below, is not just a container for human action but is itself in action.

Le Corbusier, after a lifetime of consistent effort, finally discovered a means for embodying the human act in architectural form, "...His method became one which made a building not only a container for human beings and their functions—as most buildings

are—but also—as most buildings are not—a sculptural unity that itself seems to act, like figural sculpture, and so acting to embody the peculiar human meaning of the function it contains. In accomplishing this, Le Corbusier has created the monumental architecture of his time..."³⁴

It is my contention that the building's structure holds a very important position in this respect. Naturally, other systems participate as well in producing a vibrant building. It is in the nature of good architecture and a sign of the presence of a coherent intellectual order, which permeates every aspect of the building, when in any discussion the various systems flow into each other and resist clear boundaries.

The most significant element of the structure, a poured concrete frame left rough, is the pilotis. Le Corbusier first saw pilotis during his travels along the Bosphorous. In the case of the Unité, thirty six pilotis raise the prismatic form into the air and give it monumental vitality. Scully writes in his *Modern Architecture*:

Le Corbusier's experiments of the thirties apparently attempted three things: to create a building more totally active, to unify that action into monumental form and to make the whole more structurally massive and solid.³⁵

Le Corbusier was employed part-time in the atelier of Gustave and Auguste Perret. He was exposed, during this period, to the most advanced building techniques of the time, particularly to reinforced concrete. Le Corbusier writes in *Towards a New Architecture* that "Passion can create drama out of inert stone."³⁶ To create drama,

In an age of very advanced technology and building materials he favoured reinforced concrete because it appeared to him the most plastic of all available materials, endowed with texture and pure surfaces.³⁷

The open stairs on the North side and the air exhaust chimney on the roof terrace are good examples of dramatic sculptural forms produced by the union of passion and concrete.

Giedion writes that "Le Corbusier took ferroconcrete as the instrument for the expression in architecture of his ideas."³⁸ This is indeed very true. However, something else also happens. The new materials, such as reinforced concrete, and their properties were in themselves generators of ideas for Le Corbusier. He writes:

Steel and reinforced concrete...led to the open plan; the open plan led to the nonbearing façade; the nonbearing façade led to the glass skin. It was a natural, inevitable evolution. Together with stilts, which entirely free the ground level, this evolution has created a revolution in architecture and urban design.³⁹

He also writes:

New techniques have also produced a useful instrument for those who create plastic forms:

stilts. What a marvellous way to lift the center of proportions, the center of all measurements into the air, where its four sides are plainly visible! Thanks to reinforced concrete or steel, this raised prism is more legible than ever.⁴⁰

Concrete assumed the feature of natural rock in the hands of Le Corbusier. He considered it as "reconstructed stone worthy of being exposed in its natural state."⁴¹ A few years later, New Brutalism arose in England which took this approach as its starting point.

This concludes our discussion of Le Corbusier's Unité d'habitation. Our analysis has taken us through every aspect of this building. Due to limitations on length, however, there remains a great deal that can still be said. It is clear that, despite certain faults, the Unité is a very successful building. It is also a very significant building because it embodies many ideas and attitudes of the modern period.

NOTES:

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2. Leonardo Benevolo, *History of Modern Architecture* (Cambridge: MIT Press, 1982), p.729.
3. Michael Raeburn, *Architecture of the Western World* (New York: Rizzoli, 1980), p.257.
4. Le Corbusier, *Towards a New Architecture* (London: The Architectural Press, 1970), p.9.
5. *Ibid.*, p.12.
6. *Ibid.*, p.7.
7. Wojciech Lesnikowski, *Rationalism and Romanticism in Architecture* (New York: McGraw-Hill Book Company, 1982), p.264.
8. Le Corbusier, *Towards a New Architecture*, p.12.
9. *Ibid.*, p.13.
10. Raeburn, p.259.
11. Vincent Scully Jr., *Modern Architecture* (New York: George Braziller, 1982), p.44.
12. *Ibid.*, p.41.
13. *Ibid.*, p.45.
14. Guiton, p.43.
15. *Ibid.*, p.38.
16. *Ibid.*, p.38.
17. Sigfried Giedion, *Space, Time and Architecture* (Cambridge: Harvard University Press, 1967), p.541.
18. Serge Chermayeff, *Design and the Public Good* (Cambridge: MIT Press, 1982), p.97.
19. Giedion, p.525.
20. *Ibid.*, p.528.
21. Guiton, p.60.
22. *Ibid.*, p.61.
23. *Ibid.*, p.60.
24. *Ibid.*, p.68.
25. *Ibid.*, p.61.
26. *Ibid.*, p.69.
27. Le Corbusier, *The Modulor* (London: Faber and Faber Ltd., 1961), p.130.
28. Giedion, p.521.
29. E. Sekler et al, "Le Corbusier," *Macmillan Encyclopedia of Architects* (1982), V.2, p.637.
30. Guiton, p.54.
31. Le Corbusier, *Towards a New Architecture*, p.11.
32. Lesnikowski, p.10.
33. Giedion, p.534.
34. Scully, p.40.
35. *Ibid.*, p.43.
36. Le Corbusier, *Towards a New Architecture*, p.11.
37. Lesnikowski, p.265.
38. Giedion, p.522.
39. Guiton, p.55.
40. *Ibid.*, p.35.
41. Giedion, p.546.

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