Le Corbusier 1933–1960
Editor: Kenneth Frampton

OPPOSITIONS

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In this issue:

Kenneth Frampton
The Rise and Fall of the Radiant City: Le Corbusier 1928–1960

Robert Slutzky
Aqueous Humor

Mary McLeod
Le Corbusier and Algiers

Stanislaus von Moos
Le Corbusier as Painter

Richard A. Moore
Alchemical and Mythical Themes in the Poem of the Right Angle, 1947–1965

Stuart Cohen and Steven Hurtt
The Pilgrimage Chapel at Ronchamp

Alexander C. Gorlin
An Analysis of the Governor's Palace of Chandigarh

Mary McLeod
Plans: Bibliography

Alan Chimacoff, Fred Koetter, Randall Korman, and Werner Seligmann
The Carpenter Center for the Visual Arts, Cambridge, Massachusetts.
Le Corbusier, 1961-1963: Documentation

Fred Koetter
Le Corbusier at Work: Review

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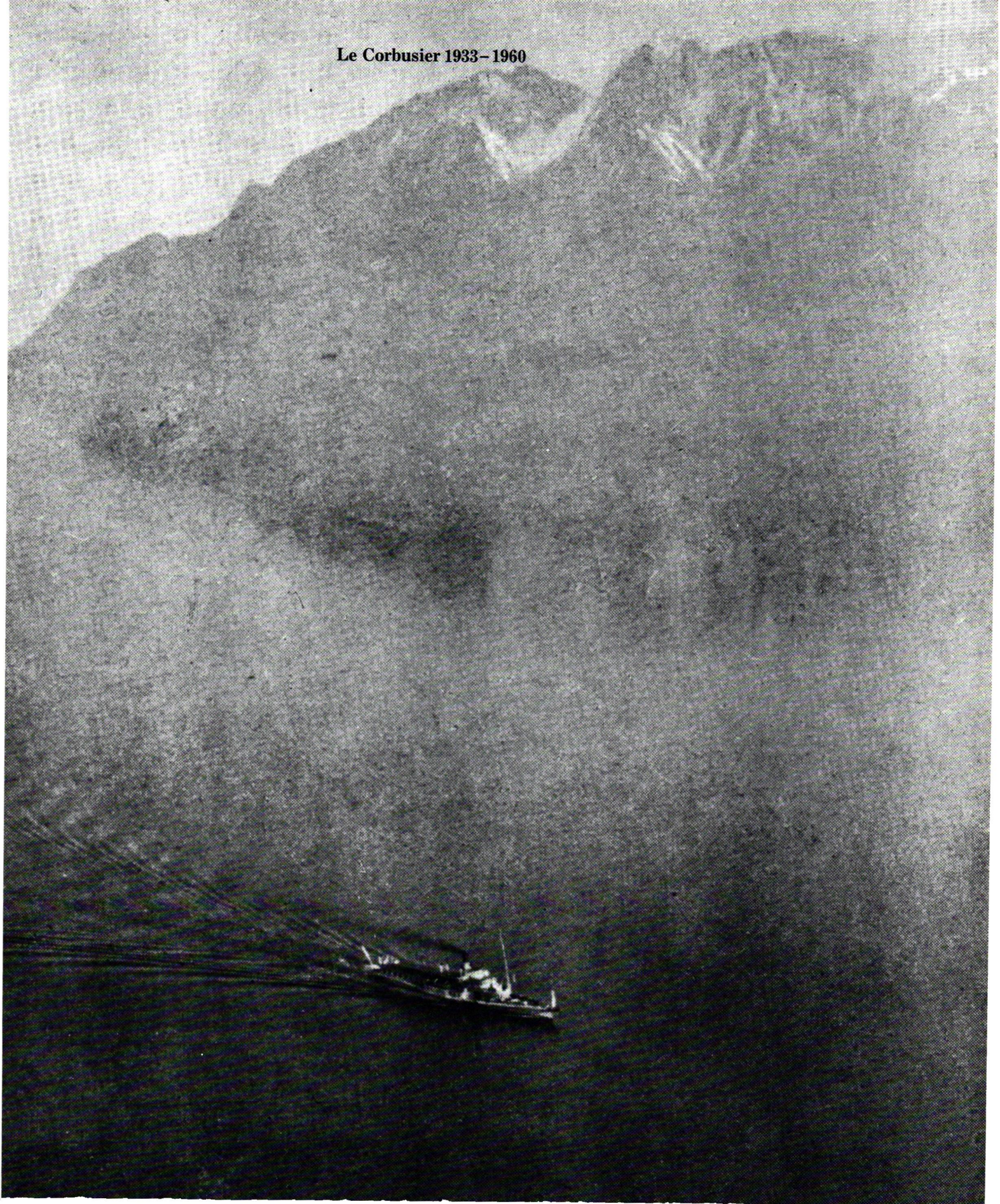


The Rise and Fall of the Radiant City: Le Corbusier 1928–1960

Kenneth Frampton

Le Corbusier's confrontation with the Left materialist architects of the Weimar Republic—the so-called Neue Sachlichkeit—at the foundation of the *Congrés Internationaux de L'Architecture Moderne* in 1928 and the three visits that he subsequently made to Russia between 1928 and 1930 brought him into contact with the international Left, and the passing closeness of this association found reflection in Alexandre de Senger's reactionary accusation that he was in fact the 'Trojan horse' of Bolshevism. Of consequence for his immediate development was his exposure to the OSA group's housing prototypes of 1927 with their interlocking duplex units and his encounter with the linear-city concepts of N.A. Miliutin (figs. 1, 2). Both of these ideas soon emerged in his own work; the first in his use of the 'crossover-duplex section' after 1932; the second the 'linear-industrial-city' which he first introduced in 1935. Once assimilated, these typical Soviet avant-gardist solutions were reformulated by him in the mid-1940's: the former as the prototypical section of his Unité d'Habitation (fig. 3), and the latter as the Cité Industrielle that was central to his regional planning thesis of 1944 entitled *Les trois établissements humains* (fig. 5). As a counter influence Le Corbusier introduced the double-layered glass curtain wall into the Soviet Union in his technically 'progressive' but ultimately faulty Centrosoyus building, erected in Moscow in 1929. Without adequate heating, this standard technique of Swiss Jura (used by him in the Villa Schwob) could not withstand the rigors of the Russian winter. It was nonetheless included as a technical element in his 1930 reply to a Moscow questionnaire, "Réponse à Moscou," a document for which the plates of the Ville Radieuse were specially prepared.

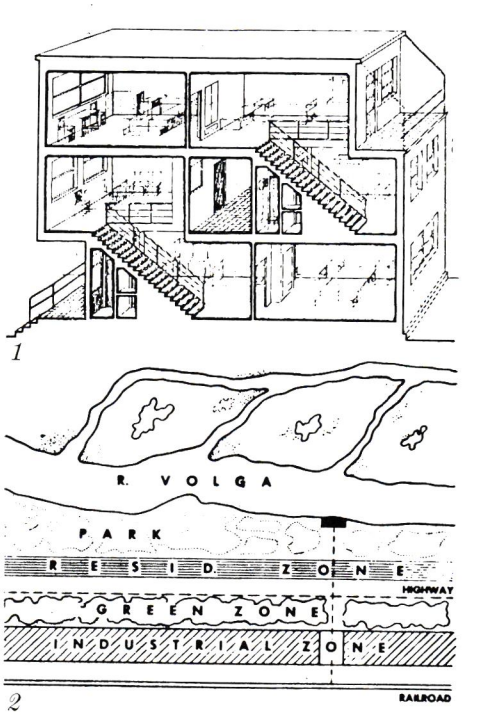
The substitution of the classless Ville Radieuse of 1930 for the hierarchic Ville Contemporaine of 1922 involved comparable changes in Le Corbusier's conception of the machine-age city, among which the most important was the replacement of a centralized model by a theoretically limitless concept whose principle of order stemmed from its being zoned, like Miliutin's linear city, into parallel bands. In the Ville Radieuse these zones were assigned to the following uses: (1) satellite cities dedicated to education, (2) business, (3) transportation zone including passenger rail and air transport, (4) hotels and embassies, (5) residential, (6) parkscape, (7) light industry, (8) warehouses plus freight rail, and (9) heavy industry. It was paradoxical, to say the least, that a humanist, anthropomorphic metaphor was still inscribed within this model. This is evident in Le Corbusier's explicatory sketches of the 'radiant city', which show the isolated 'head' of the sixteen cruciform skyscrapers about the 'heart' of the cultural center, located between the two halves or 'lungs' of the residential zone. Aside from the intermittent centralization which naturally corresponded to this biological scheme, the linear model was strictly adhered to, thereby allowing the separate zones

to expand. Thus the Ville Radieuse took the open-city concept of the Ville Contemporaine to its logical conclusion; a typical section through the city showing the structures elevated above the ground, including the garages and the access roads. By virtue of raising everything on *pilotis* the ground surface was rendered as a continuous park in which pedestrians would have been free to wander at will.

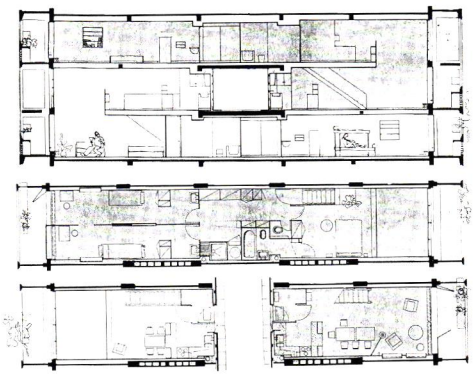
In 1929, before finalizing his plans for the 'radiant city', Le Corbusier visited South America (fig. 4) where, piloted by the pioneer aviators Mermoz and Saint-Exupéry, he had the stimulating experience of surveying a tropical landscape from the air. From such a vantage point, Rio de Janeiro impressed him as a natural linear city, laid out like a narrow ribbon along its *corniche*, with the sea on one side and steep, volcanic rocks on the other. The form of this urban terrain seems to have spontaneously suggested the idea of the viaduct city, and Le Corbusier immediately sketched an extension of Rio in the form of a coastal highway, some six kilometers (three and three-quarter miles) in length, elevated one hundred meters (three hundred and five feet) above the ground and comprising fifteen floors of 'artificial sites' for residential use stacked beneath the road surface.

This inspired proposal led directly to the plans for Algiers developed during the years 1930 to 1933. The first of these projected a motorway megastructure for the entire length of an equally spectacular *corniche*, given the code name 'Obus' because its concave enclosure of the bay resembled the trajectory of a shell (fig. 8). (Note the appropriation of the military term, as was also the case with the use of the word *redent* to describe the zigzag plan profile of the residential blocks in the Ville Radieuse.) With six floors beneath its road surface and twelve above, the idea of the 'viaduct city' came into its own. Set some five meters (sixteen feet) apart, each of these floors constituted an artificial site, on which individual owners would erect two-story units "in any style they saw fit." This provision of a public but pluralistic infrastructure designed for individual appropriation was destined to find considerable currency among the anarchistic architectural avant-garde of the post Second World War period (cf. the urban infrastructures proposed by Yona Friedman and Nicholas Habraken).

The plan configurations created for the cities of Rio de Janeiro and Algiers seem to be related to certain transformations in the expressive structure of Le Corbusier's painting, which after 1926 began to move from Purist abstraction toward sensuously figurative compositions, featuring his so-called *objets à réaction poétique*. Female figures first appeared in his painting at this time, and the sensuous, heavy manner in which these were



1 Crossover unit from OSA housing competition, Moscow. A. 011, 1927.
2 N. A. Miliutin's basic six-banded linear scheme as projected for the town of Stalingrad, 1930. As usual the water resource is incorporated into the park zone.



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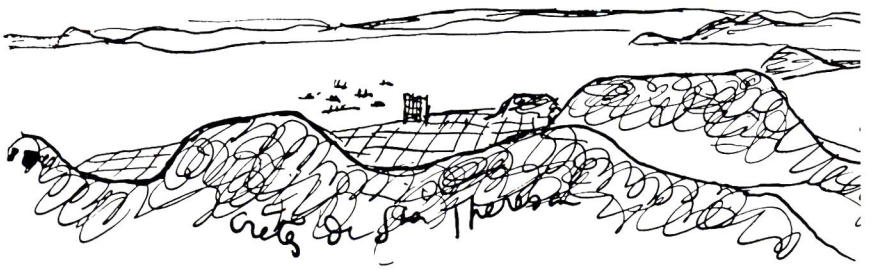
3 Unité d'Habitation, Marseilles. Le Corbusier, 1952. Cross-section and plans.
4 Rio de Janeiro. Le Corbusier, 1936. Topographic sketch.
5 Plan of linear industrial city from Les trois établissements humains. *Le Corbusier, 1944.*
6 Women at Table, *Copacabana, Rio de Janeiro. Le Corbusier, 1936. Sketch.*



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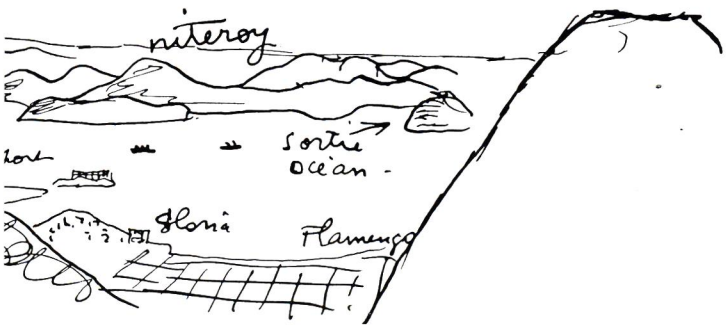
rendered lend a certain substance to his claim that, like Delacroix, he had rediscovered the essence of female beauty in the Casbah of Algiers (figs. 6, 9). This connection is dwelt upon at length by Stanislaus von Moos in his essay "Le Corbusier as Painter."

Le Corbusier's 1930 Algiers plan was his last urban proposal of overwhelming grandeur. Reminiscent of the sensuous spirit of Gaudi's Park Guell, here his ecstatic enthusiasm seems to have spent itself in a passionate poem to the natural beauty of the Mediterranean. From now on his approach to city planning was to be more pragmatic, while his urban building types gradually assumed less idealized forms. His typical Ville Radieuse *redent* block, distorted here into the arabesque of the Obus plan, was phased out entirely soon after. This last modification, which led to the postulation of the free-standing slab as the basic residential type (cf. the Unité slab of 1952), came with his 1935 proposals for the towns of Nemours in North Africa (fig. 11) and Zlin in Czechoslovakia (fig. 7). While both of these plans were projected for steeply sloping sites—for which the free-standing slab was eminently suitable—their checker-board disposition, laid out appropriately against the fall of the land, became a formula which was soon to be applied in all his planning schemes, irrespective of the topography.

Aside from the context it afforded for the evolution of the Unité slab form, the significance of Zlin, designed for the shoe manufacturer Batà, lies in its ingenious adaptation of the Soviet linear-city proposal to a specific site. In linking the old town and manufacturing center of Zlin at the bottom of the valley to the executive airport situated on the plateau, the road and railway lines paralleled the length of the valley—with the new industry on one side and the company housing on the other. Zlin thus became Le Corbusier's first formulation of the linear city after Miliutin's model; a type to be designated by him in *Les trois établissements humains* as one of the three productive units, the other two being the traditional 'radially' planned city and the 'agricultural co-operative' (fig. 10). *Les trois établissements humains*, with which according to Le Corbusier one could urbanize both the town and the country, was an attempt to resolve the conflict that had bitterly divided the Russian urban planners of the late 1920's between the de-urbanists, who had wanted to redistribute the existing population throughout the Soviet Union, and the urbanists, who had advocated the maintenance of existing towns and the creation of additional urban centers.

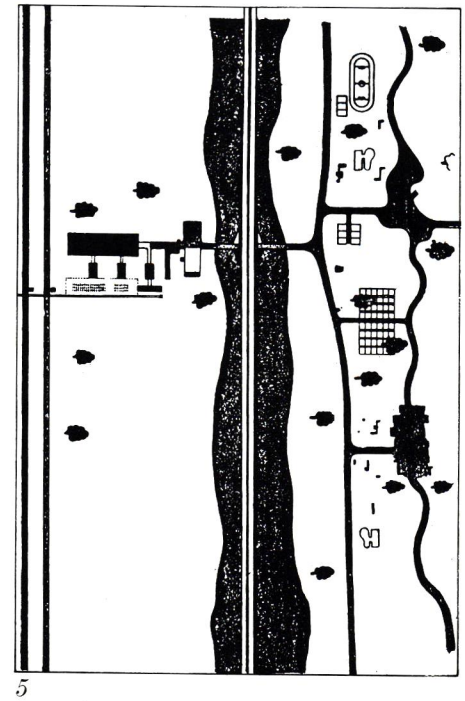
While the radiant city was never realized, its influence as an evolving model on postwar urban development in Europe and elsewhere was extensive. In addition to innumerable housing schemes, the specific organization of two



new capital cities was clearly indebted to ideas embodied in the Ville Radieuse, namely Le Corbusier's master plan for Chandigarh of 1950 (fig. 14) and Lucio Costa's plan for Brasilia of 1957 (fig. 12). Le Corbusier's basic acceptance of the existing garden-city layout for Chandigarh, as produced by the American planner Albert Mayer in the very same year, made it sufficiently clear that he had effectively abandoned any notion of creating a finite city of significant form and that he had shifted his general approach to promoting models of dynamic growth on a regional scale. Despite his modification of the Mayer plan, his 'ideal city' came to be reduced at this juncture to the government center alone, to the Chandigarh Capitol of 1950. This realist strategy had already been anticipated in his plan for St.-Dié of 1946 (figs. 13, 15, 16). From this point on, like the masters of the Renaissance, he seems to have been prepared to compensate for the unrealizable whole through the projection of a representational center on a monumental scale.

Primitive technical elements begin to appear in Le Corbusier's work with increasing frequency and freedom of expression from 1930 onward. First in the pitched-roofed, timber and stone house projected in 1930 for Errazuris in Chile (figs. 17, 18), then in the rubble-walled villa built for Madame Mandrot near Toulon in 1931 (figs. 19, 20), and finally in two remarkable works of 1935 and 1937 respectively: a concrete vaulted weekend house built in the suburbs of Paris (figs. 21–26), and his light-weight, canvas Pavillon des Temps Nouveaux, erected for the Paris International Exhibition in 1937 (figs. 27–29). The same principle is evident in his Maison Loucheur of 1929 where a rubble wall spine is used as an armature for industrialized components (fig. 41). That this period is transitional is borne out by the parallel project for the Hôtel Loucheur which is given an exclusively "machinist" rendering in the drawing published in *L'Architecture Vivante* in 1929 (figs. 39, 40).

While the roof of the Paris home recalled not only his Maison Monol of 1919, but more profoundly the traditional barrel-vaulted construction of the Mediterranean, the 1937 pavilion (see fig. 28) evoked not only the nomadic tent but also that reconstruction of the Hebraic temple in the wilderness which he had chosen to illustrate in *Vers une architecture* as an example of regulating lines. With this series of works the burden of expression now shifted from abstract form to the means of construction itself. As he was to remark of his weekend house: "The planning of such a house demanded extreme care, the elements of construction were the sole architectural means." Despite the archaic and vernacular references, both works still exploited aspects of advanced technology, the weekend house making telling use of reinforced concrete, plywood, and glass lenses, and the



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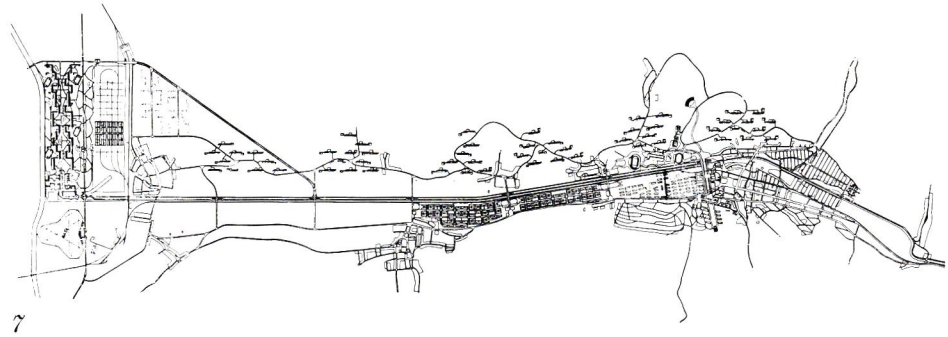

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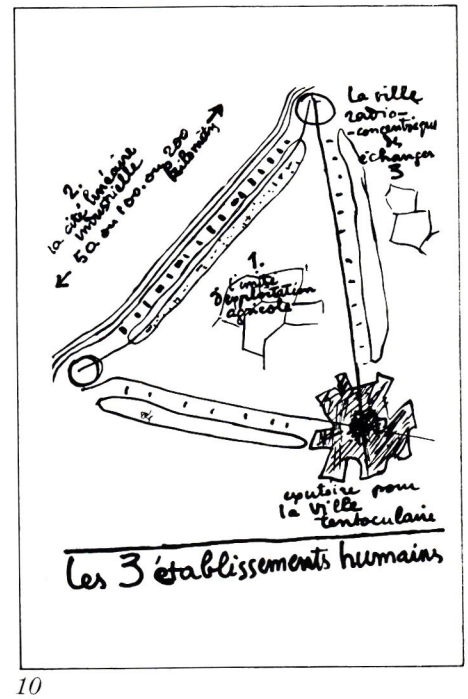
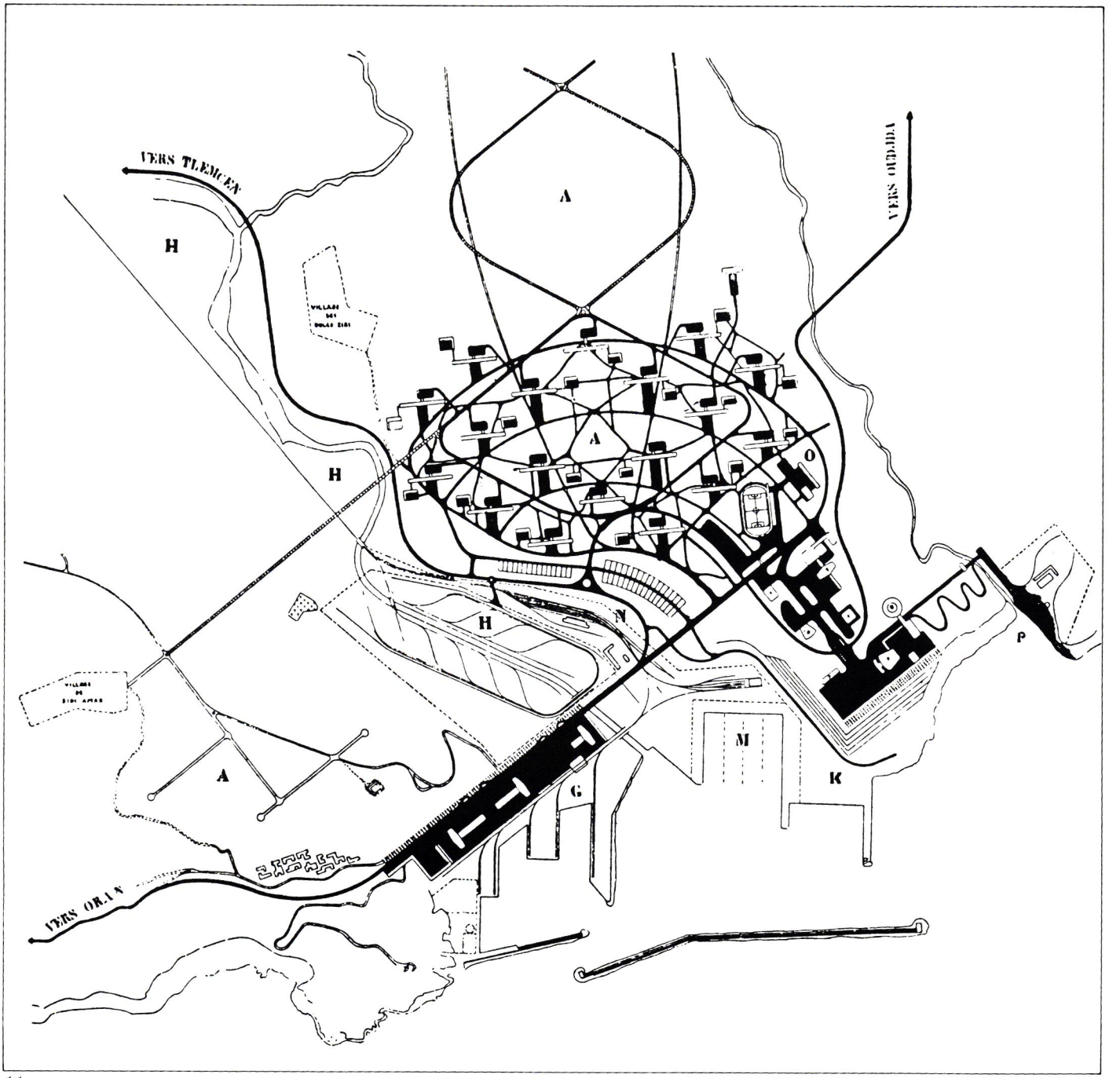

2.
la cité fonctionnelle
industrielle
50 ou 100 ou 200 habitants
La ville radio-concentrique d'échanges
3
1.
Unité d'exploitation agricole
capitale pour la Ville tentaculaire
Les 3 établissements humains

10

7 Plan for Zlin, Czechoslovakia (Batà works). Le Corbusier, 1935.
8 Fort-l'Empereur, Algiers. Le Corbusier, 1930. Sketch. The exotic landscape of Algiers had a strong impact on Le Corbusier.
9 Nudes, *Casbah, Algiers. Le Corbusier, 1930.*
10 Diagrammatic regional system from Les trois établissements humains. *Le Corbusier, 1946. A (1) center of agricultural production; B (2) industrial linear city and (3) radio-concentric city.*
11 General plan for Nemours, France. Le Corbusier 1935. A) residential; G) commercial center; H) industrial city; K) port; M) military base; O) schools; P) beach.



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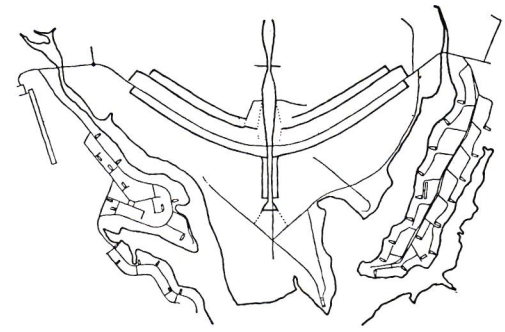

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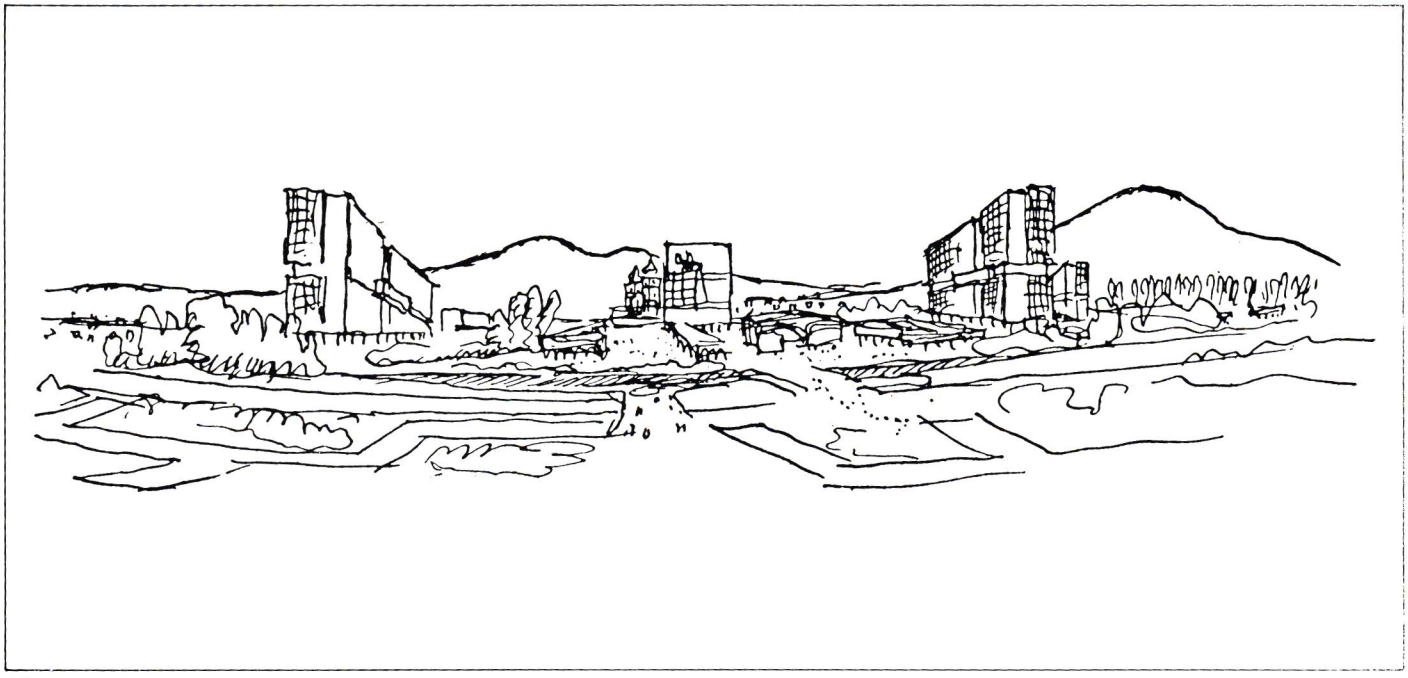

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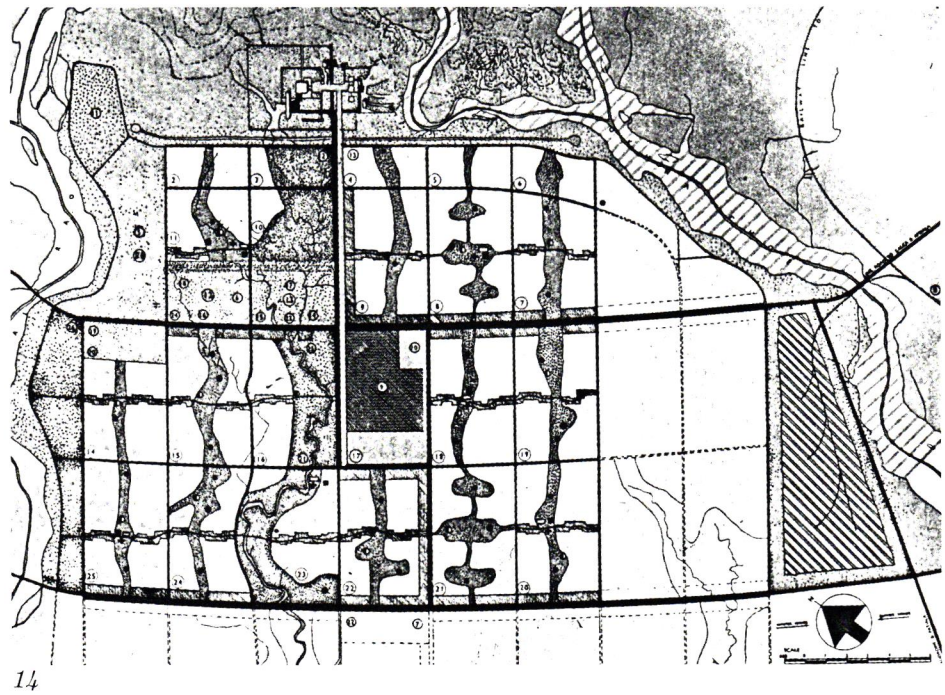

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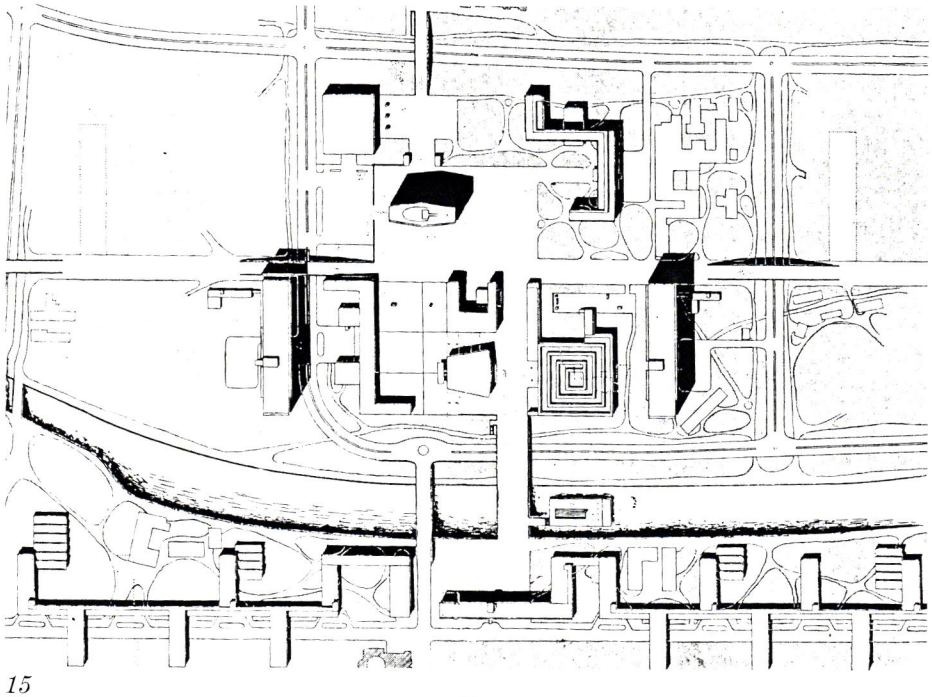

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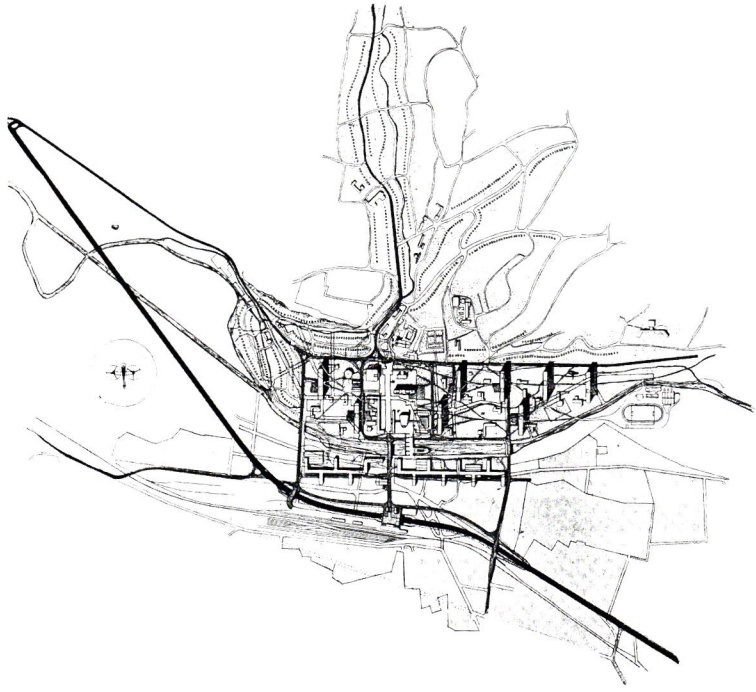

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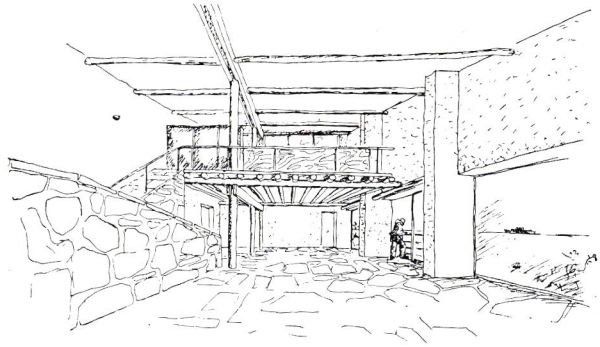
12 St.-Dié, France. Le Corbusier, 1946. Perspective of town center.
13 Plan for Brasilia, Brasil. Lucio Costa, 1957.
14 Plan for Chandigarh, India. Le Corbusier, 1950–1953.
15 St.-Dié, France. Le Corbusier, 1946. City center.
16 Plan for St.-Dié, Le Corbusier, 1946. Note small houses lining valley routes outside the city proper.



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10 *17 Errazuris House, Chile. Le Corbusier, 1930. Perspective sketch.*
18 Errazuris House, West elevation.
19 Mandrot House, Toulon. Le Corbusier, 1931. Site plan.
20 Mandrot House, main floor plan.

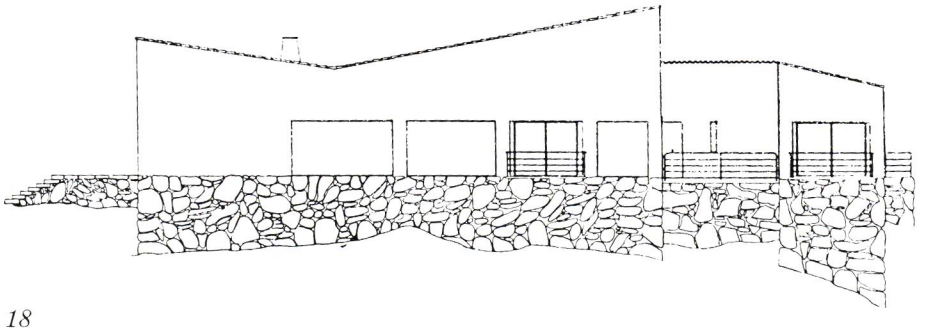
pavilion making a spectacular demonstration of steel cable suspension in such a way as to recall the jointing techniques which were then the province of aeronautical construction. Finally both works seemed to be sophisticated metaphors for a less doctrinaire future when men would mix primitive and advanced techniques according to their needs and resources.

How resources in general might best be allocated in socio-political terms was first explicitly formulated by Le Corbusier in the contributions that he made from January 1931 to the monthly Syndicalist journal *Plan*, edited by Philippe Lamour, Hubert Lagardelle, Francois Pierrefeu, and Pierre Winter. In December 1931, in an essay entitled "*Decisions*," he established the political preconditions under which his urban ideas might be fulfilled. His recommendation that urban land should be requisitioned by the state gave adequate ammunition to the forces of reaction, who had already chosen to see him as a Bolshevik in disguise; while his demand that the state should forbid by edict the production of useless consumer goods certainly disturbed those on the technocratic right, who might otherwise have taken him as an unequivocal representative of their interests.

With their holiday house built for Hélène de Mandrot outside Toulon and their Errazuris House projected for a remote site in Chile, Le Corbusier and Pierre Jeanneret began to envisage their domestic works as extending their formal influence across landscapes of gigantic proportions. This subtle shift toward a topographic sensibility contrasted with their apparently spontaneous acceptance of 'vernacular' construction as a mode of expression. Although they had used load-bearing cross-walls before, they had never exploited the expressive qualities of rough-hewn stonework.

This break with the dogmatic aesthetic of Purism (already anticipated in Le Corbusier's painting of 1926) coincides with the conceptual point in his career when he began to abandon his faith in the inevitable beneficence of a machine-age civilization. From now on, disillusioned by industrial reality and increasingly under the 'Brutalist' influence of the painter Fernand Léger, his style began to move in two opposite directions at once. On the one hand he returned, at least in his domestic work, to the language of the vernacular; on the other, as in his project for Paul Otlet's Cité Mondiale of 1929, he embraced a monumentality of classical, not to say Beaux-Arts, grandeur (figs. 30, 31).

However, to think of this schism as a simple differentiation in the expressive mode between 'building' and 'architecture' is to give an oversimplified account of Le Corbusier's practice at this time. For, despite his doubts, not only was the machine aesthetic maintained (as we may judge



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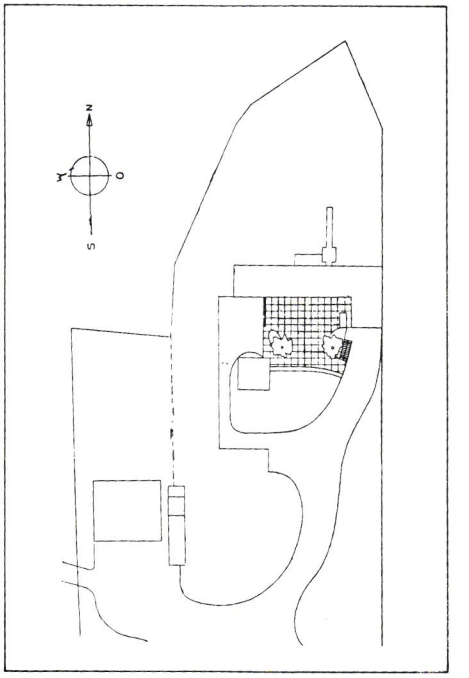
from the curtain-wall structures built by the practice between 1930 and 1933), but also works such as the de Beistegui penthouse were to reveal an unexpectedly Surrealist side to Le Corbusier's imagination (figs. 32–38). This dream-like exercise—reminiscent of Adolf Loos' interiors for the Tristan Tzara house of 1926—manifested its 'aesthetic' disjunctions on more than one level. While it emphasized the strangeness of objects at a domestic scale (the lawn of the solarium appeared like a 'living' carpet!) it also evoked unlikely urban (topographic) associations such as the isomorphic similarity between the solarium's false fireplace and the Arc de Triomphe poised on the artificial horizon of the bounding wall. This Surrealist sensibility (cf. Magritte and Piranesi) seems latent in the whole of Le Corbusier's return to the vernacular, from the de Mandrot house of 1931 to the Ronchamp pilgrimage chapel built in the mid-1950's.

In many of the 'vernacular' essays prior to Ronchamp the remoteness of the site itself became the rationale for the mode of building. An example of this is the inexpensive house built at Mathes, near Bordeaux (1935), built without the architect visiting the site (figs. 43, 44). The same justification of remoteness and limited resources could be put forward in the case of the Errazuris and de Mandrot houses, but it could hardly apply to the weekend house built in the Parisian suburbs in 1935. Here the vernacular was being consciously embraced for its articulation of material, for its capacity to enrich the reductive syntax of the Purist style. Le Corbusier wrote, "The designing of such a house demanded extreme care since the elements of construction were the only architectonic means. The architectural theme was established about a typical bay whose influence extended as far as the little pavilion in the garden. Here one was confronted by exposed stonework, natural on the outside, white on the interior, wood on the walls and ceilings, and a chimney out of rough brickwork, with white ceramic tiles on the floor, Nevada glass block walls, and a table of Cippolino marble."



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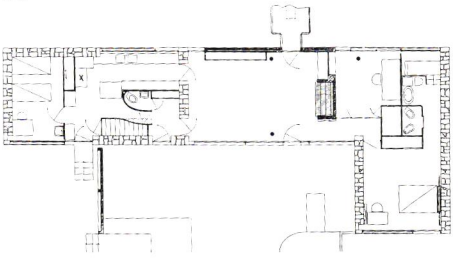

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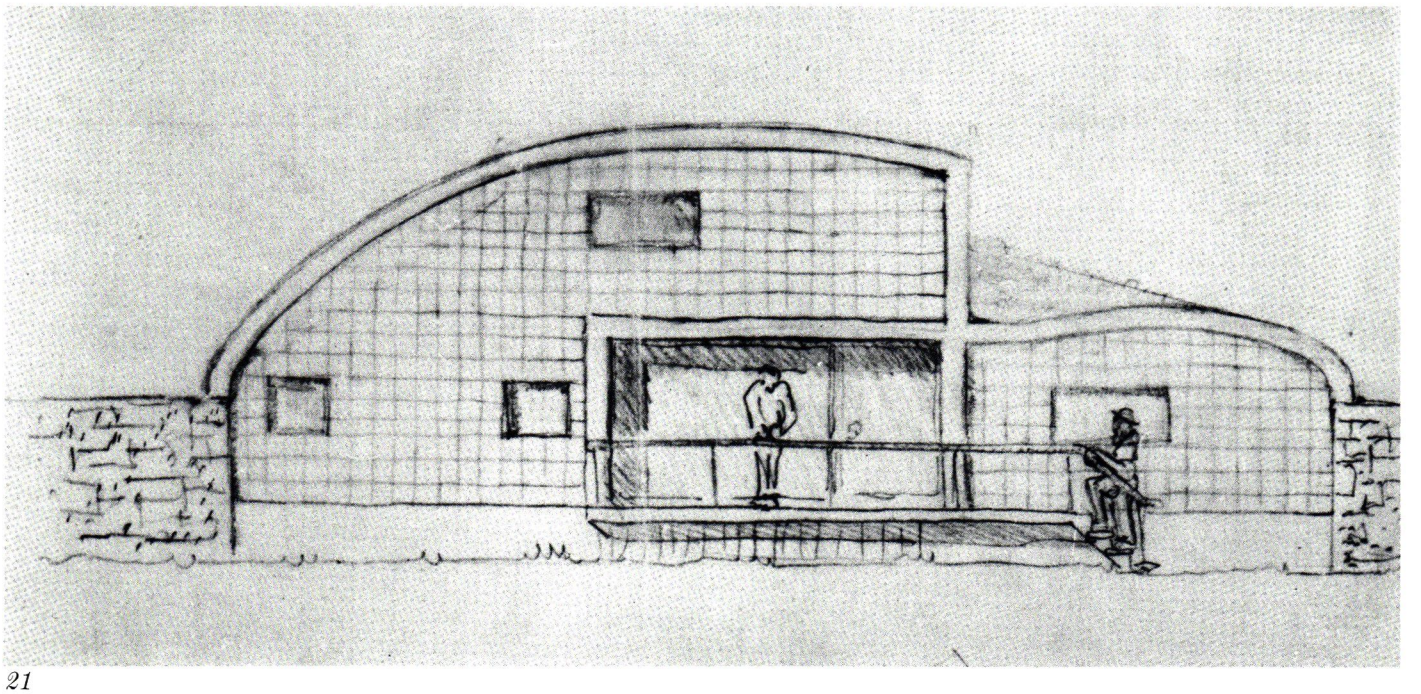
This partial shift to natural materials and primitive methods had consequences that went beyond a mere change in technique or surface style. Above all it meant abandoning the classical envelope that had been used in the villas of the late 1920's, in favor of an architecture predicated on the expressive force of a single architectonic element; be this a mono-pitched roof supported by cross-walls or a barrel-vaulted megaron. While the former (anticipated at Mathes) appeared in the rammed-earth walls and lean-to, thatched roofs of the Maisons Murondins proposed in 1940 (fig. 42) for the accommodation of refugees, the latter was the basic structural module of both the weekend house and the farm complex projected for Cherchell, North Africa, in 1946 (fig. 46). That Le Corbusier's preoccupation with the Mediterranean after the Second World War took a vernacular rather than a

21 Weekend House, Paris. Le Corbusier, 1935. Preliminary proposal with two vaults.
22 "Ma maison," Le Corbusier, 1929. Atelier project for his own use, based on shell concrete monitor vaults.
23 Weekend house, Paris. Preliminary proposal with single vault. Cross sections.



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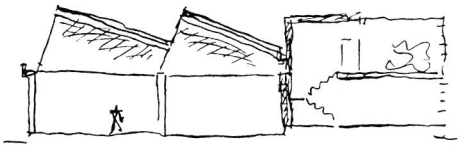

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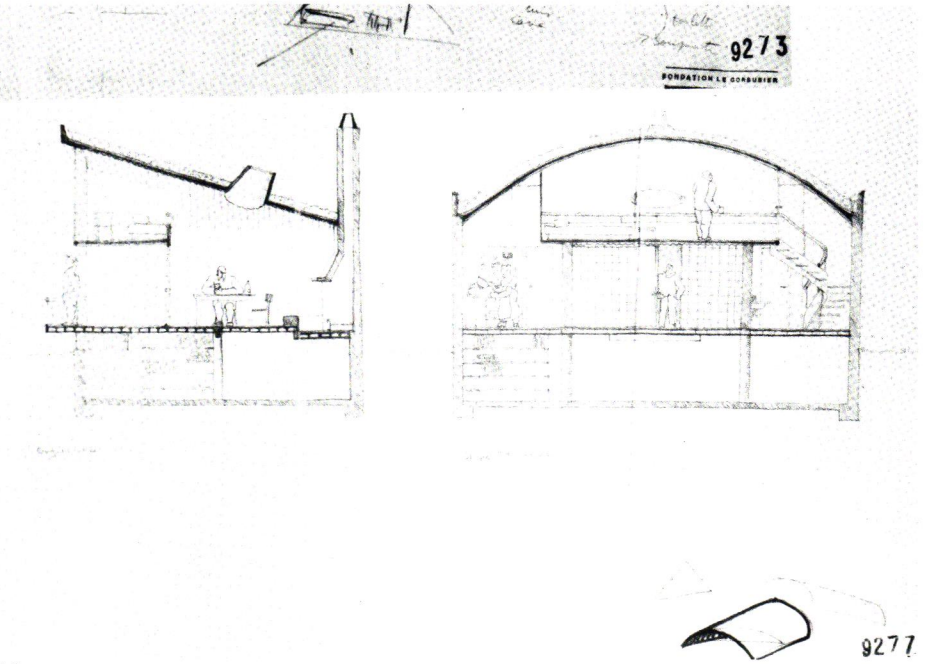

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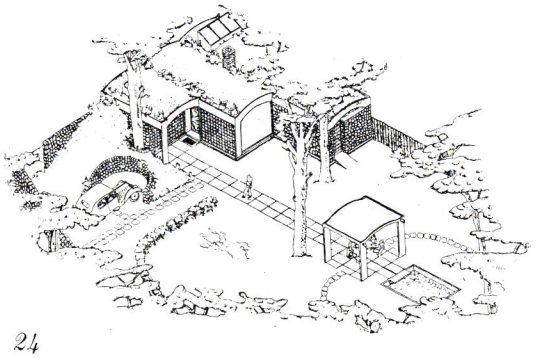

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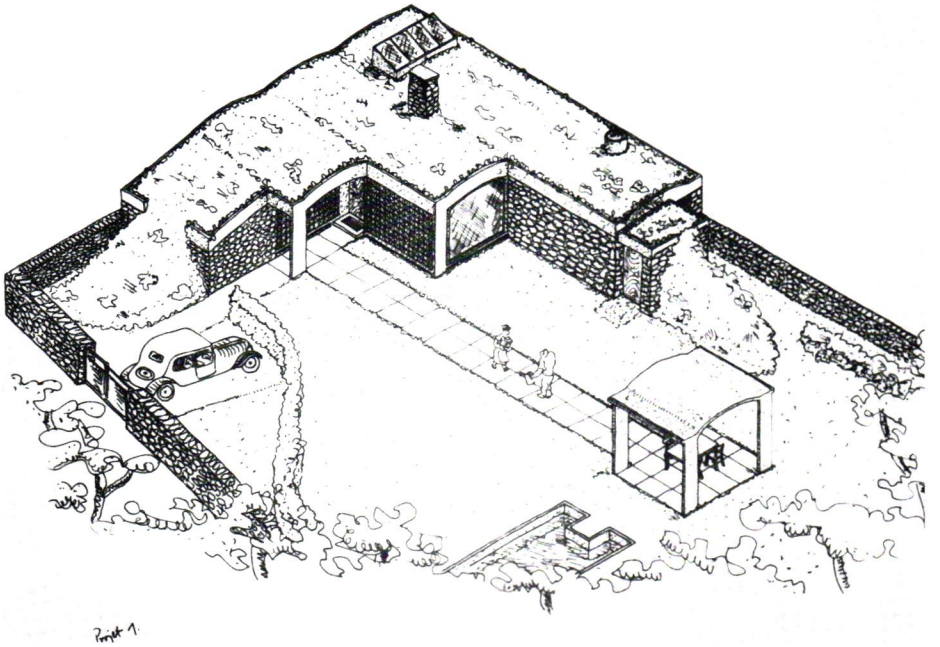

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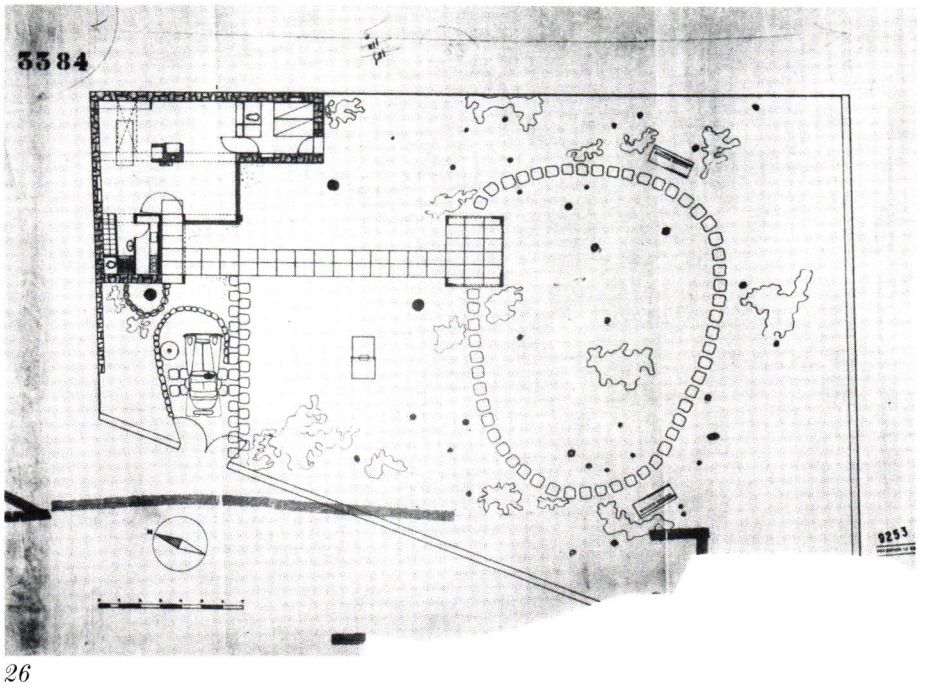

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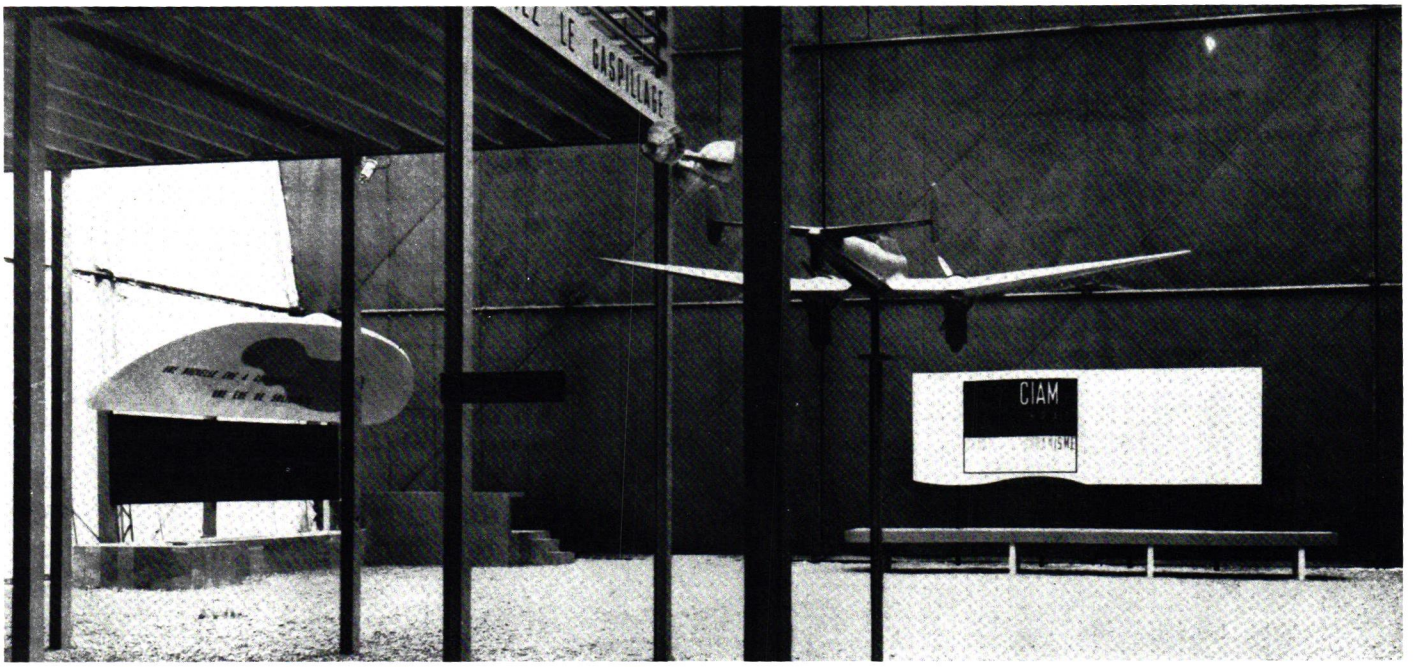
24 Weekend House, Paris. Le Corbusier, 1935. Axonometric of final version.
25 Axonometric of penultimate version.
26 Plan of final version.

27 Pavillon des Temps Nouveaux, World Exhibition, Paris. Le Corbusier, 1937. Interior.
28 Cross-section.
29 Main entry.
30 Mundaneum project, Geneva. Le Corbusier, 1928. Perspective sketch showing the jet d'eau.
31 General plan.



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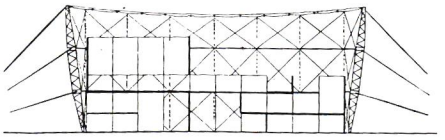

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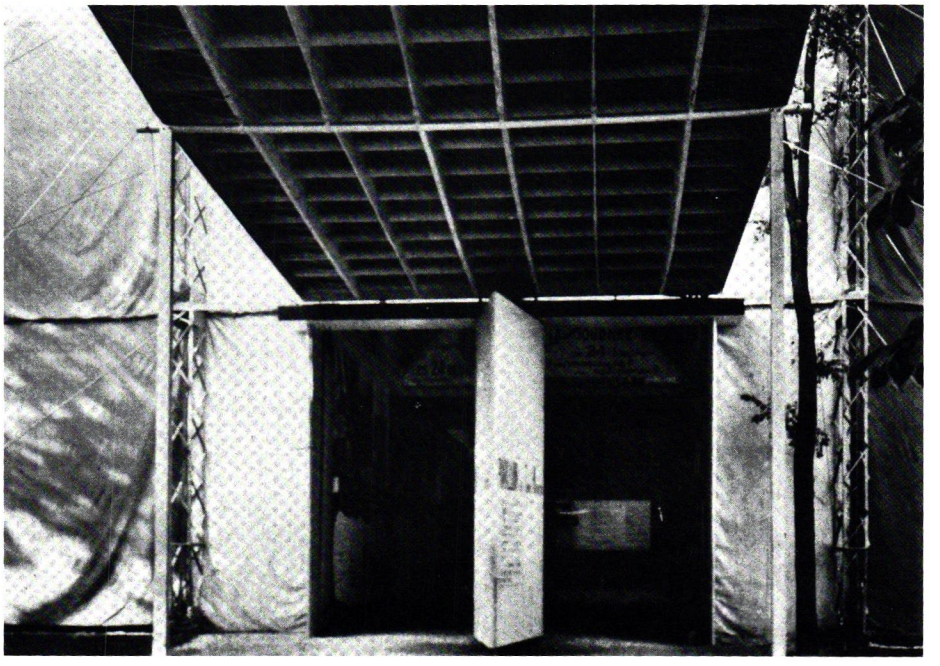

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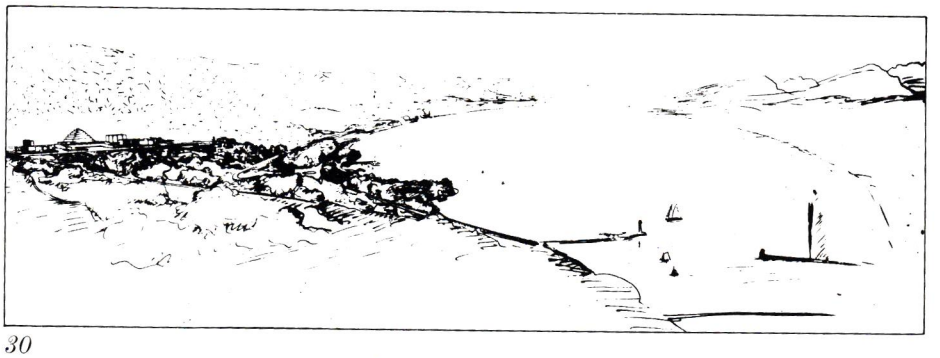

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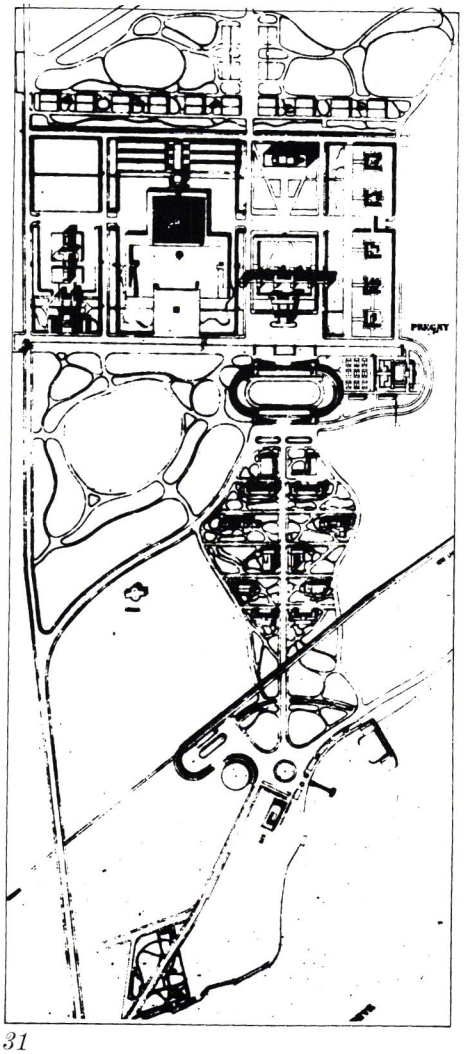
classical form is demonstrated by a sequence of works stemming from the Cherchell project and leading via the Roq et Rob housing designed for Cap Martin in 1949 (fig. 47) to the Sarabhai House in Ahmedabad (figs. 48, 49) and the Maison Jaoul (fig. 45) in Paris, these last two works being completed in 1955. The Maison Jaoul was a reinterpretation of a Mediterranean vernacular, whose overall effect stemmed as much from its introspective solemnity as from its scale. Such a surrealistic vernacular syntax could hardly be used for the eighteen-story Unité d'Habitation built at Marseilles in 1947–1952, and yet in abandoning the machine technology of the prewar era, the structure was equally committed to Brutalist methods of construction. This is especially evident in the casting of its basic concrete superstructure from rough timber formwork, which Le Corbusier was to justify on grounds which were almost existential. Aside from this *béton brut* appearance, the Unité was far more complex in its organization than the typical prewar Ville Radieuse block. Where the Ville Radieuse slab was a continuous horizontal volume, hermetically contained behind glass, the Unité revealed its cellular structure through the use of concrete sun-baffle balconies and canopies projecting from the main body of the building. This cellular morphology automatically expressed an agglomeration of private dwellings (cf. Roq et Rob), while the shopping arcade and the rooftop communal facilities served to establish and represent the public realm. The honorific status of this larger whole was expressed at ground level in the carefully profiled columns supporting the underbelly of the building. These *pilotis*, precisely proportioned in accordance with Le Corbusier's *Modulor*, suggested the invention of a new 'classical' order. Uniting its three hundred and thirty-seven dwellings with a shopping arcade, a hotel, a roof deck, a running track, a paddling pool, a kindergarten, and a gymnasium, the Unité was just as much a 'social condenser' as the Soviet commune blocks of the 1920's. And just as Fourier's phalanstery was intended to house the ordinary man in a princely context (Fourier detesting the meanness of the individual house), so the Unité was seen by its author as restoring the dignity of architecture to the simplest private dwelling.



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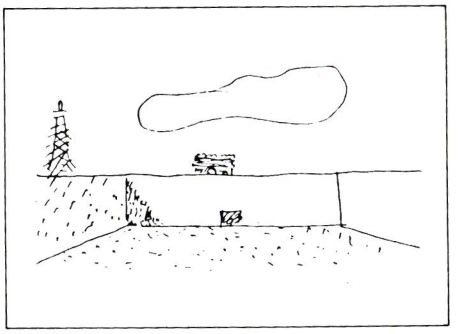
The pilgrimage chapel at Ronchamp, first projected in 1950, and the Dominican monastery of La Tourette, built at Eveux outside Lyons in 1960, represent the two principal religious structures—the sacred building and the retreat—that preoccupied Le Corbusier throughout the 1950's (fig. 50). La Tourette, which in effect combined both types, served to remind him of that 'solitude and communion' which had moved him so deeply when he first visited the Charterhouse of Ema in 1907.

Le Corbusier's concern for the sculptural resonance of a building in relation to its site was first formulated in 1923, when he characterized the Acropolis



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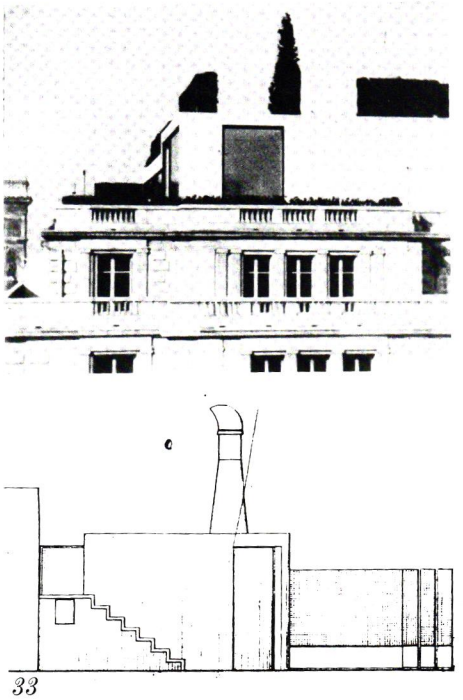
32 Beistegui Apartment, Paris. Le Corbusier, 1929–1933. Apartment erected on top of a classical block in the Champs-Elysées.
33 Elevation of roof top architecture. April, 1931.
34 This sketch appeared in a special number of L'Architecture d'Aujourd'hui, *April 1948.*



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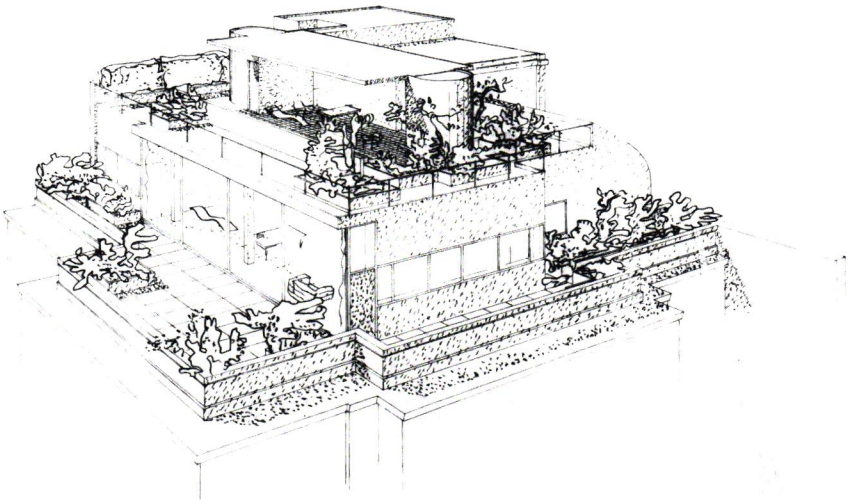

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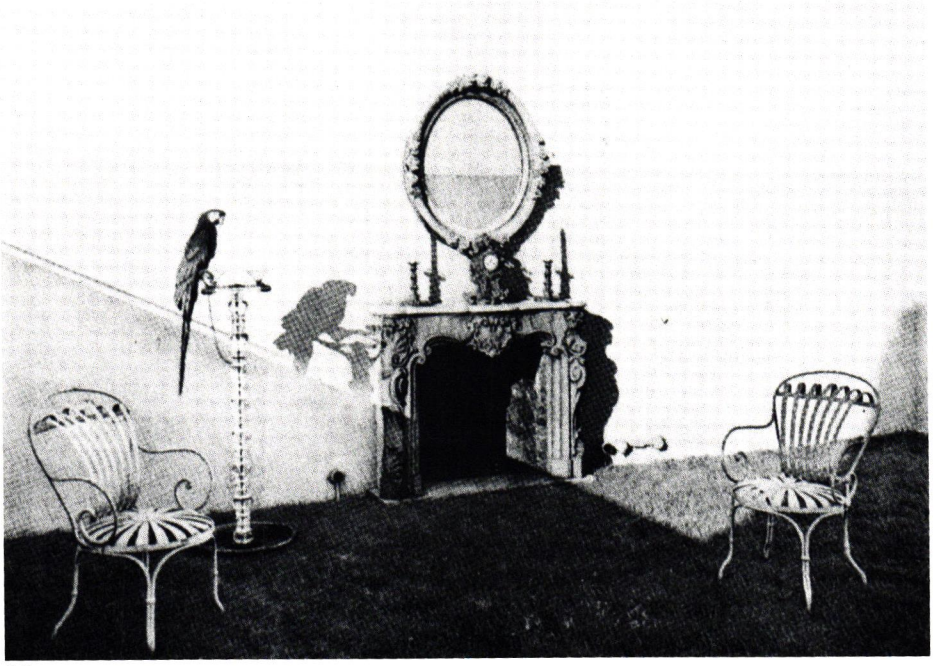

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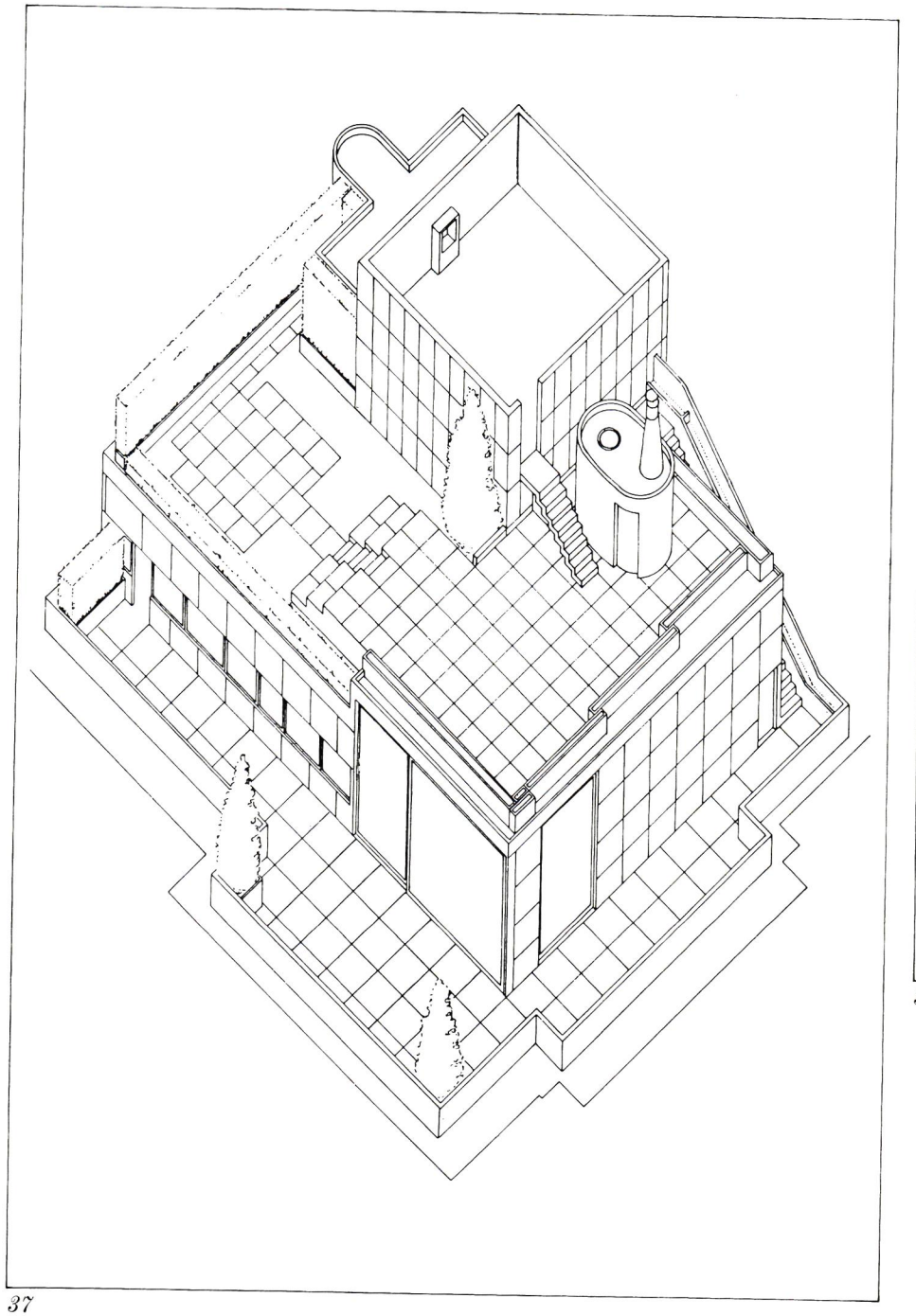
35 Axonometric, preliminary version. June, 1929.
36 Surrealism on the roof.
37 Axonometric, final version.
38 Main floor plan and roof plan, final version.



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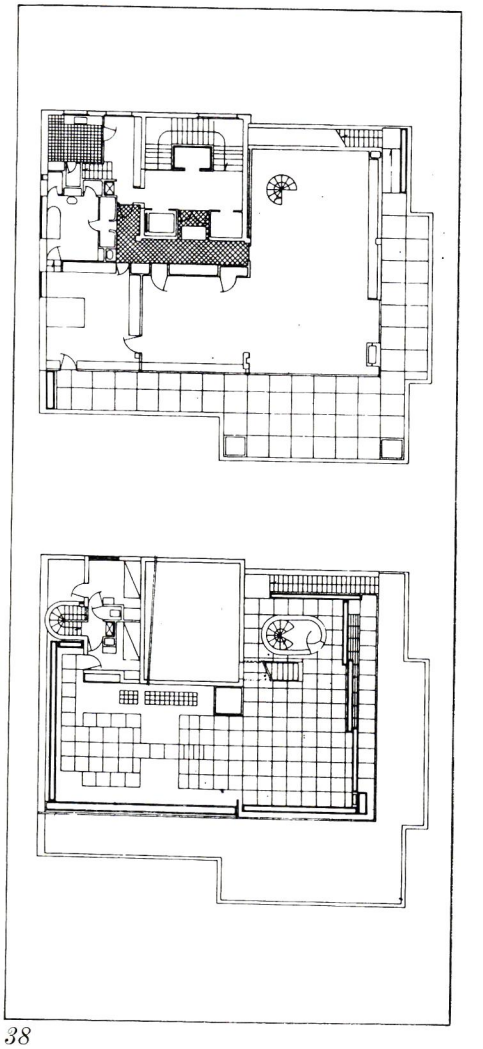

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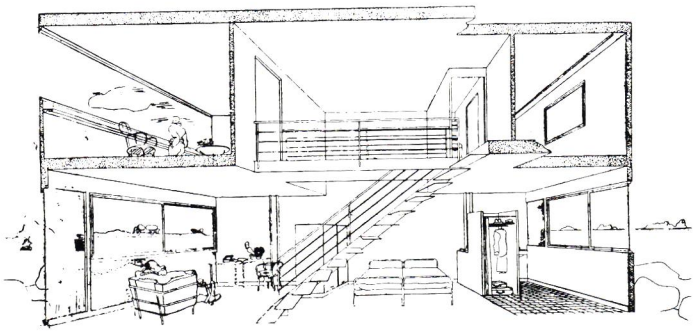

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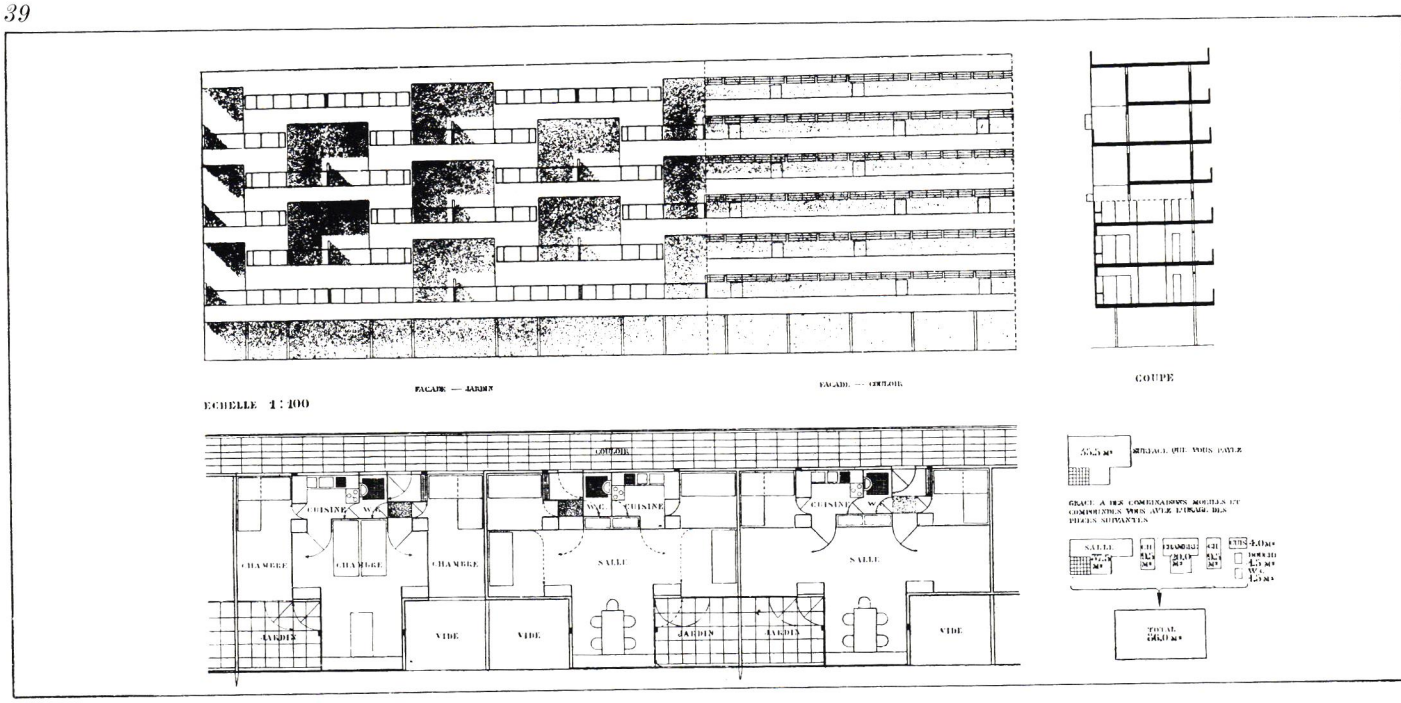

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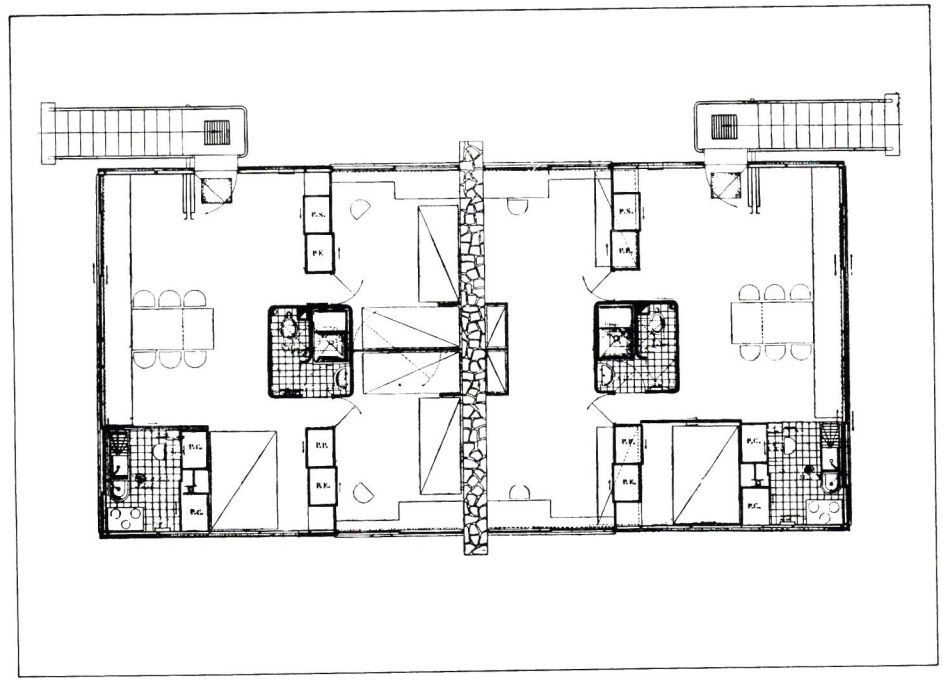
39 Hôtels Loucheur, Le Corbusier, 1929. Cross-section.
40 Hôtels Loucheur, elevation, section, and plan. Under the auspices of le loi Loucheur, *Le Corbusier made many different types of minimum housing schemes.*
41 Maisons Jumelées métalliques, Loucheur, Le Corbusier, 1929. First floor plan.



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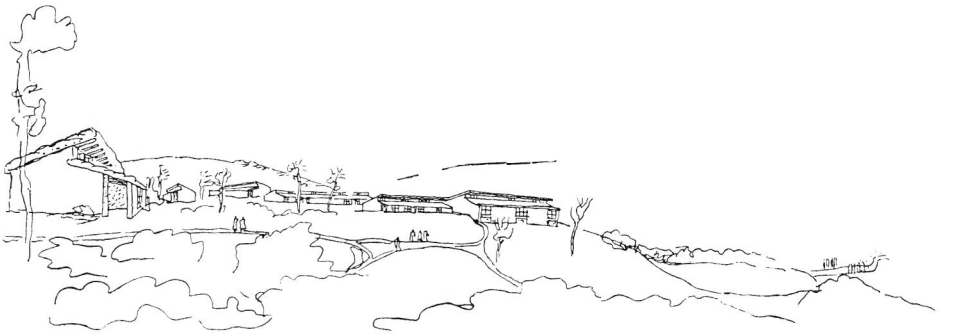
42 Maisons Murondins, Le Corbusier, 1944. Project for auxiliary housing in rammed earth (pisé).
43 House at Mathes, Bordeaux. Le Corbusier, 1935.
44 House at Mathes, Bordeaux. Le Corbusier, 1935. Ground floor plan.



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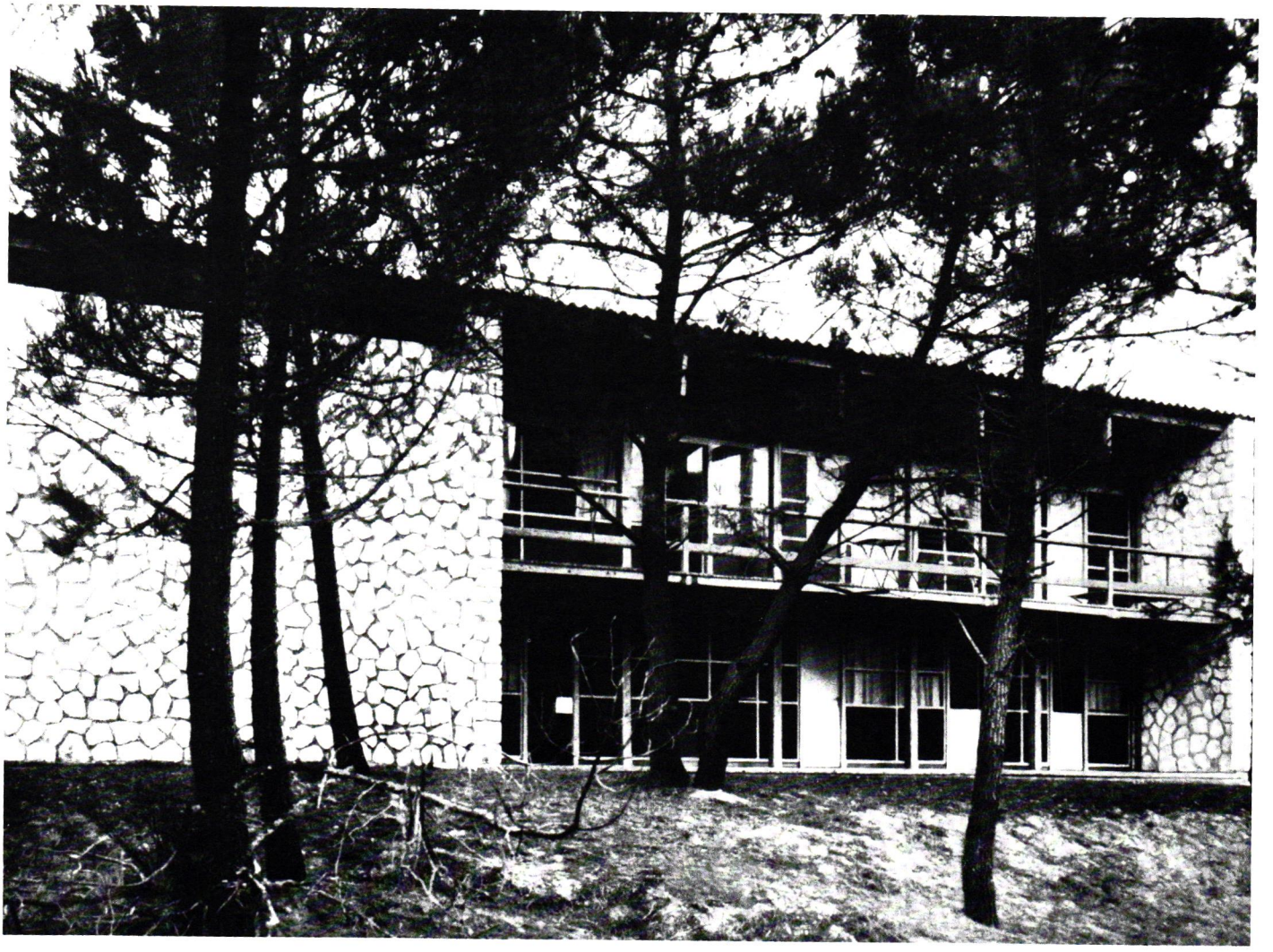

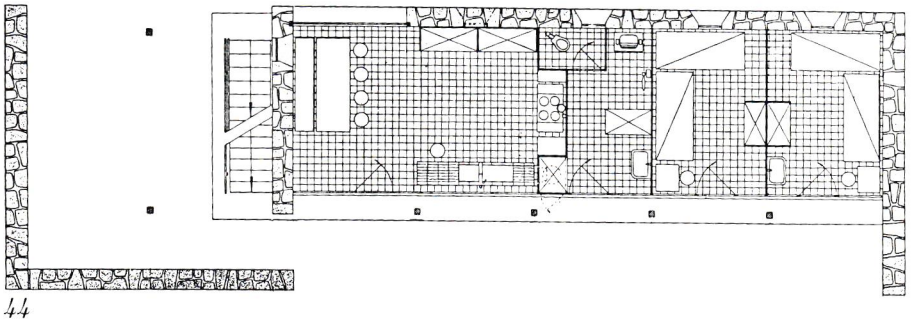

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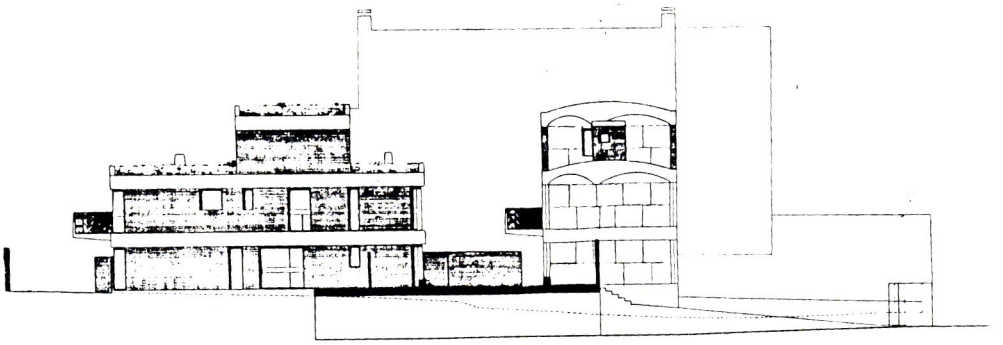

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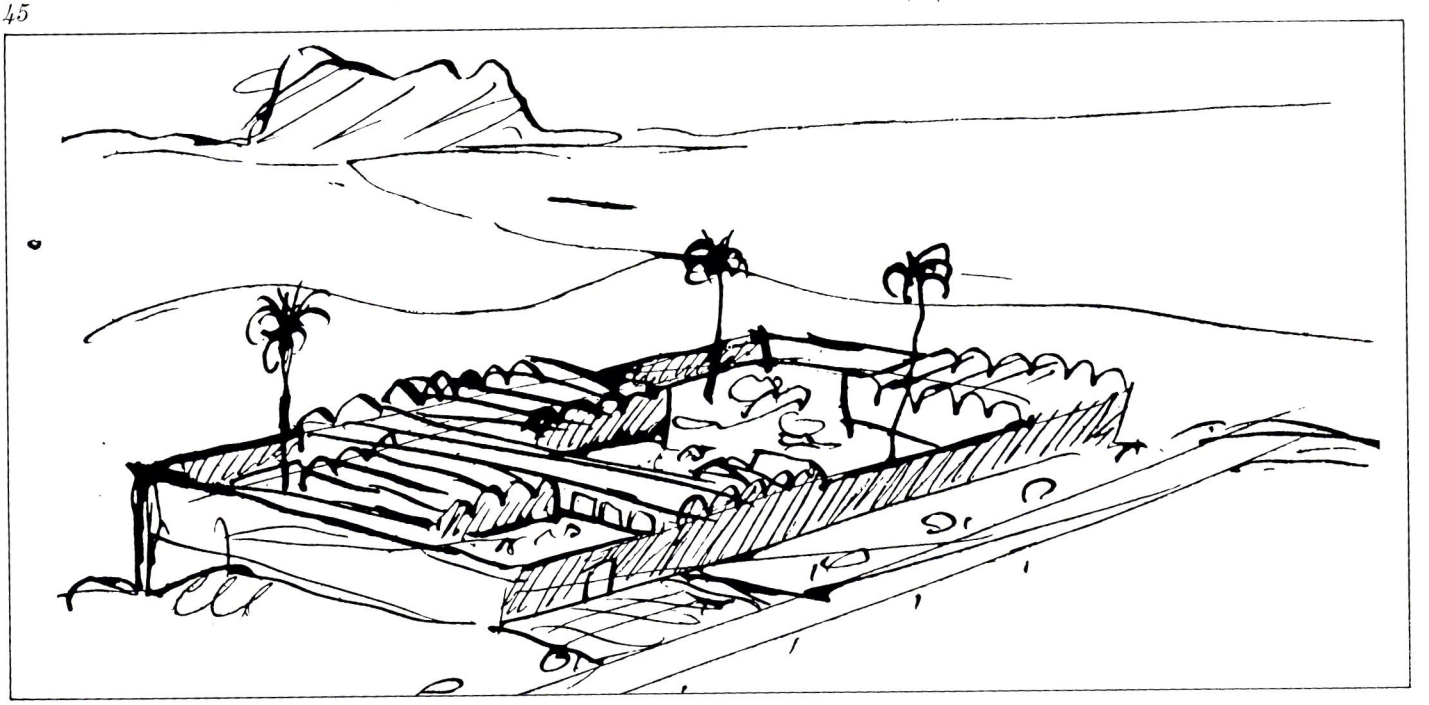

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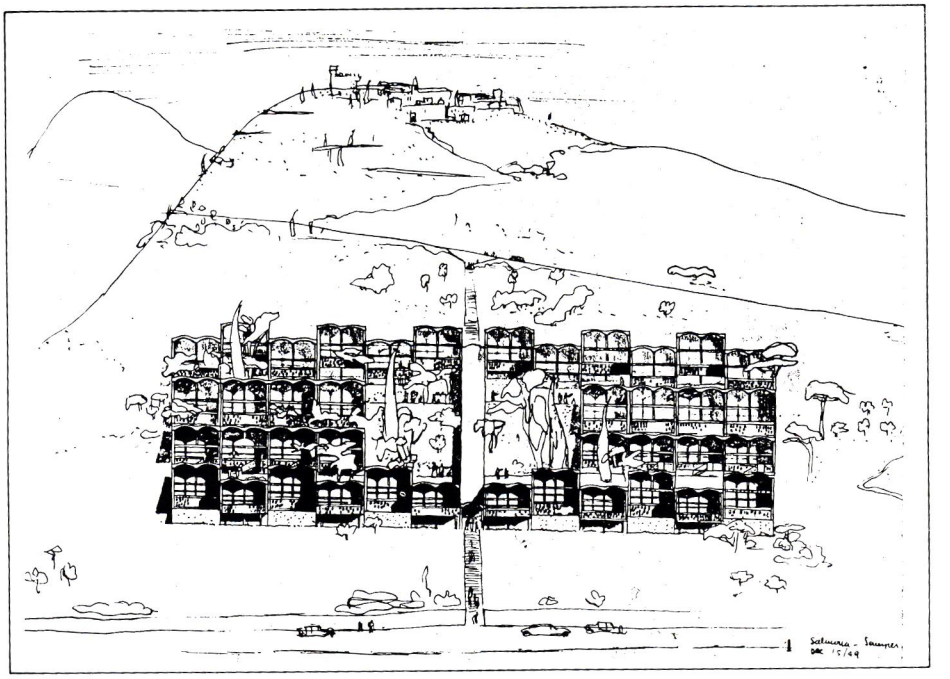
45 Maison Jaoul, Paris. Le Corbusier, 1955. North-east elevation.
46 Farmhouse, Cherchell, North Africa. Le Corbusier, 1942.
47 Roc et Rob housing, Cap Martin. Le Corbusier, 1949.
48 Sarabhai House, Ahmedabad, India. Le Corbusier, 1955. Long section.
49 Sarabhai House, first floor plan of owners suite.



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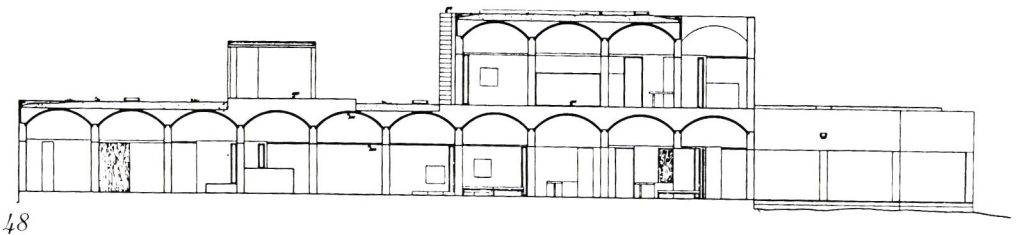

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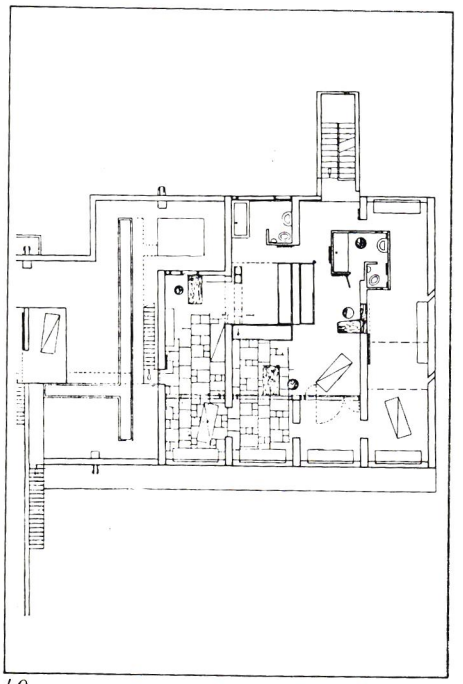
and its Propylaea as that point "when nothing more might be taken away, when nothing would be left but these closely knit and violent elements, sounding clear and tragic like brazen trumpets." This passionate image of the Acropolis, conveying a feeling for unity just prior to its disintegration, reappears as a constant theme throughout his life and with heightened pathos toward the end of his career. This was as much the principle behind Ronchamp's 'visual acoustics' as it was the motive for the diminutive volcanic, mountainous forms that erupt on the roof deck of the Unité. Ronchamp returned Le Corbusier to the 1930's, not only to the de Mandrot House with its integration into the site, but also to the basic form of the Pavillon des Temps Nouveaux of 1937. Unlikely as it may seem, this wire-cable structure was a fundamental prototype for Ronchamp, inasmuch as it was inspired by the reconstruction of the Hebrew temple in the wilderness, previously reproduced in *Vers une architecture*. As an essential connecting transposition, the dominant concrete shell roof of Ronchamp echoes the profile of the canvas-and-cable catenary roof of the 1937 pavilion. The recurrence of this profile in the Chandigarh Capitol and elsewhere in his later work makes it appear that Le Corbusier was positing this form as the twentieth century equivalent of the Renaissance dome, i.e. as a sign of the honorific.



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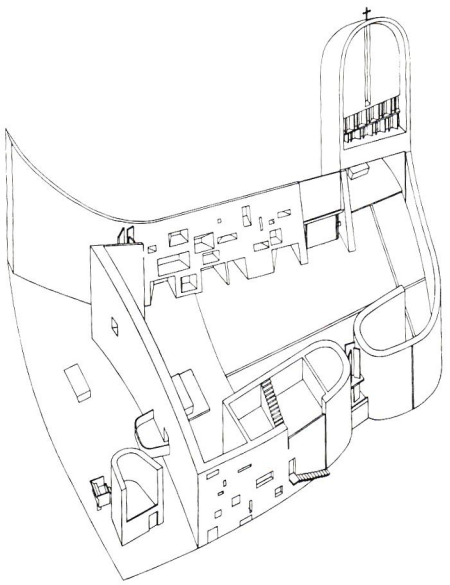
Beyond this, Ronchamp resists analysis—in part Maltese tomb, in part Ischian vernacular—its half-cylindrical side chapels, top-lit through spherical cowls and oriented toward the trajectory of the sun, serve to remind one that this Christian site was once the location of a sun temple. Built as it is around a hidden reinforced-concrete frame, the vernacular in this instance is simulated rather than reinterpreted in monumental terms. As in the villa at Garches, the rough masonry infill is rendered over with 'gunite', but the desired finish is no longer the machine precision of Purism but the stippled, whitewashed texture of Mediterranean folk building.

A more Cartesian approach informed the design of Chandigarh. Since the terrain here was flat, the siting of the monuments was determined by the imposition of a proportional grid. Le Corbusier had already used such 'regulating lines' on an urban scale in his Cité Mondiale of 1929 and his center for St.-Dié of 1945. His description of the Capitol makes it clear that he was convinced that such delicate refinements were perceptible, irrespective of the distances involved. "The composition of the Park of the Capitol, vast as it is, is today regulated to the centimeter in nearly all of its dimensions both overall and in detail. Such are the means, the powers, and the objectives of 'proportioning'. That similar modular devices had been used by Sir Edwin Lutyens when designing New Delhi was not lost on Le Corbusier, who wrote appreciatively of that capital that it was "built by

50 Pilgrimage Chapel at Ronchamp, France. Le Corbusier, 1955. Axonometric.
51 Sketch of vegetation and domestic animals, Chandigarh, India. Le Corbusier, 1951.
52 Capitol, Chandigarh, India. Le Corbusier, 1953. View of wooden model.



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Lutyens over thirty years earlier with extreme care, great talent, and with true success, the critics may rant as they will, but the accomplishment of such an undertaking earns respect."

Unlike New Delhi or the Cité Mondiale, Chandigarh achieved monumentality without referring directly to the traditional vocabulary of Western classicism. The striking profiles of its three monuments were derived, in the first instance, from a direct response to the severity of the climate. Unlike Lutyens, who had exploited only the secondary elements of Moghul architecture, Le Corbusier appropriated the traditional 'parasol' concept of Fatehpur Sikri as a monumental coding device to be varied from one structure to the next. By using this shell form either as a prelude (the Assembly entrance canopy), or as a constant (the vaulted roof of the High Court), or as a dominant (the crowning parasol of the Governor's Palace), he was able to suggest the character and status of each institution. The subtle profiles of these shell forms were derived in part from the livestock and landscape of the region. The evident intent was to represent a modern Indian architectural identity that would be free from association with the colonial past.

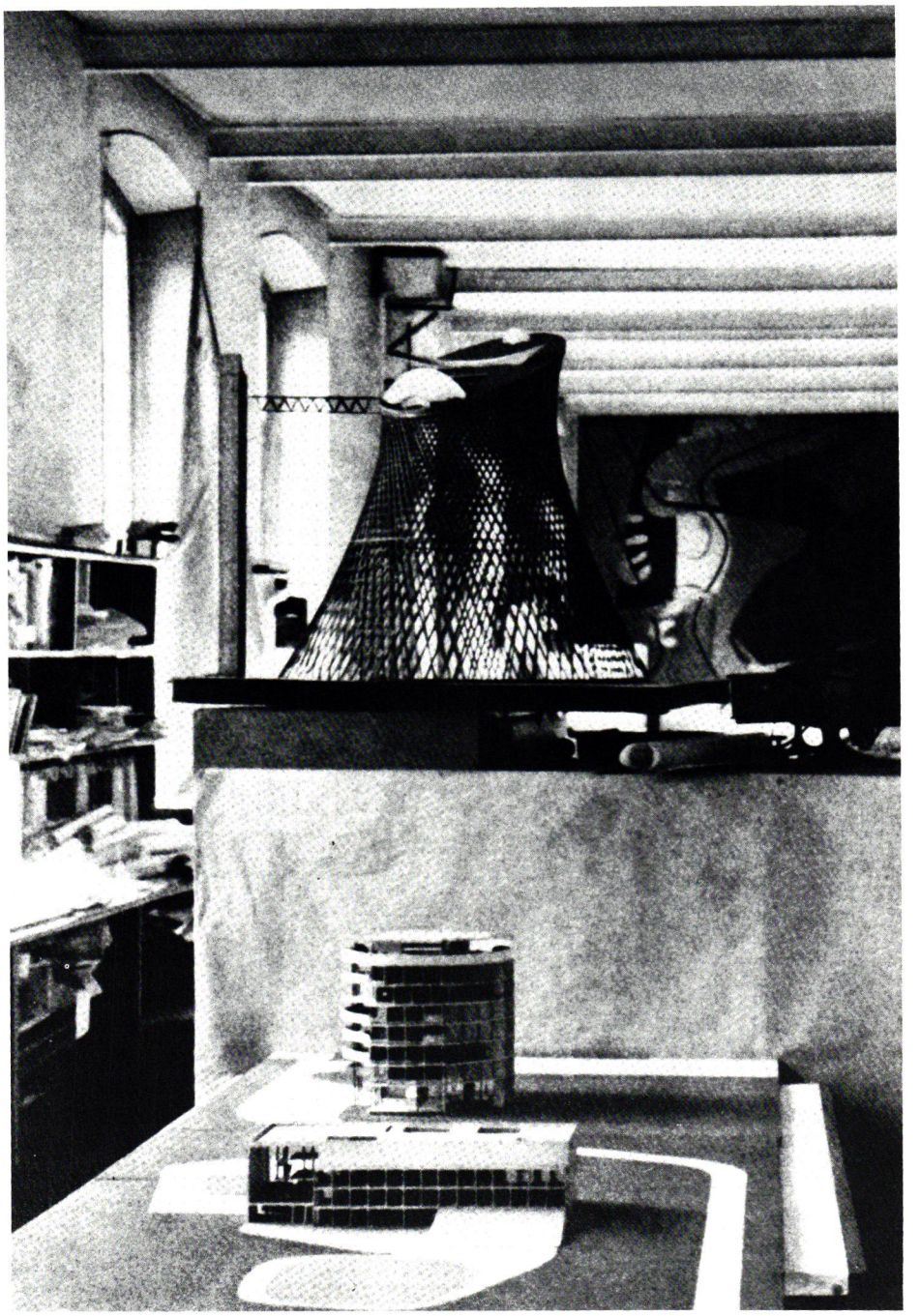
At the same time, the enormous scale of the Capitol deprived it of those qualities that had been identified as essential to urbanism at CIAM VIII, held at Hoddesdon in 1952: those public attributes of the "heart of the city" which Sert had seen as being dependent on "walking distances and man's angle of vision." Within the Chandigarh Capitol, where it takes over twenty minutes to walk from the Secretariat to the High Court, the presence of man is more metaphysical than it is convenient. In recalling the vision of De Chirico, Le Corbusier returned to Boullée's landscape of the *genre terrible*. Thus, the representative buildings of the 'three powers'—the High Court, the Assembly, and the Secretariat—were not related, as on the Acropolis by the configuration of the site, but rather by abstract lines of sight receding across vast distances, a progressive foreshortening of forms whose ultimate limits seem to lie finally with the distant mountains on the horizon (figs. 51, 52).

The realization of Chandigarh proper, as an abstract and ill-advised plan, can (as von Moos has argued) hardly be separated from the political aspirations of India at the time of its independence. For Chandigarh was more than the capital of the Punjab: it was the symbol of the New India. It epitomized the idea of a modern industrial state, the utopian destiny which Nehru had envisaged for India in total opposition to Gandhi's will. Thus Chandigarh was already on its way to becoming a picturesque 'motopian' suburb as laid out by Albert Mayer before its hasty rationalization into a

51

52

24 *53 View into the office of Le Corbusier, 35 rue de Sèvres, in Paris. In the foreground the French Embassy in Brasilia. Above that, the model of the hyperbolic assembly hall of the parliament buildings in Chandigarh. In the background, as an ending to the office, a painting by Le Corbusier. This office, in which Le Corbusier worked since 1922, was a former cloister passageway.*



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more or less orthogonal road net at the hands of Le Corbusier in association with Pierre Jeanneret, Jane Drew, and Maxwell Fry. The emerging crisis of Western Enlightenment, its inability to nurture an existing culture or even to sustain the significance of its own classical heritage, and its lack of any goal beyond constant technical innovation and optimum economic growth all seem to be summed up in the tragedy of Chandigarh—a city designed for automobiles in a country where many, as yet, still lack a bicycle.

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1 From Anatole Kopp, *Ville et revolution* (Paris: Editions Antropos, 1967).
2 From *Oppositions 9*, Summer 1977.
3, 45, 47, 51, 52 From Le Corbusier, *Oeuvre complète 1946–1952* (Zurich: Editions Girsberger, 1952).
4, 6 From Jean Petit, *Le Corbusier lui-même* (Geneva: Editions Rousseau, 1970).
5, 10 From Le Corbusier, *Les trois établissements humains* (Paris: Denoël, 1945).
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28, 29 From Stamo Papadaki, *Le Corbusier: Architect, Painter, Writer* (New York: Macmillan, 1948).
30, 31, 39, 40, 41 From *L'Architecture Vivante*, Autumn/Winter 1929 (New York: Da Capo Press, 1975).
32–38 *AMC*, No. 49, September 1979.

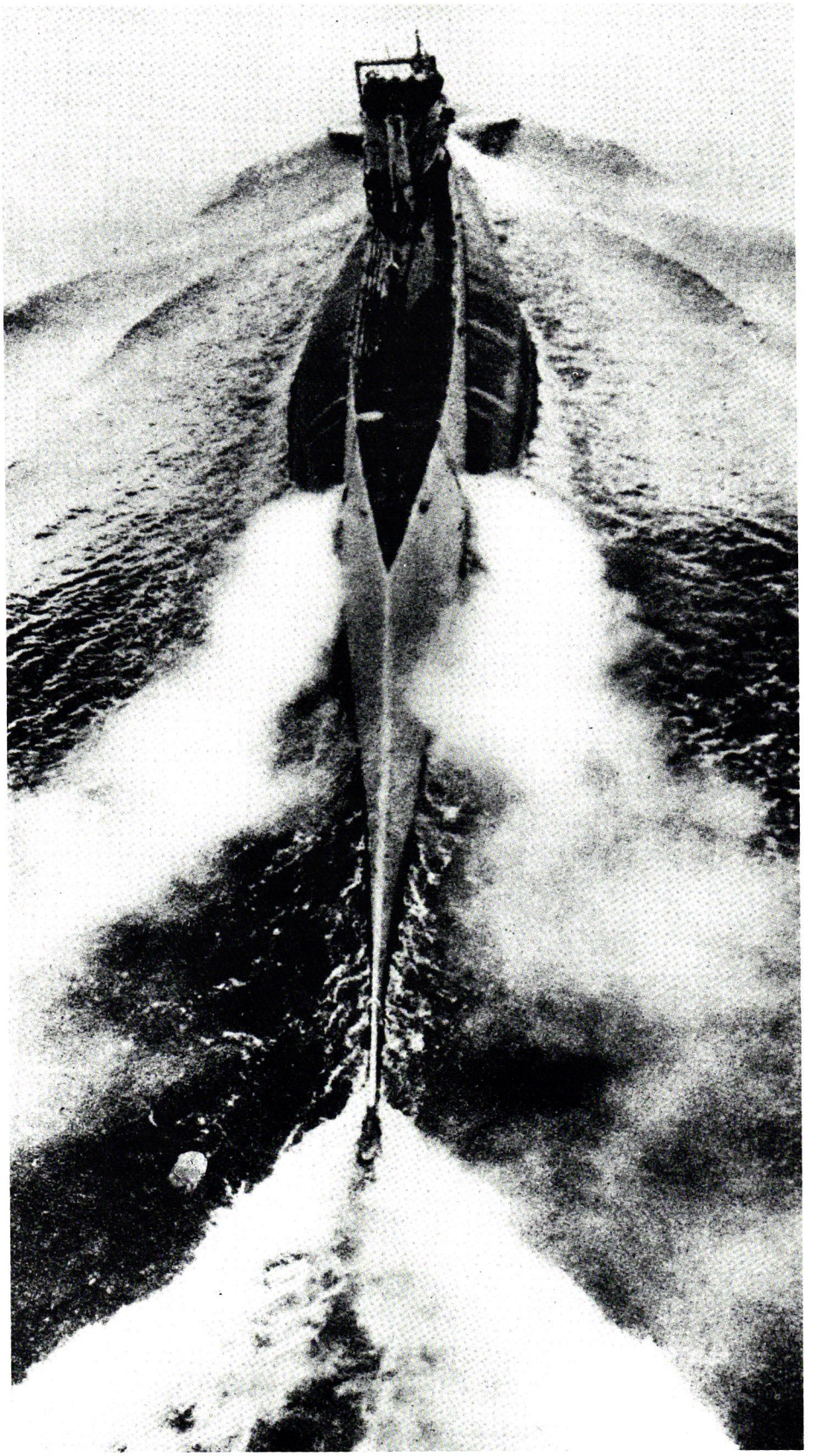
Starting from the hypothesis that Cubist painting, Joycean metaphor, and Corbusian plasticity are all equally "alluvial," Robert Slutzky posits a reading of the Corbusian oeuvre *in terms of the phenomenological dualism of water. After observing that the aqueous vision embodies both the horizontal datum of water's passivity and the sine curve of its turbulence, the author proceeds to address the elevating of the natural eye-level in Le Corbusier's work, a compositional and iconographic device which incorporates in a single paradigm not only the traditional subdivision of the painter's canvas into rear ground, middle ground, and foreground but also the hierarchic structuring of the classic villa into attic (head), piano nobile (body), and plinth (foot). Slutzky, in collaboration with Joan Ockman, shows how the anthropomorphism implicit in this subdivision is concentrated about the centroid of a* raised oculus, *which not only indicates the theoretical eye of the beholder—that is to say the traditional vanishing point—but also the cyclopean eye of the facade itself, thereby insisting on its literal constitution as a face. While stressing the everyday life of the* piano nobile, *this oculus assigns complementary connotations to the adjacent floors, the attic being given over to the spirituality of the* toit jardin *(the zodiacal level under the stars!), while the* rez-de-chaussée *accommodates within its closed base the subservient and mundane functions of storage and service.*

In one project after another Le Corbusier grapples with the compulsion to raise the "eye-foot" to the elevated datum of the piano nobile, *and where this cannot be achieved directly through the rhetorical implantation of ramps or stairs giving access to the first floor, as in say the Villa Savoye or the Millowners' Building of Ahmedabad, the same effect is arrived at through the use of traditional reflecting pools, where ". . . the ground plane entry, as reflected, becomes the precise center of the facade composition."*

At an urban level the elevated oculus yields a variety of visual effects and conceptual intentions, ranging from the reduction of mammoth structures to the scale of Purist objects—as in the aerial perspectives for the Ville Contemporaine of 1922—to a metaphorically aerodynamic displacement of energy, with turbulence and "lift" from the normally active ground plane being conveyed to the transcendental "airfoil" of the roof—as in the Rio de Janeiro viaduct city of 1929. As Slutzky points out, the architect's idea of structure, which alludes not only to hydro- and aerodynamic principles but also to biomorphic phenomena, ". . . goes far beyond a facile kind of referencing; it is a profound intuition about analogic structure and composition."

Perhaps the most surreal and disturbing aspect of Le Corbusier's oeuvre *is the way in which any relationship may be brought to oscillate between one scale and the next, changing from macro to micro and back again with little regard for traditional properties of medium and occasion. This is particularly noticeable in his* pan verre *period where aqueous bodies cradle within their reflective frames a wide range of still-life elements, ranging from the entry sequence of the Salvation Army to the historic monuments of the Seine. The dialectical consciousness implicit in this Olympian vision finds its literal reflection in Le Corbusier's own words, when he wrote toward the end of his life, "I am the sea and he [Pierre Jeanneret] is the mountain and as everyone knows these two never meet."*
K.F.

28 *1 (frontispiece) Submarine photograph, captioned "Organisms . . . perfect entities . . . a function, a form. . . ." in* La Ville Radieuse.



1

Aqueous Humor

Robert Slutzky

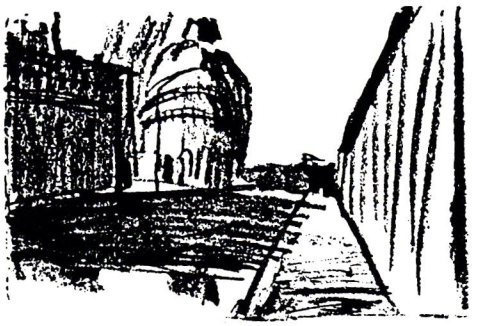
Prologue

What in water did Bloom, waterlover, drawer of water, watercarrier returning to the range, admire?
Its universality: its democratic equality and constancy to this nature in seeking its own level: its vastness in the ocean of Mercator's projection: its unplumbed profundity in the Sundam trench of the Pacific exceeding 8,000 fathoms: the restlessness of its waves and surface particles visiting in turn all points of its seaboard: the independence of its units: the variability of states of sea: its hydrostatic quiescence in calm: its hydrokinetic turgidity in neap and spring tides: its subsidence after devastation: its sterility in the circumpolar icecaps, arctic and antartic: its climatic and commercial significance: its preponderance of 3 to 1 over the dry land of the globe: its indisputable hegemony extending in square leagues over all the region below the subequatorial tropic of Capricorn: the multisecular stability of its primeval basin: its luteofulvous bed: its capacity to dissolve and hold in solution all soluble substances including millions of tons of the most precious metals: its slow erosions of peninsulas and downwardtending promontories: its alluvial deposits: its weight and volume and density: its imperturbability in lagoons and highland tarns: its gradation of colours in the torrid and temperate and frigid zones: its vehicular ramifications in continental lakecontained streams and confluent oceanflowing rivers with their tributaries and transoceanic currents: gulfstream, north and south equatorial courses: its violence in seaquakes, watersprouts, artesian wells, eruptions, torrents, eddies, freshets, spates, groundswells, watersheds, waterpartings, geysers, cataracts, whirlpools, maelstroms, inundations, deluges, cloudbursts: its vast circumterrestrial ahorizontal curve: its secrecy in springs, and latent humidity, revealed by rhabdomantic or hygrometric instruments and exemplified by the hole in the wall at Ashtown gate, saturation of air, distillation of dew: the simplicity of its composition, two constituent parts of hydrogen with one constituent part of oxygen: its healing virtues: its buoyancy in the waters of the Dead Sea: its persevering penetrativeness in runnels, gullies, inadequate dams, leaks on shipboard: its properties for cleansing, quenching thirst and fire, nourishing vegetation: its infallibility as paradigm and paragon: its metamorphoses as vapour, mist, cloud, rain, sleet, snow, hail: its strength in rigid hydrants: its variety of forms in loughs and bays and gulfs and bights and guts and lagoons and atolls and archipelagos and sounds and fjords and minches and tidal estuaries and arms of sea: its solidity in glaciers, icebergs, icefloes: its docility in working hydraulic millwheels, turbines, dynamos, electric power stations, bleachworks, tanneries, scutchmills: its utility in canals, rivers if navigable, floating and graving docks: its potentiality derivable from harnessed tides or watercourses falling from level to level: its submarine fauna and flora (anacoustic, photophobe) numerically, if not literally, the inhabitants of the globe: its ubiquity as constituting 90% of the human body: the noxiousness of its effluvia in lacustrine marshes, pestilential fens, faded flowerwater, stagnant pools in the waning moon.
James Joyce, Ulysses, *1914.*

Introduction: Meaning-full Form

All art tends toward structuring the contradiction between that which appears and that which signifies, between form and meaning. Neither field nor figure, however minimal, can avoid the burden of content; even the "blank" canvas, a field for any and all configuration, itself possesses intrinsic structural attributes, becoming a figure in a larger perceptual context. Through our perception of its edge condition, its size and proportion, its surface definition, and its reflectivity, it loses its neutrality. These factors combine to exude spatiality, stimulating an emergent awareness of heavier bottom/descending center/lighter top (foreground/middle ground/background), of latitudinal and longitudinal compression and tension (horizontality and verticality), which in turn suggest notions of landscape and interior. In such a way, this *tabula rasa* provokes our fictive and fantasizing perceptions, attracting an infill of extrinsic imageries, still vague, unordered, and even dreamlike, yet firmly rooted in past experience and historical and cultural memory.[1]

Once the process of marking the canvas begins, vagaries give way to specificity, and a quantum jump is made into



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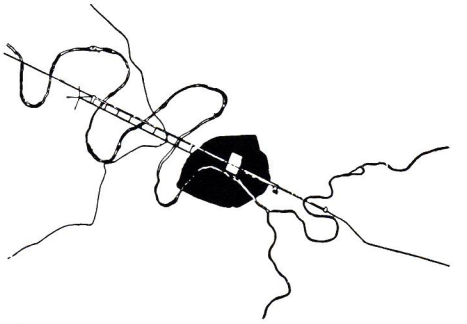
purposeful composition—a process of eradicating the accidental and the unpredictable in an attempt to manifest significant form and meaning. But even significant form, whether representational or presentational, cannot escape its own shadow of subliminal and unconscious associations. Indeed, such associations, when articulated and structured in accordance with conscious intentions, may be a fundamental gauge of profundity. These naturally provide layers of meanings and so serve to expand Time—the time of apprehension and comprehension of an aesthetic work.

In subsuming both the conscious and unconscious (the rational and non-rational) worlds, all art is *surreal*. A fabrication of mutually conflicting constituencies, it embodies doubt and change, conquering "emotional ambivalence" through "intellectual ambiguity."[2] Cubism, in particular, agglutinates form and meaning, ideally into a perfect balance between the two. Such a juxtaposition causes a kind of reciprocal distortion, culminating in the creation of new form-meanings. In the Cubist painting's mesh-like surface, the grid—a kind of compositional fish-net—seems to dissolve under the weight of its meaning-full haul, strained by, yet at the same time restraining its "catch" from fully escaping. This phenomenon can be seen in the early canvases of Braque, Picasso, Léger, Mondrian, and in late Gris still-lifes. Especially in these works, Cubism becomes that marvelous state of suspended animation between intrinsic or self-referential formal meaning and the abstracted extrinsic world that provides the signs and symbols of man's culture and history. Here the Cubist is magician, juggler, acrobat, trapping the idiosyncratic with the ideal, extruding individuation from type, feeding compulsively upon everything, everywhere; pretending to universalize but in fact introverting and personalizing. His aesthetic is one of implosion and hermeticism, nurtured by its own life systems, formally compressive and intellectually expansive.

The Cubist medium thus is not one of ethereal clarities, but of dense, gelatinous ambiguities. It savors water rather than air, the container-like still-life rather than the open landscape, the receptacle with its concavities and convexities rather than the straight and limitless vector, the mesh and the interlock rather than the statics of object adjacencies. It suggests an equilibrium, but one that oscillates and vibrates. Shimmering with visual puns and alliterations, humorously rejoicing in its own chimerical existence, it encompasses the ebb and flow of form and meaning, the grafting of illusion to allusion. At once inwardly turbulent and outwardly reflective, it is the stream, perhaps the ocean . . . the aqueous repository of all things.

The "aqueous vision" embodied by the Cubist painting from 1910 on finds its architectural expression at a slightly later historical moment in the work of Le Corbusier. In his development one discovers a progressive and typically Cubist "thickening" of space, the work becoming increasingly coagulated by a highly structured, ambiguous union of form and content unique in modern architecture. Casting farther afield to the domain of modern literature, one can find an analogous artistic evolution in James Joyce: both men as they mature break the syntactic rules with which they began, involuting and convoluting their formal languages and seeking new meanings through a recompositioning of old forms. Much as Joyce's increasingly viscous language meshes history, culture, and autobiography into more and more complex structure, so Le Corbusier's later forms carry with them and incorporate the alluvial sediments of built-up layers of meaning. Perhaps the image that best evokes this kind of retentive, all-engulfing mind is the sponge, and if for the moment we leave aside the biological description of this multi-celled organism to focus on its imbibing propensities, we can (with a certain poetic license) attribute to our metaphorical sponge the uncanny ability to select and assimilate from its watery field those diverse images that epitomize the history and culture of art. The relatively abstract platonic types of Le Corbusier's earlier work are in this way transformed into armatures for the more richly complex dialogues of his later work—highly deformed, refracted, oblique, yet nevertheless preserving to the end their generic and archetypal qualities. In the end, for the architect as for the writer, universality and idiosyncrasy cohabit in the same structure.[3]

2 Travel sketch of Pisa. Le Corbusier, 1911–1912.
3 Proposed diagram of Paris and its suburbs, Ville Radieuse. Le Corbusier, 1932.
4 Stoa-colonnade of Attalus in Athens.
5 "Redent" configurations in La Ville Radieuse. *Le Corbusier, 1925–1930.*



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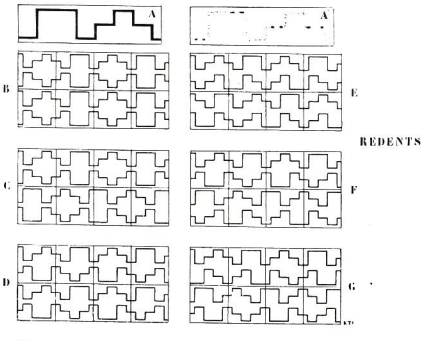

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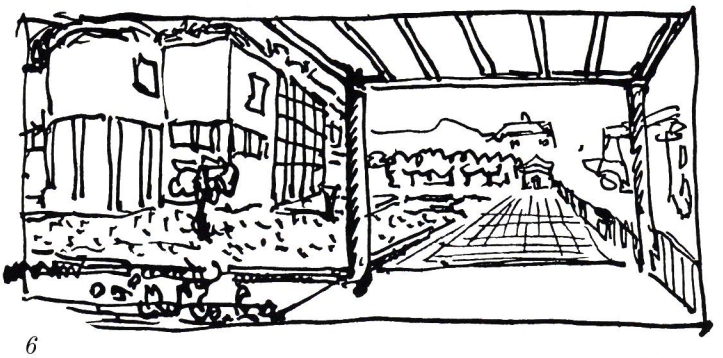
Most fundamental to the aqueous consciousness is the double condition of water as turbulent and placid. From it we can extract out the wavy or serpentine line—the sine curve with its crest and trough (measurer of both modular proportions and acoustical harmonics)—and its diametric opposite, the serenely flat straight line. Taken together they become the ideal Cubist syntax and the dualistic sign of the Corbusian synthesis.

The speared sine curve can be transformed, for example, into the ideogram of the day-night cycle; the diagram for "the law of the meander"; the caduceus, symbol of physician and healer; the interlocking hands of architect and engineer, symbol of the symbiosis of aesthetics and pragmatics; the umbrella roofs of the various exhibition pavilions; the map of "metropolitan" French skyscrapers vectoring across the Mediterranean from Algiers to northern France. In Le Corbusier's 1932 proposal for Paris, the sine curve becomes the curving Seine pierced by the new high-speed autoroute (fig. 3). The same symbol—which in Cubist painting can be seen as a visual equivalent of musical notation, recalling Braque's *Homage to J. S. Bach* as well as the recurrent male/female iconography of stringed and voluted guitars and violins (perhaps surrogate Madonna figures?)—is transformed in the plan of the *redent* housing for the Ville Radieuse (fig. 5) into a fugue played on the grid-staff of the city.

Traces of the emergent still-life vision of space in Le Corbusier's architecture are to be found in his earliest work and predate his association with Ozenfant. They are already anticipated in his voyage sketches. A comparison of his drawing of the Duomo, Baptistry, and Campo Santo at Pisa (fig. 2) with a typical eye-level photograph of a colonnade illustrates the point (fig. 4). In the drawing we find a proclivity for describing perspectival space as though the eye were more than naturally levitated above the ground plane, thereby causing the vanishing point to be raised to the center of the format.

The lifting of the eye level to the center makes the ground plane read as tipped forward or ramped, i.e., as "elevational," and suggests a replacement of the classical foreground/middle ground/background relationship (A/B/C) by a de-emphasized foreground/compressed middle ground/projective background structure (A/B/A′). This can be seen in the later drawing of the Villa Schwob garden (fig. 6). The changed relationship is articulated through an emphasis on subject matter falling in the middle horizontal zone, and a concomitant strengthening of the top zone, either by suppressing its overlap with the middle when possible or by splitting the drawing into two distinct and nearly equal horizontal zones, thus making the middle ground function as part of both foreground and background. There is also a penchant for flattening forms through a disregard of mechanical one-point perspective (often through multiple-point perspective—a reaffirmation of binocular vision) and a suppression of normal variations in line weight. Two-dimensionality predominates, and in the ensuing dialogue between flat and round, cylindrical forms appear as isometric elliptical ones. This seemingly Mannerist procedure uses distortion for informational clarity rather than for its own sake, however, striving always to *see more* of the given subject, to encapsulate within one drawing the maximum of conflicting information. Thus, distant objects—buildings—tend to tip and slide forward, becoming involved with the "front stage" and causing the plan to become quasi-elevational. The subtle but insistent interplay between symmetry and asymmetry, which defies the dictates of representational space, adds to the pictorial tension. This idea of a highly articulated middle ground within which background and foreground are mediated derives essentially from still-life rather than landscape painting—a particularly French tradition recalling Cotan, Chardin, and Cézanne. Cubism, the culmination of that tradition, in this sense provides a natural repository for Le Corbusier's spatial instincts.



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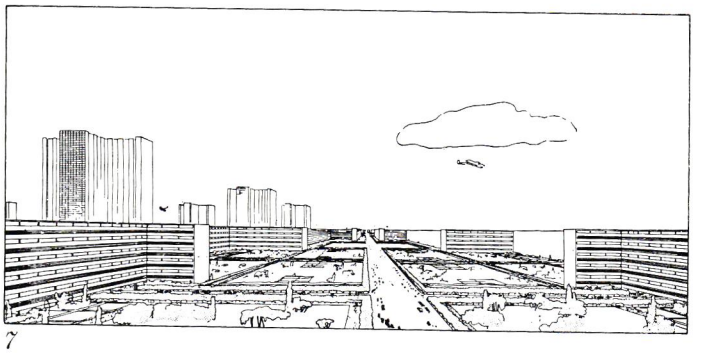
By the early 1920s, the viewpoint dominates Le Corbusier's architectural drawings, from the perspectives of his earliest urban plans on. For example, in the Ville Contemporaine (fig. 7), the raising of the horizon to the roof line of the *redent* housing causes the scale of the towers to be reduced to the pictorial dimensions of Purist *objets*, producing an urban still-life rather than an urban landscape.

6 Sketch of the rear garden of Villa Schwob, La Chaux-de-Fonds. Le Corbusier, 1917.
7 Ville Contemporaine. Le Corbusier, 1922.



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This urban still-life vision becomes increasingly pronounced in later drawings.

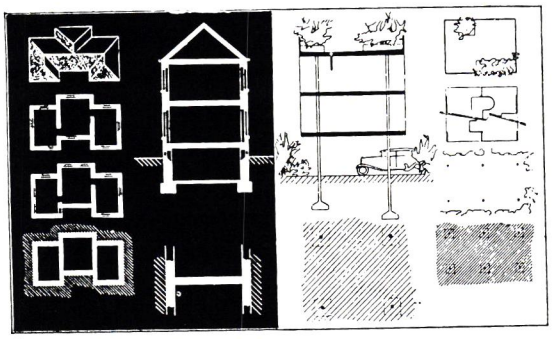
Thoroughly implicit in the foregoing is the tautening of surface. Drawn objects tend to become elastically immersed in a dialogue of contour contiguities and proportional and shape alliterations. Most importantly, negative or residual spaces are invested with a formal value equivalent to that of the objects that generate them. Now fully initiated into the Cubist syntax of concave and convex interlocking compositions constructed from distorted circles and cylinders, Le Corbusier abstracts biomorphic and machined shapes into the regular components of the Purist still-life; these *objets-types* become illuminated by varied but definite light sources, with their resultant volumetrics further transformed through surface tensioning, corrugation, patterning, and the presence of localized color interwoven throughout the agitated surfaces. The interlocking configurations of the *redent* housing for the Ville Radieuse (fig. 5) invest architectural space with precisely this Purist figure-ground ambiguity. In later architecture and painting, Le Corbusier maintains the clarity of the dialogue between complementary or opposing elements, but he increasingly laminates such graphically distinct systems to create partial erasures and the interpenetration of fields in a manner that recalls the structure of certain late Gris still-lifes. Geometrically precise systems of space and structure become penetrated by free, fragmentary, non-systemic, and fluidly defined forms that reflect the exigencies of both pragmatics and semantics.

Omitted from the previous discussion but not to be ignored is a somewhat elusive and probably unconscious presence in a few of the early drawings. This is the metaphoric, especially anthropomorphic meaning with which form is endowed. This quality will have enormous importance in Le Corbusier's work, suggesting his full extension of Cubism into architecture. The latent anthropomorphism in these drawings takes the form of an oculus, a giant eye in the central portion which seems to stare back at the viewer (figs. 2, 6). Often it appears as a small or large orthogonal aperture or sub-frame, sometimes as a dark and undifferentiated hole. At this point, it is probably a natural result of the position taken with respect to the scene being described. Later it takes on distinctly human characteristics.

The oculus appears in a built version as early as 1916 on the entry facade of the Villa Schwob (fig. 10). Here, the blank central panel on the second story, balanced above the slender columns defining the portico below (a premonition of Villa Savoye) and flanked by two sets of recessed eye-like apertures, appears taut and planar. This panel is like the painter's unmarked canvas, an invitation to the projections of the mind's eye. Seemingly vacant, enigmatic, yet somehow alive, it reflexively receives the gaze of the observer, momentarily waiting to be filled in. It is as if the viewer's eye were transposed and refocused from the center of his vision back to him: the reflected eye. This first oculus, here, one might say, with its lid closed, forty years later becomes the projecting eye of the entry facade of the Secretariat at Chandigarh (fig. 9), gazing out on a Cubist tapestry of mounds, gullies, vehicular and pedestrian routes, plazas, reflecting pools, and buildings comprising the interstitial composition of this Indian capitol complex (fig. 11).

Not only the physical manifestation of the synthetic organism of the building, this facade becomes the imaginative projection of the human organism observing it, the reciprocator of the cultural, historical, and tactile associations of the viewer. It is both analogic and haptic. By the end of the 1920s this quality animates the facade as a whole. The latent energies lying both behind and in front are evoked on a surface pregnant with implied depth. This notion of surface relates directly to the hermetically compressed and synthetically two-dimensionalized space of the Cubist still-life. It is this preference for compression over expansion which inclines the Corbusian facade to frontality rather than obliqueness, the aspects of face and profile rather than the three-quarter view.[4]

The facade of any frontalized structure most basically functions as a plane that stands between the observer and interior space, and it is accordingly associated with the idea of entrance or penetration. But now "facade" takes



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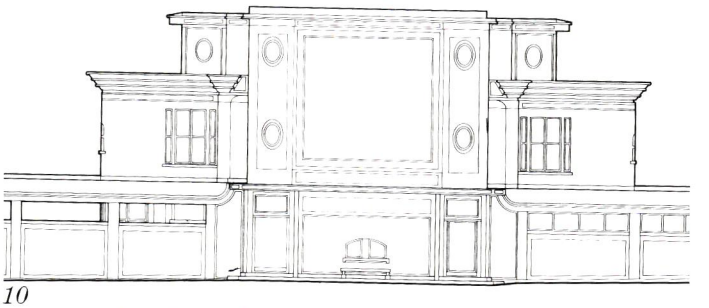
8 'Old' versus 'new' house form demonstrating the "Five Points of a New Architecture." Le Corbusier, 1934.
9 East facade of Secretariat, Chandigarh. Le Corbusier, 1952.
10 Villa Schwob, La Chaux-de-Fonds. Le Corbusier, 1917. Entry façade.
11 The Governor's Palace, Chandigarh. Le Corbusier, 1952. Site plan.
12 Proportions of the head, Villard de Honnecourt, circa 1225–1250.

on a deeper and more archetypal meaning. It signifies not only frontispiece but also *face*, the part of the body that most involves the idea of expression. And if the etymology of "facade" and "sur*face*" suggest physical anthropomorphic qualities, then "elevation" suggests also moral and spiritual ones. It has to do with enlightenment and with striving for what is lofty; with aspiration, and so with inspiration, and with breathing itself. Enlightened, it hearkens back to the medieval notion of the eye as window of the soul.

The anthropomorphic facade is not a new phenomenon in the history of architecture, but in Le Corbusier's buildings it is imbued with a Cubist inventiveness. The classical facade with its A/B/A vertical symmetry derived from plan, firmly rooted in the earth by its cellar and load-bearing wall construction, is here rotated ninety degrees and elevated on *pilotis*. An A/B/A′ horizontal asymmetry is created in section, freeing the plan and the facades as the building appears to be levitated off the ground plane and the lower and upper portions are recessed from the central one (fig. 8). The *pilotis* of the lower A section are the metaphorical legs and feet of this new structure; the middle B section enclosing the central floors is body-head-face-eye; and the top A′ section containing the highly articulated roof is the crown or brain, the exposed cranium. The result is the emergence of a facade with a human countenance—a physiognomy reflecting and gazing upon its surroundings, inviting entry, and maintaining a constant formal dialogue with its observer. This A/B/A′ horizontal structure, which is present explicitly or implicitly in nearly all of Le Corbusier's work, recalls medieval and Renaissance diagrams of the geometric proportions of the head, such as those of Villard de Honnecourt, in which the head is abstracted into a sixteen square grid with the eyes situated just below the horizontal equator (fig. 12). In the diagrams of Dürer, the head becomes a cube divided horizontally into thirds and vertically in half to determine the position of eyes, ears, nose, and mouth; in profile it is represented by a square whose center line marks the upper part of the eye socket, with a smaller, tripartite near-square defining the eye itself (fig. 13). This last diagram bears a striking resemblance to the side facades—profiles—of the Algiers skyscraper of 1938–1942, which are not only divided into three parts horizontally, but whose central oculus is further divided into thirds (fig. 14).[5] The same tripartite structure is seen in such disparate examples as an African sculpture (fig. 15), a Renaissance window (fig. 16), and an illustration for the *Book of Hours* (fig. 17). In the last example the anthropomorphism of the medieval cosmology is embodied in the division of the page into thirds; the bottom third, depicting the drudgery of the life of the serf, represents the "foot" of the chain of being; the middle third, the life of the castle, represents the "body" politic and social; the top third, the zodiac and heavens, represents the spiritual head and brain. The head-body-foot plan organization of the Ville Radieuse is suggestively analogous (fig. 19).

In all of these biomorphic compositions, the section that contains the eyes and ears (metaphorically or literally) is a central band mediating between the region below, which represents the more pedestrian or mundane functions, and the one above, which incarnates the seat of intellect and spirit. Similarly, Le Corbusier's central oculus (B) mediates architecturally between the corporeal earth (A) and the aspired-to sky (A′). Through this centrally located "optic nerve," the roof becomes the receiver of the ground plane energies, in turn transforming and re-creating them into a surreal microcosm. Here man is free to engage the celestial universe—the sun and the clouds, the moon and the stars. By day, this roofscape appears as an arcadian scene of Apollonian celebration, a child's world in touch with nature (fig. 18). By night, it gives place to pictorial tableaux of uninterrupted contemplation, to a ritualized theater of formalized dreams, like that envisioned in a 1926 Jean Lurçat painting (fig. 22). Empty and mysterious, it takes on the aspect of the dark side of the cosmos and the world at its most sublime (fig. 21). In its exaltation of Attica/attic, it proclaims the demise of the Bachelardian cellar.

In contrast to the more cerebral roof, the ocular B zone of the facade is the center of *pragmatic intelligence*, and the approaching "eye-foot" is often brought literally to it. Especially in his later work, Le Corbusier ramps or



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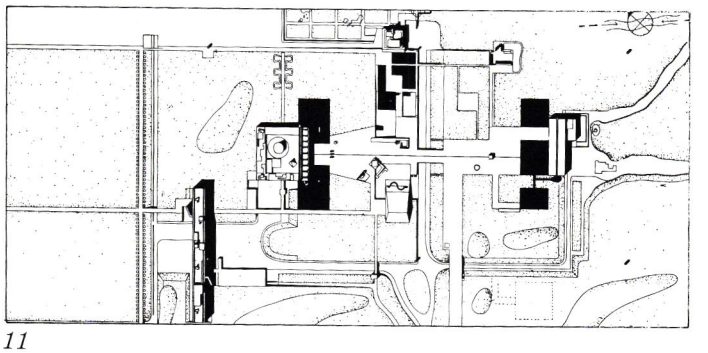

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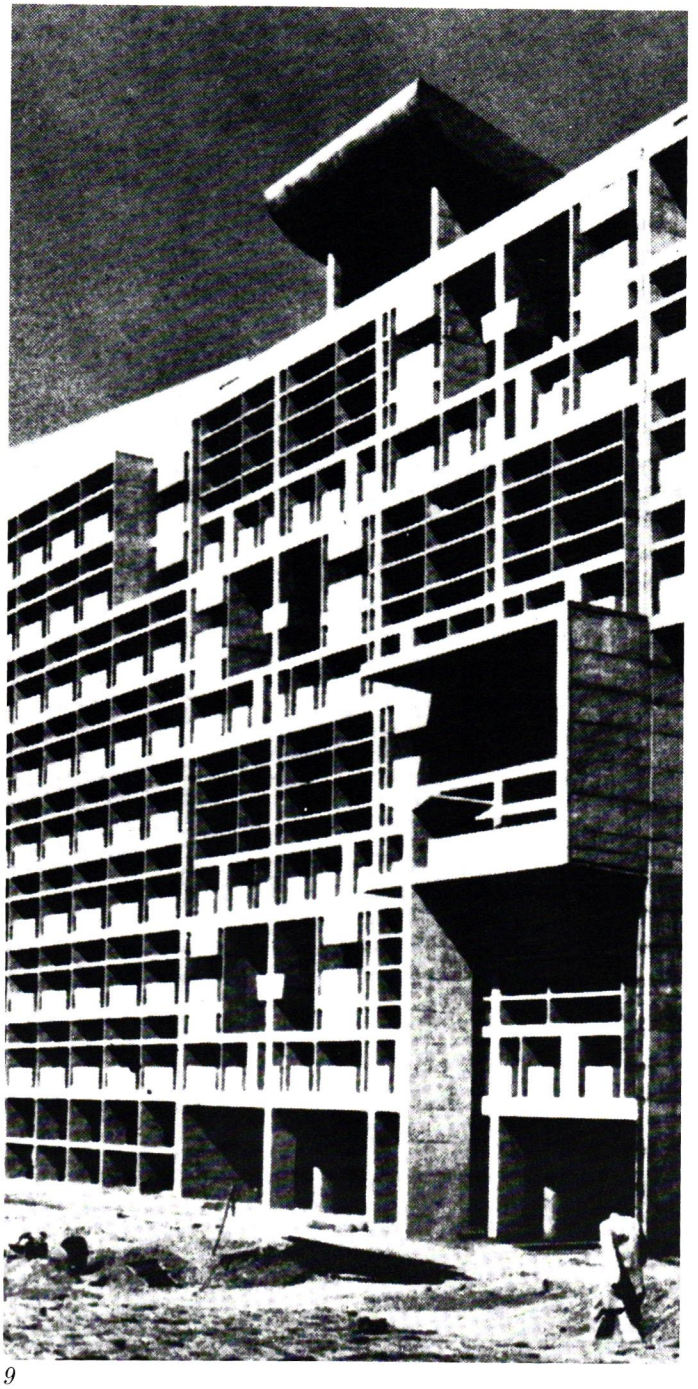

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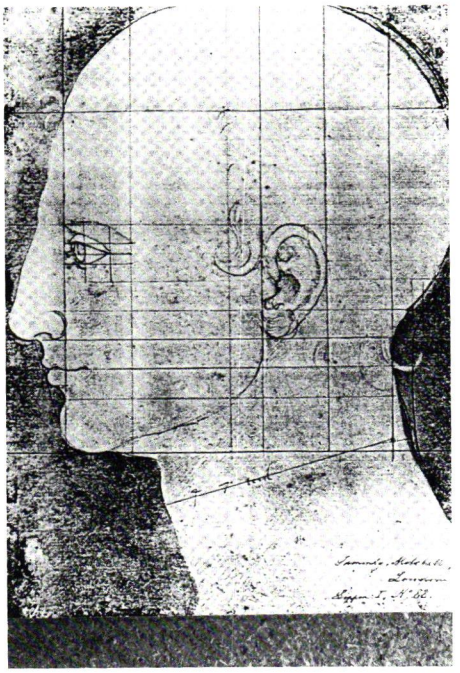

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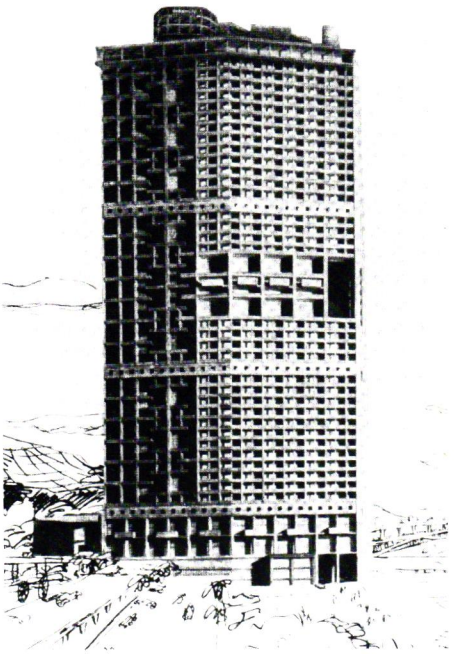

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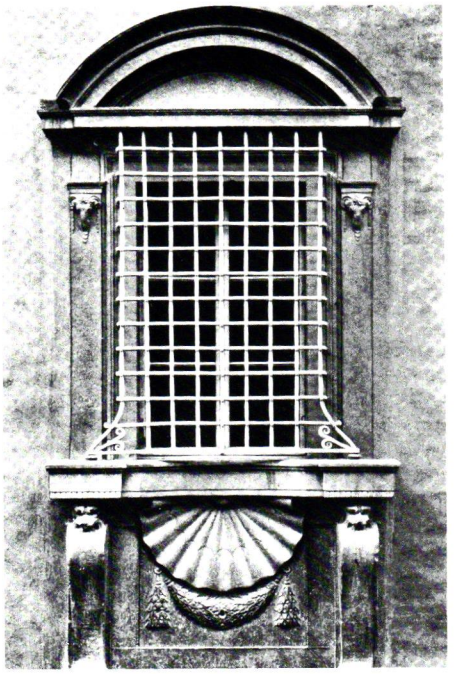

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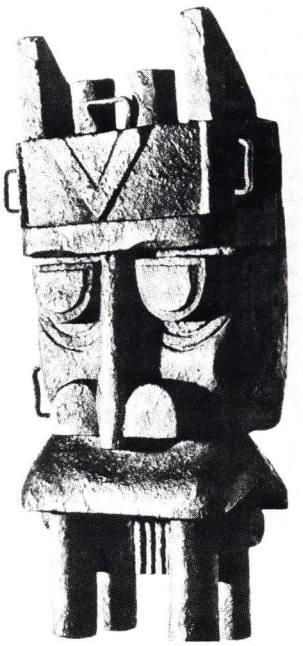

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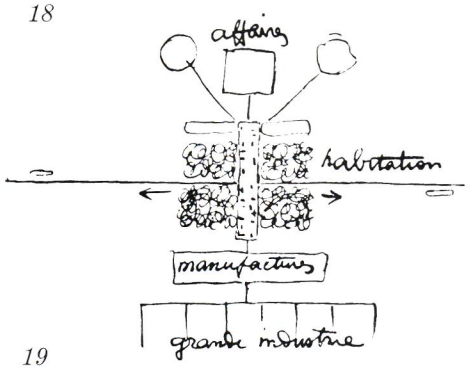

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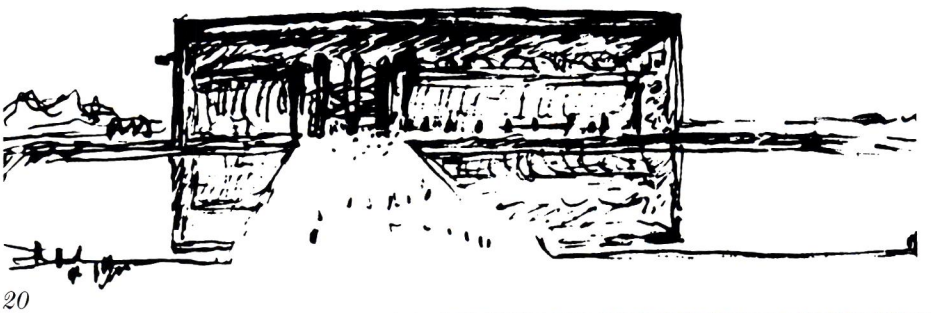
13 Proportions of the human head, Albrecht Dürer, 1518.
14 Algiers skyscraper, east elevation. Le Corbusier, 1938–1942.
15 Otubo water spirit mask, Ijo tribe, Nigeria.
16 Window of an Italian palazzo, sixteenth century.
17 "October" from The Book of Hours of Jean Duc de Berry, *circa 1400–1416.*
18 Unité d'Habitation, Marseilles. Le Corbusier, 1949.
19 Plan sketch for "Ville Radieuse." Le Corbusier, 1931.



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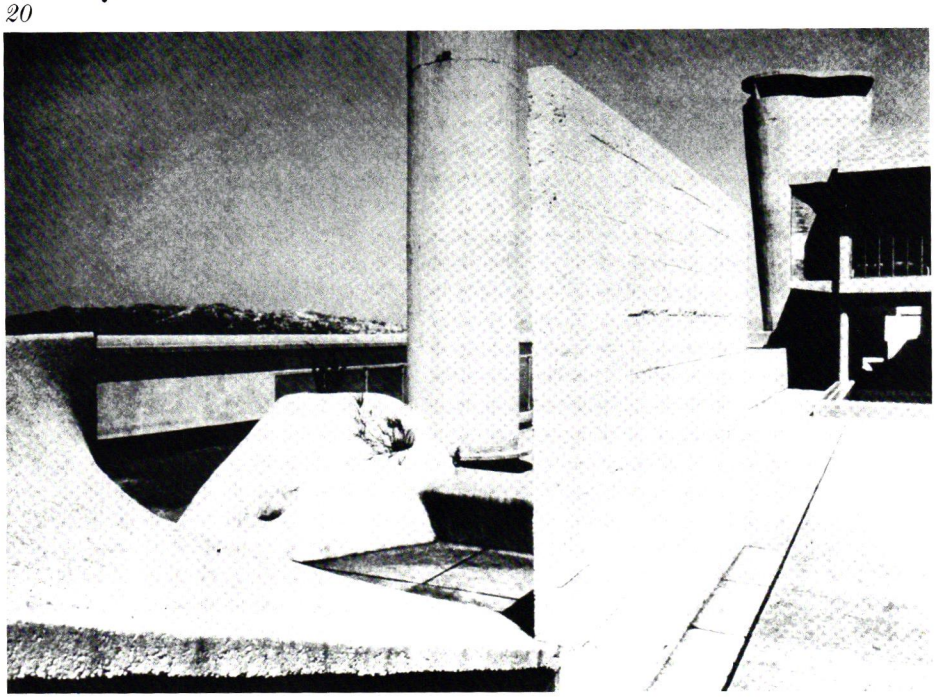
20 Palace of Justice, Chandigarh. Le Corbusier, 1952. Sketch showing intended mirror image.
21 Unité d'Habitation, Marseilles. Le Corbusier, 1949. Roofscape.
22 Painting by Jean Lurçat, 1926. This was reproduced in Ozenfant's Foundations of Modern Art.
23 Proposed viaduct housing for Rio de Janeiro. Le Corbusier, 1929. Sketch.
24 "Obus" plan for Algiers. Le Corbusier, 1935. The metaphor of turbulence extended into urbanism.
25 Photograph of a wing tip from Aircraft.
26 Turbulent hydrodynamics, from a photograph in Aircraft, *1935.*



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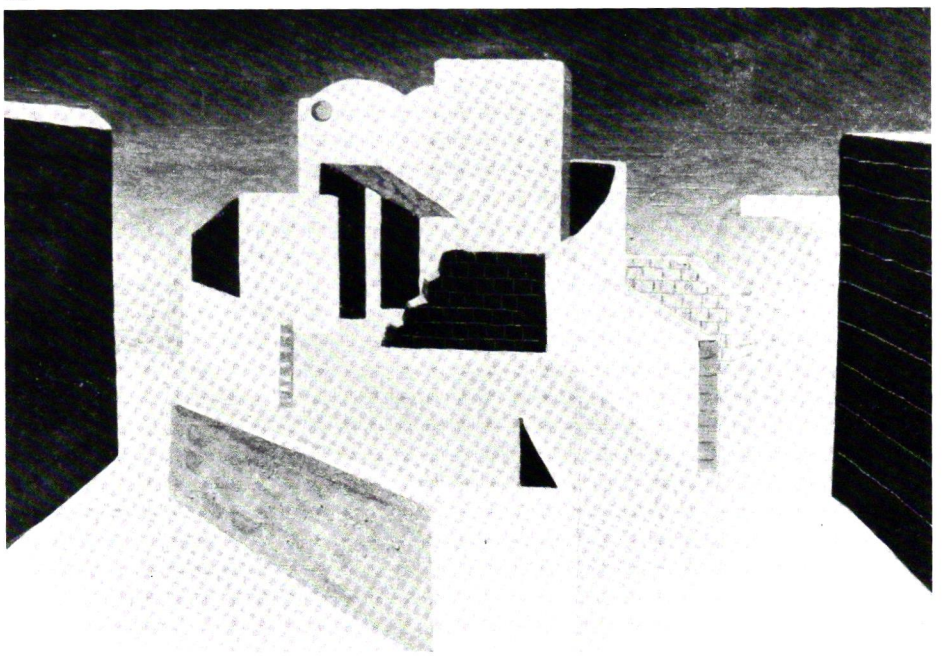

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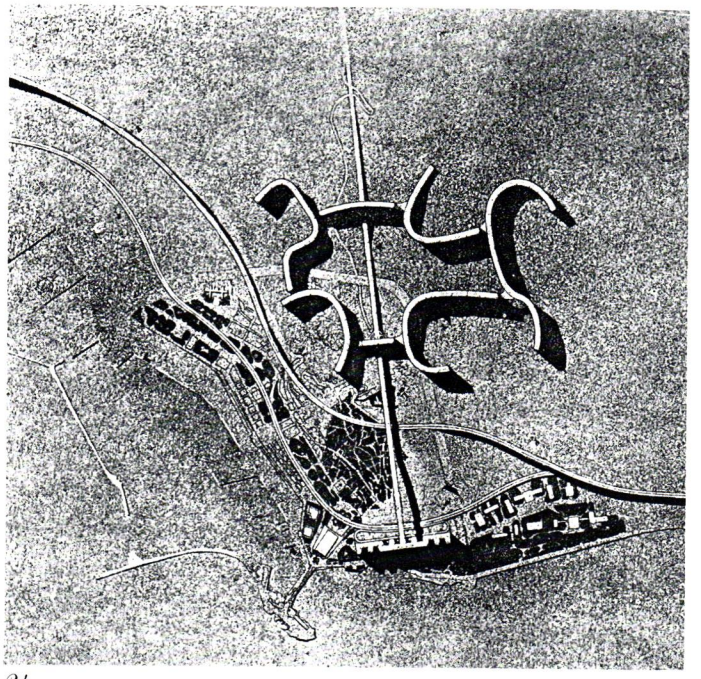

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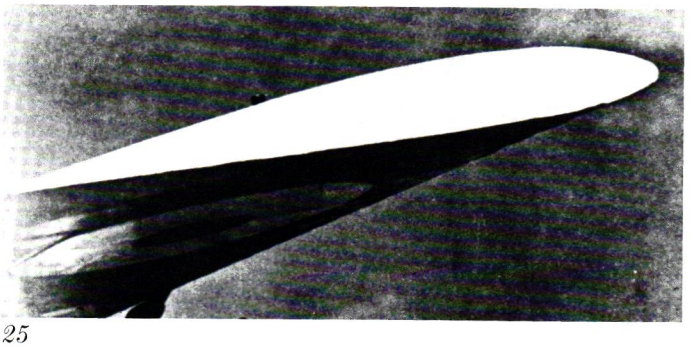

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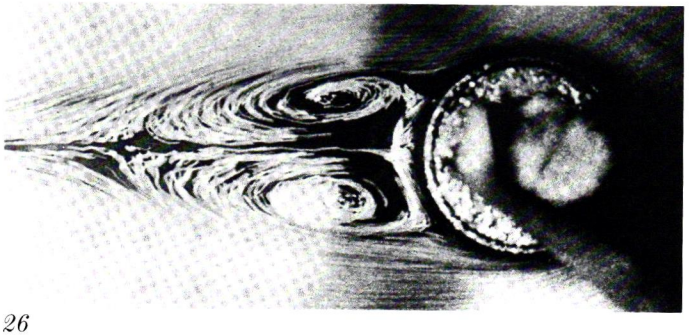

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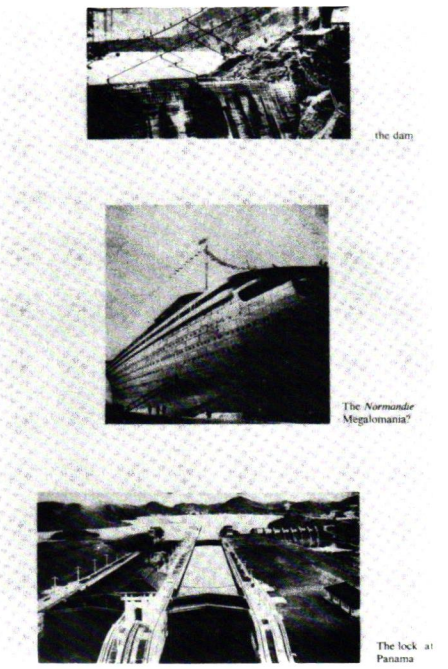
bridges through this central point. Where he cannot achieve a physical penetration he creates the illusion of one through the device of watery reflection, so that the ground plane entry, as reflected, becomes the precise center of the facade composition. This idea reaches its fullest expression at Chandigarh. There pools serenely double the buildings they reflect and transform the ground plane into levitated ramps through which the oculus is penetrated (fig. 20). Static and still, these watery mirrors of introverted reflection restore the agitation of the facades to symmetries of quietude. This illusion by which one is made to enter the oculus of the Corbusian building is analogous to the way the eye tends to center on the middle ground portion of a still-life painting—a painterly solution to an architectural problem and a reaffirmation of frontality.

The ground plane, interrupted only minimally by supporting structure, permits the energies of nature and the street to flow underneath the building. A premonition of this phenomenon can be seen in the first Dom-ino house, where the replacement of basement by exposed footings and the stacking of concrete cantilevered slabs by means of a columnar system free the plan to be shaped by pragmatic requirements.[6] While the roof plane at this stage is still devoid of meaning and the ground plane merely a hollow plinth, later, in the diagram of the new house—a modified Dom-ino—the dynamics are fully articulated (fig. 8). Read alongside a photograph from Le Corbusier's 1935 book *Aircraft* (fig. 26), this diagram can be seen as a study in hydrodynamic and aerodynamic energies. For the first time, the architecture exhibits a structure like a sluicegate suspended over a roiled ground plane. What appear to be trees are drawn as lines of turbulence, suggesting hydrodynamic eddying underneath the buoyant building, while the energy of the ground plane is hydraulically lifted to the activated roof plane. These same principles of energy transposal are applied almost literally in the section for the Rio de Janeiro viaduct housing (fig. 23), except that there the automobile rather than the tree is the source of the rooftop turbulence, and the granulated, aleatory texture of the old surrounding town accounts for the ground plane energy. Clearly one model for this new urban hous-

27 Photographs of a dam, the "Normandie," and a Panama Canal lock. From La Ville Radieuse.
28 Algiers skyscraper. Le Corbusier, 1938–1942.
29 Photograph of a canal lock gate from Frederick Etchell's introduction to the English translation of Towards a New Architecture, *1928.*
30 General Assembly, Chandigarh. Le Corbusier, 1946–1947. Plan and section, sketch.
31 Chapel at Firminy-Vert. Le Corbusier, 1960. Plan.
32 Millowners' Association Building, Ahmedabad. Le Corbusier, 1954. West facade.
33 Olivetti proposal for Rho-Milan. Le Corbusier, 1959. Site plan.



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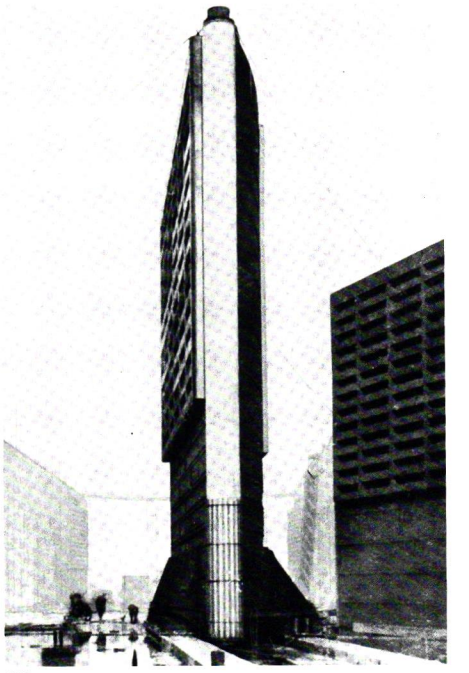

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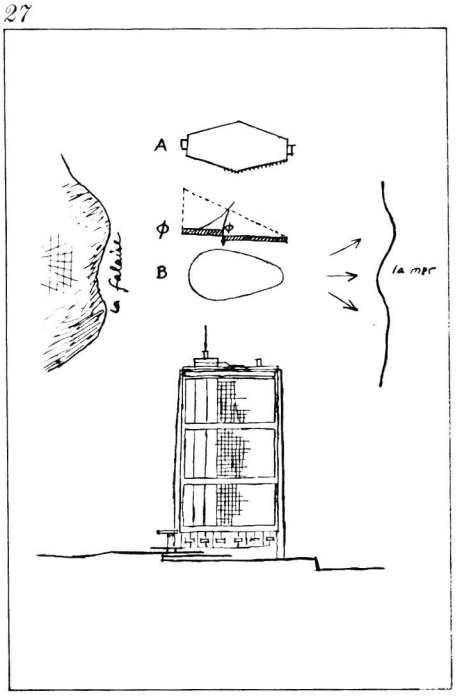

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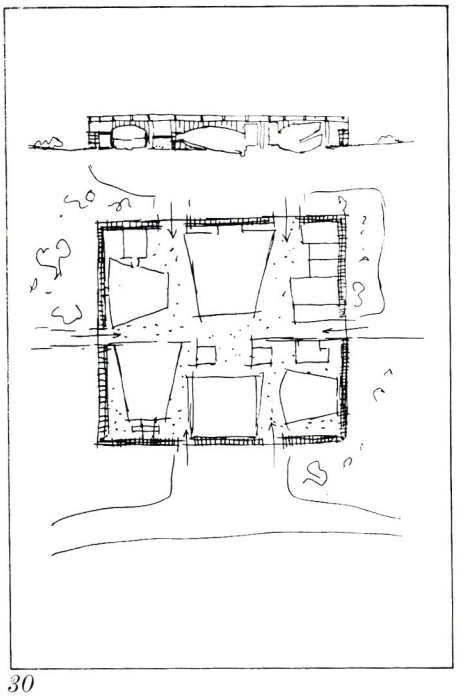

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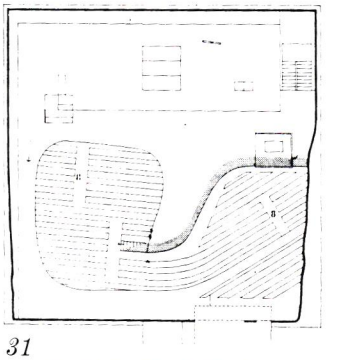

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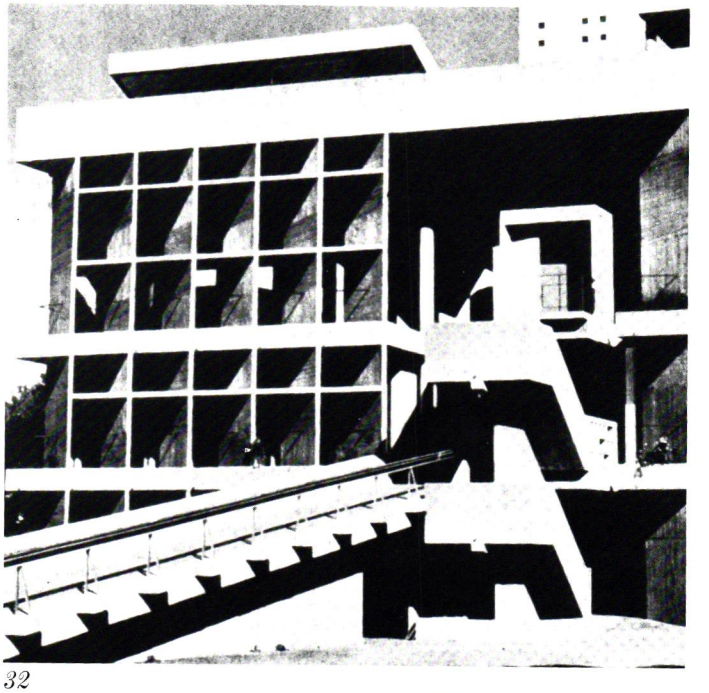
ing in which wheels and feet simulate the behavior of water is the Roman aqueduct. On the grand urban scale it can be seen in the elevated highway at Algiers as it plunges through the eddying turbulence shaping the Fort l'Empereur *redent* housing to terminate at the perpendicular monolith-slab of the Project A skyscraper (fig. 24). The viaduct housing which elegantly alliterates the shoreline of this port city, commenting upon the extreme complementarity of the other two systems, completes a poetic essay on serpentine and straight linearities.

Another photograph from *Aircraft* (fig. 25), this one of an asymmetrical wing section dramatically demonstrating the Bernoullian principle of lift-drag, as well as the numerous canals, dams, hydroelectric plants, and other craft of air and sea which Le Corbusier continues to portray and admire (figs. 1 [frontispiece], 26, 27) serve almost as a primer of principles of the new levitational and buoyant architecture. The architect's instinctive use of such dynamic phenomena as a source of imagery goes far beyond a facile kind of metaphoric referencing; it is a profound intuition about analogic structure and composition.[7]



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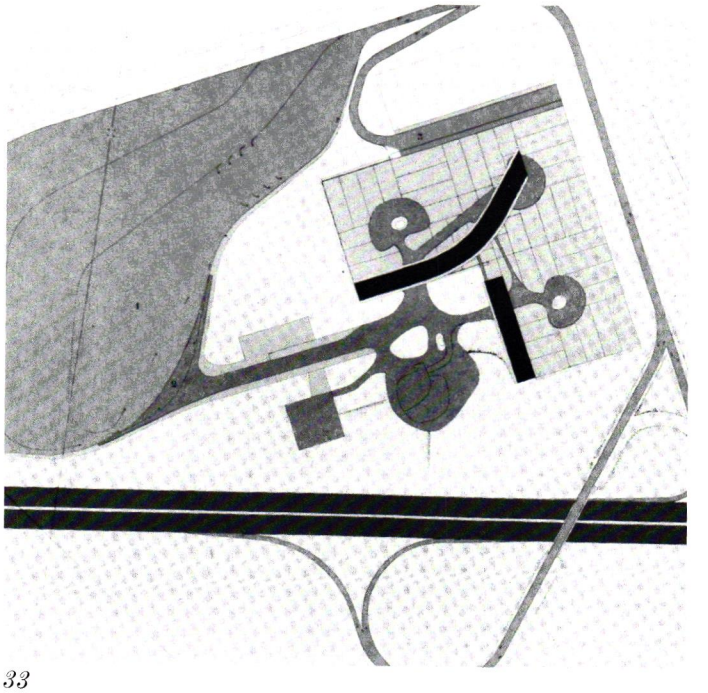
Of the many other examples of Le Corbusier's reinvestigation and reinterpretation of the theme in his own work, it is only possible to mention a few of the most subtle and inventive here. In the Algiers skyscraper of 1938, the aerodynamic principles of laminar flow are applied to the facades. The coincidence of site forces, the mainland and mountain behind and the Mediterranean in front, causes a vertical asymmetry to occur on the building's facades. This asymmetry is "rectified" by the tripartite horizontal symmetry which exists within the B section of this A/B/A′ scheme.[8] In plan, the lozenge shape of the building suggests the design of an airfoil or ship hull (figs. 28, 25, 1 [frontispiece]), as well as the canal lock gate at Liverpool published in Frederick Etchells's introduction to the English translation of *Towards a New Architecture* (fig. 29). In the Millowners' Association Building surface turbulence again disturbs an otherwise neutrally gridded facade (fig. 32). Here the thrust of the ramp plunging into the near-cubic container causes a counterthrust to its right, resulting in the projection of the stair and balcony over-



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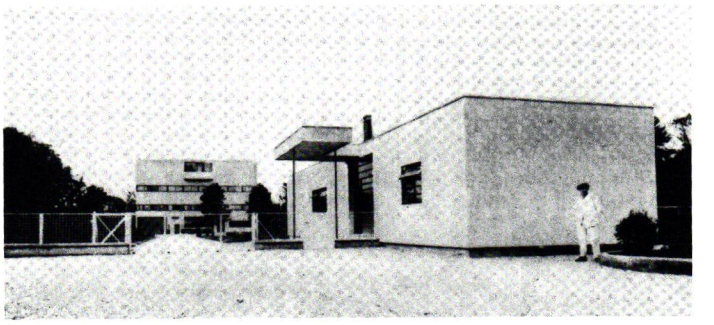
34a Villa Stein at Garches. Le Corbusier, 1928. Front facade.
34b Villa Savoye, Poissy. Le Corbusier, 1929. Front facade.
35 Villa Stein, rear facade.
36a Villa Stein, ground floor plan.
36b Villa Stein, piano nobile level.
37 Perspective sketch of 1937 Paris plan.



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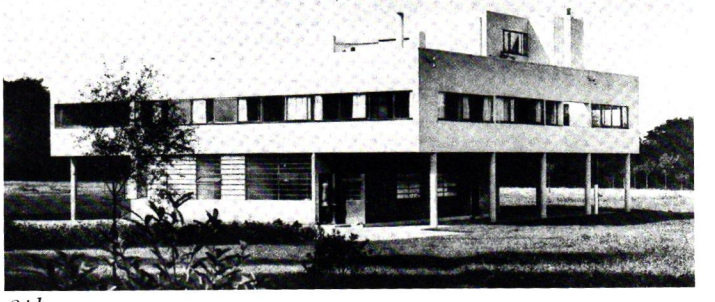

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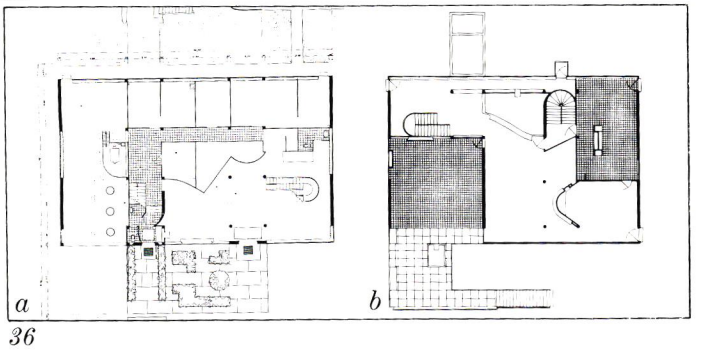

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42 look. As if the volume had been filled with a gelatinous substance that, compressed by an outside force in one place, exploded in another to neutralize this compression, the effect is a fascinating disruption of an essentially regular *brise-soleil* pattern, whereby the facade's center is sheared and dislocated to the right. This vertical disruption is also reflected in plan, where in the stacking of levels the predominantly rectilinear plan of the ground floor becomes transformed into the successively turbulent configurations of the upper stories. In the Firminy Church, an asymmetrically warped megaron volume is flattened on one side by the pressure of the encircling roadway to produce a plumb vertical entry facade. This is dynamically ruptured by a ramp, a canopied portal, and a projecting baptistry. The clockwise rotation of the entry ramp sets up in plan and in section a distorted internal symmetry of platformed seating areas, which in turn transmit and then terminate the flow of the ramp through an Arp-like warped plane (fig. 31). Only the altar retains its symmetrically orthogonal position, helping to stabilize the ramped rows of pews.

The same kinetics of flow are found in the roofed complex of the United Nations project (fig. 30), where a heavy and compressive space frame is canopied above suspended ceilings and a "bubbled" assemblage of assorted theaters, offices, and ancillary volumes. These are dispersed in plan so as to appear as islands in a sea of circulation that flows between them. In the first Olivetti scheme, it is the entire site plan, still elastically tethered to the high-speed autoroute to its south, which is set in motion (fig. 33). Here the southwest quadrant of the primarily four-square development is dislocated and eroded by the spiraling "auto current" into a cluster of residual biomorphic plateaus. The resultant laminar flow along the "T" configuration of the two elevated office slabs causes the longer slab to distend, again like the section of an airfoil or a ship's keel. The sluiced and compressed energy is allowed to eddy and swirl beneath these slabs, finally to "drain" into the centers of the three square plinths supporting them, which appropriately contain washrooms for the workers. The missing southwest square of this composition, defined by numerous corpuscular volumes, contains public functions.

37

This quadrant, a great pumping heart, thrusts energies through the arterial channels coursing beneath the slabs. Anthropomorphism and hydrodynamics here merge within the biological metaphor of the body, seen essentially as a container for the flow of aqueous and life-sustaining forces. The result is a biomorphically machined architecture—a reinterpretation of the *machine à habiter*. These selected examples suggest the consistency with which the theme of water appears in Le Corbusier's work. At the small scale of the individual building, the facades in particular carry this imagery. At the more inflated urban scale, the buildings interact symbiotically with their sites. Their exalted structures defy death and decay as they continuously comment upon it. Born out of the depths of architectural lore, they tiptoe across "graveyard" cities like huge totemic presences, absorbing and nullifying man's anxieties by offering new points of view, *over*views in fact, to the historical "otherness" that is allowed to coexist with them. Their acropolitan slab sections leave visible the veritable levels of urban archaeology flowing beneath them. Urban collages of sorts, colossal still-lifes are generated by these Corbusier edifices as they intervene among and above the older textures.

Interestingly, in the various tower and slab ensembles proposed for Paris, these giant edifices are confined to the north side of the city, between the Montmartre hills and the Seine, thus functioning as enormous reflective glass planes of extreme complementarity to the historic landmarks lying to their south (fig. 37). The spectator's preferential view of the scene is clearly from the Left Bank (although the view from the high-rises would presumably be no less spectacular). The last Paris schemes, where the more imposing tower arrangements of the earlier schemes relax into a Kellermann-type string of east-west slabs, especially suggest this reading. Here the Louvre, the Tour St. Jacques, and Notre Dame lying in the foreground of the Paris tableau function as the oranges, pipes, and compote dishes of a Cubist still-life. This type of assemblage appears in microcosm in the entry facade of the Salvation Army building, with its intimate foreground of entrance pavilions frontalized against the gridded and glazed high-rise slab lying behind.

Facades: Totemic and Tidal

A rereading of two of the great "icons" of the Modern Movement, the Villa Savoye at Poissy and the Villa Stein at Garches—one free-standing in a rural setting, the other engaged in a longitudinal suburban site—reveals a precocious and paradigmatic presence of anthropomorphism and hydrodynamics.

The Villa Savoye (fig. 38) initially appears as a four-sided, totemic object. Clearly exhibiting the three-story, A/B/A′ horizontal layering, it commands the center of a forest clearing, its principal facade facing the distant valley. The B section—a horizontal slit oculus—unblinkingly surveys its open site as it also girds the building's hyperactive interiors. This house is a machine for viewing. The curved forms on the roof further evoke the metaphor, suggesting a roll of film stretched around two spools, with the center portion cut out like a camera aperture, framing first the sky and then the arcadian landscape as one progresses up the internal circulation ramp. This ramp connects the roof to the piano nobile, implying an intimate relation between the "cranial" roof structure and the "head-body" immediately below. Directly beneath the windowed roof parapet lies the living room which, although endowed with the same exterior strip window as the other three sides, nevertheless reverses the building's outward orientation to an internal terrace, a hermetic piece of landscape dropped down to the piano nobile from the roof plane.

The ground floor is primarily the receiver of circulation. Through its intensively glazed, recessive, and central position, it permits the *pilotis*, slender white "feet" set against this curved entry plane, to become in effect tensile and adhesional lines of force, gracefully anchoring the hoisted building to a surface that possesses the faintest suggestion of a watery ground swell. Indeed, the encircling roadway marks a wake-like pattern, as though the curved entry were the prow of a ship and the flat opposite side, the stern. In Le Corbusier's well known sketches this swell is accentuated, giving a decidedly hydrodynamic reading to the whole.

It must again be emphasized that what is of interest here

38

is not the literal level of one-to-one metaphor (the obvious marine imagery in the building, recalling the ships of *Towards a New Architecture*, for example), but the kinetics and syntax of space itself and those archetypal meanings that attach to water forms and anthropomorphism. Through them, the Villa Savoye is transformed into a "floating city"—a microcosmic walled town within which visual delights are constantly savored. Its compacted, collaged, and enormously diverse visual engagements become in fact thoroughly urban in the midst of the rural setting. Behind this stolid four-sided countenance resides the urbane man.

Yet when we compare the Villa Savoye to the Villa Stein (figs. 34a,b), we realize that the former, still predominantly a rural object in space, is relatively unencumbered with surface ambiguity. The Villa Stein is much more complex, especially in its treatment of facade. This is due in part to its quasi-urban site, and more specifically to the brilliant idea of subsuming a conventional four-story Parisian townhouse type in the three-story A/B/A′ type of Poissy. What results, in the ingenious reconfigurating of its two perforated and projecting principal facades, is a pulsation between essentially architectonic expression and those subjective or subliminal impulses so characteristic of the "aqueous vision." Together, these facades (figs. 34b, 35) illustrate the full compositional variety inherent within the A/B/A′ framework. In both, it is the horizontal white band between the second and third story strip glazing which becomes the true centered oculus, the "negative" equivalent of the strip window that wraps around the Villa Savoye. But unlike the Savoye oculus, the Villa Stein center band fluctuates as it interstitially mediates the ascending, descending, and rotational energies flowing through it. Particularly on the entry side, where it can be seen clearly from the vantage point of the distant gatehouse, it serves as the middle section of a harmonic scale of increasingly wider and more solid horizontal bands crescendoing upward. From this distance, it gives the illusion of being supported by two pairs of Poissy-like *pilotis*, the residual vertical solids left by the cuts made for the doors and windows of the gound level, which appear as dark voids. These "false" *pilotis*, in fact the markings of an a/b/a/b/a *vertical* structure, perhaps also hint at the actual cantilever in the structure behind them, which is more explicitly revealed on the rear facade.

In this way, an essentially flat plane supporting three appurtenances and pierced by doors and windows of precisely defined proportions becomes an essay upon the rich compositional energies of a deliberately minimalist "picture plane." The structuring of ambiguous readings on this plane is not unlike that on the sixteenth century church facade of San Lorenzo.[9] Like San Lorenzo, it displays fluctuating cruciform configurations: the strip windows of the second and third stories can be read together with the blank horizontal panel between them, with the middle a vertical bay completing the cruciform. The same configuration can also be seen as anthropomorphic, recalling the head-body-foot images discussed above. In this case, the soffited fourth floor balcony suggests the head of a Tarascan or Dubuffet-like flattened figure.

The A/B/A′ horizontal reading predominates over the cruciform. The harmonic reading in the vertical dimension that has already been observed is further reinforced by the triangulation of the three canopy projections, a virtual diagram of crescendo. The two lower canopies serve to increase the recessional character of the bottom story and conversely the projective character of the top stories. But at the same time, this loading of the top (an inversion of the traditional bottom-heavy elevation) is undercut by a downward compressive force. This results from the geometry of the same triangulation, which tips the top portion perspectivally back in space as it also holds the bottom of the facade down to a stable base. The upper balcony especially acts to produce this double reading as one approaches the building, from the distance tending to pull the eye behind the taut plane of the facade through the "holes" of revealed sky, from close in tending to push the observer back out from the plane as he moves underneath it.

Along the horizontal axis, the facade transformationally shifts to the right, tending to move the eye across the garage door, past the service entry which is compressed

38 Villa Savoye, Poissy. Le Corbusier, 1931. Rear facade and site.
39 Pavillon Suisse, Paris. Le Corbusier, 1932. Perspective drawing.

39

to the right, past the central tripartite window, past the symmetrical main entry, and finally along the strip window which wraps around the structurally "dematerialized" ground story corner. The rightward movement is reinforced when we notice that this last window appears to be "slipped" from the central band of the horizontally tripartite middle window, which in turn is slipped from the garage door. The diagonal play of two pairs of vents over the garage door further adds to the shift of the facade, animating its otherwise stoic presence by a winking or humorously grimacing attitude that playfully provokes the spectator's kinetic involvement.

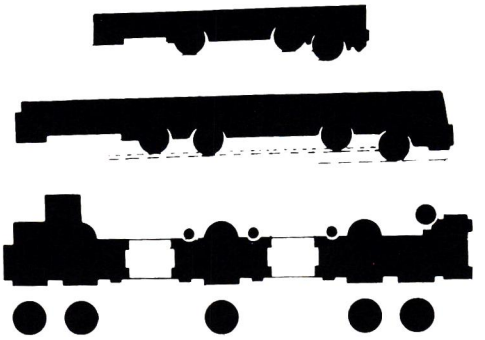
It is the fact that the garage door is framed on its left side but on its right shares the service entry bay with the service door and vertical windows that sets in motion this rippling kinetic. This subtlety also serves to distinguish the service two-fifths of the ground floor (the left a/b) from the public three-fifths (the right a/b/a); another clue to this plan *parti* lying behind the facade is the strongly symmetricized main canopy entry. Looking at the ground floor plan itself, we find a disposition to laminate the spaces behind the right a/b/a section while perpendicularly thrusting rearward those spaces lying behind the left a/b section (fig. 36a). This logic reverses itself on the garden-oriented piano nobile (fig. 36b), as the diagonal movement noted on the front facade turns out to have been initiating a checkerboarding or spiraling relationship of parts in successive floor plans. Thus, we see that the garage and service stair on the left side of the ground floor plan are reciprocated by the indented garden terrace on the right side of the piano nobile plan; the symmetrical ground floor entry, flanked by two pairs of columns and ricocheted off a convex wall into the stair, is reversely alliterated on the floor above by another convex "receiving" wall and columns now turned ninety degrees and acting, not unlike an inverted apse, to stabilize an axis parallel to the rear wall. In this way, the left a/b bays of the ground floor plan correspond to the right a/b bays of the piano nobile plan; the forward oriented, right a/b/a bays of the ground floor plan correspond to the rearward oriented, left a/b/a bays of the piano nobile plan—a typically Cubist play of alliterations and inversions.

The garden facade, lacking the oscillating planar configurations found on the entry facade, relaxes and becomes more gestural and volumetric. Here too the central two floors comprise the oculus section of the adapted A/B/A′ organization, and in their shift to the right, continue the rotational spin of the front facade, completing as it were the diagonalizing of what initially seemed to be an essentially frontalized and orthogonal monolith. The section shifting to the right now appears as a head gazing out at the garden, and projecting so as to be unobtruded by the terrace and stair to its left. This projection occurs in plan in the second and third stories where the living and dining spaces below and the bedrooms above can be seen to cantilever toward the garden landscape.

Thus the visage of this suburban villa is Janus-like: the entry facade, taut and planar, alertly and majestically staring out at the world (with a hint of sly humor), responds to a sense of the linear urban grid, to Parisian urbanism and urbanity; while the rear facade, more elegant and diaphanous, responds to a picturesque rural condition. It is as though the public and private sides of an individual were reflected in the sterner countenance of the entry facade and the more intimately engaging one of the garden.[10]

Gestural Geometry and the Syntactic Use of Materials

The phenomenon of ebb and flow in Le Corbusier's early work culminates in the Pavillon Suisse, where the ordered use of varied materials announces a highly sophisticated formal syntax (fig. 39). Here we find an exceptionally bold pairing of opposites, which become unified by a transformational and counter-transformational relationship of surfaces and textures. The building is divided into two parts (three if the refectory and concierge quarters are read as independent of the circulation tower): the entry and social spaces housing the concierge, the library, the refectory, the stair, and the elevator; and the slab on *pilotis* housing the students. Situated on the corner of the university housing tract, it presented a double-sided problem, having to respond to the opposing pressures of roadway entry from the north and open landscape to the south (since the 1930s thoroughly urbanized). As one approaches the build-



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ing, one immediately senses the juxtaposition and interrelatedness of clearly defined vertical planes of materials—glass, stone, concrete, in varied textures. The concave north wall, deflecting as though to cup the eye and receive its axial beam of energy, knits all these planes into a single composition, a device much like that used in early Braque collages (fig. 41).

The dormitory section appears as a mutated version of the ideal low-rise slab with service tower attachment, recalling the *redent* housing. The *pilotis* also appear to be mutations, from the ideal double row of Dom-ino columns to a kind of mitotic progression of "podded" to "semi-podded" to split oblong piers, which move from the two ends in to the center. In this progressive separation, they mark the point of entry as located in the near-middle of the tower section, and set up an accordion-like kinetic along this east-west axis.

Counterpointing the lateral movement of these distorted *pilotis* is an oscillating north-south movement created by the use of carefully chosen materials, especially apparent when the building is viewed from the preferred west side. The clarity of articulation recalls the vertical stacking of materials in the Renaissance Palazzo Guadagni (fig. 43). Here, however, Le Corbusier is taking the traditional four-story facade (heavy rusticated base, less heavy and smoother piano nobile, lighter third story, and finally lightest fourth story) and stepping it back in space. In effect, the Renaissance elevation is being sheared in section and plan. Thus, the eye is first introduced to the concave heavy rubble wall of the most forward one-story volume; then to the blank, slightly less curved wall of the elevator-stair tower behind it, made of concrete block and scored with horizontal and vertical seaming; then to the slab wall behind that, with the same scored concrete now punched rhythmically with square windows. With this progression of walls, an A/B/C syntactic structure begins to emerge.

It is therefore not difficult to postulate the fourth unseen wall facing south—D—as an almost entirely glazed one that will logically end the transformation (fig. 42b). Indeed, the flow of the building responds "correctly" to the site, the third and especially the glazed fourth wall straightening and tensing the building in a gesture to the sun and bucolic landscape to the south. In this way, the building allows the occupants a visual "springing forth" into the landscape beyond.[11] In fact, the building becomes a pure embodiment of the cantilever, and a kind of anthromorphic *pas de deux* emerges: the tower block, by its rootedness and low, heavy construction, takes the attitude of the male dancer, supporting the precarious extension of the slab block—the female dancer *en pointe*—beyond. One also senses in this posture the symbolic appropriateness of the south overhang's being greater than that on the north (fig. 42a).

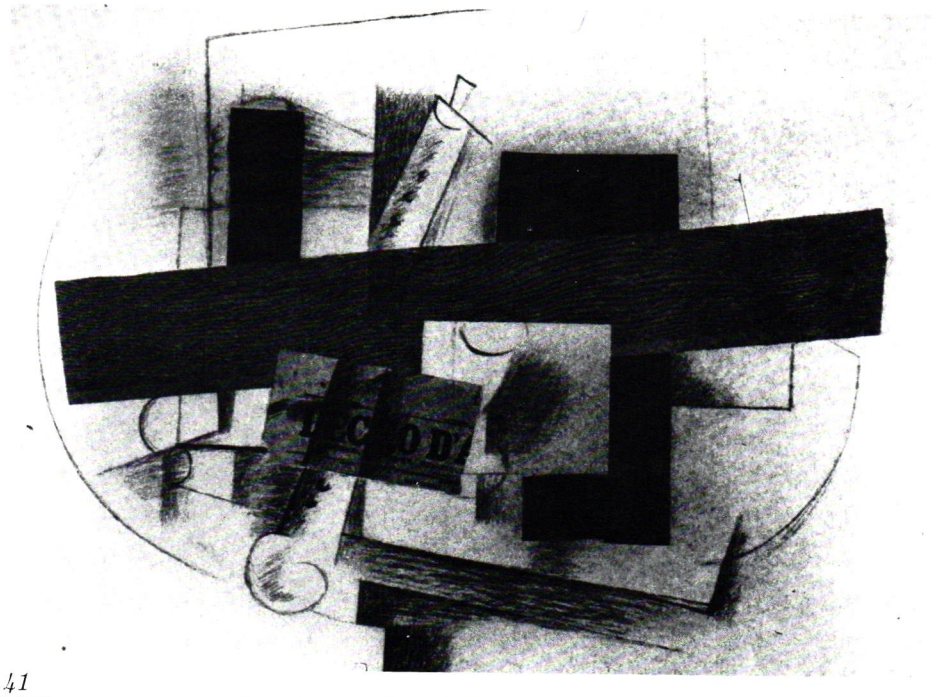
However, this progression is only half the composition. Reading now in the reverse direction along the west elevation, one finds exactly the opposite transformation (fig. 42c). Starting with the southernmost blank side wall of the slab, one visually moves northward to the connecting neck of the circulation tower, which has on its otherwise blank surface a vertical strip of fenestration disengaging it from the main slab; then on to the glass block wall that sheathes the stair itself; and finally to the totally glazed west wall of the projecting low pavilion that houses the refectory: a succession of solid to void, opaque through translucent to transparent, D/C/B/A. This ebb and flow movement through the facades can be seen compressed in the drawing of the north elevation, where planes of different materials are superimposed on each other in a highly laminated interplay (fig. 42c). This syntactic usage of materials is unparalleled in the repertory of modern building.

The Wall Thickened

In comparison to the late work, the earlier facades can be said to have a pristine clarity of organization. Relatively speaking, they are vibrant yet unembellished in their compositional interplay, planar rather than volumetric, distilled and ethereal rather than turbid and thick. With the advent of the *brise-soleil* in the later work, however, the floodgates are opened to mass and density, to all the complex dynamics of compression and shear. More than

40 Plan details of sixteenth and seventeenth century church walls.
41 The Clarinet. *Collage by Georges Braque, 1913.*

42 Pavillon Suisse, Paris. Le Corbusier, 1932. a) west elevation and section, b) south facade, c) north elevation.
43 Palazzo Guadagni, Florence. c.1530.



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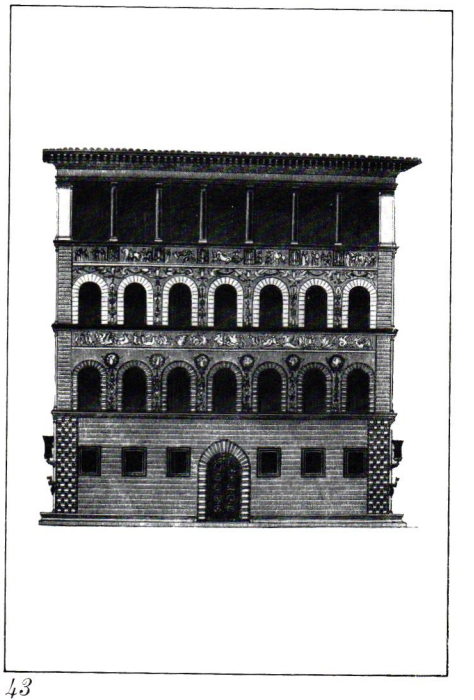

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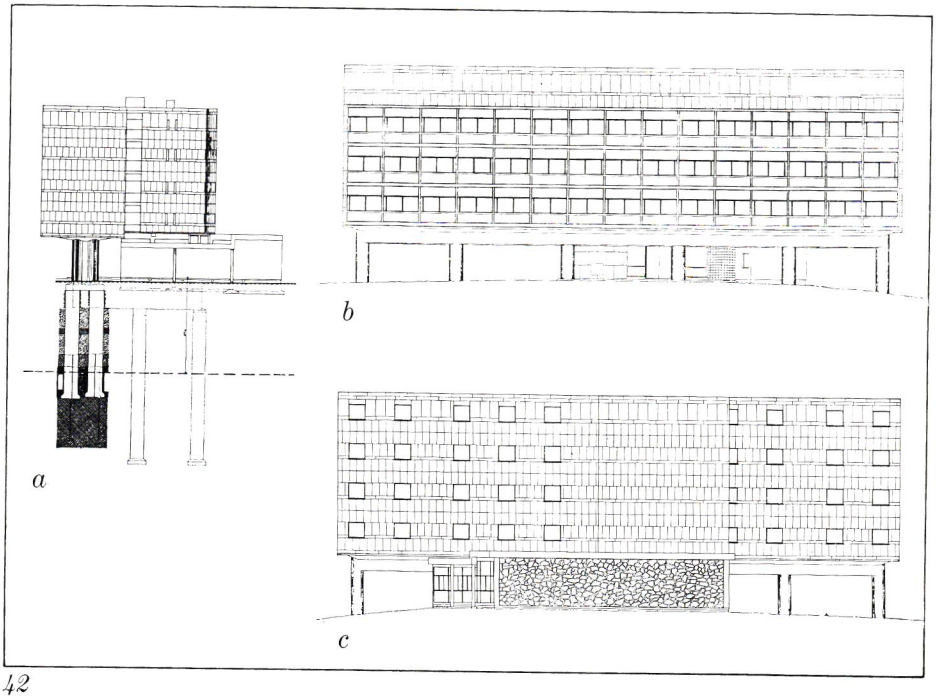

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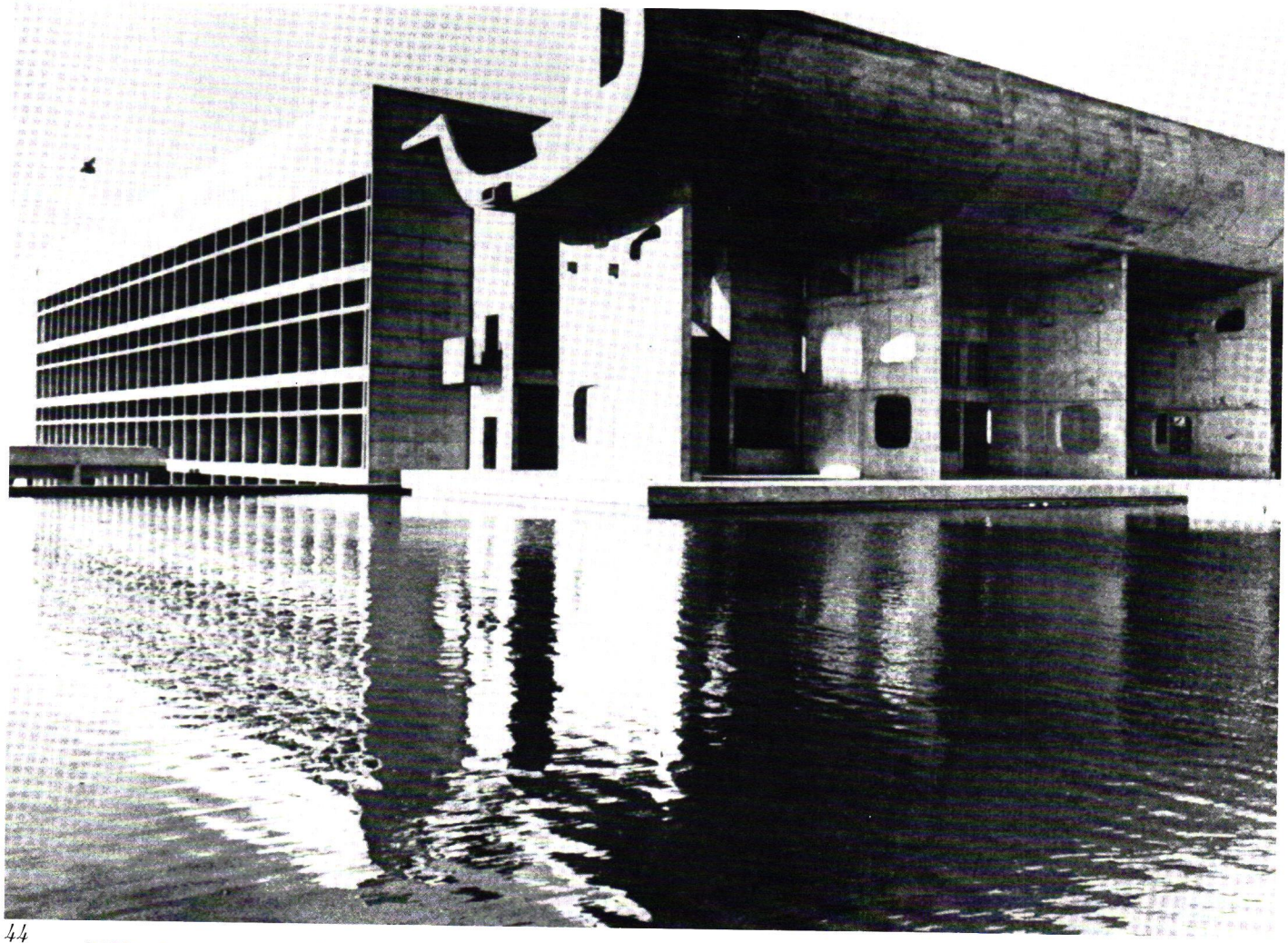
just a means of functionally controlling solar and thermal conditions, the *brise-soleil* makes the facade into a thickened plane within which agitated, puddled, even violent distortions can occur and be juxtaposed with the more placid regularity of the grid. As in the Millowners' Building, this device allows an unlimited range of formal manipulation. Not only can the plan "flip up" to inform the facade—thus creating a dialogue similar to the traditional one between section and facade—but now the site itself can also inform the facade. Porous and sponge-like, the new frontalized relief planes can be made to absorb all the energies present in the architectural milieu, participating in a fluid interchange. A new plasticity is born, bringing with it a reinvestigation of the possibilities of wall: the revelation of a tensile facade lurking behind a compressive one, with structure lying behind both; the possibilities of playing off figure and ground in response to sun and shadow; of silhouetting internal configurations; of splitting and exploding the wall into four sides—in short, of immense new opportunities for aesthetic and functional manipulation. Finally, the re-imbuing of the wall with such plastically responsive energies permits a richer dialogue of form and content. This dialogue is the apotheosis of the Cubist architectural vision.

From the 1940's on, Le Corbusier's works are essays on the variational thicknesses of walls. Their particular kinetics of receiving and emitting energies would probably have been impossible without his prior investigation of a more planar conception of wall in the twenties and thirties. Yet these late buildings rediscover and revert to an ancient sense of mass. And they are also an inversion—a modern version—of it. In the old order, the bearing structure rendered columns, pilasters, niches, and other elements standing in front of the wall non-supportive and decorative (fig. 40). In the new Corbusian order, the disengagement of the wall section from the ground plane, with layered skins of glass and concrete cantilevered out from supportive slabs, allows the section to become as free as the plan, and the composite wall system to become virtually four-sided (figs. 44, 45). In their expressive thicknesses, these late wall buildings allow for an assemblage of modern construction materials—glass, steel, aluminum, concrete, brick, wood—transforming architecture into complex, collaged monumentalities. The ultimate exegesis of this development can be found in the four buildings comprising the composition at Chandigarh.[12] It is there that the wall is made to absorb all the intrinsic and extrinsic, aqueous and animistic energies found in the Cubist canvas. It is there, paradoxically, that the thickened wall becomes truly transparent. ". . . The fourth dimension is the moment of limitless escape evoked by an exceptionally just consonance of the plastic means employed . . . not the effect of the subject chosen; it is a victory of proportion in everything—the anatomy of the work as well as the carrying out of the artist's intentions whether consciously controlled or not. Achieved or unachieved, these intentions are always existent and are rooted in intuition, that miraculous catalyst of acquired, assimilated, even forgotten wisdom. In a complete and successful work there are hidden masses of implications, a veritable world which reveals itself to those whom it may concern, which means: to those who deserve it.

"Then a boundless depth opens up, effaces the walls, drives away contingent presences, *accomplishes the miracle of ineffable space.*"[13]

44 Assembly Building, Chandigarh. Le Corbusier, 1946–1947. Front facade.
45 Millowners' Association Building, Ahmedabad. Le Corbusier, 1954. Plan detail.



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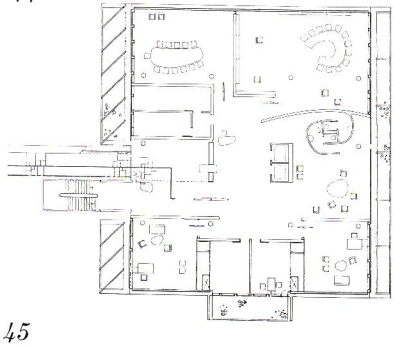

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50 *This essay stems from lectures given at various schools here and abroad from 1967 on. It now finds its way into print through the significant contributions of Joan Ockman, who has invaluably participated as editor and dialectician.—R.S.*

1. Once initiated into the history of modern painting, who can fail to conjure up the diamond configurations of Mondrian's *Fox Trot A* or his *Victory Boogie Woogie* when confronted by a white square canvas tipped forty-five degrees? Rather like a delayed afterimage, fictive perceptions tend to seek and recognize 'appropriate' fields for their realization.

2. "The more emotionally ambivalent the subject, the less it suits him that there be any ambiguity in things and in his view of things. Emotional ambivalence is what demands the denial of intellectual ambiguity. In subjects whose intellectual ambiguity is strong it often happens that the emotional foundation is much more stable than in other subjects. . . ." Maurice Merleau-Ponty, "The Child's Relations with Others" in *The Primacy of Perception and Other Essays* (Chicago: Northwestern University Press, 1960), p. 105.

3. "In other words, he has allowed his interest in the subconscious world to upset his regard for precise semantics and, with an almost overbearing care for details, to jumble syntax, to bring in foreign words and meanings—deliberately excluding the simple narrative style which might have appeased his critics. . . . The sentient power of the word is the bridge of understanding; its ambiguous structure affords diverse clues to interpretation and is, according to Joyce, the proper vehicle for an elaborate but compressed history of humanity." Frederick Hoffmann, "Infroyce" in *James Joyce: Two Decades of Criticism*, ed. Givens (New York: Vanguard Press, 1963), p. 430.

4. This is, of course, a different "point of view" from that expressed by some others in the Modern Movement, for example Van Doesburg: "In contrast to the frontality sanctified by a rigid static concept of life, the new architecture offers a plastic wealth of multi-faceted temporal and spatial effects. . . ," *De Stijl*, vol. VI, no. 6/7, 1924, pp. 78–83. As opposed to Le Corbusier's implosive and hermetic cubic fields, Van Doesburg preferred to define the new *Sachlichkeit* as a picturesque massing of exploded planes. However, Le Corbusier does betray a tendency to diagonalize in certain projects, as early as the 1910 Artisans' Housing, the Ozenfant studio, the 1924 Artisans' Housing, and even in so frontalized a building as the villa at Garches. In later work, the spiral becomes a major type in his repertory; but he reserves it for a particular kind of program: while the four orthogonal types exemplified by La Roche, Stein, Carthage, and Savoye, illustrated in the well known sketch, represent domestic buildings, the spiral fifth type, first exemplified in the ziggurat of the Mundaneum museum, and later in the other museum projects, as well as La Tourette, Ronchamp, and Firminy, is employed for more artistic or cultural usages. When defined as an "advancement to higher levels through a series of cyclical movements," this spiral becomes for him an ideal metaphor of the—inner—spirit, consciously counterpointing his more painterly frontal compositions. This subject is explored in detail in "La Tourette Revisited," a forthcoming article by Robert Slutzky and Joan Ockman.

5. On the eastern end of this skyscraper, the *brise-soleil* is peeled away in the center of the tripartite B band to reveal an extensive slot of glazing. A three-bay setback in this slot, visible only on the profiles, transforms the exposed glazed band into a gigantic eye embedded in a socket. On the opposite western end, another oculus is created, this time visible not on the profiles but *en face*, by the widening of the *brise-soleil* pattern sufficiently to allow this eye to contemplate the city and mountains behind it. This entry facade, with its tripartite vertical symmetry, is an attenuated and more anthropomorphically suggestive version of the Villa Schwob's.

6. Much has been made of the perspective rendering of the Dom-ino structure appearing in volume I of the *Oeuvre Complète*. This image, replete with drawn inaccuracies and inconsistent with the plan and two sections for it (compare, for example, the different number of columns and distribution of stair treads), dramatically illustrates a structural module that could be mass-produced cheaply and efficiently to meet the housing needs of a war-devastated Europe. The Dom-ino, like the game it is named for, is not a self-sufficient object but a flexible concrete framework (*ossature*), extendable both horizontally and vertically, and awaiting architectural definition through adaptation to the specificites of site and program. It appears in *Vers Une Architecture* under the heading "Maisons en Série," following chapters on ships, planes, and automobiles, as well as their technological equivalents in the architecture of classical antiquity and the Renaissance. The implication of this ordering is self-evident. Dom-ino should be seen as the rational and constructional—which is not to say uninspired—solution to a pragmatic problem rather than as the singular, symbolic icon insisted upon by certain critics. Its applications in various suggested housing schemes are in fact quite banal. Just as an armature is not sculpture, neither is the diagrammatic Dom-ino architecture. However, more interesting in the present context is the similarity of this 1914–15 Dom-ino to the triple-winged hydroplane Caproni and the notched wing-tipped Farman biplane, and the resemblance of the aerial axonometric drawing of a Dom-ino villa in Bordeaux to an airplane. Precisely what the Dom-ino diagram is awaiting in order to "get off the ground" is the infusion of the aerodynamic energies of the A/B/A′ structure.

7. "Le Corbusier's planes are like knives for the apportionate slicing of space. If we could attribute to space the qualities of water, then his building is like a dam by means of which space is contained, embanked, tunneled, sluiced. . . ." Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal," *Perspecta* 8, 1965.

8. "An intervention of the plastic sensibilities. All seemed to be implacably controlled by the succession of rational requirements. A poetic decision of nature intervened . . . the facade had become asymmetric. The form seems to swell to the left, then shift toward the right. It is responding to the double call of the site. The cliff, the sea. . . ." Le Corbusier and François de Pierrefeu, *The Home of Man* (London: The Architectural Press, 1948), p. 129. Accordingly, the "water-washed" eastern end of the skyscraper has the more finely gridded *brise-soleil* pattern, which extends westward by three bays past the building's vertical center on the two profile facades. The 'surface flow' is smoothly laminar up to this point, whereupon the *brise-soleil* grid opens

up to give the impression of greater turbulence—much like the behavior of water on the trailing edge of a hydrofoil.

9. See Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal . . . Part II," *Perspecta* 13–14, 1971, pp. 293–5.

10. Or in the male and female aspects of an androgynous architecture. See "La Tourette Revisited" for an exploration of this idea.

11. It is amusing to note in passing that Le Corbusier photographs the south facade with the window drapes retracted in the central floor, creating a Poissy-like oculus. *Oeuvre Complète de 1929–1934* (Zurich: Willy Boesiger, 1947), p. 87.

12. The present paper has attempted to broadly outline the uniquely coexistent fields of form and content in Le Corbusier's work, with emphasis mostly on the developmental nature of his early (pre-World War II) drawings and architecture, in an effort to establish a vocabulary that can be explored in depth in two subsequent papers, "La Tourette Revisited" and "Chandigarh." The latter especially will deal with the problem of the wall as it is used to express the poetics of water.

13. Le Corbusier, *New World of Space*, p. 8. Compare Marcel Brion writing on Joyce's *Work in Progress* (an early version of *Finnegan's Wake*):

"This gift of ubiquity permits Joyce to unite persons and moments which appear to be the most widely separated. It gives a strange transparence to his scenes, since we perceive their principal element across four or five various evocations, all corresponding to the same idea but presenting varied faces in different lightings and movements. . . .

"This appears to us as contrary neither to the laws of logic nor to those of nature, for these 'bridges' are joined with a marvellous sense of the association of ideas. New associations, created by him with amazing refinement, they cooperate in creating this universe, the Joycian world, which obeys its own laws and appears to be liberated from the customary physical restraints. And we have, indeed, the impression of a very individual world, very different from our own, a world of reflections that are sometimes deformed, as in concave or convex mirrors, and imprinted with a reality true and whole in itself. I do not speak here only of the vocabulary which Joyce employs and which he transforms for his usage—which, one might say, he creates—but especially of his manners of treating time and space. It is for this reason, much more than because of the work's linguistic difficulties, that the reader often loses his footing. This is related to the prodigious quantity of intentions and suggestions which the author accumulates in each sentence. The sentence only takes on its genuine sense at the moment that one has discovered its explanatory *rapprochements* or has situated it in time. "And if the books of Joyce are . . . difficult for many to read . . . it is perhaps because [he has] discovered a new aspect of the world and one which cannot be comprehended without a veritable initiation." "The Idea of Time in the Work of James Joyce" in *Our Exagmination Round His Factification for Incamination of Work in Progress*, Samuel Beckett, Marcel Brion, et al (Paris: Shakespeare and Company, 1929), pp. 32–3.

Figure Credits

1–3, 5–11, 14, 18–45 © *S.P.A.D.E.M., Paris/V.A.G.A., New York, 1980.*

1, 3, 5, 7, 8, 19, 23, 24 From Le Corbusier, *La Ville Radieuse* (Bologne: Edition de L'Architecture d'Aujourd'hui, 1935).

2, 6, 11, 39 From Jean Petit, *Le Corbusier lui-même* (Geneva: Editions Rousseau, 1970).

4, 9, 12–18, 20, 21, 25, 27, 28, 30–33, 40, 41, 42b, 43–45 Courtesy of the author.

10 From Le Corbusier, *Vers une architecture* (Paris: Les Editions G. Crés et Cie., 1923).

17 From Jean Duc de Berry, *The Book of Hours*, reprint (New York: Crowell, 1977).

22 From Amédée Ozenfant, *Foundations of Modern Art* (London: J. Rodker, 1931).

26 From Le Corbusier, *Aircraft* (London: Studio Publications, 1935).

29 From Le Corbusier, *Towards a New Architecture*, Etchell trans. (London: 1928).

34–36, 39 From *Oppositions*, 15/16, Winter/Spring 1979.

37 From Le Corbusier, *Creation is a Patient Search* (New York: Frederick A. Praeger, 1960).

42a, 42c From Le Corbusier, *Oeuvre Complète de 1946–52* (Zurich: Editions Girsberger, 1964).

The politics of architecture, directly related to state and private patronage since the Renaissance, gained a new dimension with the architect's assumption of responsibility for the "housing question" during the nineteenth century. The "invention" of models for social housing, from the late eighteenth century to the present, has more or less reflected architects' needs to respond to that emerging new "patronage" called society, and more recently "mass society." Inevitably this activity has demonstrated all the bifurcations of modern politics, from utopian socialist attempts to constitute the social palace, to liberal reform acts to control the quality of urban dwellings, to more direct assaults on the life and labor of the working classes in the shape of company towns and institutions of surveillance.

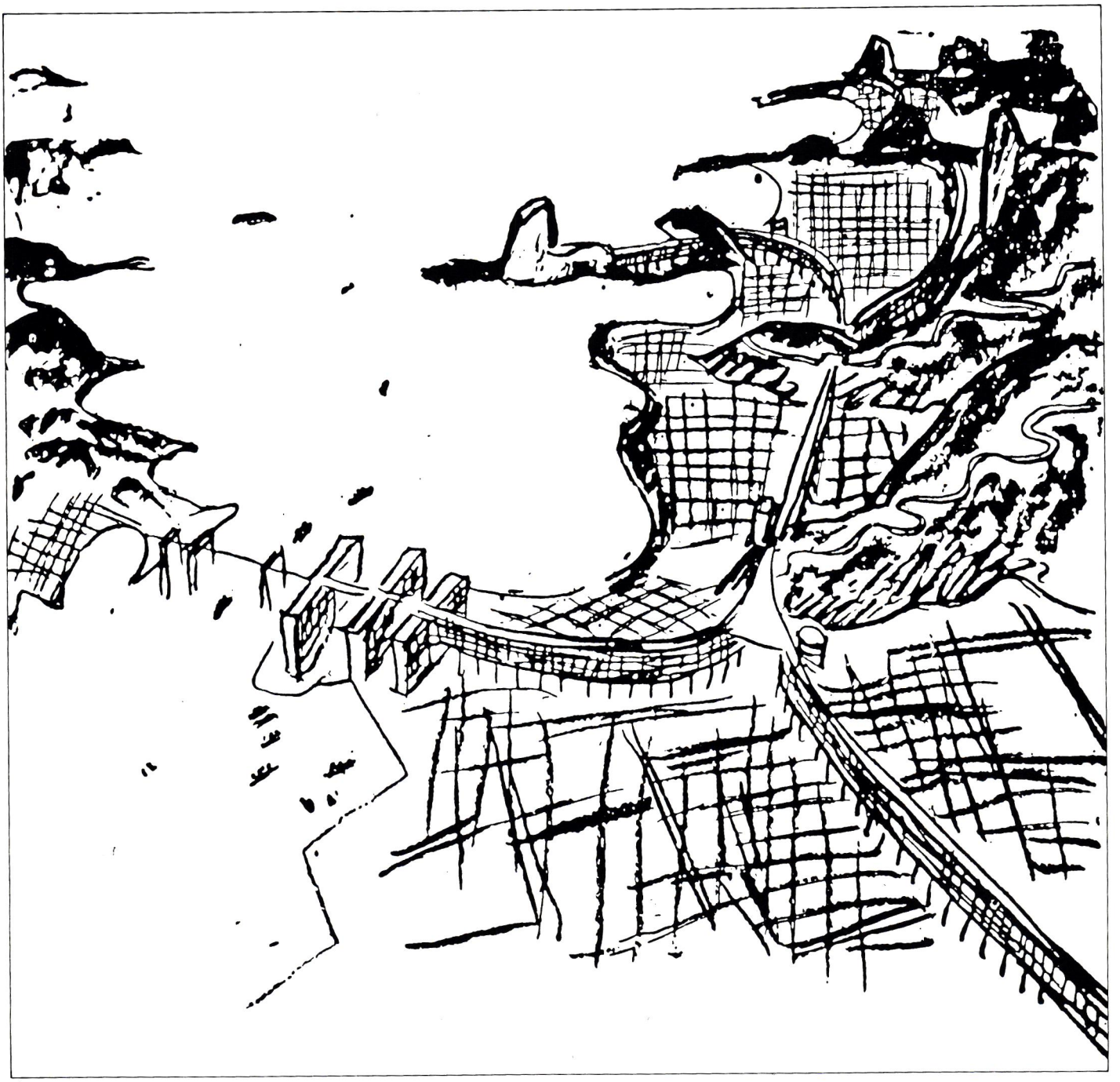
In the twentieth century, the expansion of the planners' domain to include urban and regional areas gave a deceptively "value free" and technical quality to the housing types included in such projects for city form as those prepared, for example, under the sponsorship of the English New Town Corporations or the New York Regional Plan. But the shadow of the nineteenth century typologies, together with their inherited social and political implications, still hovered behind many schemes for the housing of mass society, however Taylorized to the demands of mass production.

The "reconstruction of bourgeois Europe" after World War I, as the historian Charles Meier has referred to the new stage of capitalist organization achieved under different political signs in the inter-war years, required ready-made solutions, easily identifiable types, for renewing the entire housing stock of the bombed, depressed urban areas.

No one was so deliberately eclectic in his use of nineteenth century housing models as Le Corbusier. Even as in his high-style villas he preserved the traces of Palladio's original formulation, so in his mass-housing prototypes from the early twenties on he mined the repository of forms proposed as "social dwellings" over the previous century: the phalansteries of Fourierists were joined together in the "maison à redents," and later distributed vertically in the Unité d'Habitation; the "Familistère" built by Godin for his workers at Guise in the 1860's was transformed into the "Immeubles Villas" of 1923–1925; the linear city projects of Soria y Mata appear, in fragmented form, surrounding the major center of the Ville Contemporaine; the housing estate of Pessac deliberately recalls the motifs of Tony Garnier's Cité Industrielle. In all these reminiscences transformed into machine-age, assembly line objects, it is evident that Le Corbusier wanted to preserve the sign if not the full content of what can be called "utopian socialism."

The devastating impact of the Depression in the late twenties and early thirties, and especially in Germany and France, halted abruptly all such schemes for the brave new world. To architects like Le Corbusier the "collapse" of capitalism called for wider and more total solutions; the various regionalisms espoused by Syndicalism and neo-Saint-Simonianism appealed for this reason: they were comprehensive and thereby "organic" in their approach to settlement patterns and production alike. In these years, as Mary McLeod shows, Le Corbusier's projects, notably those for Algiers and its region, take on a more totalizing image: whereas previously the "model" of Ville Contemporaine was treated as a prototypical grouping of paradigmatic urban elements ready to be modified and fragmented according to site, now entire regional plans, specifically addressing the contours and economies of specific areas, are prepared. Here, surprisingly, the linear city, as explored in the Soviet planning schemes of the twenties, becomes the major reference; built along or even beneath the infrastructure of major highway networks, these towns snake through the landscapes of Africa and South America in Le Corbusier's notebooks of 1929–1935 and echo the literal "Fordism" of the American planner Edgar Chambless' "Roadtown" projects of around 1910.
A.V.

1 (frontispiece) Sketch plan, Rio de Janeiro. Le Corbusier, 1932.



1

Le Corbusier and Algiers

Mary McLeod

Architects and historians have traditionally divided Le Corbusier's career into two phases: the early years from Maison Dom-ino (1913) to Villa Savoye (1929) and the later period beginning with the Marseilles block (1946) and culminating with the monuments of Chandigarh (1952–1965).[1] In categorical terms, the first phase is labeled as rational, functional, Cartesian, abstract, an embodiment of the streamlined machine age; the second phase, in contrast, is considered more emotive, poetic, plastic and material, an evocation, despite applications of modern technology, of more primitive or organic roots. In this simplistic dichotomization, the works of the thirties and the World War II period are often bypassed. These projects, however, as an examination of the Algiers project demonstrates, are critical not only as precursors of later works, but also as new orientations which challenge the basic postulates—formal and social—of the Modern Movement.

By 1929, the formal vocabulary of the Modern Movement—white planar surfaces, simple cubic forms, flat roofs, strip windows—had become largely a stylistic formula. The underlying ideology of rationalism and functionalism might still retain power as an antidote to the academicism of the Beaux Arts or even as propaganda for leftist governments, but as a basis for formal articulation it had begun to be suspect. On the one hand, the "machine-age" forms had not always proved to be the most efficient, economical or readily adaptable to mass production; and on the other hand, they appeared to impose serious restriction on poetic expression. The two positions were not necessarily mutually dependent; an awareness of ideological inconsistency did not automatically necessitate a broader vocabulary of forms, or *vice versa*, but Modern Movement architects lacked the emotional distance to articulate their dilemma clearly. To accept Hitchcock and Johnson's categorization of style would have been, at least for many, blatant defeat; form and ideological justification were intrinsically linked. The rejection of one implied the rejection of the other. The shift in perspective is characterized by Le Corbusier's own reply in 1929 to Karel Teige, the Czech critic.[2] Rejecting *sachlichkeit* (the new objectivity) and his former prescription "the house is a machine for living," he declared, "the function of beauty is independent of the function utility." Henceforth, he and many of his contemporaries tend to elevate the poetic and artistic; implicit is a search for a new, more intuitive formal approach.

Closely linked with the reassessment of formal postulates and their ideological justification was the reconsideration of the social premises of the Modern Movement. The choice between architecture and revolution, boldly announced in the last pages of *Towards a New Architecture*, could not so optimistically be proclaimed; modern architecture alone, had done little to alter social conditions. Many European architects, as exponents of Taylorism and Fordism, had hoped that efficiency, optimality and expanded output—methods readily applicable to one of the major social crises, housing—would permit society to transcend class conflict and social division.[3] Increased production resulting from cooperation between manager and worker would benefit all; and thus, help to eliminate bitter confrontation over any given level of return. But the financial crisis of 1929, the rise of Fascism in Italy, and the emergence of National Socialism in Germany partially undermined faith in scientific planification and raised serious questions as to the feasibility of architecture—however efficient, economic, and standardized—as an agent of social reform in the given capitalist society.

Le Corbusier's own career had in itself provided ample evidence for such pessimism. The French government refused to consider Plan Voisin or implement major land reform; private industry failed to initiate standardized building practices; Pessac, his one low-income mass housing project, stood empty for six years as local officials denied permission for water lines; and finally, the jury of the League of Nations competition recognized bombast and academicism as a symbol of world peace. Le Corbusier's previous stance, apolitical professionalism, had failed; he now believed that technocracy alone could not produce the necessary economic and political reorganization. "We must," he proclaimed in 1930, "carry the fight for our cause straight from the drawing board into the papers and periodicals" and "call for action."[4]

2

In this instance his declaration was not jargon, but an expression of serious intent. He became immersed in the regional syndicalist movement, an outgrowth of the earlier French labor movement, and turned his own design production increasingly to urban studies.

Of all the projects of the thirties, the Algiers project, the center of his urban preoccupations from 1931–1942, most clearly illustrates his attempt to address the dual dilemma posed by the Modern Movement. Not only did the project in the introduction of lyrical, undulating forms suggest a new direction in formal expression, but it became for Le Corbusier a symbol of his new social and political commitment: his involvement in regional syndicalism as an editor of *Plans* and *Prélude*, and later his immersion in Vichy politics. By concentrating on the first scheme for Algiers, Obus A, proposed at the height of the architect's participation in syndicalism[5] and the last project, the Plan Directeur, formulated under the auspices of the Vichy government, the present analysis will attempt to reveal the role which political ideology, in the two different but related guises, played in the conception of Le Corbusier's architectural work.

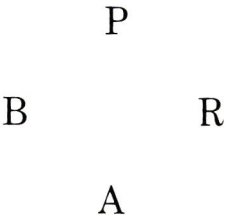
Syndicalism

Syndicalism with its slogan of *action directe* was in many respects a natural political choice for a professional like Le Corbusier, who detested abstract speculation. Despite the "-ism," it was not primarily a theory, but a mode of action. As such, syndicalism never became a very clearly defined doctrine. It stressed, as the historian Peter Stearns delineates, three major points: complete hostility to the existing capitalist order; a belief that economic rather than political means—notably the general strike—was the only successful way to attack this system; and a vague conception of a future society with a decentralized power structure in which local economic units directed by the producers themselves would be the basis of organization.[6] The haziness of the objectives was intentional: syndicalist action was to be the result of practical experience, an immediate, pragmatic response to the needs of the moment rather than an expression of a pre-established social theory or plan. Life would reveal to the working class what they must do; practice would shape their objectives. As Hubert Lagardelle, a long-standing syndicalist spokesman, explained, "l'action crée l'idée."[7]

By 1930, the first year of Le Corbusier's explicit association with the movement, syndicalism had bypassed the years of its greatest power and had only marginal control over a small segment of the labor population. Prior to World War I, its participants claimed to be in the majority in the trade union movement and, indeed, did control the largest labor organization, the Confédération Générale du Travail, during this period. However, the syndicalists' collaboration with the government during World War I in conjunction with the creation of the communists' C.G.T. Unitaire in 1921 had discredited the movement within the C.G.T.[8] Shortly afterwards, a C.G.T. Syndicaliste Révolutionaire was created, and it survived until World War II. But it was small and had virtually no influence on the trade union population. No longer associated with one central organization, syndicalism continued to be propagated with varying emphases by a series of small reviews including *L'Ordre nouveau*, *Plans*, *Prélude*, *L'Homme réel*. Le Corbusier served as an editor and writer for the last three publications.[9]

The ideological orientation of these journals, in contrast to that of the earlier syndicalist movement, was syncretic; the hope was to bypass traditional oppositions in the establishment of *l'ordre nouveau*. Recognizing that labor was still a minority in France, Lagardelle, now the political spokesman of *Plans* and *Prélude*, argued that any revolutionary group could be effective only if it extended beyond the boundaries of the working class. As syndicalism transcended political party, it must also transcend class; the crisis of democracy affected the whole nation. Communism, Nazism, and Fascism in their respective attempts to address this crisis were each valuable experiments from which the syndicalists could potentially draw. But the emphasis on cultural and spiritual regeneration as much as economic and social reform evoked an emotional tone particularly close to that of contemporaneous Italian and German writings. In contrast to *l'homme économique* of the Marxists or *l'homme abstrait* of the democrats, the

2 Sketch, Rio de Janeiro. Le Corbusier, 1930.
3 Four cardinal points: Paris, Barcelona, Rome, Algiers.



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journals proposed *l'homme réel*. Man was an intuitive, emotional, "biological" being. *Esprit* was as important as *besoin*; art, as important as material equality. Nietzsche and Sorel with their declarations of moral heroism were the oft-quoted heroes. Syndicalism, or regional syndicalism as it was sometimes called, was now in essence an organic movement; political and economic change were to emerge spontaneously, growing from cell to region. The new society, in contrast to the previous utopian vision which focused on the economic unit as the basis of organization, was to reflect natural hierarchies whether productive, geographic, or racial. These "natural" frontiers would, it was hoped, insure world peace.[10] To define objectives more specifically was unnecessary; the goal, after all, was simply the attainment of that which was natural or organic to man.

Though modified considerably in the context of an actual urban situation, these principles infuse the early Algiers schemes. With its unique geography, at the frontier between Europe and Africa, and its unique heritage, Moslem and European, the city occupied a special locus in the syndicalist vision of world reconstruction. In their proposal for new administrative regions, Europe itself was to be divided into three areas: the Mediterranean or Latin Federation, Germanic Central Europe, and Slavic U.S.S.R.[11] Algiers, no longer to be a colonial city, would become one of four capitals in the Mediterranean region. Le Corbusier proclaimed the syndicalist hope in a letter to the mayor of Algiers, Charles Brunel:

"With a firmness and broad-mindedness which have earned you as much admiration as envy, you govern a city of great destiny.

"The economy of the world is upset; it is dominated by the incoherence of arbitrary and harmful groups. New groupings, and regroupings, new units of importance must come into being, which will give the world an arrangement that is less arbitrary and less dangerous. The Mediterranean will form the link of one of these groupings, whose creation is imminent. Races, tongues, a culture reaching back a thousand years—truly a whole. An impartial research group has already, this year, through the organ *Prélude*, shown the principle of one of these new units. It is summed up in four letters, laid out like the cardinal points (fig. 3).

"Paris, Barcelona, Rome, Algiers. A unit extending from north to south along a meridian, running the entire gamut of climates, from the English Channel to Equatorial Africa, embracing every need—and every resource.

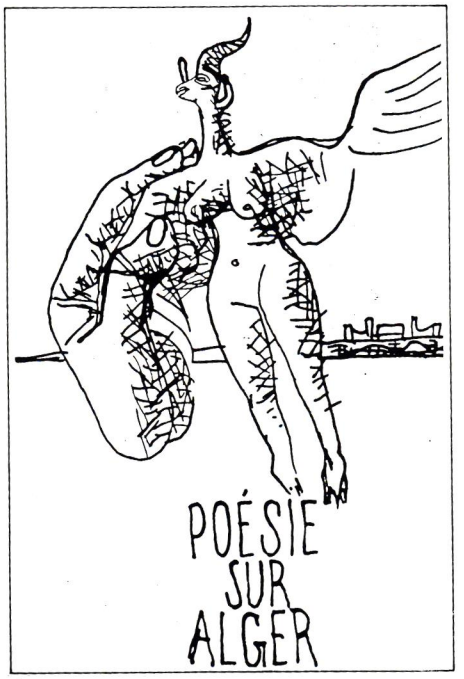
"Algiers ceases to be a colonial city; Algiers becomes the head of the African continent, a capital city. This means that a great task awaits her, but a magnificent future too. This means that the hour of city planning should strike in Algiers."[12]

Algiers

Le Corbusier's intense preoccupation with Algiers begins in 1931, the year of his first visit there and shortly after his introduction to the syndicalist movement.[13] With a rapidly growing population of two hundred and fifty thousand, two-thirds European and one-third Muslim,[14] the city was at that moment the administrative, commercial, and industrial capital not only of Algeria, but of all French North Africa. Reflecting its population, Algiers consisted of two distinct but contiguous sectors: the Casbah, a squalid maze of narrow alleys and densely packed dwellings where most of the Muslim population resided; and the modern European quarters, constructed in the typical colonial idiom—broad boulevards and eclectic academic buildings—which contained the major commercial activities. The site itself was magnificent; potentially, Le Corbusier hyperbolized, "the most beautiful in the world." Stretching ten miles along the western edge of the Baie d'Alger with the Kabylie Hills and Atlas Mountains as its land edge, the port opened as a vast white amphitheater to the sea (figs. 5–7).

The landscape in conjunction with the combination of Eastern vernacular and modern commercialism moved Le Corbusier deeply. He had been invited by the Friends of Algiers to give two conferences in early 1931 on urbanism and the future of Algiers as part of an ongoing series of lectures organized for the colonial centennial. On both occasions, he spoke to capacity crowds of fifteen hundred for four hours and, animated by the city's aesthetic and social possibilities, he promised the audience that after

4 Title page of Poésie sur Alger. *Le Corbusier, 1950.*
5 Algiers, 1931.
6 Street in the Casbah, 1931.
7 View of the Admiralty Point with the Casbah in the background, 1835.
8 Sketch of Casbah, Le Corbusier, 1931.
9 Sketch of Ghardaia, Le Corbusier, 1931.



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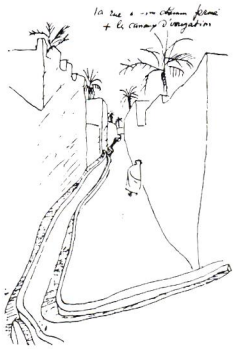

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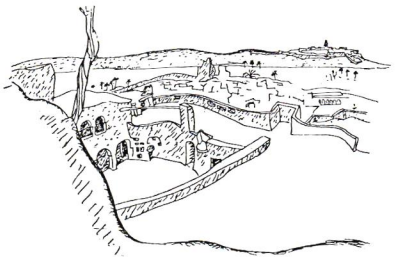

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his departure he would formulate a more concrete development. Le Corbusier received no commission or official endorsement, but the interest in his ideas was sufficiently strong that the progressive mayor Brunel, who had attended his conferences, went to visit his office in Paris the following summer to examine his first studies. Le Corbusier himself extended his initial stay in the city two weeks, wandering through the Casbah and the hills of Fort-L'Empereur with the writer Lucienne Faure, the son of the art historian Elie Faure, and his former employee and friend P. A. Emery.[15] Hours were spent drawing and studying the Muslim houses and landscape (fig. 8). Fascinated by the city, he returned again to Algiers during his summer vacation, visiting the M'zab and Ghardaia as well (fig. 9).

Obus A

Over a year later, in December 1932, Le Corbusier submitted his first proposal to the city, the Obus (shell), so named to emphasize its schematic nature and perhaps its explosive potential.[16] The project was to be displayed the following February in a large exhibition on architecture and urbanism organized by the Friends of Algiers, including a mixture of International Style projects by local architects such as P.A. Emery and Jean de Maisonseul and neoclassical colonial works. In preparation for its submission Le Corbusier waged a vigorous publicity campaign with the journalist Edmund Brua of *Travaux Nord Africains*: a public questionnaire for the citizens of Algiers, a series of articles in both the local and architectural press, and the showing of a film on the city.[17] The Entreprise des Grands Travaux Hydrauliques, a company presided over by one of Le Corbusier's close syndicalist associates, François de Pierrefeu, undertook a detailed financial study to demonstrate the project's economic feasibility.

The Obus consists of four major elements: the *cité d'affaires* (business center), located in the Quartier de la Marine, the housing *redents* of Fort-L'Empereur, the great coastal viaduct, and the elevated highway connecting Fort-L'Empereur and the Quartier de la Marine. As in all of Le Corbusier's previous urban studies, the premise was a dense concentration of residential and business quarters to permit the freeing of terrain for parks and recreation. The corridor street is eliminated, pedestrians and vehicular circulation separated, housing considered as a collective entity, and large-scale communal amenities implemented (figs. 10–15).[18]

Despite these important continuities with his earlier projects the Ville Contemporaine and the Plan Voisin, the Obus project fundamentally challenges their static, Cartesian plans in what might again be termed its organic qualities: evolutionary growth, additive cellular structure, responsiveness to climate and geography. Like the syndicalist utopia, the project strives for a spontaneous and total symbiosis of man, architecture, and the landscape. This desire for organic integration, though most fully developed in the Obus scheme, can be traced back in Le Corbusier's own work to two important precedents, the Ville Radieuse (1930) and the Rio de Janeiro project (1929).

From the Ville Radieuse, the Obus derives the notion of change or adaptability; implicit is the syndicalist idea of organic evolution from cell to country. In his articles for *Plans*, Le Corbusier condemned the concentricity of the Ville Contemporaine as static and proposed for Ville Radieuse a linear organization which would permit "organic growth" and the "biological development" of the city.[19] Apart from its administrative center, its head, and transportation core, its heart, the remaining zones of the city, the industrial and residential, are allowed to expand independently of each other in linear sequence (fig. 18). Although the Obus adopts a dual axial scheme, the potential extensions of the coastal viaduct and adjacent support activities similarly permit growth. The biological analogy further pertains to the additive conception of parts. At the base of the urban organization, like the individual participant in the syndicalist hierarchy, is the residential unit, "the fourteen meter square cell" (figs. 19, 21). The unit, like any basis for decision—whether economic or aesthetic, must be, Le Corbusier asserted, "biologically good in itself . . . and also susceptible of multiplication to infinity."[20]

10 Obus A, Algiers, Le Corbusier, 1932.
11 Title from La Ville Radieuse.
12 The viaduct highway, elevation, 100 meters, launched from hill to hill above the city.
13 Roof plan of viaduct.

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PROJECT "A" 1931-1932

FIGURES FOR THE CITY COUNCIL'S FORECASTS

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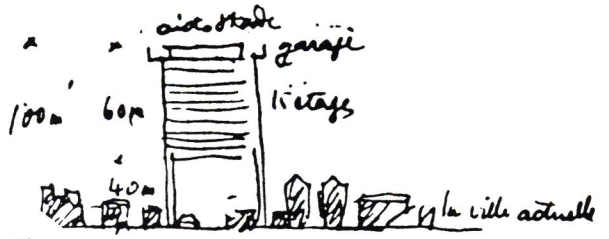

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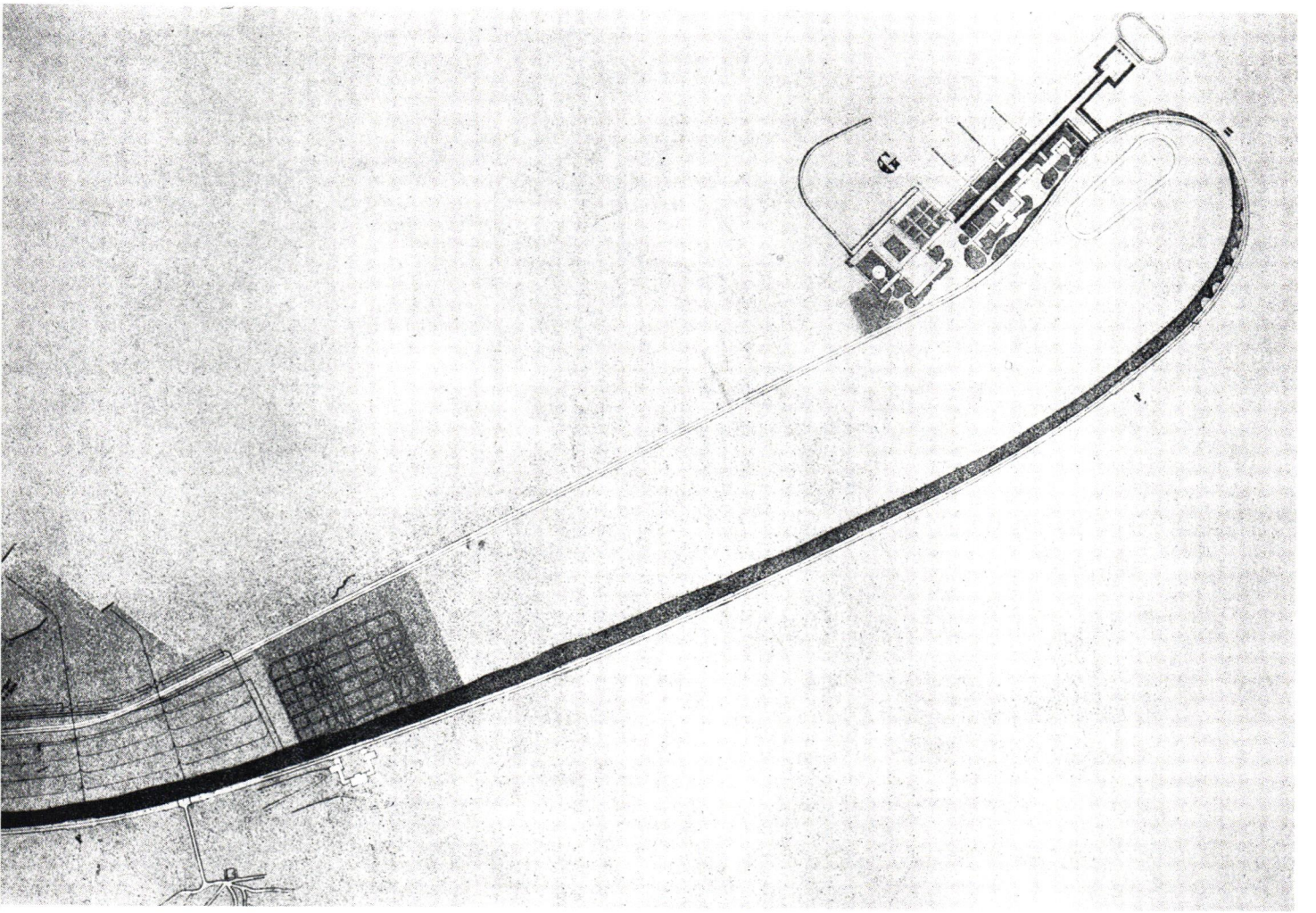

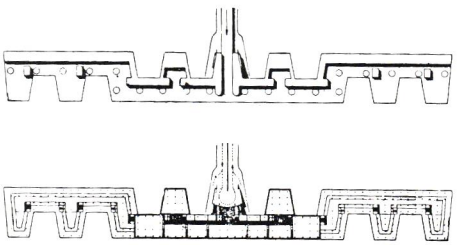

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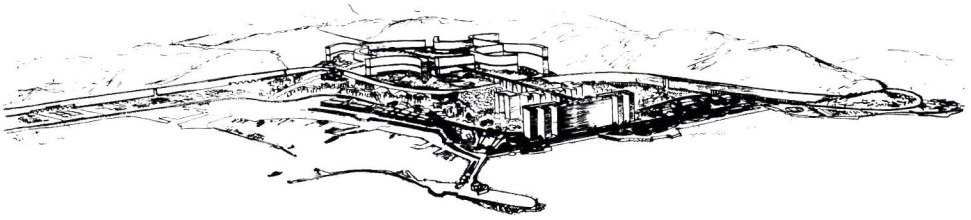
14 Obus A, Le Corbusier, 1932.
15 Obus A, Algiers, 1932.
16 A fragment of curved redent, *Fort-L'Empereur type.*
17 "Law of the Meander," Le Corbusier, 1929.
18 The Ville Radieuse.



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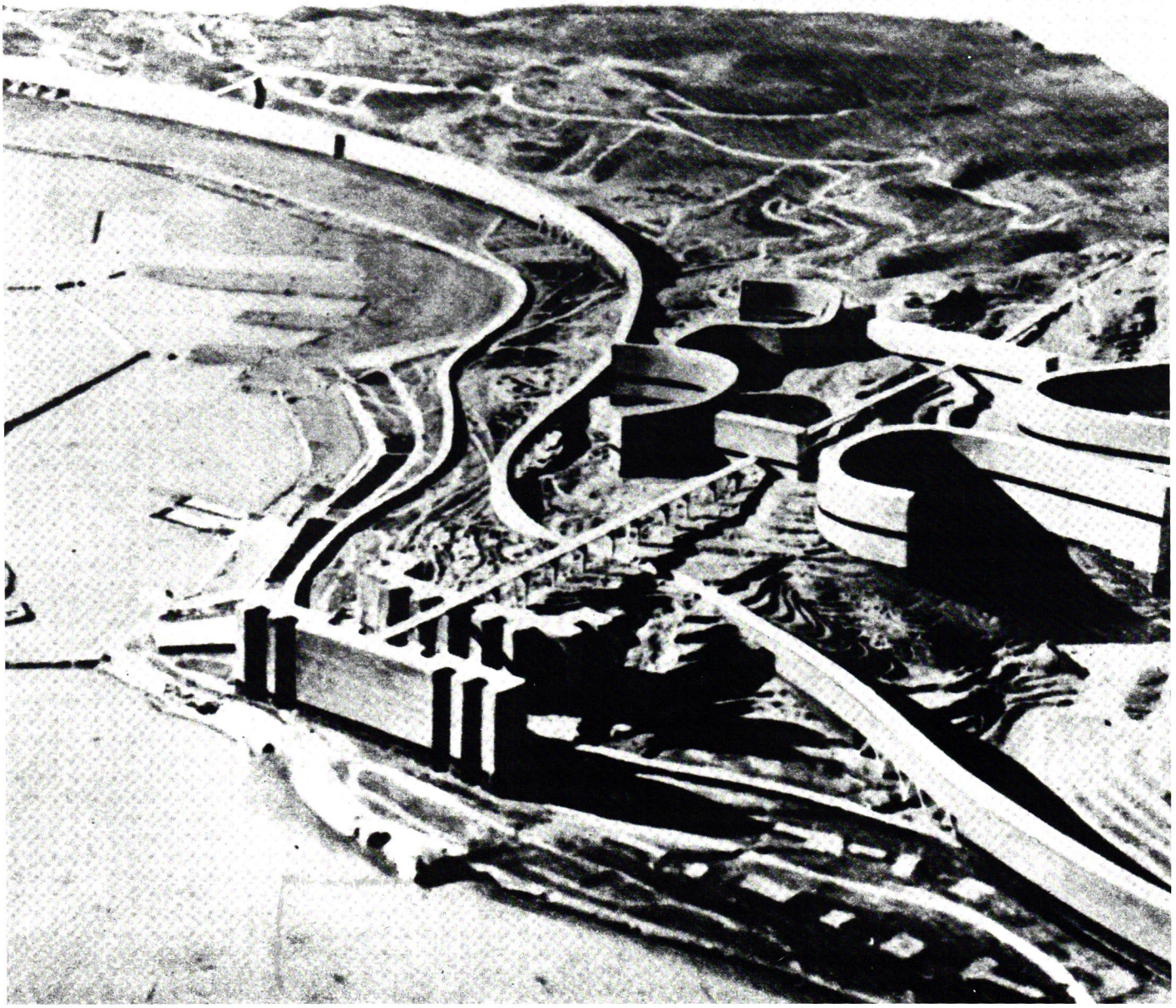

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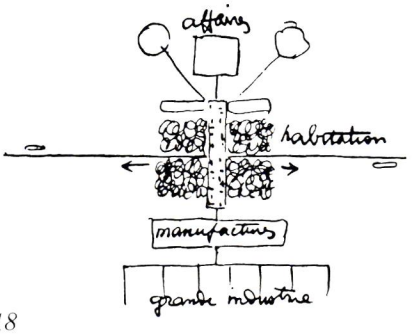

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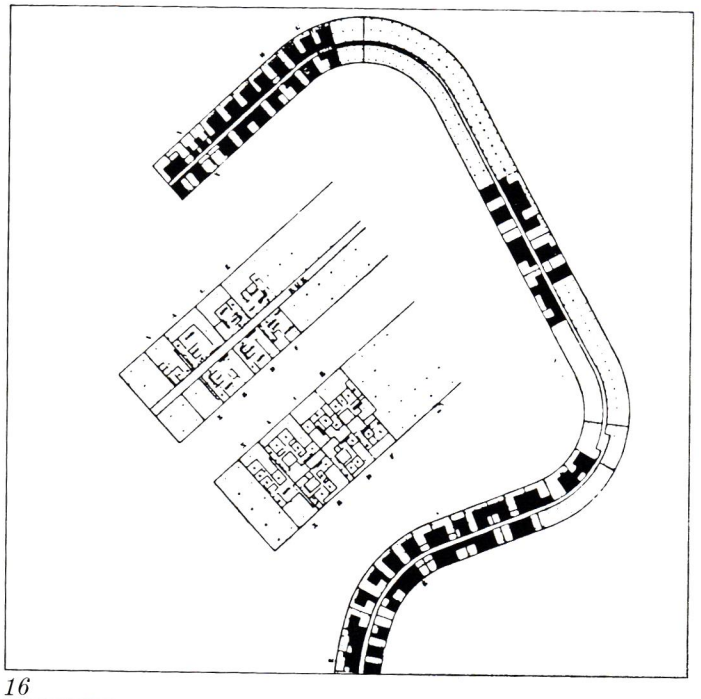

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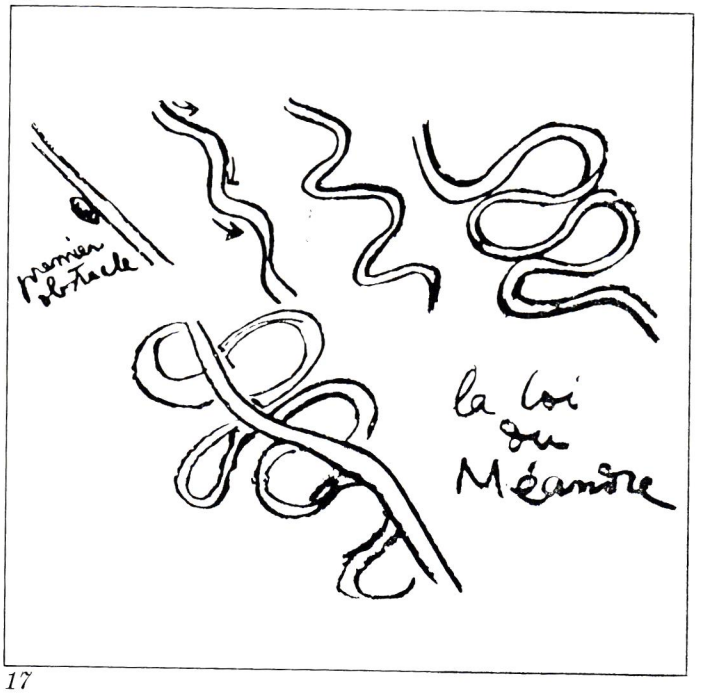

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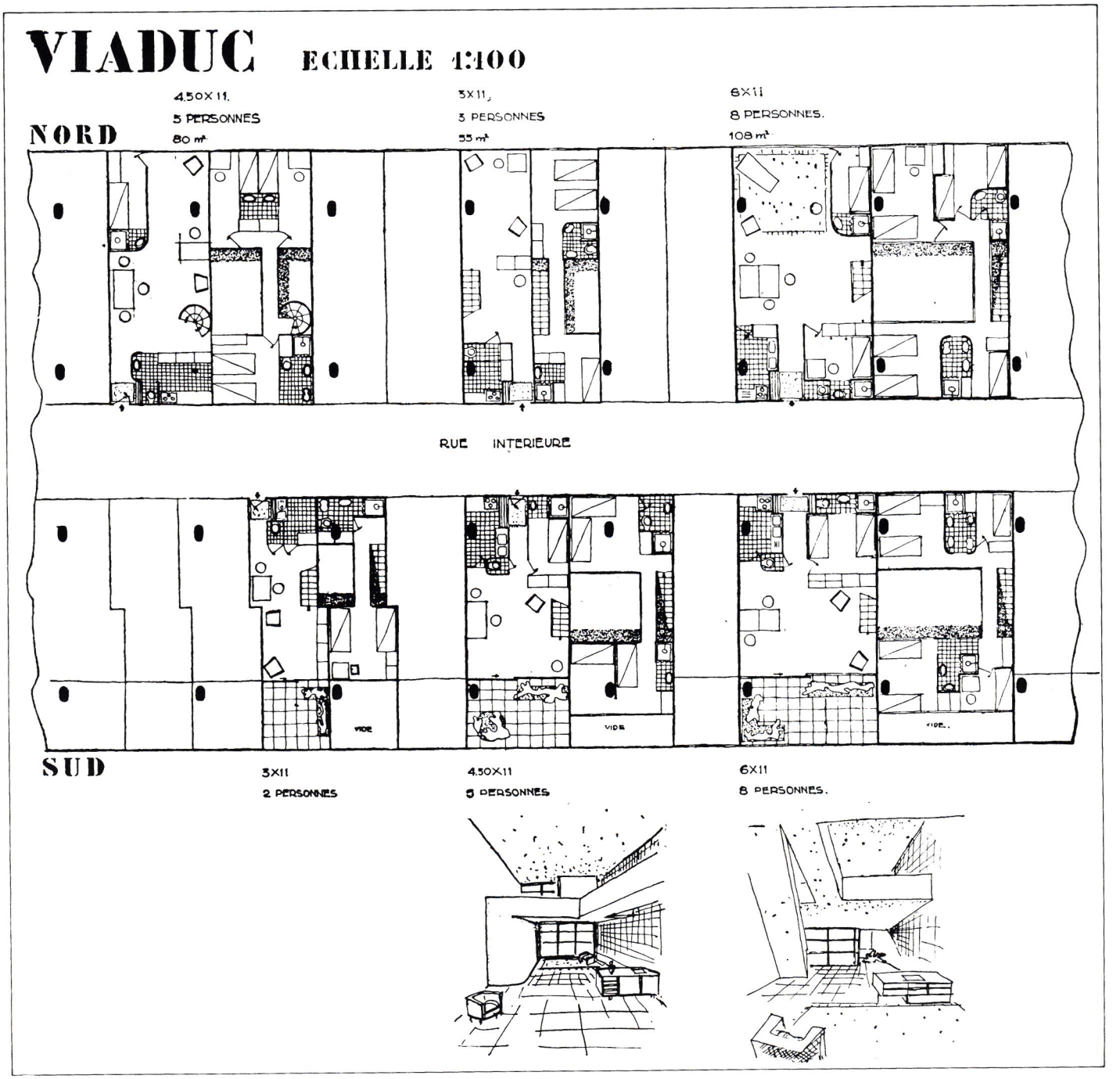
In the actual design and disposition of the elements, the Obus, however, carries the organic implication much further than the regularly gridded Ville Radieuse and relates more closely to the Rio de Janeiro scheme (figs. 1 [frontispiece], 2). As Le Corbusier himself described in *Précisions*, his airplane trip to South America with Saint-Exupéry and Mermoz had revealed a "whole biology," "a whole organic life."[21] Flying over the Uruguay, Parana, and Amazon rivers, he discovered the "law of the meander" (fig. 17). Analogous to the process of human creativity, the river's winding course was in contrast to the despised "donkey's path," a miraculous symbol.[22] During the same period his drawings and paintings began to portray "objects evoking poetic reactions"—roots, flints, shells, splinters of wood, butcher bones, and tree roots. In 1928 the human figure emerges as a primary subject matter;[23] the strong, flowing contours of peasant women fill his sketchbooks of South America and Algeria (fig. 20). The extension to the urban scale was not an impossible leap. The landscape, so critical to the syndicalist conception of organic order, is in both the Rio and Algiers projects an invitation for a new lyricism or *poésie*.

The clearest manifestation is the prominence of the curve. Previously restricted to a scale close to the human body—bathroom walls, furniture, bottles painted in somber purist tones—the curve is now best perceived, like the bends of the Amazon, from the air. The long viaduct in the Obus, extending from Hussein-Dey to Saint-Eugène, sweeps gracefully along the coast; the five *redents* of Fort-L'Empereur, supplanting the carefully configured rectilinear setbacks of Ville Radieuse, bend in response to winds, sun, and views to the broad horizons. Enormous objects, grouped in a kind of frozen dance to the Kabylie Hills, they evoke the forms of his robust Algerian women (fig. 16).

Similarly, the horizon emerges in the composition as an architectural element. In contrast to the earlier vertical towers of the Ville Contemporaine and the Ville Radieuse, the buildings submit to the lines of the sea and the sky. Like the Duomo in Florence or Notre Dame in medieval Paris, the office building alone continues to stand in symbolic counterpoint (fig. 24).

19 Residential cells, housing viaduct, Obus A, Le Corbusier, 1932. Plans and perspectives.



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Le Corbusier's new awareness of the landscape altered his style; it became in his own description more "dynamic." But perhaps more importantly it resulted in a new understanding of the relationship between nature and artistic form. No longer was the objective, as in Villa Savoye, the imposition of a geometric order over the undulating lines of the earth, but rather a reinterpretation of its lyrical essence. To explain this change simply as a reaction to syndicalism would be deceptive; its genesis in his drawings and sketches actually predates his formal alliance with the movement. But the political and aesthetic change in orientation were reinforcing. Both reveal a desire to break with more abstract solutions and find an answer in nature. Order, more than Cartesian abstraction, meant to Le Corbusier and the regional syndicalists an understanding of the earth's processes—climate, topography, resources.

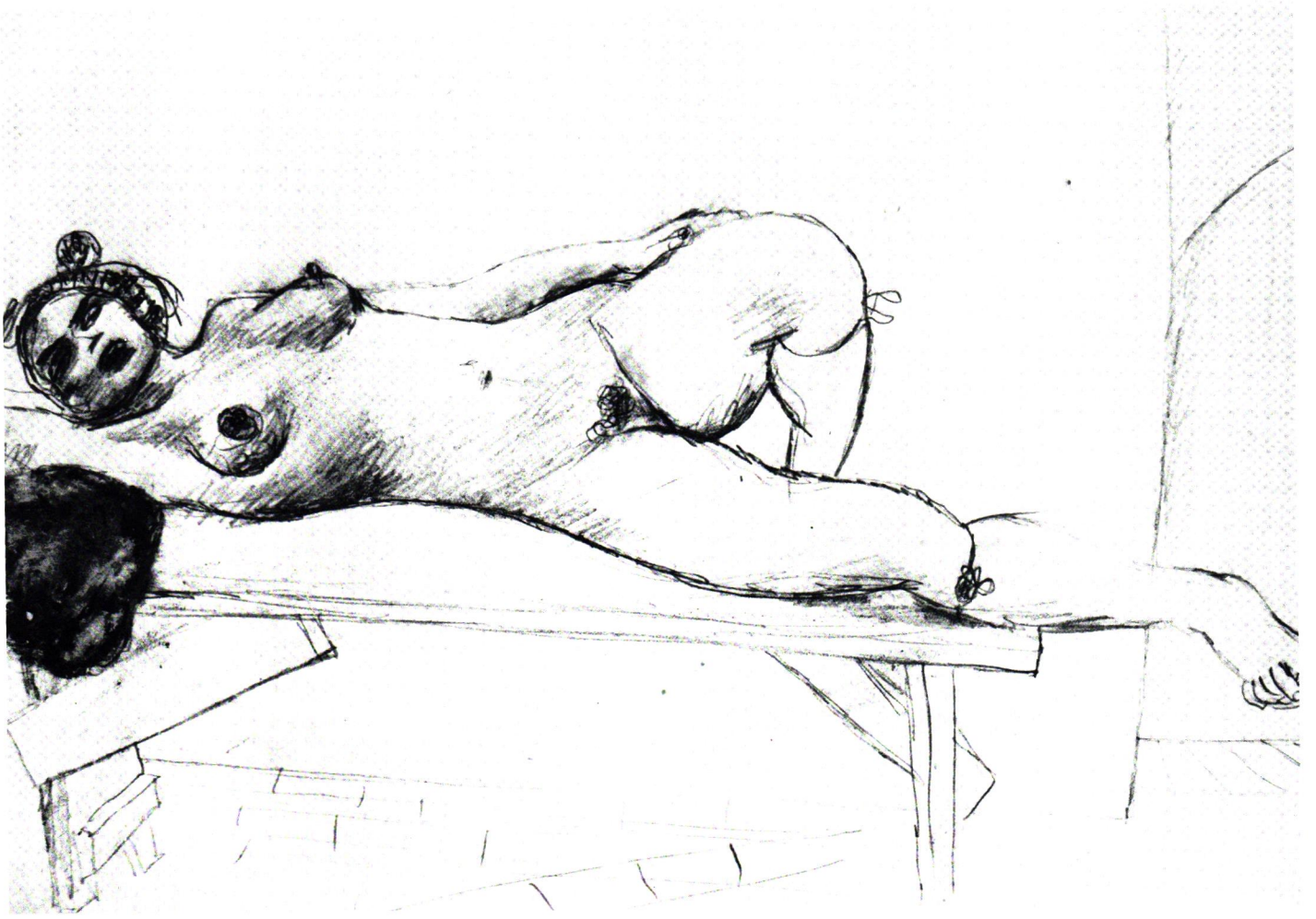
This new preoccupation with the landscape was, in fact, a critical component of the Mediterraneanism proposed by the syndicalists and a number of prominent European and North African intellectuals including André Gide, Henri de Montherlant, Albert Camus, Gabriel Audisio and Emanuel Robles.[24] Le Corbusier's sentiments almost echo those of Camus, as Emery recognized when he proposed that the two work jointly on a new review of Mediterranean culture, *Rivages*.[25] The claim to Mediterraneanism as a logical cultural and political entity was, as Camus explained in his early address "The New Mediterranean Culture," not one of cultural superiority, though in both the architect and writer there is a certain celebratory note, but "a kind of nationalism of the sun." Both artists express themselves in terms of "harmony with the land." The Mediterranean had evoked a kind of miracle: the existence of a unified people, for whom reasoning and abstraction were less important than physical life. The landscape had overcome doctrine.[26] It was natural that the Obus, in response to this autochthonous force, should turn its back on Cartesian rationality and look to the Mediterranean for its generation.

The fundamental cultural importance of Mediterraneanism, a consequence of the region's historically and geographically unique encounter between East and West, was articulated more specifically as one of the dominant themes in the project. Symbolizing the union of the two cultures was the *cité d'affaires*, the focal point of the project. The thirty-one story office slab, located in the Quartier de la Marine at the junction of the European and Muslim sectors, was not only intended to integrate the economic community within the city, but to proclaim, as an architectural monument visible to all visitors approaching from the sea, the joining of world axes.[27] In this choice of location for the business center Le Corbusier opposed most *colons*, who considered the center of the city to be in the Agha quarters, the European port area. The administration's proposal for the Quartier de la Marine, calling for traditional public housing and corridor streets, would have served only to reinforce, the architect believed, the barrier between the two worlds (fig. 23).

The Casbah itself was to be preserved; the only "improvements" would occur in the lower quarters to permit the two mosques to be seen once again in their original setting. In contrast to the callousness he exhibited toward the vibrancy and charm of ancient Paris in Plan Voisin, a deep respect for the Muslim vernacular extending beyond the simple joys of *folklorique* emerges in Le Corbusier's descriptions and drawings of the old Turkish citadel. Under one photograph published in *La Ville Radieuse*, he declares, "O inspiring image! Arabs, are there no peoples but you who dwell in such coolness and quiet, in the enchantment of proportions and the savor of a humane architecture."[28] The Muslim dwelling achieved in a radically different fashion many of his own ideals outlined in *La Ville Radieuse*; that the aesthetic was different was by no means prejudicial. With his acceptance of regional syndicalism, no longer would he declare, as he had eight years earlier in *L'Art décoratif d'aujourd'hui*, "Abandon regional expression in favor of an international idiom."[29]

The European part of the city in contrast with its corridor streets and "the disorder of the past fifty years," was replaced by his own lyrical vision of the modern city. Elevated highways, automobile lifts, sophisticated structural and mechanical systems were the elements of com-

20 Sketch of Nude, Algiers, Le Corbusier, 1931.
21 Interior of residential cell, terrace.
22 Redent, *Fort-L'Empereur, Le Corbusier.*



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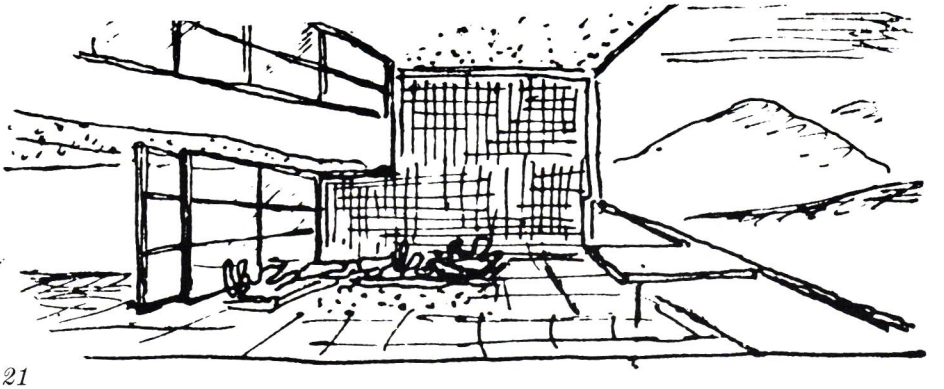

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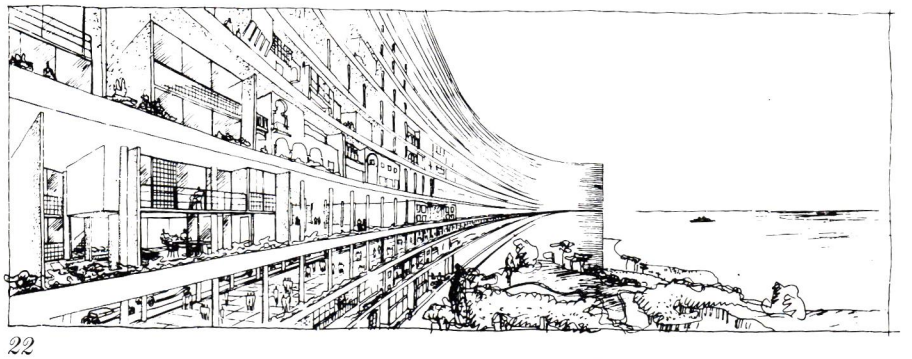

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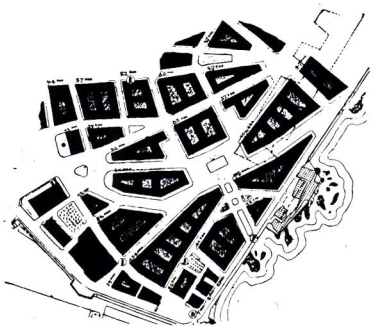
position: the most poetic city was also to be the most technically advanced. Only the Arcade des Anglais, a precedent for his own grand coastal viaduct, remained as a vestige of the colonial settlement (fig. 25).

This commitment to the union of two cultures, which appears so naive in the face of the subsequent rebellion, was the "accepted" solution to the colonial problem in the thirties. French liberals such as Léon Blum, Maurice Violette, and Jean Melia and Muslim leaders such as Ferat Abbas, Mohammed Saleh Bendjelloul, and R. Zenati mutually proposed a policy of assimilation that was more generous and egalitarian than the existing one.[30] Few Frenchmen or Algerians were perceptive enough to recognize the dangers ahead. In the centennial celebrations of 1930 it was assumed that after a century of conquest, settlement, and integration, Algeria had little reason to be preoccupied with its past. The French believed France was contributing her share to the "fardeau de l'homme blanc" and fulfilling in Africa her "mission civilisatrice." Gustave Mercier, an eminent *colon* and supporter of Le Corbusier, summarized the celebration's objectives. "The profound and indissoluble union of peoples of different origins in love for a Fatherland whose generosity and nobility all understand . . . and yesterday's stubborn fanaticism has been replaced by the appreciation of a superior ideal, one inspired by the radiation of French thought. . . ."[31] Algerians, while condemning the racist overtones of such statements, also generally saw their future as lying with France. Though Messali Hadj and his radical Ulemas association had already spoken of independence by 1930,[32] most educated Moslems still sought French political and legal rights without abandoning their special religious status. The leading moderate spokesman Ferat Abbas not only rejected the idea of Algerian independence, but he denied that there had ever been an Algerian nation to revive.

However reasonable assimilation might have appeared in this context, a certain naiveté resulting from the fusion of art and politics colors the Obus solution. Unlike Camus who observed while watching the sun setting over an Arab settlement that "it would have been pleasant to abandon oneself to an evening so surprising and so grandiose, but that the suffering whose flames burned red before us imposed a kind of ban on the beauty of the world,"[33] Le Corbusier regarded the Casbah and Kabylian villages purely in poetic terms. According to official statistics, over ninety-five percent of the adult Muslim population was illiterate, fifty percent were employed less than a hundred days a year, and ninety percent of industry and commerce was in European hands. When confronted with the beauty of Algeria and its native population, Le Corbusier, like the average *colon*, tended to forget such facts. Beyond housing, the Obus made no direct provision to ameliorate the poverty, crime, and destitution which most Moslems faced; instead it concentrated on removing the "architectural confusion" of the European quarter. The union of two cultures proclaimed by the *cité d'affaires* remained in the last analysis largely aesthetic.

Le Corbusier's dual postulation of individualism and collectivism appears to have been equally ineffectual. Both principles were to emerge "naturally" in the biological development of the project from the individual cell to the larger social whole. In a rather confused account Le Corbusier explained: "For Algiers it is possible to make plans that are capable of respecting demands for individual freedom. Plans that support collective activity in terms of speed, economy, and productivity. Through them one can initiate a change capable of enabling human bodies to regenerate their physical and spiritual forces. In short, a town whose structure is based on the principle of biological cells is the demand. The increase and growth of the cells should develop according to biological principles which stand for the maintenance and not the destruction of individual freedom."[34]

The residential unit, the primary cell, was itself to be an expression of individual freedom. Anticipating Nicholas Habraken's supports proposal, the *redents* were to provide a permanent infra-structure, consisting of basic frame, circulation and service systems (fig. 22). The units themselves would be completed in any style that the residents or individual architects preferred. As the sketch of the Fort-L'Empereur *redent* reveals, the scale of the in-



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23 Administration's proposal for the Quartier de la Marine, Algiers, n.d.
24 "Who are the protectors of the fatherland? Those who create it!" Sketch made during a lecture in Algiers, Le Corbusier, 1933 (probable date).
25 Sketch of the Arcade des Anglaise, Algiers, Le Corbusier, n.d.

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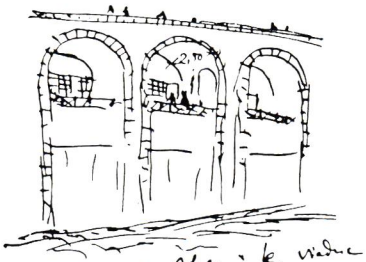

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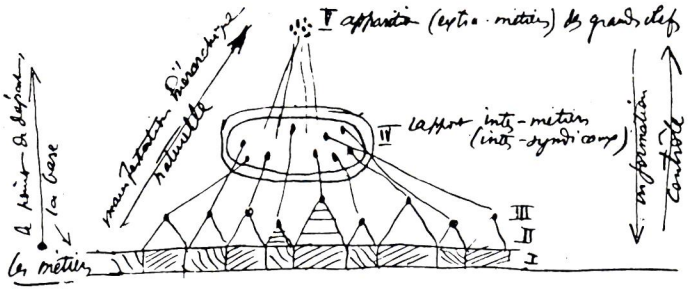
N-York
violens
Farouch.
Jour, vanité et
cupidité.

26 "Pyramid of Natural Hierarchies," Le Corbusier.



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frastructure was such that a Moorish-style villa might gracefully be juxtaposed with the Pavillon de l'Esprit Nouveau.

The extension of individual rights beyond the cellular level, however, was left undefined. The syndicalist model of political organization with political power evolving from *syndicat* to federation to confederation, which Le Corbusier specified in a triangular diagram in *La Ville Radieuse* is not elaborated in the Obus (fig. 26).[35]

Collectivism, similarly not conceived as an issue of political organization, was considered implicit in the "speed, economy, and productivity" of the plans. Still accepting many Taylorist assumptions, Le Corbusier and his fellow syndicalists saw planification as a way of overcoming class conflict and establishing a new model of social harmony. It was intended that residents of Algiers would be able to enjoy public recreational facilities, communal kitchens, laundries, day care units, and cultural centers, all built with the funds that would accrue through the economies of mass production and scientific planning.

Yet, social and economic divisions clearly remained. Taylorism and planning might serve a communal society, but they were not substitutes for its actual existence; "Communism," as Lenin stated, "might be Soviet power plus electrification—but not electrification alone."[36] The social inequalities were reflected in the architecture itself. The housing of Fort-L'Empereur was reserved for the middle and upper classes, the coastal viaduct for the working class. Everybody would have the sky, the sea and the mountains, but some would enjoy this "joyous parade" from a fourteen meter square cell, while others, from a unit four times as large. "Material wealth," Le Corbusier believed, "was an object of less esteem when one had a house which afforded fundamental scope for enjoyment."[37] If the Depression had undermined their faith in their own espousal of planification, the syndicalists relied on a mystical organicism to complete the social cure. "Nature in all its magnificence" was "the elemental reality." Once again social and political reform remained essentially a matter of *poésie*.

Thus, it was no accident then that the business core was the symbolic focal point in both the Obus plan and Ville Radieuse (figs. 27, 28). Although Le Corbusier despised the waste and selfishness of the capitalists, he still recognized the business center as a source for "money-making." In the Obus plan the syndicalist vision became a capitalist world made palatable by an organic metaphor, both social and aesthetic in implication. Anguish was warded off by absorbing its causes; crass materialism masked by beauty. Rather than rigorously analyze the parameters of existing society and specify the conflicts which in fact forbid an equal access to art or to the terrain, Le Corbusier and his political associates depended for social redemption on a dreamlike return to natural hierarchies—a primeval state whose economic and social structures elude definition.

The potential political implications of the Obus become particularly problematic in the context of Le Corbusier's actual efforts to realize the project and instigate social reform. The moral parameters of *action directe* were vague. To the syndicalists, implementation was more important than procedure, *l'homme réel*, more meaningful than *l'homme abstrait*. Although Le Corbusier attempted to arouse general public opinion in Algiers, his main hope was government intervention. He proclaimed to Marshal Lyautey that "the plan must rule, it is the plan which is right, it proclaims indubitable realities" and demanded to Mayor Brunel "a simple decision of authority."[38] Though there was little risk of such action for economic reasons alone, the potential for fascist interpretation was clear. Such a "simple decision of authority . . . to destroy and rebuild completely a city of three hundred thousand residents," Brunel replied, "would require an absolute dictator controlling not only the goods, but the life of his subjects."[39] This position was not necessarily in contradiction to the *Prélude* program. Freedom like art was linked to nature's law. Harmony with the land, not abstract rights, was the requisite condition to man's liberation.

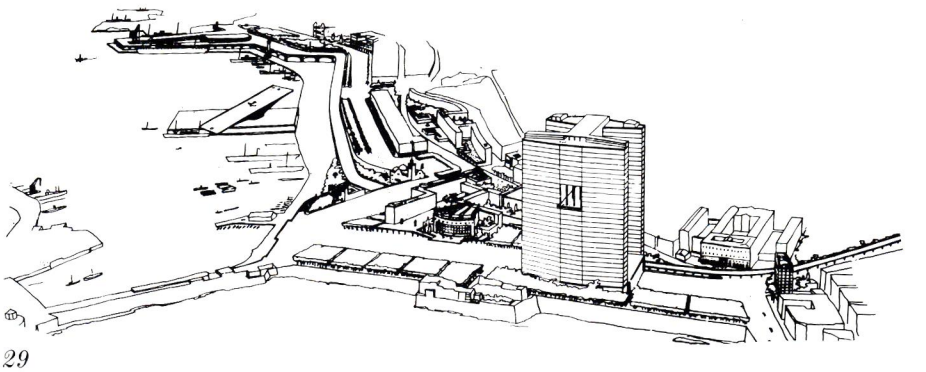
With the public rejection of the Obus in the spring of 1932, Le Corbusier, deeply committed to Algiers, developed a

series of new projects without official commission or payment.[40] Each scheme was narrower in scope; each attempt an increasing compromise with economic and political realities. Obus B, submitted a year later, eliminated the grand viaduct and offered a new design for the business center based on the tensistructure process developed by the Italian engineer M. Guido Fiorini (fig. 30).[41] The connecting highway and curved *redents* of Fort-L'Empereur were left unchanged. The size and scale of the project continued to receive sharp criticism from public officials and financiers, and Le Corbusier submitted in the spring of 1934 yet a third variant, Obus C (fig. 29). Restricted to the Quartier de la Marine, the area officially designated for urban renewal, it consisted only of the skyscraper, a more detailed development of the one appearing in Obus B, and an outline of a future civic center, located to the east of the tower. The Municipal Council bypassed the project, stating that it had full confidence in M. Proust, an urbanist with preferences toward garden-city dispersion, who had previously been appointed by the Council to develop plans.[42] Despite initial interest and enthusiasm for Le Corbusier's ideas, the public seemed to view the various Obus schemes as utopian; the amount of office space was considered excessive; elevated vehicular circulation, futuristic. Many *colons* were disturbed, in addition, by the location of the *cité d'affaires* and the preservation of the Casbah. Even supporters such as the newspaper critic Jean Cotereau referred to the scheme as "Un nouveau bombardement d'Alger." For the next three years Le Corbusier restricted his efforts to publicity and attempting to prove the financial feasibility of Obus C. Brunel himself was defeated in 1936, partially as a result of the banking community's criticism of his extensive building program. The new mayor, Rozis, a conservative whom Camus accused of having learned his lessons in orthodoxy from Charles Maurras, the leader of the Action Française, had even less sympathy for Le Corbusier's proposals.[43] However, through the efforts of P. A. Emery, his collaborator, and Georges Huismann, the Director of the Ecole de Beaux Arts, he was finally appointed to the Comité de Plan Regional in February 1938.[44] With Renaud, the chief engineer of Ponts et Chaussées, he developed Obus D, a project similar to C, only now the skyscraper was Y-shaped in plan (figs. 32, 33). Several months later, in March of 1939, he proposed Obus E, the famous *brise soleil* skyscraper, which was to appear once again, though in a new context, in the Plan Directeur (fig. 35). Ideological differences within the committee in conjunction with arguments about payments for his transportation costs abruptly curtailed his further participation until 1941 and led to his immersion in Vichy politics.

Plan Directeur

The fragile reconciliation of art and politics in the search for an organic order becomes increasingly problematic in the Plan Directeur, his final scheme for the city. The proposal, which in part defies ideological classification in its poetic details, is inevitably colored in its urban aspects by Le Corbusier's role as a minor official in Vichy.

Like so many Frenchmen both conservative and liberal, Le Corbusier welcomed the fall of France as an opportunity to re-establish basic truths. The failure of the Popular Front, the decay and abyss of the last days of the Third Republic had reinforced many syndicalists' conviction that the course for rejuvenation lay outside the parliamentary system. Pétain, a leader of "imagination, will and technical knowledge," would, they hoped, implement the *ordre nouveau*.[45] Indeed, certain objectives of Pétain's National Revolution program—"natural" groupings from province to family, agrarian reform, corporatism, youth programs—evoked aspects of the *Prélude* outline. Lagardelle himself, at the age of sixty-seven, became the Vichy Secretary of Labor, and it was during his period of office that the Charte du Travail with its slogan "Solidarity, Duty, Sacrifice" was implemented. In January 1941, Le Corbusier and two of his former *Plans* associates, François de Pierrefeu and André Boll, received temporary appointments to serve on the Comité Latournerie, officially entitled the Comité d'Etudes du Batiment.[46] The group's life was extended on May 27, 1941, in an official mandate signed by Pétain, which decreed yet another title, Comité d'Etudes de l'Habitation et de la Construction Immobilière, and which charged the committee to establish a national building policy and to initiate any "studies or missions which it judges useful, in France, in the Empire



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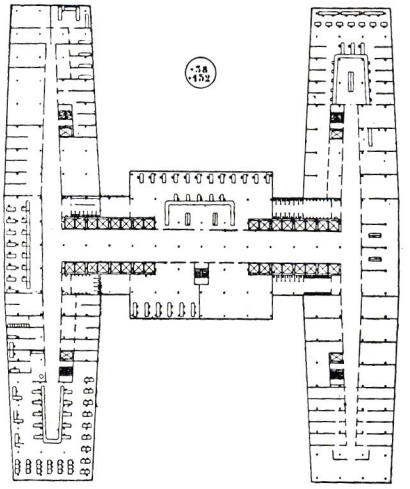

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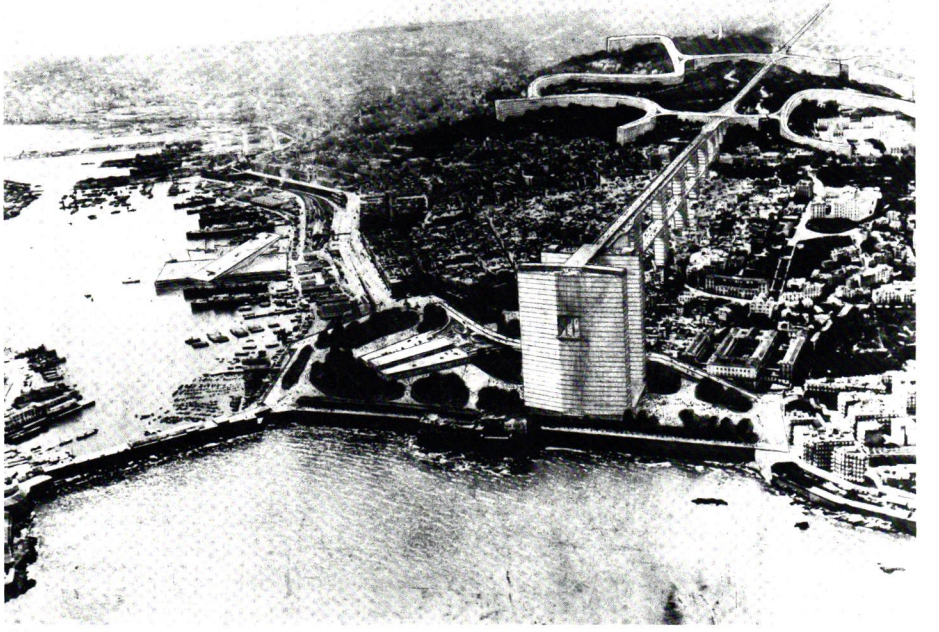

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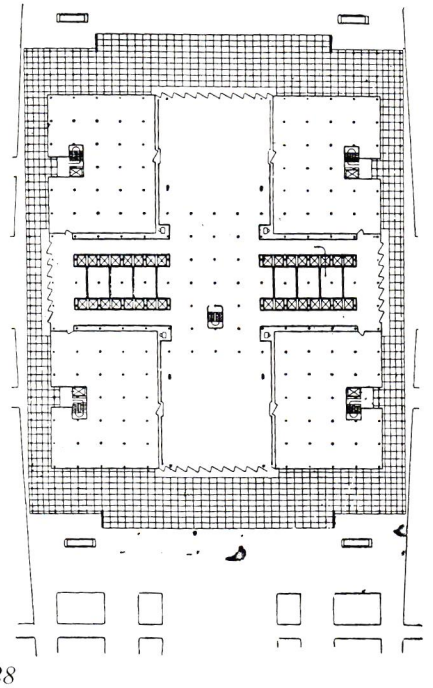

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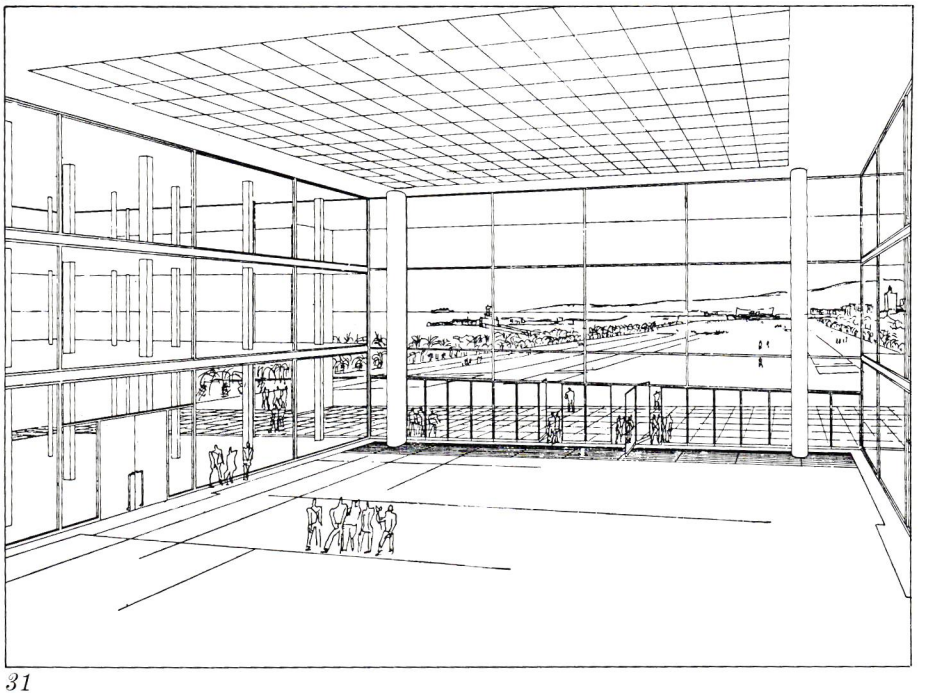

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27 The Business City, Project C. Upper floor plan.
28 Ground level plan. Obus C.
29 Obus C, 1933.
30 Obus B, 1933.
31 The Hall, the Business City's Forum. Obus C, 1933.

or in foreign countries." The Algiers project headed the committee's list of seven exemplary works to be undertaken by the Vichy government.[47]

After a year of further investigation and close collaboration with P. A. Emery in Algiers, Le Corbusier submitted the Plan Directeur to the prefect of the city on April 23, 1942. The proposal, which had received the recommendation of du Moulin de la Bartheté, chief of the Vichy civil cabinet, consists of three major plans, outlining the three stages of development, 1942, 1955, and 1980, and an extensive text describing basic principles.[48] Like the first Obus, it is a master plan for the extensive development of the city. In its formal organization and social implications, however, it is a profound modification of his earlier schemes. Not only is the *cité d'affaires* relocated, but a new series of developments are proposed: a civic center, an area of light industry and crafts, an industrial zone, and a center for Muslim cultural institutions (figs. 34, 36, 37).

Formally, organicism remains a predominant theme, though its context has been modified. Plasticity and lyricism, precursing the projects of the fifties, appear not in the larger composition of the urban plan, but in the design of the individual building—in this instance, the skyscraper. The plan itself evokes the rational Nemours project (1933), proclaimed by the C.I.A.M. as the "purist expression of the Athens Charter." Replacing the coastal viaduct of the Obus plan is a somewhat more traditional highways system, an automobile route circumscribing the city with coastal extensions. The buildings themselves are no longer integrally connected to each other or the dramatic terrain but stand as objects in a field, with the exception of considerations of orientation, designed from the inside out. The Y-shaped housing units, in contrast to the curved *redents* of the first project, might appear anywhere. And indeed they do, both in Le Corbusier's business center proposals (Anvers-Rive Gauche, Barcelona, Buenos Aires, Manhattan) and in his housing projects (Hellocourt in Lorraine and the Bastion-Kellermann in Paris). One can only assume from the example of the *cité d'affaires* that at the next level of design more variation, indicative of the buildings' locale, would have emerged.

The skyscraper alone begins a dialogue with the landscape. With its narrow edge fronting the water, its slender mask extending upward, it appears like a giant vessel setting sail to join sea, land, and sky. Its plan, an airplane wing expanding around a solid service core, and its *brise-soleil*, the modern equivalent of the Muslim loggia, were responses to sun and heat control. Such regional concerns were, as was so often the case in the Obus plan, the source for a new *poésie*, crystallized in the lyrical syncopation of the concrete screen. Just as the Obus departed from the Cartesian world of Ville Contemporaine, the plasticity of the skyscraper facade challenged the taut curtain walls of his earlier towers. The free plan that Le Corbusier had developed in the twenties was now complemented by a facade whose articulation was much more plastic. The clarity and harmony of the building skeleton, which Le Corbusier equated with the armature of a tree, permitted an infinite variation of all the secondary elements. The skyscraper became in its final design "*une pure architecture Nord-Africaine*," "a palace and no longer a box—a palace worthy of reigning over the landscape" (figs. 37, 38).[49]

In contrast to the Obus plan which attains plasticity through its initial site disposition, the Plan Directeur project evokes lyricism and poetry through its details, the articulation of individual elements. The "parti," the general composition, is according to Le Corbusier's own description rationally determined. This relegation of plastic qualities to the more secondary elements, to a level of conception more specifically concerned with the formal appearance of the building than with its generating origins, appears to have made it easier for the architect to view organicism as a more strictly architectural issue. With concerns for geography, regionalism, and Mediterraneanism limited to the expressions of detail, the illusion of an organic social structure could be readily cast aside.

That this in fact occurred, though apparently without Le Corbusier's full awareness, is evident in the new political context of the Algiers scheme—Vichy France. Despite

diagrams illustrating the joining of East and West, Europe and Africa (figs. 40, 41), the image of simultaneous social and architectural regeneration does not extend in the proposal beyond a few empty slogans, which are vestiges of past ideals.

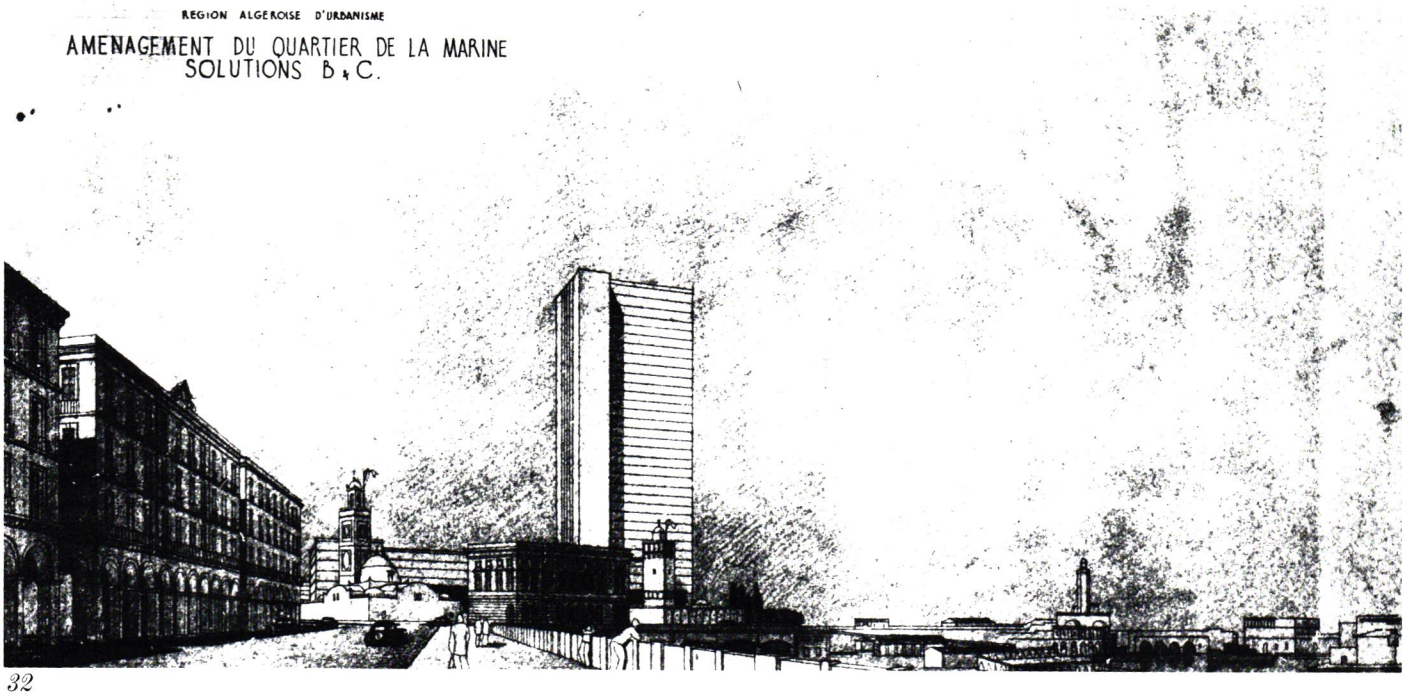
More explicitly, "Alger, Capitale de l'Afrique du Nord" has changed to "Alger, Capitale de l'Afrique Française" (fig. 42). In his texts for the *Plan Directeur* and *Poésie sur Alger* (fig. 4) Le Corbusier renounced his earlier internationalist stance, and with new illusions of grandeur he proclaimed to the prefect, governor-general, and mayor of Algiers that the city would become "the phoenix of France," insuring "the recognition of the mother country reborn from her ashes."[50] The dream of a new Mediterraneanism—of a terrain with poetic and social power—was lost in the declarations of French nationalism so characteristic of the Vichy era.

The plan of the Directeur scheme, in its disposition of functional activities, reflects in part the compromise in ideological position. Although the Casbah is still preserved, to the detriment of the project's ultimate success, the skyscraper, the symbolic focal point, has been moved from the Quartier de la Marine to Bastion 15, in the heart of the European part of the city. From this point the radius of habitation and all major circulation systems extend. This solution was undoubtedly more realistic but in its acceptance of the existent hierarchies of economic power it validated European dominance; the summit of the city belonged to the *colons*. In locating the secondary activities Le Corbusier attempted to compensate for this compromise, but his efforts remain rhetorical gestures without the social or economic power to effect reconciliation. The civic center, for example, located on the platform of the Arcade des Anglais, the area of first European settlement, was intended to link the indigenous center at the Quartier de la Marine with the European community. But with its low sedentary buildings in the tower's shadow, it was clearly of secondary importance. Likewise, the Muslim Casbah and the Quartier de la Marine, with no independent economic viability beyond tourism and craft production, became virtual shrines to the past. In the proposal for new housing, as in the Obus, the division between the Moslems and Europeans was further perpetuated. The Moslems displaced by the renewal of the Casbah were to reside on the slopes dominating Bal-el-Oud and the future commercial port; the Europeans were to live on the Heights of Mustapha above the cliff dominating the Casbah.

The Plan Directeur's feeble gestures toward the native population appear all the more problematic given the built-up tension between the European and Muslim communities during the late thirties and war years. The Depression and the Occupation, which had brought unemployment and poverty to many Frenchmen, resulted in even greater misery and deprivation for the Muslim population of Algeria. The layoffs of Algerian workers in France, the restriction in immigration quotas, in addition to inequities in public grain distribution during the famine of 1939, made the necessity of radical social reform overtly clear.[51] But little legislative action was taken to suggest that the promises of the centennial would be upheld. After the defeat of the Blum-Violette bill, which was aimed at establishing equal political rights for a limited constituency of Muslims and the suppression of Messali Hadj's newspaper *Etoile Nord Africaine* in 1937, Algerian Moslems ceased to entertain the illusion that metropolitan Frenchmen were any different from the *colons*, and would ever be persuaded by rational discussion and legal argument. The Vichy regime, adamantly supported by most *colons* (the Gaullist coup in Algiers was carried out by not more than two hundred men), only aggravated the situation for Algerian Moslems. Though moderates like the integrationist Abbas were left alone, the more extreme separatists like the Messalists were jailed by the hundreds.[52] Few Moslems retained the hope of full French citizenship; integration had become a dead myth. Abbas himself reversed his earlier position in his famous declaration of 1943: "The Algerian nation no longer conceives the problem of liberation in a form other than the Algerian fatherland. . . . Henceforth an Algerian Moslem will ask nothing else but to be an Algerian Moslem."[53]

The Obus's postulation of integration—even as aesthetic

32 Obus D, 1938.
33 Obus D, 1938.



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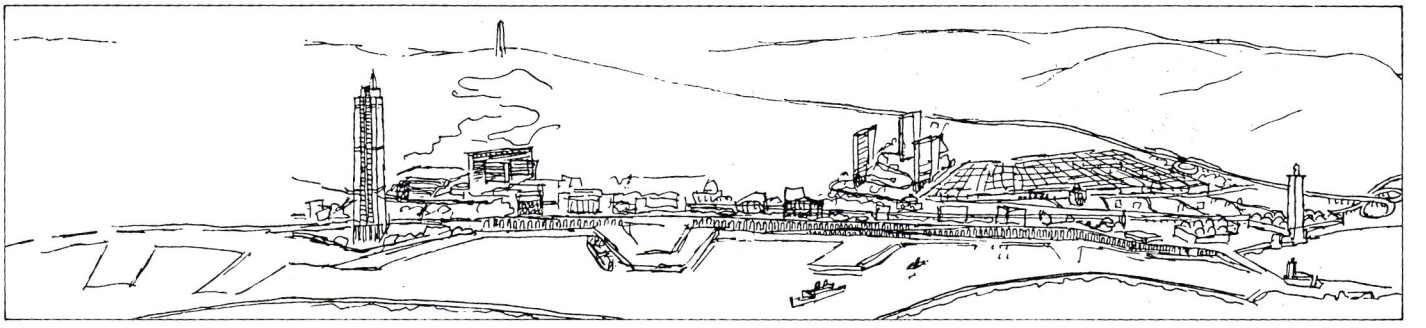

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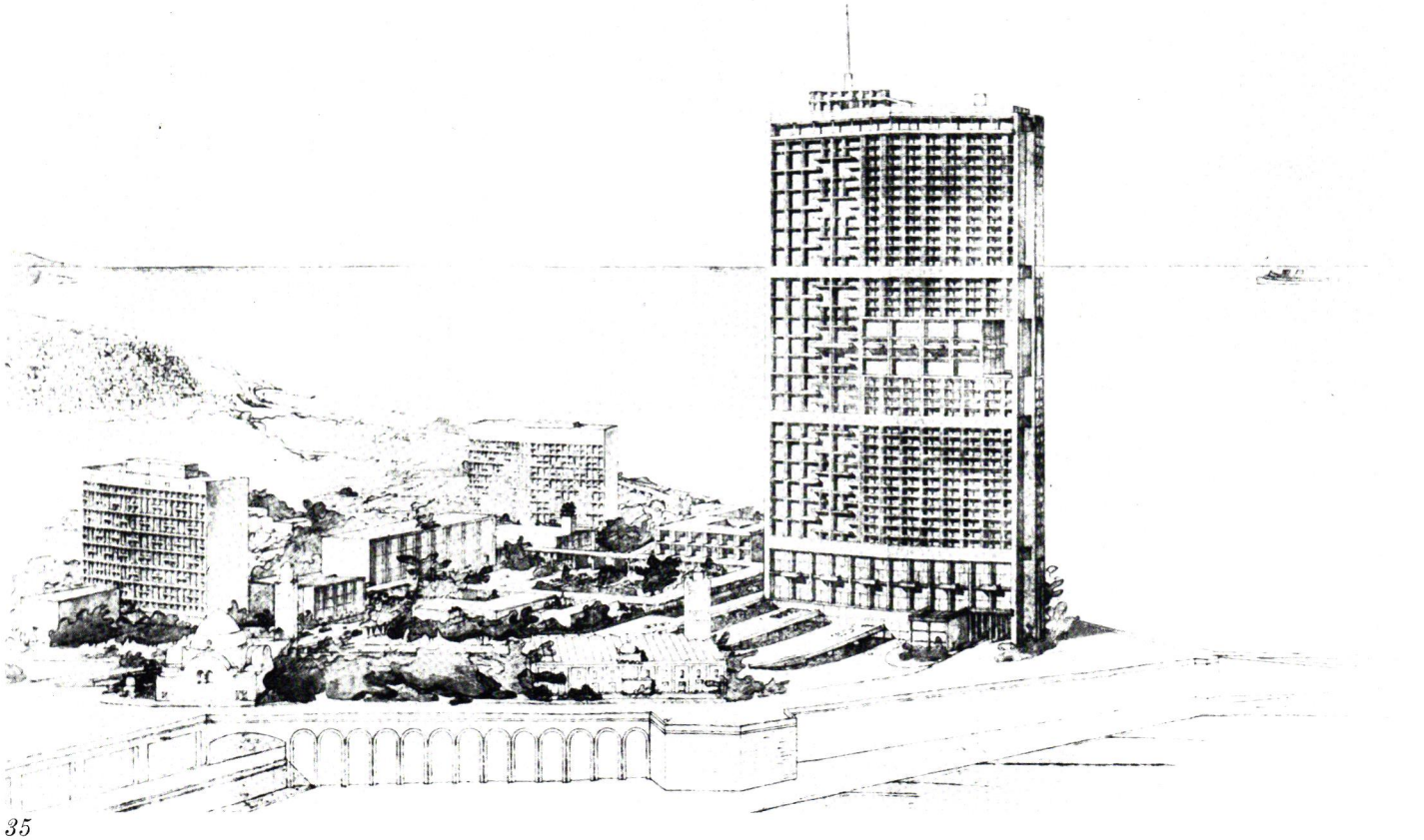

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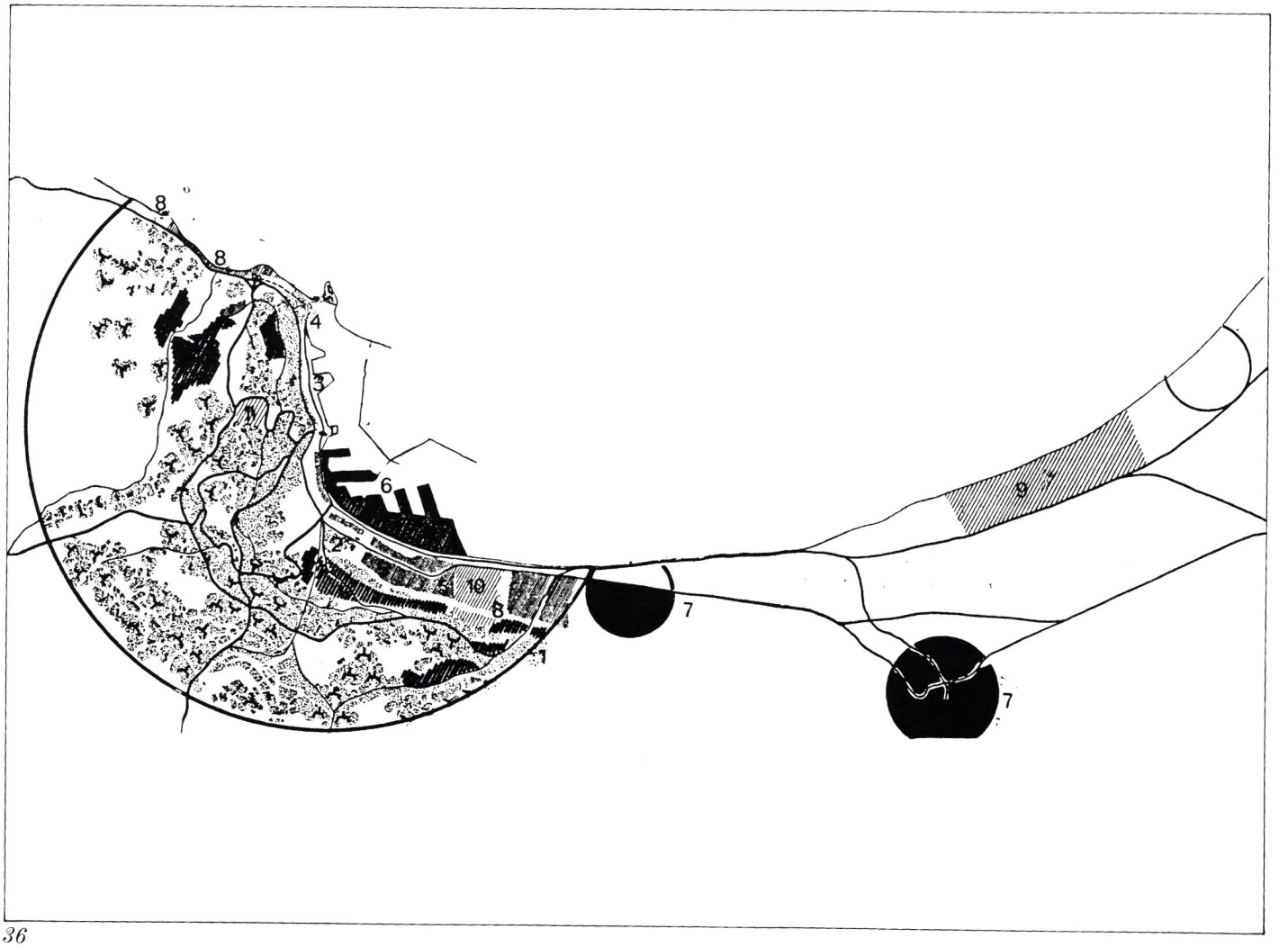
34 Plan Directeur, Le Corbusier, sketch, 1942.
35 Obus E, 1939.



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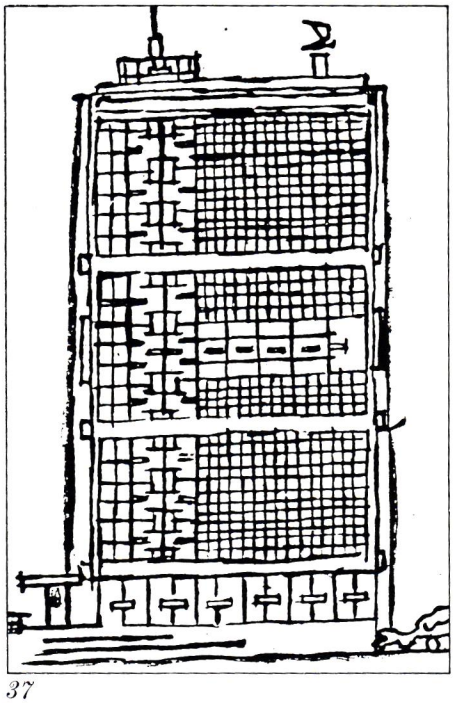
36 Plan Directeur, Algiers. Le Corbusier, 1942. Master plan: 1) business center; 2) civic center; 3) transportation center; 4) admiralty, marina; 5) light industry; 6) shipping, port; 7) industrial center; 8) recreation facility; 9) weekend retreat; 10–11) gardens, the Unité d'Habitation (with common facilities) form a 'Y'.

37 Obus E, 1939. Cité d'affaires, sketch elevation.
38 Sketches of skyscraper, Algiers, Le Corbusier, 1938.
39 Obus E, 1939. Interior view of offices.
40 Diagram submitted with the Plan Directeur, Algiers, Le Corbusier, 1942.



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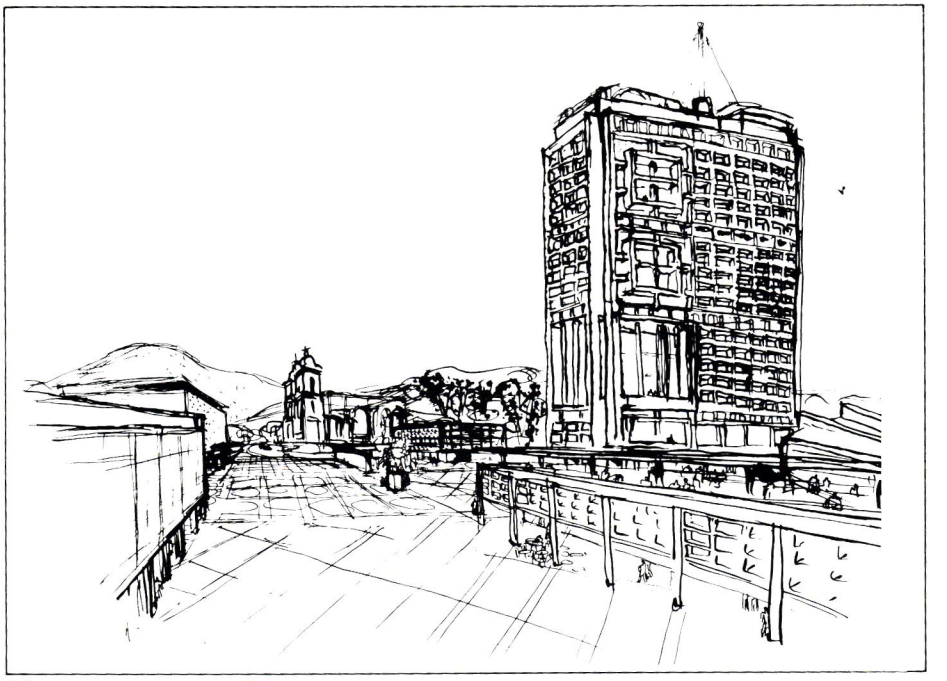

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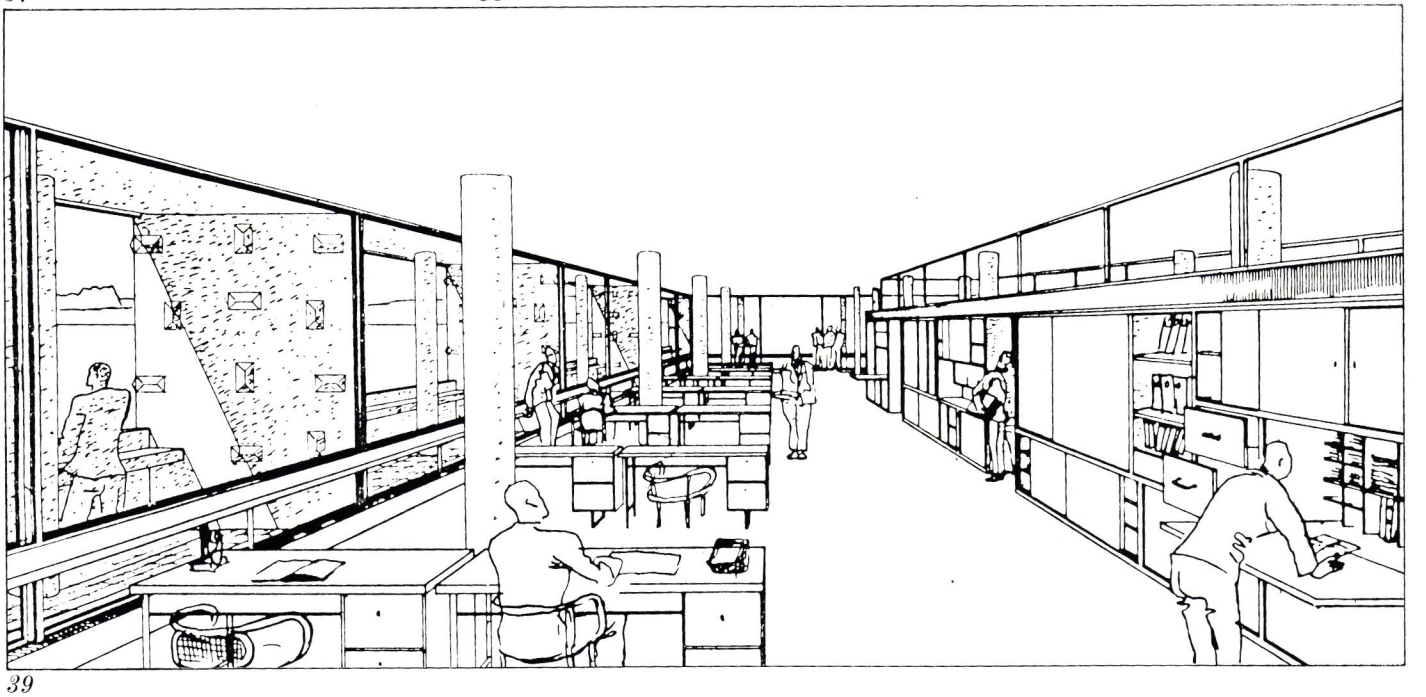

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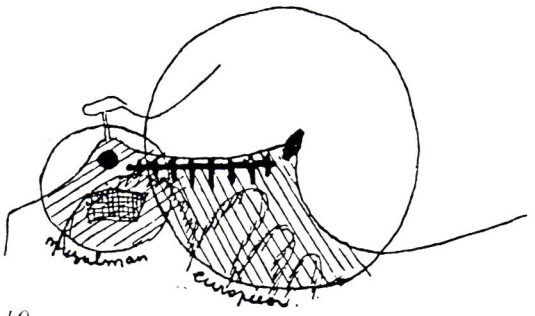

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image—was no longer possible. By World War II it was doubtful that any architectural proposal that sought immediate realization—and certainly one formulated under the auspices of Pétain's government—could hope to address an issue which demanded, first and foremost, radical political action.

Le Corbusier's own political role was restricted to seeking the project's implementation. The authoritarianism implicit in his earlier demands to Brunel became more explicit and ambitious. He demanded in a government report that Vichy officials dismiss the local planning commission and intervene on his behalf. "These works must be suspended or their continuance forbidden by superior edict. This gesture of authority would have a decisive influence on public opinion in Algiers; it would show that the Government of Marshal Pétain is seriously concerned with the eminent problems of urban planning and that, henceforth, it intends to impose a new orientation."[54]

Vichy rhetoric now replaced syndicalist discourse in his polemic. "Famille, Travail, et Patrie," his new organic categories, were the criteria by which he condemned the local plan.[55]

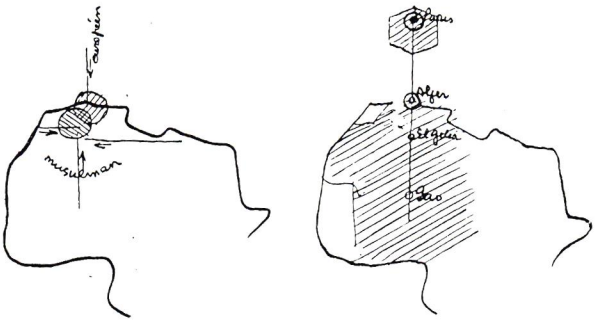
It is ironic and perhaps indicative of Le Corbusier's confused ideological stance that the Plan Directeur was rejected not because of its authoritarian implications but in part because of its "Communist" aspirations. June 4, 1942, *Travaux Nord Africains,* a construction journal distributed regularly to government offices, printed Alexandre von Senger's "L'architecture en perile," an article originally published in *La Libre Parole* in 1934. The same author had previously written *The Trojan Horse of Bolshevism,* a series of vicious attacks on Le Corbusier, which were printed by a Swiss paper during the League of Nations competition and later used by the Nazis to discredit modern architecture. "L'architecture en perile" similarly attested to Le Corbusier's involvement in an international Jewish conspiracy. The *Travaux N.A.* reinforced the argument by printing photographs of the Pravda building and the Club of Municipal Works without an attribution of architect.[56] Eight days later the Municipal Council issued the following declaration: "In as much as the project is essentially communal, it is not desirable to attempt an experience so uncertain and on such a large scale. Accordingly, we have decided to reject purely and simply the project presented by Le Corbusier."[57]

The dream of the Obus—as a reconciliation of art and politics—had failed. For a moment it had appeared as if the two modes might be parallel paths, each an assertion of an organic natural order superior to the artificial caprices of modern democracy and sterile functionalism. The image, however, remained metaphorical—successful as an initial artistic gesture, impossible as a project to be realized. The Algiers projects left a rich heritage of new forms. But for Le Corbusier and most modern architects the hope for immediate social redemption through architecture was abandoned.

It would be tempting to dismiss Le Corbusier's role in Algiers as political opportunism—and at times, he appeared sufficiently inured to the compromises of life to seize whatever opportunity availed itself—but the problem extends much deeper: both to the nature of his political choice and to the role of architecture itself as social redeemer.

As noted previously, Le Corbusier was one of a number of syndicalists who became immersed in Vichy. The movement itself was partially responsible for such transfers of allegiance. It was in essence syncretic, attempting to transcend social, economic, and political barriers by an emotional appeal to the "real" and the "natural." Once having asserted *bios* over *logos*, there could be no final criteria, despite continual references to plan, efficiency, and technique, by which to evalute what was indeed "real" and "natural." "On philosophe peu, on agit." The syndicalist ideas had cumulatively formed an intuitive mind-picture rather than a logical construct lending itself to implementation of a new order. The movement, as "temperment," could produce an image of cultural reconciliation, but when translated to institutional form it inevitably failed. Greater specificity—a hierarchy not a simple fusion of values—was required.

41, 42 Diagrams submitted with the Plan Directeur, Algiers, Le Corbusier, 1942.



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This failure of the syndicalists' syncretic vision becomes explicit in the context of Le Corbusier's architecture. The dream of the beautiful world masked the suffering of men here and now; in its aura political action became ineffectual or seriously compromised. As the Muslim question pointedly revealed, the assumption that the aesthetic good and the social good were synonymous was naive deception. Perhaps Le Corbusier was fortunate to meet such adamant opposition. For many syndicalists who persisted with their dream of Vichy as the organic state, it was not until 1946 that the deception became clear. Lagardelle, their primary political spokesman, was sentenced to life imprisonment for the deportation of French workers to Germany.

On a more general level and perhaps one of the more immediate concerns to us today, the regional syndicalist movement, as opposed to the Communist party for example, is indicative of the problems inherent in using built form to criticize an existing society. Architecture cannot change a society through analysis of its present shortcomings, but must ultimately relate to the social structure of which it is a part. In contrast to many radical movements, in which destruction of the capitalist stage and bourgeois system are prerequisite to the implementation of future order, regional syndicalism, as it evolved in the thirties, viewed both as coincident. *Planisme* supplanted the general strike. It was not a question of architecture or revolution, but both—social redemption and cultural regeneration. Thus, Le Corbusier believed he could account for his social responsibility simply through the practice of his craft.

In this respect syndicalism is analogous to another political tradition in France to which architects have frequently been drawn, utopian socialism. For utopians, in contrast to Marxists or even early syndicalists, the development of plans is the means to a new society; in the case of Robert Owen (1771–1858), Victor Considérant (1801–1893), and Jean-Baptiste André Godin (1817–1888) those plans frequently took architectural form. Revolution was not a result of historically created conditions of class struggle, but the practical implementation of a new vision of society. The plans would be so alluring, so positive, that man would voluntarily give up his past institutions. The Obus and Plan Directeur were expected to take a similar role. Instead of critically examining the existing class structure and economic conditions, Le Corbusier offered *poésie* to bring about "the revolt of human consciousness."

His espousal of revolutionary objectives became, in this regard, a mere formality. Preoccupied with the visualization of a new society, he was too often oblivious to the material conditions of the present. Marx's critique of the utopian socialists may justly be applied: "Historical action is to yield to their personal inventive action, historically created conditions of emancipation to fantastic ones, and the gradual spontaneous class organization of the proletariat to an organization of society specifically confined by these inventions. Future history resolves itself in their eyes, into the propaganda and practical carrying out of their social plans."[58] *Action directe* had become utopianism—a utopianism of potentially tragic implications.

1. Nikolaus Pevsner's *An Outline of European Architecture* (Baltimore: Penguin, 1960) and Henry Russell-Hitchcock's *Architecture: Nineteenth and Twentieth Centuries* (Baltimore: Penguin, 1971) bypass Le Corbusier's middle years. Likewise, Sigfried Giedion's *Space, Time and Architecture* (Cambridge: Harvard University Press, 1967) spends only five pages on Le Corbusier out of sixty-six pages given over to this period. However, in recent years, several books on Le Corbusier have begun to examine this period. See: Stanislaus von Moos, *Le Corbusier: Elements of a Synthesis* (Cambridge: MIT Press, 1979); Charles Jencks, *Le Corbusier and the Tragic View of Architecture* (Cambridge: Harvard University Press, 1973); and Russell Walden, ed., *The Open Hand* (Cambridge: MIT Press, 1977).
Among the texts specifically discussing the Algiers project are: Robert Fishman, "Le Corbusier's Plans and Politics, 1928–1942," *The Open Hand*; Fishman, *Urban Utopias in the 20th Century* (New York: Basic Books, 1977); R. Panella, "Algeri: Il Piano 'Obus' de Le Corbusier e la città di Algeri," vol. II (Venice: Gruppo Architettura, I.U.A.V., 1970–71); Manfredo Tafuri, *Architecture and Utopia*, trans. by Barbara Luiga la Penta (Cambridge: MIT Press, 1976).
2. Le Corbusier, "In Defense of Architecture," trans. by George Baird, Nancy Bray, André Lessard, and Alan Levitt, *Oppositions 4*, October 1974, pp. 93–106.
3. Taylorism, initially popularized by the American Frederick W. Taylor (1856–1915), was a system of labor discipline and workshop organization supposedly based on scientific investigations of human efficiency and inventive systems. For an excellent account of its impact on Europeans, society, and the present, see Charles S. Maier, "Between Taylorism and Technocracy: European ideologies and the vision of industrial productivity in the 1920's," *Contemporary History*, vol. 5, 2 (1970).
Maier argues that Taylorism and the American model of industrial productivity had lost its catalytic inspiration by the Depression. However, in France, where its impact was felt more gradually, the American industrial utopia was still an immensely provocative image into the early thirties, as witnessed by its discussion in reviews like *Plans*, *Plan du 9 Juillet*, and *L'Homme nouveau*. Le Corbusier himself was familiar with Ernest Mercier's Redressement Français, a group of economic experts who epitomized the growing vogue of Americanism and wrote for the association a pamphlet "Pour batir: Standardiser et Tayloriser," *Bulletin du Redressement Français* (May, 1928).
4. Le Corbusier, "Introduction," Le Corbusier et Pierre Jeanneret, *Oeuvre Complète de 1929–1934* ed. by Willy Boesiger (Zurich: Girsberger, 1964), p. 11. The quotation is somewhat modified in the "Introduction." See Le Corbusier, *Précisions sur un état present de l'architecture et de l'urbanisme* (Paris: Vincent Fréal, 1960), p. 268.
5. The French word *syndicalisme* simply means trade unionism. Ordinarily, the French describe this movement as *syndicalisme revolutionnaire*. The term did not simply mean that the unions were committed to revolutionary politics: that had also been true of communist unions. Rather, revolution and unionism were equally important: syndicalism meant revolutionary action by unions to establish a society based upon unions. See F. F. Ridley, *Revolutionary Syndicalism in France* (Cambridge: University Press, 1970), p. 1.
6. Peter M. Stearns, *Revolutionary Syndicalism and French Labor: A Cause without Rebels* (New Brunswick: Rutgers University Press, 1971), p. 9.
7. Victor Griffuelhes, *L'action syndicaliste* (Paris, 1908).
8. The syndicalists, adamantly pacifistic in the first decade of the century, had promised a general strike if international war occurred. This was considered tantamount to revolution. Léon Jouhaux, the secretary of the C.G.T., reversed his previous stand and chose to collaborate with the state during World War I. This move effectively curtailed any revolutionary pretensions of the union organization.
9. For a description of Le Corbusier's participation on the editorial boards of *Plans* and *Prélude*, refer to "Introduction to *Plans* Bibliography" in this issue of *Oppositions*.
10. Le Corbusier himself discusses this theme in his article "Truth from Diagrams," *Prélude*, no. 6 (June/July, 1833), reprinted in *The Radiant City* (New York: Orion Press, 1967), pp. 192–195.
11. "Un Plan d'Organisation Européen," *Prélude*, no. 6, June–July, 1933, p. 1.
12. *The Radiant City*, p. 228.
13. Primary sources for this article are Le Corbusier's correspondence, documents, and notes on the Algiers project at the Fondation Le Corbusier. Many of the classified documents are in Archives B53, doc. 1932–33, 1938–39, 1941. However, much of the information on Algiers remains to be classified. I would like to express my gratitude to Mr. Pierre-André Emery for the hours he spent with the author (in July of 1977) discussing the project and answering questions about documents. I am also grateful for the help I received from M. Miguel and the Fondation Le Corbusier in Paris.
There is considerable conflict among published texts about the dating of the Algiers project and Le Corbusier's association with the city. Samir Rafi, "Les Femmes d'Alger," *Revue d'Histoire et Civilisation du Maghreb*, no. 4 (January 1968), p. 51, and Maximilien Gauthier, *Le Corbusier ou l'architecture au service de l'homme* (Paris: Editions Denoel, 1945), p. 167, claim that Le Corbusier first visited the city in 1929 during the centennial preparations. Le Corbusier himself alludes to thirteen years devoted to the Algiers study (1929–1942) in his text *Poésie sur Alger* (Paris: Editions Falaige, 1950), p. 12. His *Oeuvre Complète de 1929–34* dates Obus A as 1930. However, extensive archival work has revealed no evidence of a journey to Algiers before March 1931. Mr. Emery, who was Le Corbusier's close associate on the Algiers Project, has confirmed this date.
14. Historical background material on Algeria is taken primarily from the following sources: Edward Behr, *The Algerian Problem* (London: Hodder and Stoughton, 1961); Michael K. Clark, *Algeria in Turmoil* (New York: Grosset and Dunlap, 1960); David C. Gordon, *The Passing of French Algeria* (London: Oxford University Press, 1966); Great Britain Naval Intelligence Division, *Algeria*, Geographical Handbook, Vol. II, May 1944; Mahfoud Kaddache, *La Vie Politique à Alger de 1919 à 1939* (Algiers: SNED, 1970).
15. Emery worked closely with Le Corbusier on the Algiers schemes. He prepared preliminary documents and offered im-

portant local criticism. His role becomes even more important in the formation of the later Plan Directeur.

16. Letter from Le Corbusier to M. Brunel, Mayor of Algiers, 10 December 1932.

"Dear Sir, I am taking this opportunity to send you the enclosed special number of *Architecture Vivante*, which contains a preliminary study of our Algiers project. I will follow it up with a more localized study of the Quartier de la Marine and the Fort L'Empereur.

"When you did me the honor of coming to my atelier to see the plans that I had elaborated for the purpose of establishing the general principles and order for the urbanization of Algiers, I had the distinct and clear feeling, apart from the fact that you did not hide your opinion from me, that you thought these to be worthwhile ideas for a better time, namely the future, that is to say, in your estimation a time some hundred years from now.

"Allow me to say that this impression does not reflect the present reality, nor the events which are required to bring an indispensable equilibrium to contemporary society. These cannot be postponed for a century but must be immediate, since there is now no balance between the inroads of the machine and man's total failure to adapt to the new conditions of existence.

"It is useless to develop this theme here, and the only thing that I want to say now, from the bottom of my heart and with the disciplined feelings of a responsible technician, is that the plans that I have conceived for Algiers are plans for today not for tomorrow. These development proposals which will bring enormous financial benefits to the society at large, while today's traditional town planning conceptions will only entail ruinous expenditures without providing any real benefit or any kind of adequate solution.

"My Algiers proposal is but a project in principle. If one decides to look forward and not backward, one can examine this project with a critical eye to the actual contingencies, beginning with an efficient and fruitful study of the exact conditions, which are as much technical as financial. And toward the same ends, one can search for piecemeal solutions that could, in any case, launch an era of great work. These solutions at any rate will commence the true planning of Algiers and will constitute not a total operation but a first step, which may then be followed by a second, a third, a fourth, and so on.

"Dear Mr. Brunel, allow me to say openly that the study of Algiers which I have not ceased to pursue since your visit confirms its reality every day. One must not, by a shrug of the shoulders, reject this 'utopia' which, truthfully speaking, could be realized by a simple decision of the authorities.

"In my studies of urbanism, done for many capitals, I have always proposed this theme: courage, enthusiasm, and action. For I sense that today the world and this country in particular are in an epoch of troubling inertia, a period of the most dangerous immobility. This epoch portends weighty things. By building, one can orient events toward a solution and future joy. If one simply shrugs one's shoulders, one is left to rack one's brains even more dizzily over the anguish that is everywhere.

"My action is summed up in these words: it is so good to act and it is a disgrace to do nothing.

"Please excuse me for expressing myself so freely. I know how much you love Algiers, and it is because of this that I am saying, contrary to everyone else, that if you return to your original impression, you will realize that there are some energies which would be useful to employ, especially if they are unselfish. My selflessness toward Algiers is total: I am giving my plans to the city of Algiers.

"With my sincere regards, Le Corbusier."

Letter from M. Brunel, Mayor of Algiers, to Le Corbusier, 26 December 1932

"Dear Sir, I have received with pleasure your letter and the special issue of *Architecture Vivante*. I thank you for this package, but more for the offer that you have given me—your plans—which I fervently accept for the city of Algiers.

"Please believe that I esteem them highly, as well as your laborious studies; surely no one could underestimate them so much as to simply reject them with a 'shrug of the shoulders', as you seemed to have assumed.

"Nor will I permit myself to make such a discourteous gesture, which again goes contrary to my thoughts and the impression that my examination of your study has made on me. I have appreciated your ingenuity and the way your ideas relate to modern needs; on the other hand, I'm not sure that our present means are capable of realizing their goals. I reiterate that for these goals a 'simple decision by the authorities' would suffice. I agreed, and still believe it, but I would add that for the requisite authorities to declare the complete destruction of an agglomeration of three hundred thousand habitants and its reconstruction—in stages, undoubtedly, but built rapidly enough to remain in use—it would be necessary to have an absolute dictator with the property and even the lives of his subjects at his disposal.

"In the period in which we are living, as strange as it may be, I don't see any example yet—anywhere, I would say—of a revolution so profound that it would affect the nature of human society. In any case, it is not a power that lies in the hands of a French mayor.

"In a word, this is what I have said to you and it is not a pretext to cover a faintheartedness, which you have alleged in your appeal 'to courage, enthusiasm, and action'.

"Permit me, nonetheless, to thank you for this criticism in particular; I was not expecting it. In the twenty-five years that I have had a public role, I have only heard about the excessive audacity of my projects, the number of my undertakings and their prematurity, and finally my temerity in these audacious actions. And now you are warning me against the 'inertia and immobility . . . the disgrace of doing nothing'. You can understand the value that I attach to your amicable criticism, and your encouragement to act! Receiving these blows from two opposing sides, I am tempted to conclude that I have found the right balance.

"But perhaps my adversaries here are right, as opposed to you, because I must confess that your modern and ingenious projects do not seem to take sufficient account of the immediate conditions of human life. If my unlucky star were to lead me to this absolute dictator necessary to the execution of your plans, I would not adopt them for the reason that they project the reconstruction of the city on the same site; I would choose another,

better, nearby, and it would be easier. I would not plan to lay out a zone of housing in the immediate proximity of factories, warehouses, and offices anymore. Bear in mind that North Africa has this unique advantage in the world (Chile is similarly endowed) to have in its environs all along the coast, an uninterrupted chain of mountains of medium height, the Atlas with its enchanting climate, with its incomparable site, where men tomorrow will make their nests and be able to find shelter in a few minutes in their own homes, in the middle of their own individual parts, after a workday reduced to a few hours, or after their sports and recreational activities.

"What would one do with skyscrapers with metal-plated cells, narrow and fake like a stage set, at a moment when each person could live in the open country, far from noise, fumes, smells, their neighbors, under the open sky?

"Man has gained his wings; he sees, he hears the whole word from his home; both the old city and the modern city are outdated conceptions. They will no longer be, there must not be in the near future a 'city' of residence. It is a matter of man's health, of the stability of human societies and the life of mankind.

"This is what one sees when one looks—not so far ahead.

"With my sincere regards, The Mayor."

17. For an account of Brua's correspondence with Le Corbusier, see Edmond Brua, "Quand Le Corbusier bombardait Alger de 'Projets-Obus'," *L'Architecture d'Aujourd'hui*, no. 167 (May–June, 1973), pp. 72–77.

18. The following is a chronology of the major events associated with Obus A. March 1931: first documented visit; two conferences sponsored by the Friends of Algiers. July 1931: travels through the M'zab and Ghardaia. March 1932: first logged drawings. Fall 1932: drawing published in *Architecture Vivante* (5° série, pp. 5–9). December 1932: technical and financial study carried out by Enterprises de Grands Travaux Hydrauliques; submission of plans to city of Algiers; letters to Brunel, Lyautey, and Peyroutin. February 17–26, 1933: Obus A displayed in Exhibition on "Modern Architecture and Urbanism," Algiers. March 7, 1933: public conferences, Algiers.

The buildings shown on the master plan of Obus A (fig. 10) include:

A) *cité d'affaires* (business city), Quartier de la Marine. 31-story office slab. March 1932 drawings show one slab, later model photographs of Obus A show two parallel slabs; B) *housing viaduct and highway*, Hussein Dey to Saint Eugène. 14-story building housing 180,000; C) *redents*, Fort-L'Empereur. Five or more buildings, approximately 23 stories high, housing potentially 220,000; D) *development of the merchandise harbor*; G) *sports center and beach resort*, Hussein Dey; also an *experimental garden* next to the merchandise harbor, a *seafront boulevard* from Hussein Dey to Saint Eugène, and a *connecting bridge* between Fort-L'Empereur and the business city.

19. *The Radiant City*, pp. 168, 170, plate VR13.

20. Ibid., p. 143.

21. *Précisions* (Paris: Vincent Fréal, 1960), p. 7. Jean Mermoz and Antoine de Saint-Exupéry were among the first pilots to fly with the pioneering South American company Aeropostale. They both opened numerous routes on the continent. Saint-Exupéry describes some of these adventures in his novel *Vol de Nuit*. There are many parallels between Le Corbusier's political attitude and that of Saint-Exupéry. Saint-Exupéry believed that man's hope was based in a universal truth, transcending ideology, found in nature. The pilot was more than a dry technician; from his special vantage point he was an observer of truth. His province permitted him to unite the visionary and the practical. Saint-Exupéry, like Le Corbusier in his postulation of man as builder of civilization and wielder of authority, betrayed an elitism at times reminiscent of Fascist polemics.

22. *Précisions*, pp. 5, 142–143. In the first chapter of *The City of Tomorrow*, trans. by Frederick Etchells (Cambridge: MIT Press, 1971), Le Corbusier condemns Camille Sitte and his proposal for "the pack-donkey's way."

23. Le Corbusier, *New World of Space* (New York: Reynal and Hitchcock, 1948), p. 16.

24. For the French writers André Gide and Henri de Montherlant ("Images d'Alger"), the fortuitous combination of French culture and a neo-pagan world view found on the shores of North Africa seemed to offer hope for a new renaissance at a time when Judeo-Christian civilization was in an advanced state of decay.

Gabriel Audisio and Emmanuel Robles, young North African writers who joined with Albert Camus to work on *Rivages*, asserted the power of Mediterraneanism as a unifying force. Gabriel Audisio in his *Jeunesse de la Mediterranée* stated "Algeria is our only overseas territory where we have really succeeded in making France . . . [out of a] heterogeneous population consisting of Languedocians, Provençals, Catalans, Corsicans, Andalusians, Neopolitans, Mahonais, Maltese, Arabs, and Berbers. [This mixture will soon be] 'Algerian', a synthesis of coastal races cemented by French culture." From Marcel Amrouche, ed., *Terres et hommes d'Algérie* (Algiers, 1957), p. 300.

25. Emery proposed to the publisher Edmond Charlot that Le Corbusier work with Camus on a new magazine of Mediterranean culture *Rivages* (Emery, letter to Le Corbusier, 1937). Although Le Corbusier did not finally participate in the publication, the similarity in viewpoints was clearly recognized. Camus himself quotes Le Corbusier in his *Notebooks 1935–42* (New York, Alfred A. Knopf, 1963), p. 132. For a discussion of *Rivages* and Mediterraneanism, see Herbert R. Lottmann, *Albert Camus* (Garden City: Doubleday, 1979).

26. Albert Camus, *Lyrical and Critical Essays*, trans. by Ellen Conroy Kennedy (New York: Alfred A. Knopf, 1969), pp. 189–98.

27. This dimension of the project receives particular praise from Jean Pierre Faure, the North African urbanist and founder of *Alger Republicain*. In his text *Alger, Capitale* (Paris: Société Française d'Editions Littéraires et Techniques, 1936), Faure, who was the son of the art historian Elie Faure and brother of a co-disciple of Le Corbusier, explains at some length Le Corbusier's projects for Algiers and attempts to answer local objections to the scheme.

28. *The Radiant City*, p. 230.

29. Le Corbusier, *L'Art décoratif d'aujourd'hui*, reprint of 1924 original edition (Paris: Vincent Fréal, 1959), p. 37.

30. Maurice Violette, the governor-general of Algeria from 1925–27, was an experienced administrator who supported "in-

tegration" and "Algérie Française." In 1931, he published a book, *L'Algérie, vivra-t-elle?*, in which he argues that France must accept assimilation "or else . . . before twenty years are up, we will know the worst of difficulties in North Africa" (Gordon, p. 22). As Minister of State under Blum's Popular Front government, he sponsored the Blum-Violette Bill, which admitted to Algerian Moslems "the political rights of French citizens without any modification of their status of civil rights." Jean Melia (the author of *La France et l'Algérie* [Paris 1919]) was an extreme liberal *colon* who supported complete integration of the Moslems, but only after they had foresworn their religious status. Ferhat Abbas and Dr. Mohammel Saleh Bendjelloul, leaders of the Fédération des Elus Musulmans, supported assimilation with equality; the title of Abbas's journal, *L'Entente*, indicated their aspirations. Later, Abbas, who turned to nationalism, was to regret his short booklet *Le Jeune Algérien* (Paris, 1931) with its oft-quoted phrase: "If I had discovered the Algerian nation, I would be a nationalist, and I would not blush for it as a crime. Men who die for a patriotic ideal are honored and respected. My life is not worth more than theirs. But I would not die for an Algerian fatherland, because such a fatherland does not exist. I cannot find it. I questioned history. I questioned the living and the dead. I searched through the cemeteries: nobody could speak to me of it. You cannot build on air." R. Zenati, in his *La Voix Indigène* expressed an extreme Berberist assimilatory point of view.

31. Gustave Mercier, ed., *Le Centenaire de l'Algérie exposé d'ensemble* (Algiers, 1931), p. 10, as quoted by Gordon, p. 19.

32. Messali Hadj and his movement—known successively by a variety of appellations, including Etoile Nord-Africaine and Parti Populaire Algérien—were unique in their nationalist orientation. The movement was closely allied with the Communists in its early years, but ultimately broke with the Party because of Hadj's emphasis on an Islamic state.

33. Albert Camus, *Actuelles III. Chroniques Algériennes 1939–1958* (Paris: Gallimard, 1958), p. 41.

34. "A New Classification of Town Building, a New Dwelling Unity," *Oeuvre Complète de 1929–1934*, p.119.

35. *The Radiant City*, p. 192.

36. Maier, p. 51.

37. *The Radiant City*, p. 13 and *Oeuvre Complète de 1929–1934*, p. 119.

38. *The Radiant City*, p. 248. See note 16.

39. Brunel, letter to Le Corbusier, December 27, 1932. See note 16.

40. Le Corbusier refers to seven plans for Algiers. See *Poésie sur Alger* (Paris: Falaize, 1950). However, only six appear in the *Oeuvre Complète* or are discussed in the Algerian press. See Edmund Brua, "Urbanisme à coups de canon, depuis 9 ans, Le Corbusier a tiré sur Alger 6 'plans-obus' sans resultat," *TAM*, Alger, no. 7 (September 19, 1942), p. 1. There are three different schemes for Obus D, the Cartesian "Y-shaped" skyscraper solution which was developed in conjunction with the Comité du Plan Régional. Likewise, two variations of Obus E were developed. In the first scheme the *brise-soleil* pattern is symmetrical; in the second, it is based on a division established by the golden section.

The following is a chronology of the intermediate projects:

Obus B

Spring 1932: Publication of Guido Fiorini's system applied to Algiers in *Savigliano*, no. 1–2. Fall 1932: Beginning of second study. December 1933: Drawings submitted to City of Algiers; letter to Brunel.

Obus C

Winter 1933: Published in *Architecture Vivante*, *L'Architecture d'Aujourd'hui*. February 1934: Financial survey, J.P. Faure and Lafon. March 20, 1934: Project submitted to Brunel and City Council.

Obus D

February 4, 1938: Official nomination to Comité du Plan Regional. April 7–9, 1938: First participation with Plan Regional (Algiers) and collaboration with Renaud. January 1939: Completion of plans.

Obus E

January, 1939: Beginning of the skyscraper studies. June 10, 1939: Plans submitted to the Comité de la Region.

41. Two articles explaining this structural system appear in the local Algerian press. "Pour doter Alger d'un Centre d'Affaires . . . Le system du Tensistructure de M. Guido Fiorini," *Le Journal Générale*, *Travaux Publics et Batiment*, Alger, no. 559 (February 3, 1933), pp. 1, 8. Guido Fiorini, "Tensistructure," *Travaux Nord Africains*, Alger, no. 18 (February 1933), p. 1. See also *Savigliano*, no. 1–2 (January–April, 1932), pp. 529–541.

42. Brunel, Letters to Le Corbusier, April 17, 1934, and April 18, 1934.

43. For local reaction, refer to Faure, Brua, and Jean Cotereau, "Un nouveau bombardement d'Alger," a series of 10 articles, *Travaux Publics et Batiments*, May 15, 1934–July 3, 1934.

44. Le Secrétaire Général pour le Préfet (signature illegible), letter to Le Corbusier, February 4, 1938.

45. *The Radiant City*, p. 78.

46. *Journal officiel*, vol. 73, no. 148 (May 29, 1941), p. 2241. Fishman discusses Le Corbusier's participation in Vichy in his book *Urban Utopias in the 20th Century*. The author was most helpful in suggesting sources as well as showing me his dissertation before publication.

47. "Intervention de M. Le Corbusier à la séance du Plan de la Région d'Alger le 16 juin, 1941 à Alger," pp. 5–6.

48. "Propositions d'un plan directeur d'Alger et de sa région" (Algiers, April 23, 1942). Le Corbusier wishes to publish the text, but the manuscript was believed to have been lost in the Algerian uprisings. A copy including a series of water-colored illustrations was found, however, in the Fondation Le Corbusier. The following is a chronology of the major events associated with the Plan Directeur: June 16, 1941: Meeting of Le Corbusier with the committee for the Plan de la Region d'Alger to introduce the Vichy project. April 23, 1942: Submission of Plan Directeur to the City of Algiers. June 4, 1942: Alexandre von Senger's "L'Architecture en perile" published in *Travaux Nord Africains*. June 12, 1942: The Municipal Council rejects the Plan Directeur.

49. *Oeuvre Complète de 1938–1940*, p. 50. Le Corbusier, *Le Lyricisme des temps nouveaux et l'urbanisme*, special issue of

Le Point, 4th year.
50. *Poésie sur Alger*, pp. 40, 44.
51. Camus gives a moving account of the 1939 famine in his series of essays, "Misère de la Kabylie," *Actuelles*, III, pp. 31–90.
52. Behr, p. 50.
53. Ibid., p. 51.
54. Le Corbusier, "Note relative au Plan directeur," July 12, 1941.
55. Ibid.
56. For a summary of these events, see Maximilien Gauthier, *Le Corbusier—ou l'architecture au service de l'homme* (Paris: Denoel, 1944), pp. 171–2.
57. *Mairie de la Ville d'Alger, Extrait du Régistre des Délibérations du Conseil Municipal*, June 12, 1942, p. 9.
58. Karl Marx and Friedrich Engels, "The Communist Manifesto," in *The Marx-Engels Reader*, ed. Robert C. Tucker (New York: Norton, 1972), pp. 359–360.

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1–42 © S.P.A.D.E.M., Paris/V.A.G.A., New York, 1980.
The author wishes to thank the Fondation Le Corbusier for permission to photograph materials found in the Algiers archives. Figures 14, 22, 30–32 were supplied to the author directly by the Fondation from their microfilm archives.
1, 17 Reprinted from *Précisions*, 1929.
2, 8, 11–13, 16, 18, 23–29, 35, 39–42 Reprinted from Le Corbusier, *La Ville Radieuse* (Bologne: Edition de L'Architecture d'Aujourd'hui, 1935).
4 Reprinted from Le Corbusier, *Poésie sur Alger* (Paris: Falaize, 1950).
5, 10, 19, 21 Reprinted from *L'Architecture Vivante*, Autumn, 1932, by Da Capo Press (New York: 1975).
6, 7, 15, 20, 33, 37, 38 From the Fondation Le Corbusier. Courtesy of the author.
9 Reprinted from *Plan 8*, October 1931.
34, 36 Reprinted from Le Corbusier, *Oeuvre Complète 1938–1946*, edited by Willy Boesiger (Zurich: Girsberger, 1964).

Stanislaus von Moos's text, which first appeared in Beiträge zur Kunstgeschichte des 19. und 20. Jahrhunderts *(a collection of essays in honor of the Swiss art historian Gotthard Jedlicka) in 1974, was of critical importance at the time since it assembled new evidence demonstrating the way in which Le Corbusier's later painting was as much related to his post-Purist architecture as his Purist canvases had been linked to his classic villas of the twenties.*

But of even greater import from a historiographic point of view was von Moos's revelation of the way in which Le Corbusier's passion for painting and drawing the female nude—to which he gave full rein while working on the Obus plan for Algiers—later became the substance of a monumental mural painted in the house that Jean Badovici built at Cap Martin between 1927 and 1929. The gestation of this work, finally inscribed in the surface of the Badovici covered loggia of 1938 took an inconceivably long time. It was, it seems, thematically derived from the numerous sketches he made of women in the Casbah of Algiers, while from a compositional point of view it was inspired by Delacroix's Femmes d'Alger *of 1833. Le Corbusier returned to this abandoned mural project in 1937, when Picasso's* Guernica *demonstrated how it was possible to produce a powerful fresco without the aid of polychromy. The final work, entitled* Sous les Pilotis *or* Graffite à Cap Martin, *was compositionally structured according to the late Cubist method known as* mariage des contours *and hence demonstrates how many of the early Purist precepts still prevailed in Le Corbusier's later painting.*

More surprising perhaps—and this point is also taken up by Mary McLeod—is the way in which the fragmentary evocation of the erotic images that Le Corbusier had recorded in the Casbah became the principal means by which to distort the redent *blocks of the Ville Radieuse when these were placed in the Obus plan for the Fort-l'Empereur site above the harbor of Algiers. Not only did his experience of the world from the air provide him with new insights into the processes of nature and hence suggest a new range of biological metaphors that could be reinterpreted in terms of built form, but also this novel vision encouraged him to indulge in a set of formal references which could only be perceived from the Archimedian point. How else could the distorted* redent *blocks be seen as being isomorphically related not only to the sensuous anatomy of Arab women but also to the arabesque forms of traditional Islamic texts? Like Kasimir Malevich, Le Corbusier seems to have visualized an architecture which would transcend the traditional perspectives of Humanism by being aeronautically readable in terms of the newly found space/time continuum. That such a vision contradicted his equally newly found existentialist approach to architectural phenomena seems not to have occurred to him.*
K.F.

1 Le Corbusier, Three women (Graffite à Cap Martin), *mural on chalk, Odunarnod house in Roquebrune-Cap Martin. Signed and dated, 1938.*

1

Le Corbusier As Painter

Stanislaus von Moos
Translated by Jane O. Newman and John H. Smith

Le Corbusier's paintings center around two main themes: the still life and the nude.[1] When the young architect began to paint regularly around 1918, shortly after he settled in Paris—working side by side with Amédée Ozenfant—his pictures showed bottles, glasses, plates, and guitars, the objects favored by the Cubists (fig. 10). Yet in contrast to the Cubist works of Picasso and Braque, the plastic identity of these objects is emphasized, as if they had to serve a new *Weltanschauung*. These anonymous objects seem to represent the new morality, the *esprit nouveau* of a machine age based on *Typisierung* and standards. It seemed that after the debacle of the war a new era of classical restraint, a new elementalism was arising in all areas of culture; a phenomenon which, according to the two founders of Purism, called for a new conception of art. The demands of mechanization, they thought, necessarily would bring about a formal purging of the world of wares, of goods and commodities. This highly interesting ideological fiction[2] at the same time served as a background to Le Corbusier's architectural language, the reformism of his city planning, and the idiom of his still-life painting. In fact, the glorification of industrially produced *objets types* took on a programmatic character in all of Le Corbusier's thought.

In contrast to this, it may seem that his paintings of human figures have nothing in common with his theory and practice as an architect and city planner; it may seem as if those critics were right who interpreted them as merely marginal phenomena in his oeuvre, as a pastime of no great import. I would like to try to show that, quite on the contrary, his figurative paintings are a key to many fundamental aspects of his activity as a designer.

In his books, Le Corbusier situates the 1918 still-lifes at the beginning of his artistic development, but he had already sketched and painted much earlier. In addition, in the many land- and city-scapes which he made on his journeys (some of which have been published), scenes of human figures seem also to have interested him from a very early date. Amédée Ozenfant, in the slightly condescending tone which frequently characterizes his remarks on the early artistic career of his friend, mentions them in the following context: "He used to enjoy making humorous gouaches, caricatures, somewhat Venetian in tone, and extremely baroque; he preferred scenes of brothels, peopled with the corpulent bodies of women. . . ."[3] In the course of time, however, Purist morality put an end to such frivolities. Le Corbusier reports later that he actually discovered the real beauty of the naked female body in Algeria: "thanks to the plastic structure of certain women of the Casbah under the intense, yet subtle light of Algiers."[4] Regardless of its true beginnings, the theme of the female nude plays a central role in Le Corbusier's work beginning in 1930.

Le Corbusier's Femmes d'Alger

In the spring of 1931, the architect traveled for the first time to Algiers. A group called "Amis d'Alger" had invited him to present a lecture on the topic of urbanism. This first contact with Algiers was to develop into an intense preoccupation with the city's architectural problems, which lasted until 1942. The initial result of his interests was the famous Plan Obus of 1932 (figs. 2, 5);[5] a series of urban renewal proposals followed, crowned by the high-rise project for the Quartier de la Marine. This project, like all the others, was never executed.

Yet Le Corbusier's interests were by no means only of an architectural nature. Jean de Maisonseul, later the director of the Musée National des Beaux-Arts in Algiers, had worked as an eighteen- or nineteen-year-old boy for the city planner Pierre A. Emery. He recalls being asked one day, when Emery himself was too busy, to accompany Le Corbusier to the Casbah. De Maisonseul writes of the excursion in a letter of January 5, 1968:[6] "Our wanderings through the side streets led us at the end of the day to the Rue Kataroudji where he [Le Corbusier] was fascinated by the beauty of two young girls, one Spanish and the other Algerian. They brought us up a narrow stairway to their room; there he sketched some nudes on—to my amazement—some schoolbook graph paper with colored pencils; the sketches of the Spanish girl lying both alone on the bed and beautifully grouped together with the Algerian turned out accurate and realistic; but he said that they were very bad and refused to show them."

2 Le Corbusier, Plan Obus for Algiers, 1932. Model.
3 Postcard from Tangier.
4 Islamic writing symbols.
5 Le Corbusier, Plan Obus for Algiers, 1932.
6 Le Corbusier, Two women, *watercolor on transparent paper. 50 × 64.5 cm. Milan, private collection (n.d.).*
7 Le Corbusier, Two women, *watercolor on transparent paper. 51.5 × 75 cm. Milan, private collection (n.d.).*
8 Le Corbusier, Reclining woman, *rear view, watercolor on transparent paper. 32.3 × 50 cm. Unsigned (n.d.). Milan, private collection.*

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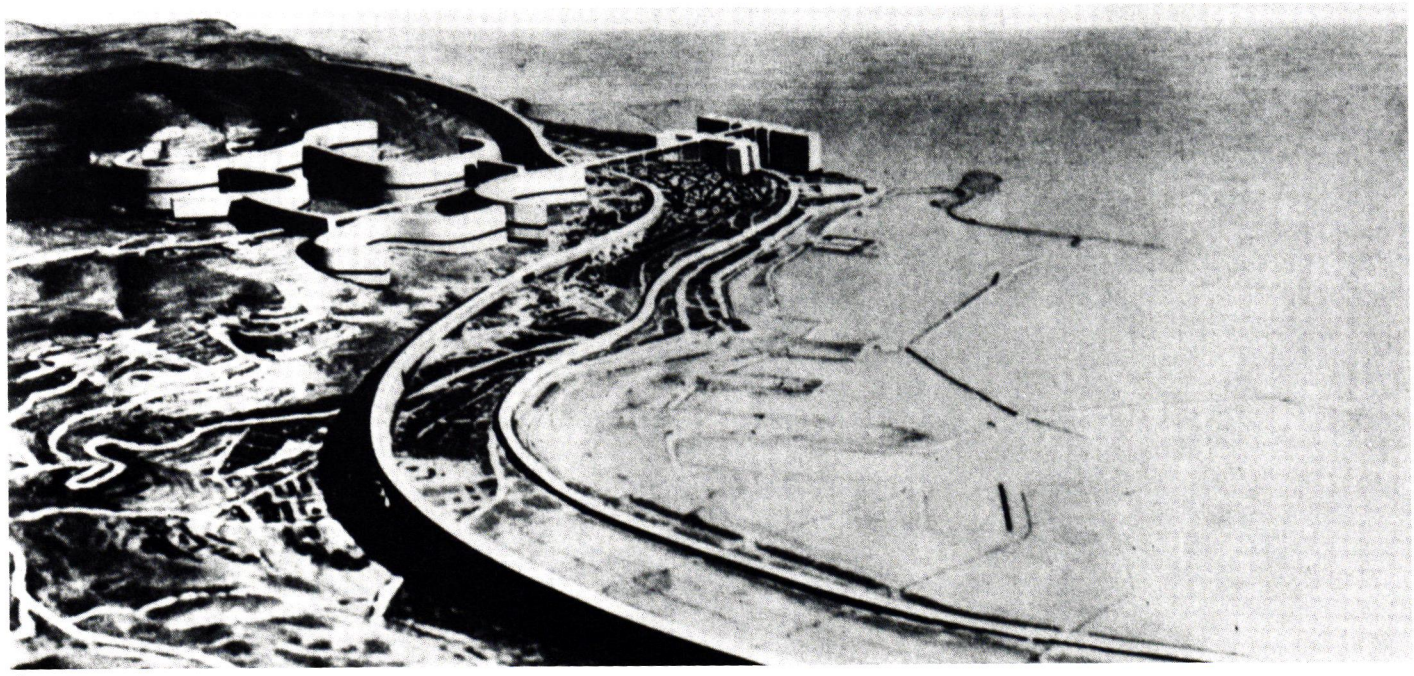

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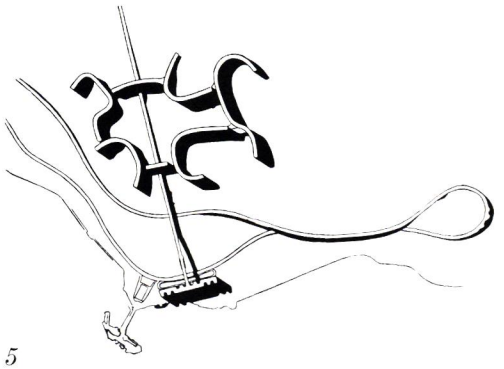

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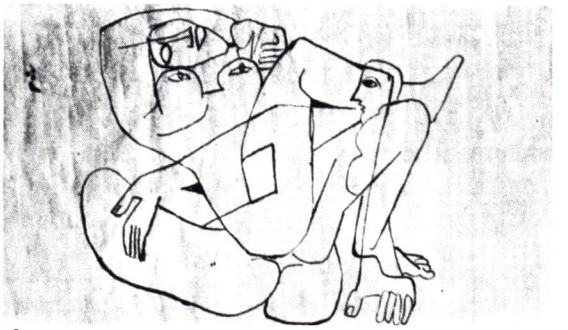
Le Corbusier's guide also remembers how he was shocked to see his famous guest from Paris stop at the kiosk near the Place du Gouvernement to buy postcards. The cards were in assorted garish colors, especially pink and green, and depicted naked natives surrounded by oriental bazaar decor. Such postcards may still be purchased in North Africa and it is possible that future research on Le Corbusier's legacy will discover in his postcard collection such rarities as the *Pretty Fathma Taking a Siesta* (fig. 3).

The drawings of the girls contained in the three notebooks were not the only studies sketched in the period around 1930. Other early nudes by Le Corbusier are well known, especially those of his friend Josephine Baker, which he completed on the steamer *Lutetia* during the return voyage from Rio de Janiero in December of 1929.[7] But the Algerian sketches possess a unique and exemplary character; they are the preparative studies for and the basis of a projected monumental figure composition, the plans for which seem to have preoccupied Le Corbusier during many years, if not during his entire life.

While Le Corbusier himself claimed that the three notebooks from Algiers were stolen from his studio,[8] a small number of the sketches do still exist. In addition, a number of later drawings from 1937/38 and 1963/64 have survived. Based on the Algerian sketches, they were intended as the designs for a richly colored fresco (figs. 6–8, 11).

In fact, a few months after his sojourn in Algiers, Le Corbusier began to rework his original sketches into numerous studies. His method was to lay transparent paper over the original. This allowed him to retrace, step by step, what he thought to be the decisive contours of the rough drawings. In this way, by cleansing the form of all unimportant and random information, the female bodies attained the looked for degree of sculptural purity and constraint.

Le Corbusier extracted from the Algerian sketches three main positions. The plan to unite these three positions in a painting or mural led him to make numerous sketches



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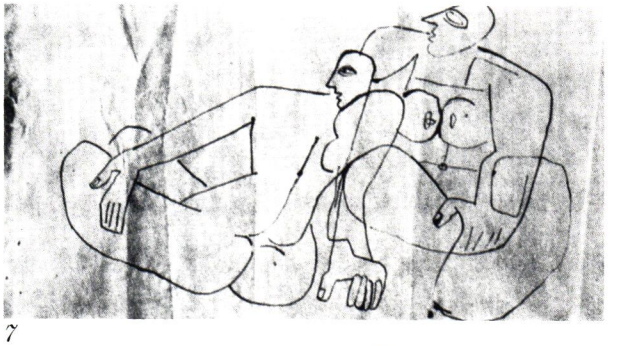

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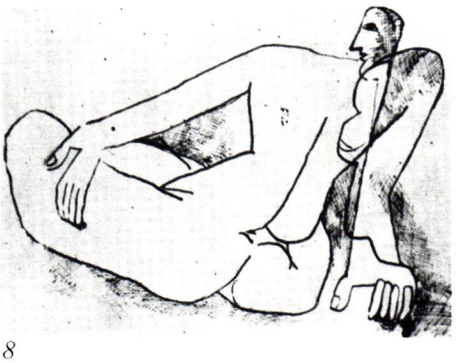

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9 Eugène Delacroix, Les Femmes d'Alger, *oil on canvas, 1833. Paris, Louvre.*
10 Le Corbusier, Still-life with bottles and glasses, *pencil drawing on oilpaper. 60 × 50 cm. Signed: Jeanneret, undated (1922). Paris, private collection.*
11 Le Corbusier, Crouching woman, *front view (after Delacroix's* Les Femmes d'Alger), *watercolor on transparent paper. 49.7 × 32.7 cm. Unsigned (n.d.). Milan, private collection.*

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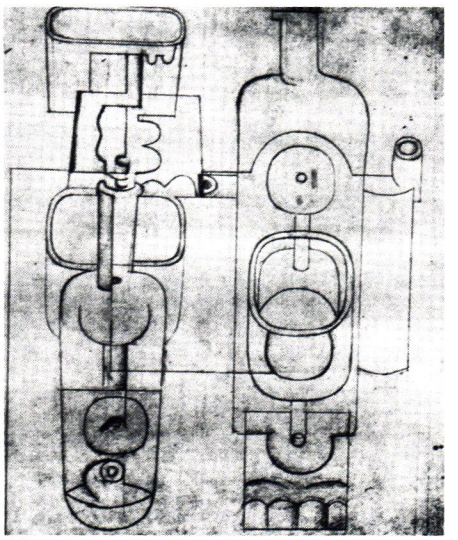

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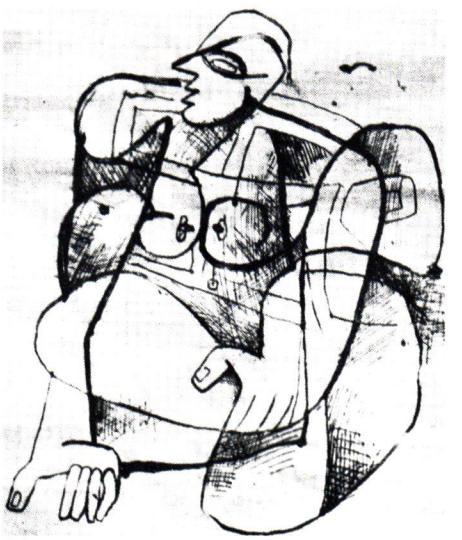

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of Delacroix's *Femmes d'Alger* in the Louvre—a painting which had gained a certain political interest in 1930, the centennial of "Algerie Française" (figs. 1, 9). In a series of sketches after the original—or, more likely, on the basis of postcards or other reproductions—Le Corbusier concentrated on the problem which Delacroix had mastered so well: the harmonious grouping of four individual figures into the closed framework of one composition.[9] Of course, since he was an admirer of Ingres and Seurat, there was no question of using the Oriental decor or the light as the unifying compositional factor. As in the Purist still-lifes with plates, glasses, and bottles, it was the individual outlines of the figures which determined the fundamental harmony of composition. Le Corbusier called this technique a "mariage des contours." He thus divested the *Femmes d'Alger* of their exotic clothing since he was interested only in the naked figure free of all incidentals of decor. He appears to have been most affected by the crouching figure in the center of Delacroix's painting; he transposes it almost literally into his own linear ornamentation (see fig. 11); the other figures are more radically altered.

These studies, however, did not go far. Le Corbusier showed them to Picasso who was reported to have been amazed at the introduction of a reclining figure: "She should have stayed as you discovered her, in the spirit of Delacroix; now you have three women, the one sits, the other lounges, and the last is upright. . . . It is more complete!"[10] After this somewhat malicious, but—as we will see—interesting remark by Picasso, the studies disappeared into an obscure drawer.

Le Corbusier's attitude toward his own composition changed in 1937. Upon seeing Picasso's *Guernica,* which was being exhibited that year at the Paris World's Fair in the pavilion of the Spanish Republic, Le Corbusier was astonished to find that it was possible to produce such a powerful fresco completely without polychromy. He decided to take up his studies of the *Femmes d'Alger* once more. Since Picasso had reached back to the monochromy of Cubism for his *Guernica,* Le Corbusier now planned to create in his own way a monumental painting without color. To do this, he returned to the technique of the *mariage des contours* which he had developed during his Purist stage.

His strategy now was to shift the figures, each sketched on a separate piece of transparent paper, back and forth over one another until they fell into an acceptable grouping. The final configuration could then be transposed onto another transparent sheet. As a result, individual contour lines belong to two different figures, as if they were part of a jigsaw puzzle; for example, the line forming the back of the center figure coincided with the hip outline of the reclining figure.

The final version of this group was completed in 1938, many years after Le Corbusier's rejection of his Purist method of superimposed drafts (*plans superposés*). He seems to have been satisfied with the product of his research. That same year he transferred the sketch to the side wall of the covered veranda of the house which Eileen Gray had built between 1927 and 1929 in Cap Martin for Jean Badovici, the publisher of *Architecture Vivante* (see fig. 1).[11] The mural measures two and a half by four meters. Le Corbusier drew the contours directly onto the rough white, chalk dust covering of the concrete wall. He then shaved the dust off in such a way that broad dark lines exposed the underlying concrete while narrower lines merely left scratches in the plaster. These finer grooves were finally painted in black. The present owner of the house points out numerous bullet holes in the fresco, damages from the Second World War. "Corbu," she comments, "did not want anything repaired, and urged me to leave it as it is, as a reminder of the war."

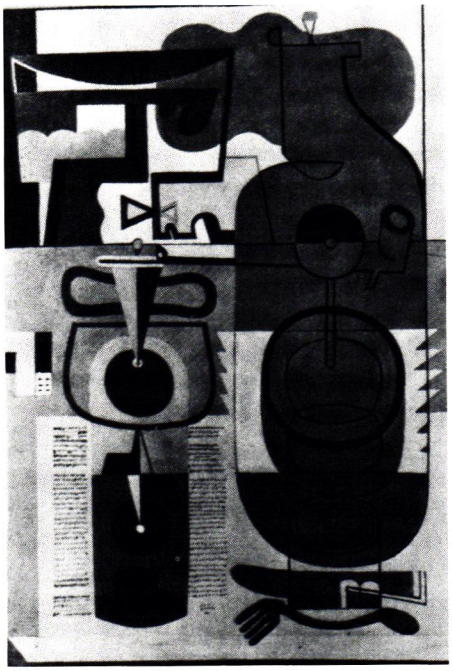
Le Corbusier referred to the work as either *Sous les Pilotis* or *Graffite à Cap Martin.* He explained to his friends that "Badou" was depicted on the right, his friend Eileen Gray on the left; the outline of the head and hairpiece of the sitting figure in the middle, he claimed, was "the desired child, which was never born."[12] Picasso, on seeing the mural, was—according to Le Corbusier—immediately reminded of Delacroix's *Femmes d'Alger* and in 1954/55 he decided in fact to paraphrase the *Femmes*

12 Le Corbusier, Still life with fork, *oil on canvas, 146 × 114 cm. Signed and dated, 1929. Zurich, Centre Le Corbusier.*

13 Pable Picasso, Les Femmes d'Alger, *after Delacroix oil on canvas. 114 × 146 cm., 1955. New York, private collection.*

14 Le Corbusier, Deux figures à l'écharpe multicoloré, *oil on canvas. 97 × 146 cm. Unsigned, undated (1937). Location unknown.*

15 Pablo Picasso, sketch for Guernica, *1937. The Museum of Modern Art, New York.*



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d'Alger, either from memory or from reproductions. On this occasion he too placed a reclining figure in the center of his picture, just as Le Corbusier had proposed twenty-five years earlier (fig. 13). This interest of Picasso exerted a new influence on Le Corbusier and in 1963/64, moved by Picasso's fifteen variations of Delacroix's masterpiece, Le Corbusier planned to convert his old sketches into a large mural which would embody in drawing and color the sum of his endeavor. The new composition was never realized. As he reviewed the old sketches, he said to Samir Rafi: "I no longer like the yellowed, worn out paper."[13] He proceeded to copy twenty-six of these drafts onto fresh transparent paper, and burned the remaining drawings since they were now worthless for him. What he found crucial and worth saving was the artistic essence, the pure form, liberated from its temporal, material appearance on yellowed paper.

The Algerian sketches offer useful insights into three aspects of Le Corbusier's creativity. First, they demonstrate the way in which he understood the female nude to be fruitful for his work. Second, they shed light on his method of artistic appropriation of reality through drawing. Finally, they testify to the fact that drawing for Le Corbusier was the primary medium of perception and depiction; indeed, that drawing, as the product of an extended process of purification, could embody the essence of an artwork. An investigation of his understanding of drawing technique may give some elements towards a reconstruction of his theory of art and the historical conditions which affected it.

The Nude, Ornament, and Contour

The female nude becomes the central theme of Le Corbusier's painting in the 1930s. The paintings of those years are indeed not conceivable except in the context of Braque, Léger, and the Picasso of the classical period. And yet, Le Corbusier never attempted to transport the female body into a realm of mechanistic anonymity as Léger did or in a certain sense, Ozenfant.[14]

Le Corbusier's still-lifes in the Purist mode from the period of 1918 through 1925 are characterized by classical precision and mundane elegance (see fig. 10). These qualities seem to disappear in the later work. Where the early paintings exhibited a tender but apparently passionless sensitivity, the swells, twists, contortions, and dangerous mutilations of the bodies in the paintings of the thirties announce the explosion of dark, stormy feelings. Monstrous figures with mountainous limbs are often threatened by tool-like objects and pieces of cord (*cordage*), a sense of demonic masquerade revels in their ecstatic gestures: parody and pathos, despair and strength.[15]

The *Graffite à Cap Martin* also shows, however, how many of the principles of Purism had survived, despite Le Corbusier's efforts to distance himself from the programs of Purism and its founder, Ozenfant.[16] A comparison with Picasso's variations on the *Femmes d'Alger* reveals the unique character of Le Corbusier's treatment of the theme (compare fig. 13): Picasso fragments the appearance of the figures and spreads the pieces across the surface, only to join them again in a new, subjective unity; Le Corbusier, on the other hand, presents only that projection of the figures which they themselves seem to offer from one definitive and unchanging perspective.

This is as Purist a technique as could be wished. While the Cubists circled their objects in order to project different perspectives onto a flat surface, Jeanneret and Ozenfant strove to capture the exact cross-section and plan of the bottles, glasses, and musical instruments before them.

Contrary to the intentions of its founders, however, Purism soon expanded beyond the new objectivity which it had originally proclaimed. The contour lines of the objects in Le Corbusier's paintings gain an expressive power of their own and become increasingly independent from subject matter. In the still-lifes after 1925, for example, the complex cross-sections of objects and the intersections of superimposed contours produce surprising new forms, often accented by vivid coloration (fig. 12). The contours no longer circumscribe the object, but create out of themselves an autonomous vocabulary of forms.

We can follow this process in Le Corbusier's development

some ten years later. Although clearly a composition of three women in the nude, the *Graffite à Cap Martin* can be read as an abstract ornamental web of lines. In this respect, the picture is not unrelated to Islamic miniature art (fig. 4). The flowing contours remind one of Islamic ornaments which interweave script, geometric patterns, and animal shapes. This connection is by no means accidental. At the art school in La Chaux-de-Fonds, the young Charles-Edouard Jeanneret had grown interested in nature studies as a result of his study of Owen Jones's *Grammar of Ornament.* Later he took delight in studying Islamic miniatures in the Louvre.[17]

The View from the Airplane

Another composition with human forms, completed in 1937 provides further insights. In particular, it gives us an idea of the kind of coloration perhaps originally intended for the *Femmes d'Alger.*[18] *Deux figures à l'écharpe multicolore* (fig. 14) was strongly influenced by Picasso's *Guernica* as well. But here one perceives a definitive break with Cubism: there is no refraction of figure fragments on the canvas, but instead a kind of silhouette with two female figures nestling against one another. A large, brightly colored scarf envelopes the left quadrant of the picture. The wide white band on the right seems to recall the ladder which appears in a number of Picasso's studies for *Guernica* (fig. 15). Twelve years later, when Le Corbusier used the *Deux figures à l'écharpe multicolore* as the model for a large wall painting, he moved the white ladder on the right and emphasized instead the bold contour of the female figure lying behind it. This second version from 1949 bears the title *Alma Rio 36.* Le Corbusier was especially fond of it; it hung for many years in the living room of his home in the Rue Nungesser-et-Coli (fig. 16).

How did he come to give a group study from 1949 a title which refers to a trip made twelve years earlier? One answer lies in the experience of the trip itself. Le Corbusier had made many sketches in Rio, not only of architecture. He remembered in particular a dinner in Copacabana, which he had captured in sketches, because it was so pleasant "to draw the lovely shoulders of the women in Rio."[19] What *Alma Rio 36* also calls to mind, however, is the urban renewal proposals for the city of Rio which he had first outlined in 1929 and which he showed publicly in Rio in 1936. It is obvious that his thoughts on city planning in Rio had been greatly inspired by the landscape of the Bao de Asugar, the Corcovado, the Gavea, and the Gigante Tendido. On his first visit to the city in October, 1929, he remarked, "To urbanize this land would be to fill the barrel of the Danaides."[20]

Yet, before leaving Rio again, Le Corbusier had found an image of a city which could meet the dramatic challenge of the landscape. "On the shore, I envisioned a large and magnificent girdle of buildings, crowned horizontally by a motorway leaping from hilltop to hilltop and extending its hand from one bay to the other."[21] His vision seems to have occurred to him as he flew over the Bay of Rio. The first sketches look as if they were jotted down in the plane (figs. 18, 19).[22] The main road swings in a wide curve like a viaduct from peak to peak. Underneath the highway, distributed over the floors which constitute that 'linear city', are the offices and apartments of Rio. The idea clearly anticipates his Plan Obus for Algiers of three years later (see figs. 2, 5). A viaduct from the roof of the high-rise, on the harbor—the Cité d'Affaires—extends to the crest of the Fort l'Empereur. It encloses the large residential units, which line the hillside in massive curves. Along the coast, another long viaduct serves as a superhighway with businesses and shops below.

Such a vision of a city could only have been conceived in an airplane. In fact, aviation came to possess a near magical attraction for Le Corbusier. He believed the airplane to be among the most spectacular symbols of a new machine age founded on logic and calculation.[23] In the *Ville Contemporaine* (1922) he placed the airport in the heart of the city; almost every view of the project includes a plane above the parks and high-rises. During his journeys in South America and in North Africa (1929–1931), the view from the plane revealed to him the chaotic state of human habitation, while the broad contours of the coastline and the meanderings of the rivers provided him with guidelines for a new urban aesthetic, which he thought

16 Le Corbusier in his living room with his wife and Father Courturier (Rue Nungesser-et-Coli). On the wall: Alma Rio 36, *oil on canvas, 1949.*

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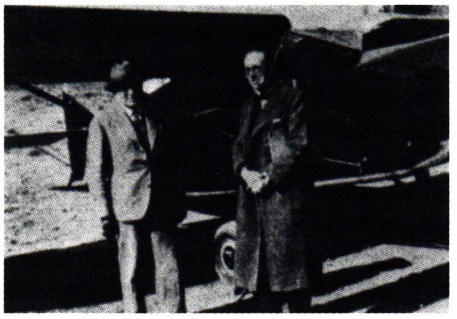
17 Le Corbusier and the pilot Durafour, Mzab (North Africa), 1933.
18,19 Le Corbusier, sketches for the urban renewal project in Rio de Janeiro (from the air). Pencil on paper, 1929.



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should be conceived with regard to the "fifth facade," that is, the view from above. He liked to use planes as a scientific instrument to research possible new forms of human habitation. One photograph from 1933, for example, shows him in North Africa standing next to a plane with the famous pilot Durafour (fig. 17). His dress with tie, cigarette, and sketch-pad indicates that the operation was for him not a tourist excursion but part of his work.

He made the following notes during a flight over the Atlas Mountains in 1933:

"A flight in a plane is a drama with a message—a philosophy.
"Not a sensual delight.
"From five feet above the ground, flowers and trees have a proportion: a scale which is related to human activity and to human proportions.
"But in the air, from above?—A wilderness, without relation to our thousand-year-old ideas, a fatality of cosmic advents and events.
"I can understand, and measure it, but I cannot love it; I feel that I am not prepared for the joy of this drama from on high.
"The non-professional flier, who flies (and knows nothing) is led to thought: he finds refuge only in himself and in his works. But once he is down on the ground again, his aims and intentions will have achieved a new dimension."[24]

The writer Antoine Saint-Exupéry, whom Le Corbusier seems to have accompanied on one of his flights over Argentina and Uruguay in 1929, ten years later expressed a similar experience in one of his books: "Thus we are changed into physicists, biologists, surveying these civilizations which embellish valley bottoms and sometimes, miraculously, spread out like parks when the climate is favorable. Here we are, judging mankind on a cosmic scale, observing man through our portholes, as through a microscope. Here we are rereading our history."[25] But Saint-Exupéry's ecstasy was also accompanied by the sense of being in a foreign environment, cut off from human fate. He concludes a description of a tornado with the following statement: "It would certainly have been more of a thrill if I had told you the story of an unfairly punished child."[26]

I need not discuss here how praiseworthy or questionable Le Corbusier's desire to design a city as a sculpture seen from the perspective of outer space may have been. This is not the issue here.[27] The central point here is that the achievement of a certain distance, of a conscious alienation from sensual contact with things, the abstraction from the random particulars of objects and people, constitutes one of the fundamental characteristics of Le Corbusier's creative efforts. Flight confirmed one of his basic intellectual tenets: nature and the world are both to be grasped as the nameless expression of underlying cosmic laws.

Drawing and Coloration

The "cosmic view" of nature is reflected in his sketches and studies from the thirties and in the *Poème de l'angle droit*. Here time and again the meandering winding of a river across a plain (fig. 20) is echoed in the outline of a female figure, in the contours of a roadway, or in a series of housing units. Such decisively drawn contours thus recall both images of anatomical outlines or landscape structures. They can likewise direct the spatial and plastic organization of a house or of a city.[28] Hence the great symphonic rhythm of contours in *Alma Rio 36* (see fig. 16), the interplay of convex and concave, seems to suggest promontories and hilltops. Nature is observed simultaneously from a close human perspective and from an abstracting view from on high: a cartography of emotions cast in expansive gestures. The theme is the latent harmony of all aspects of earthly existence, conveyed through outlines which reflect the precision and finality of an architectonic plan.

Not all of Le Corbusier's paintings possess the diagrammatic finality of *Alma Rio 36*. Yet even the Algerian sketches can illustrate the method of graphic representation characteristic of his work. Here the goal is the purification of the graphic structure, the *disegno*. The drawing bears the essence of the statement, while the coloration fills in the background. Thus, in the later work, in contrast to the method used in the Purist works, the

construction of the graphic structure and the colored background are executed separately. The coloration becomes an independent system of forms, following its own laws and conversing, as it were, with the lines of the drawing.

The primacy of drawing over coloration becomes most evident when one compares different colored versions of the same picture—for example, the two versions of Le Corbusier's 1920 *Nature morte à la pile d'assiettes*, one in the Basel Art Museum, the other in the Museum of Modern Art in New York.[29] It is made even clearer by the fact that in various publications, Le Corbusier liked to reproduce certain among his paintings as negatives or as reversed mirror-images.[30] It may be no more than a game with photographic techniques, a game, however, that confirms that he considered the graphic outline, and not the colored form, to be the raison d'être of the work, the product of a long process of purification. For Le Corbusier the pure design defined the true essence of a picture. Picasso's method of painting provides once again a contrast to Le Corbusier's conception of art: "For me, a painting is the result of decomposition. I make a picture, and then I destroy it. . . . A picture is never fixed in advance; while you work on it, it moves with the mutability of your thoughts" (1935).[31]

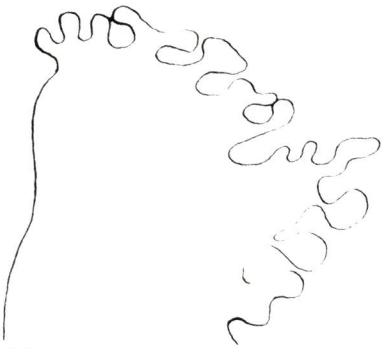
At this point, it would be interesting to consider Le Corbusier's own theoretical writings on art. His description of his beginnings as a painter are already symptomatic. He reports that as a sixteen-year-old pupil at the art school in La Chaux-de-Fonds, he once bought some tubes of paint for the summer vacation. His teacher L'Eplattenier reprimanded him: "You don't have the ability to paint. . . . Draw; that will suffice."[32] Le Corbusier certainly tried hard to controvert his teacher's judgment in his later career. But still the admonition "Draw; that will suffice" permeated both his practice and his theory. In the manifesto of the Purist movement, published in the fall of 1918 by Ozenfant and Jeanneret, we can read: "The idea of form precedes that of color. . . . Form is preeminent, while color is but one of its accessories."[33] Nearly forty years later, Le Corbusier reformulated his method: "In order to make it [a painting], one must take a canvas or a board, first trace a sketch, then take some color and lay it on with paintbrushes.The reward for a longer preparation is that the artist need no longer experiment on the canvas; he expresses acquired ideas which need only to be executed."[34] He went even further, no doubt, when he stated: "The actual painting consists of nothing but the time which is necessary to apply a thick layer of paint."[35]

Naturally, such statements give a one-sided view of Le Corbusier's efforts as a painter. However, his theory of drawing and coloration do indeed represent two distinct stages in the genesis of a work of art. This notion guides much of his theory and polemic. Time and again, the final, objective, absolute, and pure form (in the sense of Purism) is opposed to the form produced from decompositions. In particular, the drawing must bear this form. Color is secondary with regard to the essential artistic product; it is a backdrop.

In this respect, Le Corbusier can be placed into a long tradition of classicist art theory, beginning in the Renaissance with Vasari, for example, who valued the *disegno* over the colorism of the Venetians. Since the seventeenth century, this polarity played a major role in French academic circles: Félibien had postulated the priority of the *dessin* over color; Le Brun incorporated this postulate into the foundations of official doctrines of art.[36] It is, of course, unlikely that Le Corbusier was familiar with the writings of Félibien or Le Brun. However, many of these ideas certainly could have reached him via the literature of the nineteenth century, for example, through Charles Blanc, Ingres's biographer. His *Grammaire des arts du dessin* (1867) had motivated the young Jeanneret in La Chaux-de-Fonds to continue his study of architecture. In it, one reads: "Drawing (*le dessin*) is the masculine sex of art; color (*la couleur*) is the feminine sex."[37]

I recognize the intrinsic limitations of any attempt to fix Le Corbusier's place in the tradition of French academicism on the basis of only one principle. Yet, there are certainly other indications that this tradition influenced the direction of his thought. The overall impression which idealist French intellectualism must have had on him has

20 Le Corbusier, sketch from the airplane over the Boghari Desert, ca. 1933.



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been documented by Paul Turner in his detailed study of Le Corbusier's library and of his numerous marginal notes. His reading of Eugène Müntz's Raphael monograph (1900) seems to have been a kind of initiation.[38] I do not think it mere chance that the book dealt with an artist who had been an idol of the French academics since the seventeenth century. But Le Corbusier's early readings involved not only artistic knowledge. Nietzsche had a profound impact. In Edouard Schurés's *Les grands initiés*, he encountered the idea that the human spirit, as the primary factor of historical progress and human grandeur, could rejuvenate modern civilization. Le Corbusier had owned and studied this work since 1907.[39] A belief that he too belonged to the *grands initiés* seems to have accompanied his later thought and creations—that he was called upon to be a kind of prophet or redeemer. Thanks to his early mentor L'Eplattenier and the Protestant-Puritan morality of his family, such views had found fertile ground in the young man.

Even Le Corbusier's political philosophy stands in the shadow of the seventeenth century. He never tried to hide his sympathy for absolutism, and would not have minded a modern Louis XIV with the full powers of a state architect. "For some years I have been pursued by the shadow of Colbert," he confessed in 1930.[40] Of course, in spite of Pétain and de Gaulle, France refused to assign him this role. Nehru's India brought the fulfillment of the dream; in this light, the capitol of Chandigarh is Le Corbusier's Versailles.

Draft and Execution. A Glimpse into Architecture

Charles Blanc's categorical division between drawing and coloration points to the idea that drawing is not only the foundation common to all arts, but more importantly, the key to architecture as well. Naturally, this belief carried particular weight for the architect Le Corbusier. For him, the draft relates to its execution in architecture as drawing does to color in painting. A few examples should suffice to illustrate the importance attached to the concept of the architectonic plan, as opposed to the particular conditions of its material realization.

Le Corbusier's plans were almost never restricted to a particular location. Even the question of materials, especially before 1930, rarely proved to be as decisive as it sometimes seemed at first. For him "the manifestation of a clear plan and modern aesthetic" was in no way tied to specific materials.[41] To be sure, the development of a new architectural language depended heavily on the application of reinforced concrete. But once this new vocabulary had been created, the problem of form was again freed from the problems of practical application and execution. Form became absolute and primary.

Le Corbusier once spoke of the kind of sculpture which he envisioned; it was to be a sculpture which came to life not in the modeling of form, but in the expressive power of connected volumes: "a sculpture which is not modeled but assembled."[42] The nature of the medium—the grain of the wood, the brilliance of metal, the rough surface of concrete—may well help to support a work. The decisive factor for him rests in the draft, in the conception.

In the Purist buildings of the twenties, executions meant nothing but the translation of the draft into another dimension. After 1930, he allowed the chance effects of natural materials a much greater degree of free play. In the Unité d'Habitation in Marseilles (1947–1952), the secondary effects of the architectural epidermis attain the greatest degree of freedom: it was the birth of "béton brut." He encouraged visitors who complained of the building's "poor execution" to look at a Florentine palazzo with its coarse stonework or at a cherry tree with its rough bark.[43]

The sources of this sensual delight in the facades of rough, unfinished materials are numerous. In his rejection of the smooth perfection and anonymity of the International Style, Le Corbusier turned to more fundamental truths of construction, which he found in folklore. Furthermore, his indifference to the finish and detailed formation of an individual building reflects a mild contempt for the "nature of materials" glorified by many among his fellow protagonists of modern architecture, such as Frank Lloyd Wright or Mies van der Rohe.

This neglect of the material for the sake of form resulted in immediate and often fatal consequences; the majority of Le Corbusier's early post-1920 buildings are poorly preserved. In fact, the capitol of Chandigarh began long before its completion to turn into a grandiose field of ruins. And yet it seemed to make little impression on the architect that many of his buildings were doomed to quick ruin, or that some, like La Tourette, could only be built at the price of an imprecise technical execution.

Le Corbusier seems never to have been particularly worried by all that as long as one thing remained intact: the idea, the pure form, as it is preserved forever in the seven volumes of his *Oeuvre complète*.

So, Le Corbusier's architecture also rests on an idealist foundation. Here too the draft, the *disegno*, was all important. One thinks perhaps of Alberti.[44] But once again, I would rather seek his precursors in French design theory of the late nineteenth century or in the German Werkbund. When Charles Blanc characterized the *dessin* as the masculine sex of art, and when Behrens or Muthesius around 1910 promoted their ideas on the spiritualization of industrial work and on the necessity of "types" in building and manufacturing they were continuing the same idealist tradition.[45]

Psychological Foundations and the History of Ideas

It has been possible to interpret Le Corbusier's theoretical concepts to a certain extent on the basis of their context in the history of ideas. They thereby become relativized as expressions of a socially conditioned state of consciousness. But this leaves many questions unanswered. Le Corbusier stresses the dialectical opposition between drawing and color, between idea and form (in a Neoplatonic sense). Such a conflict invites, indeed calls for, a psychological interpretation. No doubt that some of his paintings can be understood as reflections of strong and unresolved inner tensions. However, the question may be raised of the extent to which these psychological conflicts and tensions are perhaps symptoms of problems and conditions deriving from broader premises in the history of ideas.

In this context a paper by the art historian and critic Gotthard Jedlicka (1899–1965) offers perhaps surprising suggestions. In his essay of 1947, "On Contemporary Swiss Painting," this author develops a series of characteristics to describe Swiss painting.[46] It is interesting that many of these characteristics directly apply to Le Corbusier, an artist who is not explicitly mentioned in this article (as far as I know, Jedlicka has never written on Le Corbusier). Jedlicka speaks in his essay of a particular "mixture of slightly rigid convention and surprising, somewhat erratic originality."[47] He traces this trend in part back to the fact that many Swiss paintings seem "to have been painted in different and clearly separated stages." This fact "produces on the canvas an overlaying of differently conceived levels each executed in a different mood."[48] Above all, he points out how drawing came to dominate pure colorism in Swiss painting, thus emphasizing how artistic form would often first be fixed in the drawing and then accompanied or heightened by color. "This seems to me an expression of the desire to secure the picture as much as possible in advance. The careful painter begins a composition with a drawing."[49] Finally his discussion of the method of painting serves as a backdrop for the definitive statement: "The Swiss painter often has more character than talent."[50]

From here I believe it may be possible to arrive at a more differentiated interpretation of Le Corbusier's painting, which will also deal with the question of quality. Let us begin once again with the artist himself. He often said that the relationship between head and hand had been disrupted in modern man. He must have been aware how precarious this relationship was in himself—much of his activity documents his struggle to maintain the balance between head and hand. Seen in this way, Le Corbusier's graphic art on the whole[51] appears to manifest an adventurous, often unfortunate struggle between head and hand, character and talent, intellectualism and sensuality. He was torn between insistence on correct perception and a longing for great, absolutely valid form. This holds true for his paintings as well. It would not be inaccurate to say that spontaneity in his paintings is allowed to occur only within the guidelines established by the conscious will.

21 Le Corbusier, sketch for the Monument of the Open Hand, Chandigarh (unbuilt), ca. 1952.
22 Villa Fallet, La Chaux-de-Fonds, Switzerland. Le Corbusier, 1905–1906. Detail of facade.

The intellect relates to the artist's spontaneity in his thought and creativity as the *disegno* relates to the execution in his painting. There are countless studies from different periods in which Le Corbusier reveals his coloristic genius. And yet, standing before the canvas he seems to address the public as a different person, as if he must arrive at some great and definitive statement. Hence, the dry, even pedantic eclecticism of so many of his paintings, and their forced schematism. It is no coincidence that his work is characterized by a complex vocabulary of signs, signals, and symbols, the iconographic meaning of which cannot be discussed here.[52] Likewise, the forms become stylized into blatant manifestos, into a poster idiom (one might actually say that Le Corbusier was one of the first to develop an interest in posters as an art form).

It is tempting to explain these artistic peculiarities in terms of the idiosyncrasies of his character. His erratic character and personality are well documented by colleagues, friends, and adversaries.[53] Infamous for his harshness with officials, critics, admirers, and snobs, he commonly played the role of the arrogant and self-righteous artist in his interactions with strangers and opponents. A determination to teach, demonstrate, explicate, and convince; but behind this facade, an individual vulnerable to all expressions of emotional sincerity.

The instability, the problematic of his artistic oeuvre, seems to correspond, then, to personality traits. A psychological and moralizing interpretation might thus point to the self-conscious and inhibited nature of his painting, an art created not from fullness, but from frustration. It would have to show how the free unfolding of his creative energy was suppressed by a need to dominate, by an intellectualism which masked a deep-rooted insecurity.

And yet, such a judgment does not do justice to the historical context which gave rise to this art. It relies too heavily on a questionable humanistic belief in the fundamental identity of moral and aesthetic values, of goodness and beauty; furthermore, it shares the ideology of the immutable biological fate and the tragic destiny of human "character." The instability or the tragedy of the oeuvre[54]

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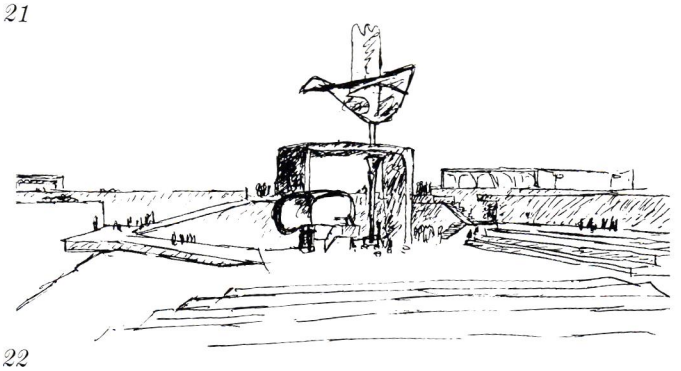

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goes beyond the psychological make-up of the individual. Its foundation lies in the conception of art adopted and developed by Le Corbusier, a conception which combines two conflicting aims: on the one hand, the desire to capture naively and spontaneously the fullness of life and, on the other hand, the endeavor to establish a popular symbolic language, an accessible grammar of forms and formulas which evoke universal and elementary sensations.[55] For Le Corbusier, this conflict meant the desire to be an authentic representative of twentieth century painting, an important figure within the Paris art world, and the prophet of a new gospel capable of embracing the world at large.

Not surprisingly, the roots of Le Corbusier's works are anchored in the culture of the turn of the century; from the Jugendstil ornamentation of his first major work, the Villa Fallet in La Chaux-de-Fonds, 1905–1906 (fig. 22), to the hieroglyphic decorations in Chandigarh, culminating in the symbol of the open hand (fig. 21) there exists a direct continuity. Here and there, cosmological and mystical symbolism mediates to the dream of an integrated society. It is a dream, or more precisely, a fiction; for that "state art" proposed by Le Corbusier is bound to remain occult for it lacks a grounding in a corresponding state religion.[56]

Thus two opposing ideals are at work in Le Corbusier the painter: a participation in the artistic avant-garde of the twentieth century (heralded by Picasso, Braque, and Léger), and the creation of an official monumental art, resting on a pure and rudimentary grammar with clear symbols and formulas accessible to all people.

Author's Postscript, December 1980

A few years ago, at the AA in London, after a lecture in which I exposed some of the ideas underlying this article of around 1970, a student asked why I had not mentioned the swastika inscribed into the ornamental web of outlines of the *Graffite à Cap Martin*. In fact it had escaped my attention that the almost rectangular lines inscribed into the chest of the woman on the right hand side of the mural clearly suggest a swastika.

Nothing, in art, speaks for itself; yet this detail, which cannot be accidental, almost does. In the article, I refer to Picasso's *Guernica* and its role as a catalyst for Le Corbusier's *Graffite*. Le Corbusier had been shocked by the Nazi raids during the Spanish Civil War and publicly supported the Republic.[1] On the other hand, his sympathy for the pro-Nazi Vichy government of France has never been a secret. As much as I have been able to understand in conversations with various close partners of Le Corbusier, his attitude to what at this time was often referred to as the "Jewish question" has, during the thirties, embarrassed and frightened many of his friends.

Should we thus read the mural as a secret—given its location—reply to Picacco's Republican outcry, in the name of what Le Corbusier seems to have believed to be more pacific and constructive forces of a humanist Mediterranean fascism? And was the swastika inscribed into the *Women of Algiers* with an eye on a possible postwar Europe within which this *Graffite* could be acclaimed as a private anticipation of what then might have become a public artistic imagery? There seems, in any case, more to be said about the strangely heraldic and enigmatic character of the curved outlines which constitute this image.

I should add that around 1977 the *Graffite* has been entirely demolished by mistake of a local mason in charge of some works in the Villa Odunarnod. More recently, the mural has been reconstructed on the grounds of photographs. Finally, valuable insights in the prehistory of this composition will certainly be gained from Le Corbusier's sketchbooks, whose publication is imminent.
S.v.M.

1. According to Mary McLeod, who has studied the corresponding documents at the Fondation Le Corbusier, Paris.

1. The preceding essay was written for the most part in 1969/70 and was published some years later as "Le Corbusier als Maler," in Eduard Hüttinger and Hans A. Lüthy, eds., *Gotthard Jedlicka. Fine Gedenkschrift. Beiträge zur Kunstgeschichte des 19. und 20. Jahrhunderts* (Zurich: Orell Füssli Verlag, 1974), pp. 139–156. At the time I was working on it, the Le Corbusier legacy in the Fondation Le Corbusier was not yet accessible for research. The essay develops certain ideas which were dealt with in part in my monograph *Le Corbusier. Elemente einer Synthese* (Frauenfeld and Stuttgart, 1968), pp. 54–69, 337–406. Portions of this essay have already been published; see "Von den 'Femmes d'Alger' zum 'Plan Obus', Hinweis auf die Kunsttheorie Le Corbusiers," *Architèse*, 1, 1971, and "Cartesian Curves," *Architectural Design*, 4, 1972, pp. 237–239. These notes were updated in 1973, in order to acknowledge the more recent literature on Le Corbusier.

2. This subject will be dealt with in more detail in the largely reworked English version of my Le Corbusier monograph *Le Corbusier. Elements of a Synthesis* (Cambridge: MIT Press, 1979). Concerning "machine aesthetics" in art ca. 1920 in Paris, see John Golding, "Léger and the Heroism of Modern Life," *Léger and Purist Paris* (catalogue of the Tate Gallery, London, 1971), pp. 8–84; Christopher Green, "Léger, Purism, and the Paris Machines," *Art News*, 1970, No. 8, pp. 54–56; R. Krauss, "Léger, Le Corbusier, and Purism," *Artforum*, April, 1972, pp. 50–53.

3. *Aujourd'hui*, No. 51, Paris, 1965, p. 14, and Ozenfant, *Mémoires* (Paris, 1968), p. 104.

4. Samir Rafi, "Le Corbusier et les Femmes d'Alger," *Revue d'histoire et de civilisation du Maghreb*, January, 1968, pp. 58–61. Rafi's work is probably the most detailed contribution to Le Corbusier's painting published to date. Since it was begun while the artist was still alive, it can rely on spoken statements by Le Corbusier.

5. See *Oeuvre complète, 1929–1934*, p. 175ff.; Le Corbusier, *Poésie sur Alger* (Paris, 1950); on the general conditions, Edmond Brua, "Quand Le Corbusier bombardait Alger de 'Plan Obus'," *L'Architecture d'aujourd'hui*, May–June, 1973, pp. 72–77. For a critical discussion of the project, Giorgio Piccinato, *L'architettura contemporanea in Francia* (Bologna, 1965), pp. 62–66; von Moos, *Le Corbusier*, pp. 205–216; Manfredo Tafuri, *Progetto e utopia* (Bari, 1973), pp. 115–137.

6. P. A. Emery was kind enough to send me a copy of Jean de Maisonseul's letter to Samir Rafi. The following quote is taken from this letter.

7. See *Le Corbusier. Suite de dessins*, ed. by Jean Petit (Paris, 1968), Figs. 60, 25, 26, etc. Concerning the friendship with Josephine Baker, see Jean Petit, *Le Corbusier lui-même* (Paris, 1970), p. 68ff., and Charles Jencks, *Le Corbusier and the Tragic View of Architecture* (London and Cambridge, Mass., 1973), p. 102ff. Jencks too emphasizes the influence of these studies on the architectonic formal language since ca. 1930. His conclusions are similar to mine. Jacques Gubler has recently brought to my attention a remarkable series of watercolor group studies from 1926; see *Le Corbusier inconnu*, catalogue of the Gallerie Cour St. Pierre (Geneva, 1972). Le Corbusier's telling title to this series of watercolors reads "50 Aqueralles de Music-Hall ou le

'quand-même' des illusions."
8. See Rafi, "Les Femmes d'Alger, . . . " p. 51.
9. At least three of these sketches have survived. Ibid., p. 54, p. 62, fig. 2. I take the reproductions from Rafi's publication. Some of these sketches are supposedly owned privately in Milan; my attempts to find the originals were without success.
10. Ibid., p. 55. Le Corbusier seems to have had relatively close contact with Picasso after 1927. At least he mentioned this to Rafi. Just how much such statements were influenced by Le Corbusier's admiration for Picasso (see also S. von Moos, *Le Corbusier*, p. 343ff.) still needs clarification.
11. Le Corbusier painted at that time a whole series of murals in Badovici's house. Concerning the building itself and its ingenious interior design by Eileen Gray, see "Maison en bord de mer," *Architecture vivante*, Paris, 1929; Joseph Rykwert, "Eileen Gray: Pioneer of Design," *Architectural Review*, Dec., 1972, pp. 357–61 (with additional bibliogaphical references). It seems likely that Le Corbusier collaborated in some way on the project. He was a friend of Badovici's and probably supported his efforts to become an architect. He kept a copy of the previously mentioned volume of *Architecture vivante* in his studio and considered the house exemplary. It is certainly no accident that it shows similarities to the house which Le Corbusier drafted for his mother in Vevey in 1923; see Le Corbusier, *Une petite maison* (Zurich, 1954). After the Second World War, the architect built a "cabanon" for the summer months close to Badovici's house. After the death of the owner, Badovici's house was sold to the Swiss architect Marie Louise Schelbert who lives there and maintains the house in perfect condition. Concerning Badovici's house "Odunarnod" and the Cabanon, see the recent comments by Alfred Roth, *Begegnungen mit Pionieren* (Basel and Stuttgart, 1973), pp. 115–20.
12. This interpretation cannot be accepted at face value. It was given by the present owner, Frau Dr. Schelbert, who also provided the previously quoted description of the present condition of the house in a letter of February 14, 1969.
13. Rafi, "Les Femmes d'Alger . . . ," p. 61.
14. See John Golding, "Ozenfant," catalogue of the M. Knoedler Gallery, New York, 1973; with bibliography.
15. See Jean Badovici, editor, *Le Corbusier, Oeuvre plastique* (Paris, 1938); *Le Corbusier, l'oeuvre plastique 1919–1937*, catalogue of the Kunsthaus in Zurich (Zurich, 1938), and the recent *Fifty Works by Le Corbusier*, catalogue of Sotheby and Co. (London, 1969), and *Le Corbusier peintre*, catalogue of the Galerie Beyeler (Basel, 1971).
16. Le Corbusier later placed much value on establishing that the term "Purism" was not his but from Ozenfant; he claims that he rejected all "-isms." See *Art d'aujourd'hui*, No. 7, Paris, 1950.
17. Rafi reports "Le Corbusier had in effect spoken for a long time of a certain plate in the room of Islamic art at the Louvre whose interlacings simultaneously delineated organic branches and fish." "Le Corbusier, Femmes d'Alger," p. 59.
18. Le Corbusier, *Oeuvre plastique*, p. 27.
19. Jean Petit, *Le Corbusier parle* (Paris, 1968), p. 62. Concerning the general conditions, see von Moos, *Le Corbusier*, pp. 205–209. One of the sketches from Copacabana is reproduced in Jean Petit's *Le Corbusier lui-même* (Geneva, 1970), p. 83.
20. Le Corbusier, *Précisions sur un état présent de l'architecture et de l'urbanisme* (Paris, 1930), p. 244.
21. Ibid.
22. Le Corbusier, *Aircraft* (New York and London, 1935), figs. 112a and 112b. In one copy of the book, dedicated to S. Giedion, Le Corbusier wrote the more expressive title, which he had originally intended: "L'avion accuse."
23. Ibid., Introduction.
24. Ibid.
25. From the (German) translation by Henrik Becker in the collection of Antoine de Saint-Exupéry's *Romane, Dokumente*, 1966, p. 193.
26. Ibid., p. 191.
27. See note five.
28. One can certainly speak here of the "displacement of concepts" in the sense of Alan Colquhoun's study, cf. *Architectural Design*, 4, 1972, p. 236.
29. See von Moos, *Le Corbusier*, p. 370.
30. See *Le Corbusier. Oeuvre plastique*, table 9, "La cruche et la lanterne." The same picture is accurately reproduced in Le Corbusier, *L'atelier de la recherche patiente* (Paris, 1960), p. 53. On the other hand on p. 230 there is a negative detail of the fresco in the "Pavillon Suisse" of the Cité Universitaire. On the following page, it is correct.
31. Quoted from Pablo Picasso, *Wort und Bekenntnis. Die gesammelten Dichtungen und Bekenntnisse des Künstlers* (Zurich, 1959), p. 35ff.
32. From Le Corbusier, "Purisme," *Art d'aujourd'hui*, No. 7, Paris, 1950.
33. See Ozenfant and Jeanneret, *Aprés le cubisme*, p. 57.
34. Le Corbusier, *Modulor 2* (Boulogne s. Seine, 1954), p. 293ff.
35. Quoted from Le Corbusier, *Von der Poesie des Bauens*, edited by Hugo Loetscher (Zurich, 1957), p. 81.
36. See Félibien, *Entretiens sur la vie et les ouvrages des plus excellents peintres* (Paris, 1966); André Fontaine, *Les doctrines d'art en France* (Paris, 1909); Arnold Hauser, *Sozialgeschichte der Kunst und Literatur* (Munich, 1953 [edition of 1973]), p. 477ff.
37. Charles Blanc, *Grammaire des arts du dessin* (Paris [fourth edition] 1886), p. 21. Also Vasari, *Le vite* (etc.), Edition Milanesi, vol. I, p. 168: "Perché il disegno, padre delle tre arti nostre. . . ."
38. Paul Turner, "The Beginnings of Le Corbusier's Education," *Art Bulletin*, June, 1971, pp. 214–224. Jeanneret received the Raphael monograph in 1902 as a gift from his parents.
39. Ibid., Schuré's *Les grands initiés* was a gift from L'Eplattenier in 1907.
40. See S. v. Moos, *Le Corbusier. L'architecte et son mythe* (Paris, 1971), p. 198ff.
41. *Oeuvre complète, 1929–1934*, pp. 48–52. The passage concerns the Errazuris house in Chile.
42. Le Corbusier, "Unité," *Architecture d'aujourd'hui*, special issue dedicated to Le Corbusier (Boulogne s. Seine, 1948), p. 57.
43. *Oeuvre complète 1946–1952*, p. 190.
44. Alberti's distinction between the *lineamenta* and *structura* (Italian *disegno* and *construzione*—according to the translation of Giovanni Orlandi, Milan, 1966) which form the essential com-

ponents of building is a fundamental axiom of idealist architecture theory. This is especially true of the idea that the *disegno* is a *forma mentale* which is projected onto the material objects, independent of their realization. Alberti emphasizes, "Si potranno progettare mentalmente tali forme nella loro interezza prescindendo affatto dai materiali: basterà disegnare angoli e linee definendoli con esattezza di orientamento e di connessioni," *De re aedificatoria* (1485), quoted from the edition of 1966, vol. I, p. 1.

45. See Reyner Banham, *Theory and Design in the First Machine Age* (London, 1960).

46. Gotthard Jedlicka, *Zur Schweizerischen Malerei der Gegenwart* (Erlenbach-Zurich, 1947); "Allgemeine Bemerkungen," pp. 13–25.

47. Ibid., p. 20.

48. Ibid.

49. Ibid., p. 18.

50. Ibid., p. 17.

51. See Jean Petit, editor, *Le Corbusier. Suite de dessins*, which offers a mediocre but representative selection of Le Corbusier's graphics.

52. Patricia Sekler, in her dissertation (Harvard, 1973) provides a systematic iconographic and iconological analysis of Le Corbusier's motifs. For an initial interpretation of Le Corbusier's "hieroglyphic language," see von Moos, *Le Corbusier*, pp. 347–369.

53. See Maurice Jardot, "Esquisse d'un portrait" in *L'Atelier de la recherche patient*, p. 9ff; Jean Petit, *Le Corbusier lui-même*. See also the journalistic sketch in the *New Yorker*, April 24, 1948, which was strongly influenced by Ozenfant. More recent and particularly valuable is Alfred Roth's *Begegnungen mit Pionieren*, pp. 13–122, and the posthumous character study by Charles Jencks, *Le Corbusier and the Tragic View of Architecture*. Le Corbusier's own autobiographical notes are also particularly interesting: *Le Corbusier parle* (Paris, 1966) and *Mise au point* (Paris, 1966), both edited by Jean Petit.

54. "Tragic" with regard to Le Corbusier applies not only to the external fate of being "hindered," as S. Giedion believes (see *Raum, Zeit, Architektur* [Ravensburg, 1965], p. 352, American first edition in 1941). The tragic is much more a positive characteristic of his creativity. Le Corbusier views himself from the beginning as in the image of the artist struggling against a hostile environment. Nietzsche's conception of human greatness which shatters as it confronts reality forms a fundamental aspect of Le Corbusier's existential and artistic self-understanding. See Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, pp. 170–182.

55. Both points of view are precisely formulated in the "Introduction" to *Le Corbusier. Oeuvre plastique.*

56. Reinhold Hohl rightly points out that Le Corbusier's painting strives for an intensity rooted in religion, from *Le Corbusier peintre* (introduction to the Beyeler catalogue). It is certainly no accident that some of the most important later works were done on the commission of religious institutions. A study of the role which the longing for a "new religiosity" plays in Le Corbusier's generation would be a subject of its own; in this context many of S. Giedion's writings, e.g. *Architektur und Gemeinschaft* (Reinbek b. Hamburg, 1954), passim, represent highly suggestive information.

Figure Credits

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1–21 Reprinted from Stanislaus von Moos, *Le Corbusier als Maler* (Zurich: Orell Fussli Verlag, 1974). The figure credits in this book appear as follows.

10 Private collection, Paris.

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15 The Museum of Modern Art, New York.

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17 Reprinted from Jean Petit, *Le Corbusier lui-même* (Geneva, 1970).

18–20 Reprinted from Le Corbusier, *Aircraft* (New York and London, 1935).

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Until now the figurative matter of Le Corbusier's later work has been generally regarded as opaque and as far as I know no serious attempt has yet been made to uncover its specific nature. This second number of Oppositions *dedicated to the work of Le Corbusier features a number of articles which attempt to analyze the hermetic iconography of his second career. These texts, in the order of their appearance, are Robert Slutzky's "Aqueous Humor," Stanislaus von Moos's essay on the* Femmes d'Alger, *Richard Moore's study of Le Corbusier's use of alchemical and mythical themes, Stuart Cohen and Steven Hurtt on Ronchamp, and Alexander Gorlin's analysis of the Governor's Palace at Chandigarh. Of these the only author to treat directly the source of the iconography itself is Moore, who attempts to demonstrate the alchemical themes present in* Le Poème de l'angle droit, *executed in seven parts over a seven year period between 1947 and 1953.*

According to Moore the latent alchemical sources of this 'poem' can be fully substantiated, but what is more difficult to explain is why this preoccupation would emerge in the later career of Le Corbusier, for the Purism of his early period had been a normative aesthetic, a corrective to the distorted and subjective vision of Cubism. Its planar compositions combined the profiles of those quotidian anonymous objects precipitated largely by industry at the end of the previous century. The primary principle behind this early work was not the imago lapis *or the* opus circulatorum *of alchemical lore but rather the dictates of serial production and the supposedly unpretentious taste of the newly urbanized masses.*

The break seems to come with the abandonment of the Purist syntax and with the introduction into his paintings of so-called objets à réactions poétiques *around 1927. From this point onward he seems to look to mythic and Manichean themes to carry out and reinterpret the substance of his iconography, and the question arises, from what did this peculiar and unique impulse arise? Greek mythic themes, latent throughout his work, are openly embraced as are magical signs by the time that he colors an archaic* kore *for Louis Carré's exhibition of primitive art, staged in his studio in 1935. Manicheanism, however, only surfaces between 1943 and 1946, first with his use of the crescent moon to announce his* approches d'une synthèse *of 1943 and then with his introduction of the sun/medusa image at the head of his essay on* l'urbanisme *in 1946, under which he was to inscribe the caption,* "Le désastre contemporain ou la liberté de l'espace?"

This Manicheanism has in part been accounted for by Bernard Hoesli, who has cited evidence that Le Corbusier came from an Albigensian background—first his occasioned use of the heretical term l'enemi *for the devil, and second Albert Jeanneret's assertion after the death of Le Corbusier's mother in 1949 that the secret faith of the family had been that of the Cathar sect who originated in southeastern France in the twelfth century.*

Any direct link between the Albigensian heresy and the medieval cult of alchemistry is difficult to establish but the dualism of the Cathar faith—the equal weight that is placed on both good and evil, the one having the potential to turn into the other—is reminiscent of the alchemical opus circulatorum *in which base matter is transformed into rich material.*

A conjunction also arises between the nature of Le Corbusier's death—his "suicide" in the Mediterranean—and the Albigensian tradition of sacred suicide, known as the endura *and conceived as a virtuous act whereby spirit is liberated from matter. According to Jerzy Soltan, Le Corbusier once said, "My dear Soltan, how nice it would be to die swimming for the sun."*
K.F.

1 (frontispiece) Iconostase, Poem of the Right Angle. *Le Corbusier*, *1947–1953*.

Alchemical and Mythical Themes in the Poem of the Right Angle 1947–1965

Richard A. Moore

The debate over the respective roles of functional and formal standards in the architecture of Le Corbusier omits one important alternative—the symbolic.[1] This can be explained by the unwillingness of historians and critics to consider his pictorial work, which is unfortunate because he constantly proclaimed that his pictorial work was the center of his creativity.[2]

The symbolism of Le Corbusier can be traced back to 1908 when he made a Christmas card representing himself as a condor, a great bird forced to see reality from above. The second period began in 1928 when he formulated the concept of *acoustique plastique*, acoustics of plastic matter. Aesthetic matters of vision were symbolized in the water balance mechanism of the inner ear and the hand motif, representing the giving and receiving of sound (figs. 3, 4). In the thirties the cochlea and stirrups of the inner ear became less mechanical metaphors and more identified with the reproductive system of the archetypal woman, who was associated with the horizontal water level in nature.

From 1947–1948, symbolism became a comprehensive system dominating his architecture. This new symbolism proved to be an important demarcation in his career. The rooftop garden concept had been exhausted, and his aesthetic theory based upon mechanical models had been completed with the publication of *The Modulor*. These events coincided with his commission for the Marseilles Unité apartments. The new period was also initiated by his extension of pictorial activity into sculpture and graphic media. It is in the *Poème de l'angle droit*, executed in a seven-part structure over a seven year period, from 1947–1953, that the systematic nature of this symbolism is revealed (fig. 1). The basis of the symbolism in the *Poème* was alchemy and such allied symbolic languages as astrology and Greek mythology.[3]

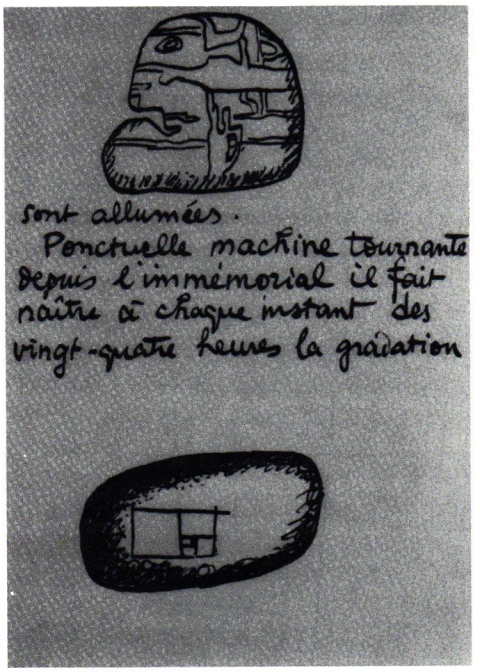
Alchemy appealed to Le Corbusier first for the way in which opposites were separated and joined (*solve et coagula*); second, for its attempt to transform basic matter, or the original four elements, into a higher fifth substance known as the "quintessence" or "philosopher's stone"; third, for its assertion that earthly elements and processes were expressions of greater cosmological phenomena and events, thus according with Le Corbusier's concept of the *mécanique spirituelle* formulated in the twenties; and finally, for the anthropomorphic nature of the alchemical doctrine symbolized by Mercury or Hermes, who represented a primal synthesis between the celestial phenomena of sun and moon, or the terrestrial elements of sulphur and salt.[4]

A fertile and receptive ground for alchemical references exists on both a general and personal level throughout Le Corbusier's previous career. In his Purist works, alchemy is easily associated with bottles and glasses, which evoke the apparatus of the alchemist studio. Equally compelling as an automatic basis of association was his tendency to rotate the images in his paintings at ninety degree angles, creating strange metamorphoses reminiscent of the circular work of the alchemical wheel turning one substance into another. On a personal level, there is Le Corbusier's identity as a bird, especially the *corbeau*, or raven, the alchemical symbol of change from material to spiritual, black to white. This bird has the same meaning as that associated with the philosopher's stone, a transformative substance that elicits Le Corbusier's other self-portrait symbol: the stone head or *imago lapis* (fig. 2), prominently displayed in the first section of the *Poème*.[5]

The Poem of the Right Angle, 1947–1953

The specific alchemical nature of Le Corbusier's symbolism in the late period is immediately demonstrable in the organization of the *Poème*. For diagrammatic clarity, it is divided into seven horizontal zones of meaning, each with its own color key. Together they form a compositionally top-heavy and complex cross-pattern with each zone composed of adjacent squares numbering, from top to bottom respectively, 5, 3, 5, 1, 3, 1, 1. Le Corbusier refers to this cryptic configuration as an *iconostase*.[6] If we read this framework deductively as representing a newly envisioned spiritual order, the various zones are labeled by title and color: A, *milieu* or environment (green); B, *esprit* or spirit (blue); C, *chair* or flesh (violet); D, *fusion* (red); E, *caractère* (clear); F, *offre* or offering (yellow); and G,

2 Stone head or Imago Lapis from Poem of the Right Angle, *Le Corbusier, 1947–1953.*
3 Water balance mechanism of the inner ear.
4 Lunch Near the Lighthouse, *painting, Le Corbusier, 1928.*



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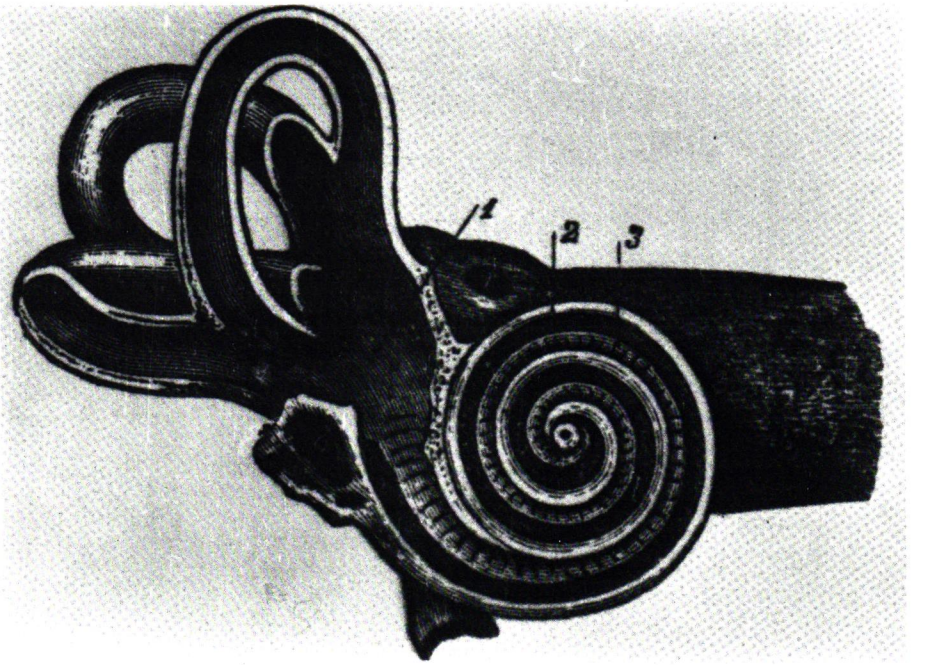

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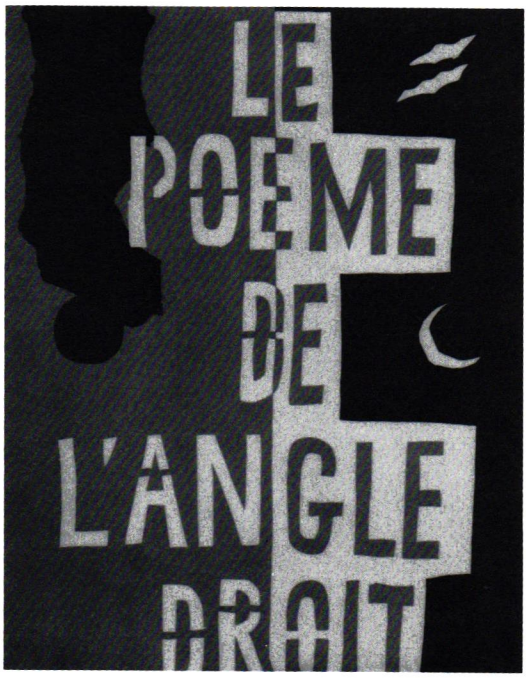
5 Cover, Poem of the Right Angle.
6 Sun-moon dichotomy, male-female dualism. La Maison des Hommes, *Le Corbusier and Francois de Pierrefeu, 1942.*

outil or instrumentality (purple). Its significance as an esoterically explicit alchemical formation composed of the magical number seven, or the septenary, is initially suggested by a quotation from Jung regarding this very sequence: "Together the letters ABCDEFG clearly signify the hidden magical septenary."[7]

The importance of this type of alchemical interpretation is reinforced by the fact that the cover page is cleaved between a dualistic order, with the red sun on the evening blue sky at the left, and the crescent waning moon in the red sky of the day on the right (fig. 5). Significantly, the pattern of the cover can be interpreted as an inverted version of the seven-staged *iconostase* cross, cropped top and bottom by one zone so that the middle *fusion* falls and is caught more explicitly in the middle of the composition. Here it is flanked by the immediately contiguous and symbolic support of the sun on the left and the moon on the right. This arrangement reduces the original seven to five, evocative of another major alchemical theme, the quintessence, the fifth purest element (the goal of the alchemical *opus*). This leads suggestively, by reductive numerical process, to the fundamental notion of a trinary balance of thesis, antithesis, and unstable mercurial synthesis. Both the sun with its dark cloud and the waning crescent of the moon facing to the right reflect this weakened, transitional state. This leads to a new state in which both halves work together to form a single composite head or face, showing the kind of male-female dualism which had occurred in a drawing of 1946, and which appears numerous times on the *iconostase*, especially in zones A–C (fig. 6).

In this elaborate context of symbolic design, it is likely that the red and blue colors that appear on the cover page, and which differentiate the two interlocking mathematical series of Le Corbusier's Modulor Man, shown at the beginning of zone B, are being revealed as the dualistic sign of Mercury, or Hermes.[8] Mercury (fig. 7), the most important subject in alchemy, is the offspring, or archetypal child, of the masculine sun and the feminine moon. Together with the sun and moon Mercury accounts for the number three, the alchemical symbol of agency or



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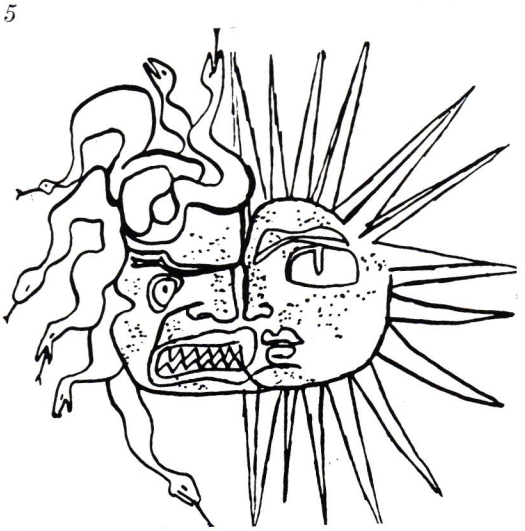

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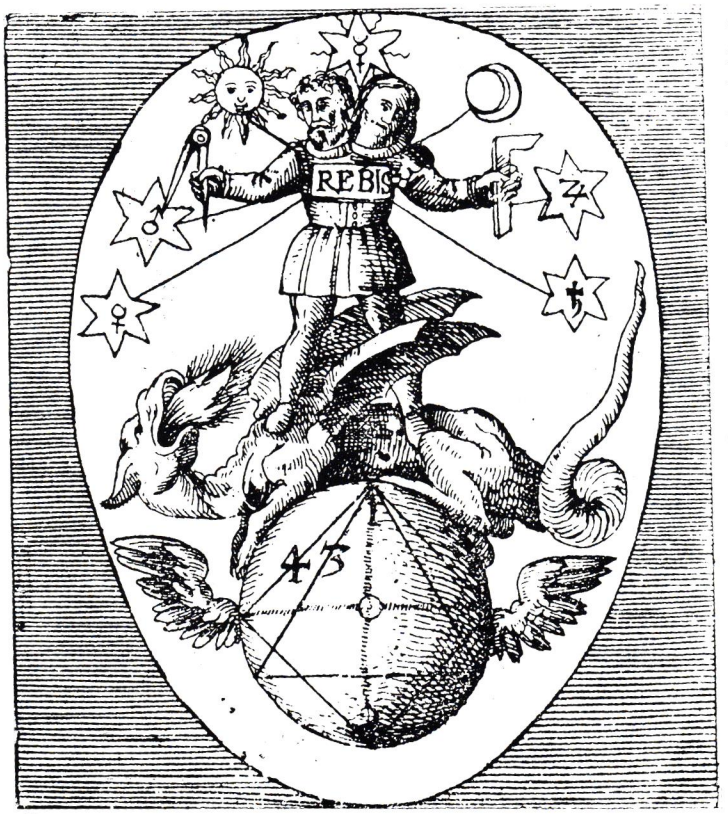
7 Mercury.
8 Model of Algiers, top view. Le Corbusier, 1931.
9 "Law of the Meander," sketch, Le Corbusier, 1929.
10 Cover, Poésie sur Alger, *Le Corbusier, 1950.*



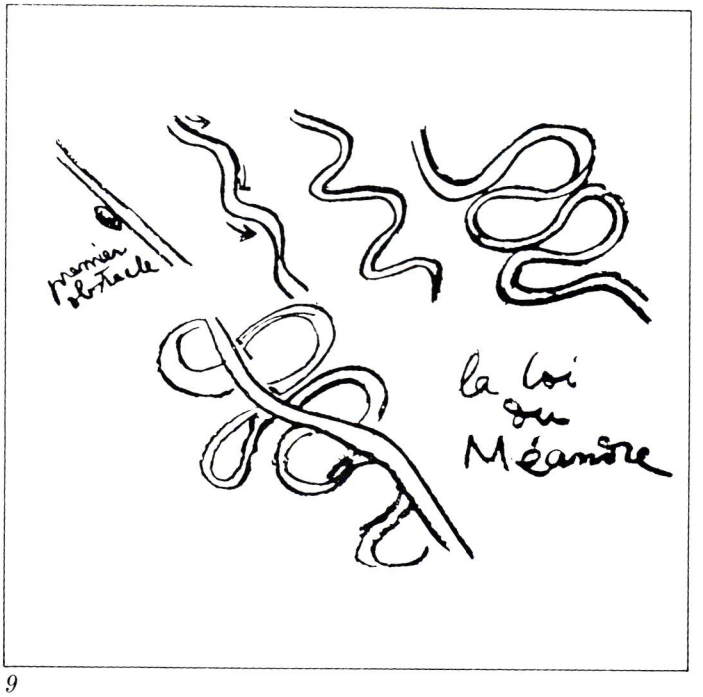
7

creative activity. The other seven original planets account for the number four, thus evoking the trinary and quaternary of the sacred septenary. In this symbolic context, the spiral interlocking of the two mathematical series of the Modulor scale could represent the caduceus of Mercury.[9] As a dualistic or binary, rather than dialectical being, in which opposed forces of matter and spirit retain their identities, Mercury is symbolized by the philosopher's stone, a theme clearly found in the text of zone A, and in the context of Le Corbusier's self-portrait.

Compositionally and iconographically the various sections of the *Poème* follow the top-heavy configuration of the *iconostase*. They become progressively shorter in literary length but not in content as one goes from zones A to G. Zone A, *milieu*, colored green, the alchemical symbol of the universal primal matter, lays down in a preeminently alchemical fashion the problem, and by circular inconclusiveness, the solution. Nature, characterized at first by the solar process of the year, month, and especially the twenty-four hour day, is simultaneously personified in the archetypal female figure. On one hand, the female agent represents on an implied, almost secretive level of occult correspondence a cosmic opposition with the male form. Yet she is also, like Mercury, the composite alchemical image of both, denoting their mutual reconciliation and virtual resolution.[10] In her alchemical capacity as a cosmic force, the female represents a sublimated hydraulic principle of water flowing back to its original *niveau*, horizontal level, of nature (compare Le Corbusier's *loi du méandre*, formulated in 1928, which he superimposed on the megastructure of the Algiers Plan, figs. 8–10).[11] This is demonstrated in the second and fourth images from the left of zone A, in the *iconostase*, and in the text of the *Poème*.

The level establishes where
stops the descent of the waters
to the sea
the sea daughter of droplets
and mother of vapors. And
the horizontal defines
the liquid content.

8



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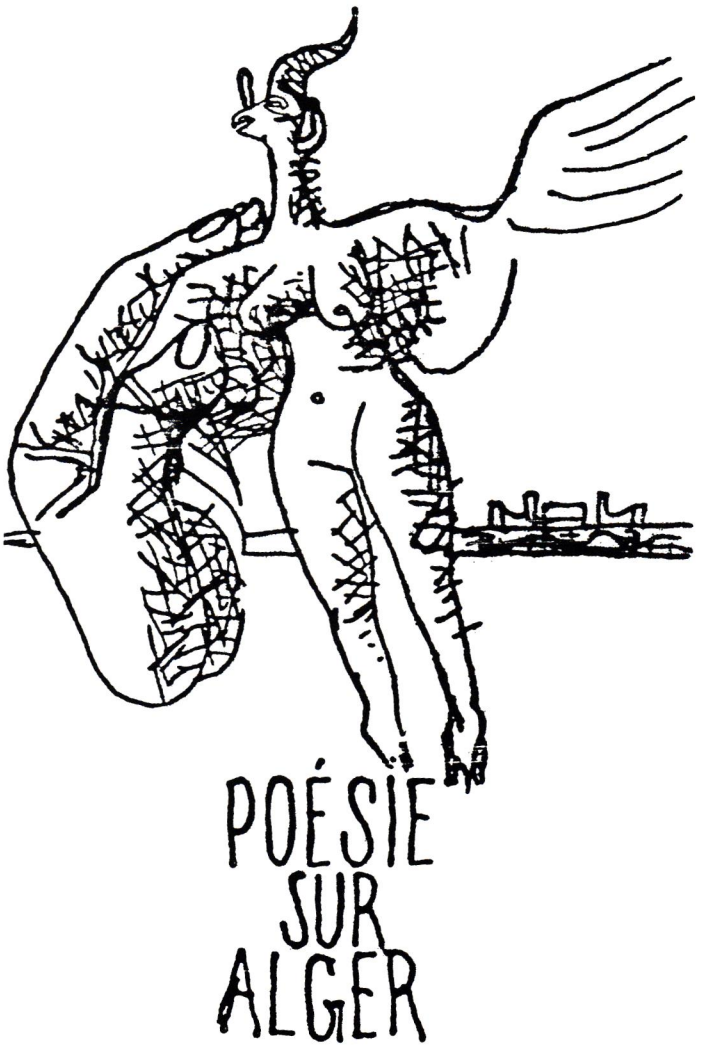

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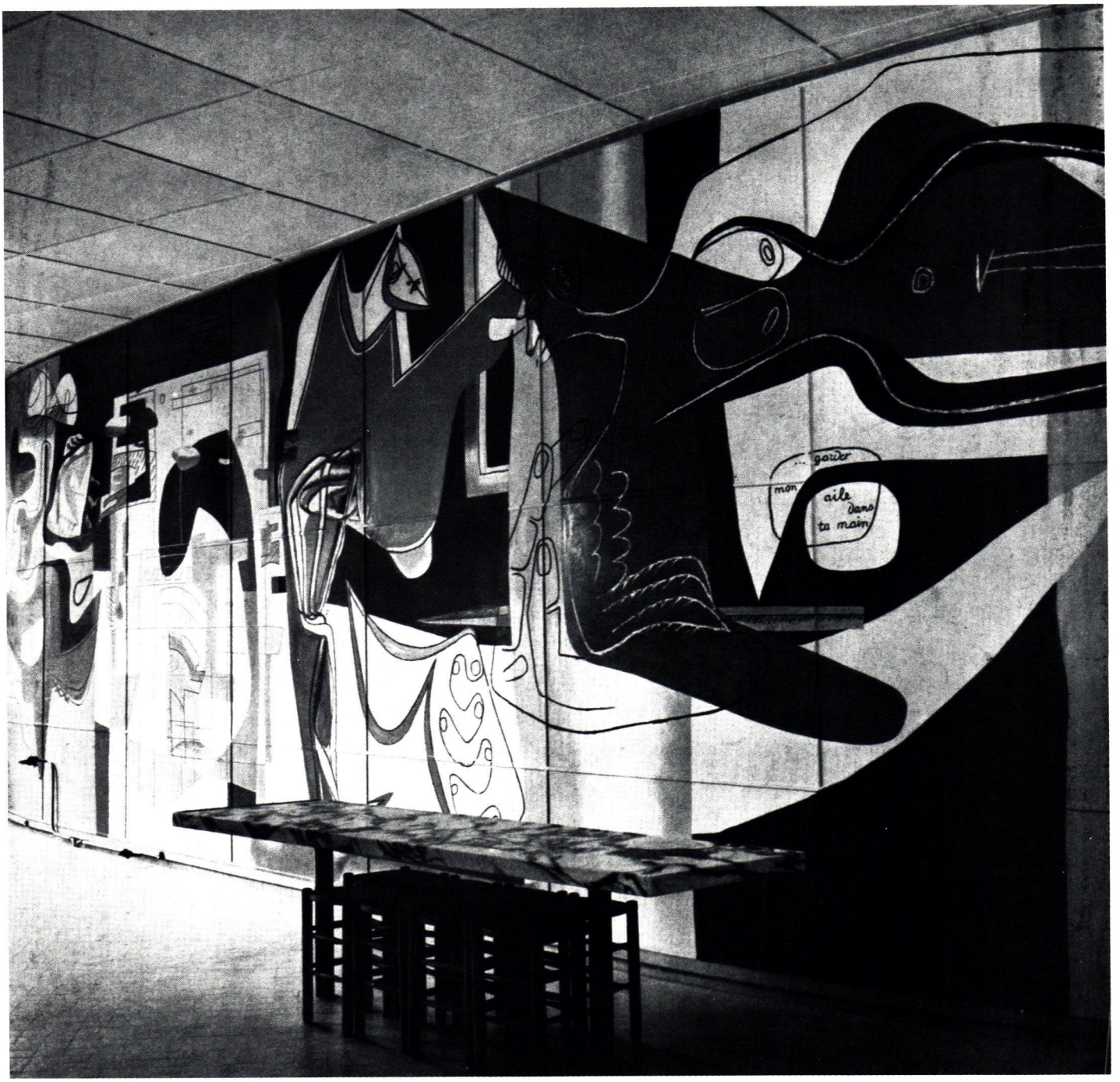

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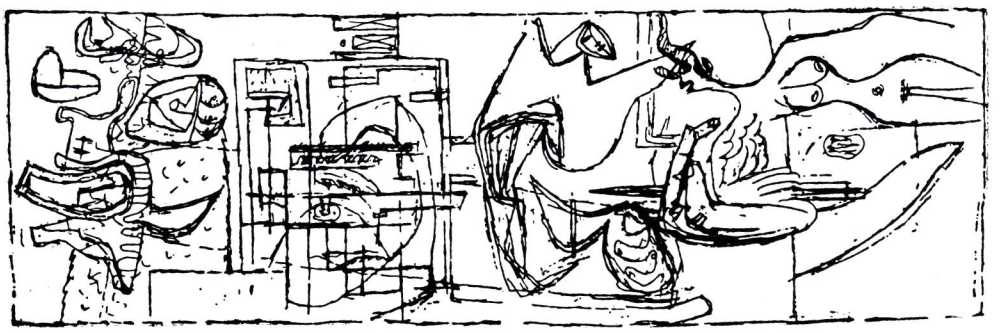

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11 Pavillon Suisse, mural, Paris. Le Corbusier, 1948.
12 Pavillon Suisse, study for the mural.
13 Pavillon Suisse, mural, left side.

In traditional alchemical terms, water is almost indistinguishable from the philosopher's stone.[12] Water is the penultimate symbol because it seeks, alternatively and simultaneously, the lowest level through condensation and the highest through evaporation, so that, as in the most famous of hermetical texts, the *Emerald Tablet*, attributed to Hermes Trismegetes, the ultimate alchemical formula occurs: "What is above is below and what is below is above." Rather than being a substantial unity, water is a matrix for a dualistic universal confrontation.

Between poles reign the tension
of fluids working on the
liquidation of accounts
contradictory proposes an
end to the hatred of the
inconciliable ripen the union
fruit of confrontation

The Iconography of the Pavillon Suisse Mural 1948
One work in particular clarifies the full symbolic intent of Le Corbusier's *Poème* as it relates to his late architecture, sculpture, and painting. This is the second mural done for the Pavillon Suisse in September of 1948 (figs. 11, 12).[13] Not only does this work provide the heuristic basis of the most important third zone C, but it incorporates the broader issues of astrology with the personal level of mythic themes.

As the key work in the development of Le Corbusier's symbolism, the Swiss mural seems to have been intended to be read right to left, like the zodiac. To the right, occupying one fourth of the mural, is a female figure in a horizontal flying pose. Her head seems to be that of a she-goat with long horns, although only one is pronounced, which is decisive for a full iconographic accounting. The right wing of this creature rests in a monumental hand cupped in an approximately right angle cusp of support. Running below both the hand and wing is a long horizontal object pointing left, perhaps a representation of the artist's pencil and, together with the hand, an autobiographical symbol of his involvement.[14]

13

14 Frontispiece of Le Minotaure, *vol. 7, 1935. Photo by Man Ray.*
15 Pavillon Suisse, mural, center. Le Corbusier, 1948.
16 Le Corbusier on Long Island Beach, 1950.
17 Clay figure, cult of the Moon Goddess, before 1200 B.C.

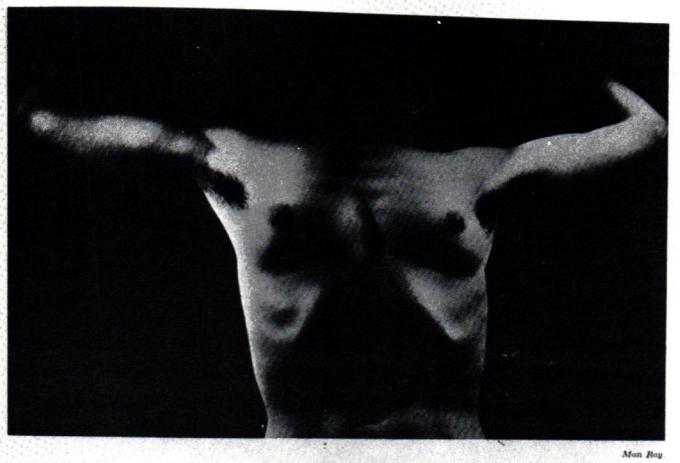
118 These strange forms on the right are balanced at the other end of the Swiss mural by an even more complex variety of shapes. Upon thorough analysis of Le Corbusier's writings and drawings, these shapes are found to represent a bull's head (fig. 13). This crucial interpretation would be difficult, if not impossible, to make without the reappearance of the same configuration of forms in the *Poème* with its accompanying poetic revelation:

Because of being drawn and redrawn
the ox of pebble and root
became bull.

The synthesis across the middle is established when one identifies the large white shape on the left side of the bull's head as the ear, human in shape. The bull's ear acts as an orifice-type termination of a large white form which tapers down to a point at the extreme right, under the hips of the horizontally flying female figure with the goat's head. When this large form is identified as a formal adaptation of the spiral goat's horn, all the forms of the Swiss mural begin to take on the total programmatic meaning of a classical mythological symbolism related to the alchemical processes of transmutation and sublimation by the continuous separation and unification of opposites. The only consistent symbolic meaning for the shape of the female figure is that of Capricorn, one of the essential mythological subjects of classical space and time provided by the zodiac. The large white shape running some two-thirds the length of the mural and ending in the bull's ear is then the Cornucopia, which was indeed derived from Capricorn. It is the Cornucopia which acts as the fecundating source out of which the natural objects, which entered Le Corbusier's art in 1928, pour to constitute the bull's head.[15]

The iconographical key to this mural, split between the forces of death and rejuvenation, winter and spring, seems to lie in the strange figure occupying the center—a crescent-shaped face turned upward to the right, feminine in character (fig. 15). It is perched on the centermost of three prongs, the outer two apparently representing the flying extension of wing-like arms. This pivotal configuration, which is crucial to the ambitious symbolic schemes of Le Corbusier's production in all areas, would seem to represent the moon in its waning crescent, facing to the right toward the winter season of Capricorn.[16] The three prongs which sympathetically echo the bull's horns on the left would then represent, in deep symbolic accord, the well-known myth of the moon as a horned, bull-consorting goddess, who provided one of the archetypal cosmogonic myths in the evolution of early Greek mythology. A comparison of the middle figure, displaced in the *iconostase* to the fifth, quintessential level, with numerous archaic figures presumably representing the moon goddess readily supports this identification (fig. 17). More important than this morphological congruity is the realization that the horned moon goddess symbolizes at once the waxing, full, and waning moon, a triadic fertility deity who stands in matriarchal opposition to the male forces of the sun.[17]

The most common mythological source for this cosmogonic imagery is the tale of Pasiphäe, the moon goddess or earth mother who mated with the white bull sent out of the sea to Crete (the realm of her husband Minos) for sacrifice.[18] The result of Minos's failure to sacrifice promptly the white solar bull was the mating of the bull with his wife, and their offspring, the Minotaur, became associated with ritual sacrifice in the Cretan labyrinth. In this context the Minotaur is a symbol of the cyclical, eternal rebirth of nature in spring, a theme clearly developed in a 1939 issue of *Le Minotaure*, a periodical to which Le Corbusier had previously contributed. Nor should one overlook Man Ray's Surrealist photograph from the same periodical showing a woman's nude upper torso immersed in darkness to create the form of a minotaur head (fig. 14). Le Corbusier himself assumed the same pose, but in sunlight and without the female associations, in a photograph taken on a beach on Long Island in 1950 (fig. 16). All of these events take on deep iconographic meaning when it is discovered that the bull's head in the Swiss mural, as reworked in the *Poème*, actually contains a smaller bull's head, with wispy facial hair, embedded in the right side.[19] It is the same double, split face motif which Le Corbusier developed, as we have seen, in the middle forties. Now,



Man Ray

N° 7 **MINOTAURE** Prix 25 frs

(La couverture de ce numéro est spécialement composée par JOAN MIRO*).*

La peau de la peinture .. .. E. TÉRIADE.

Portraits de femmes .. .. MAN RAY.

Mimetisme et psychasthénie légendaire .. .. ROGER CAILLOIS.
Documents photographiques de Le Charles.

Un tout petit cheval .. .. HENRI MICHAUX.

La manière blonde. .. .. JACQUES BARON.
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Appliquée .. .. PAUL ÉLUARD.
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Hors-texte en couleurs.

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Le Jour est trop court .. .. YOUNG.

Il n'est pas encore trop tard .. .. YOUNG.

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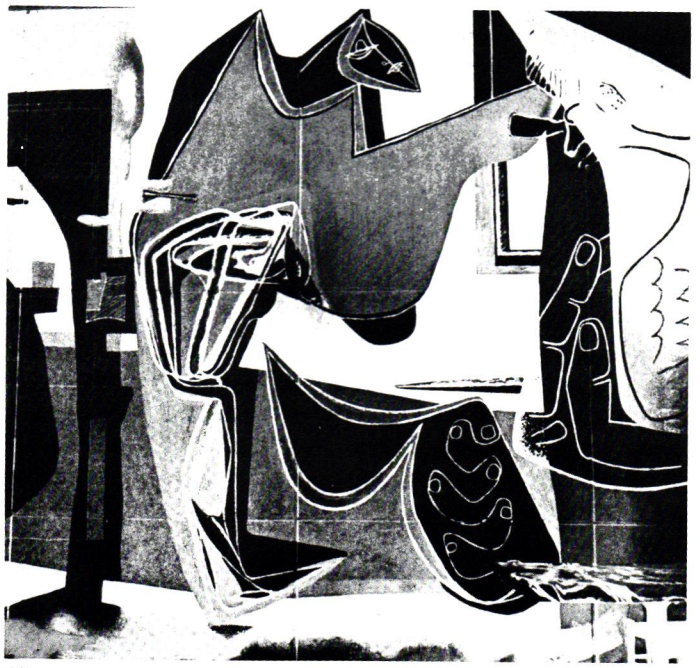

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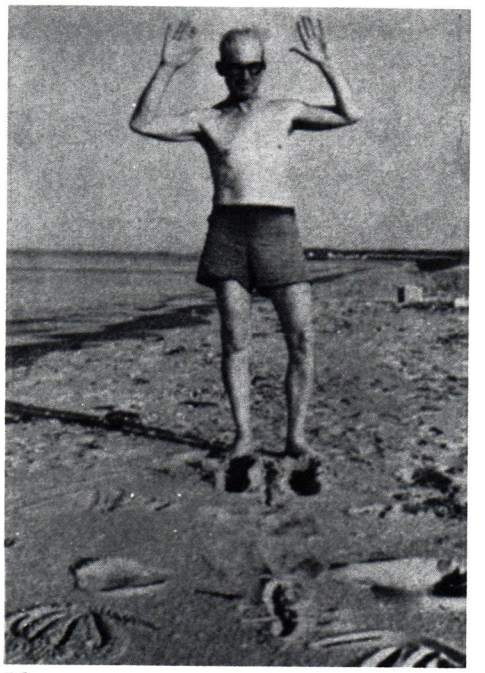

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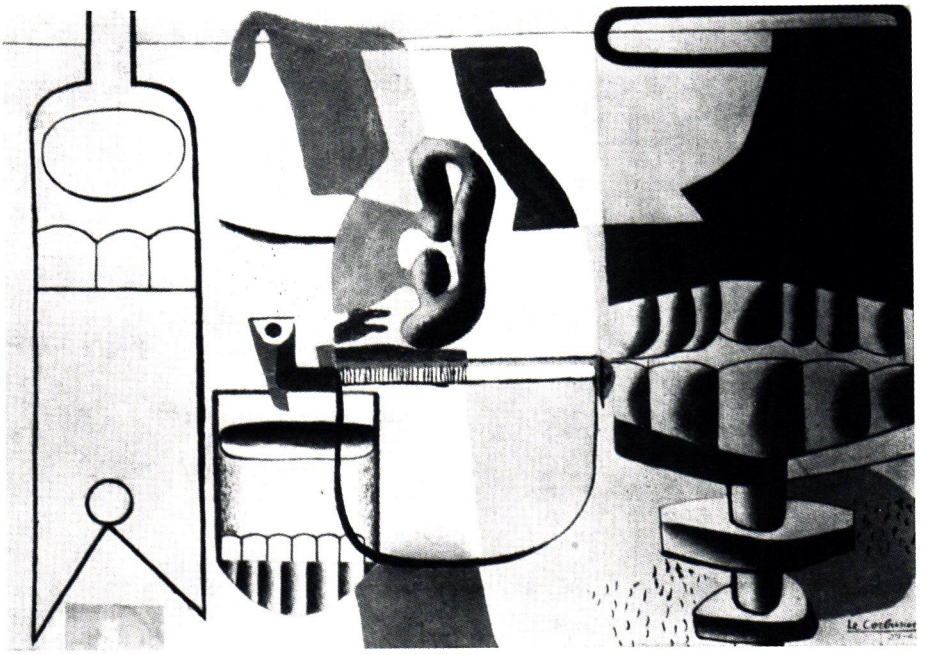

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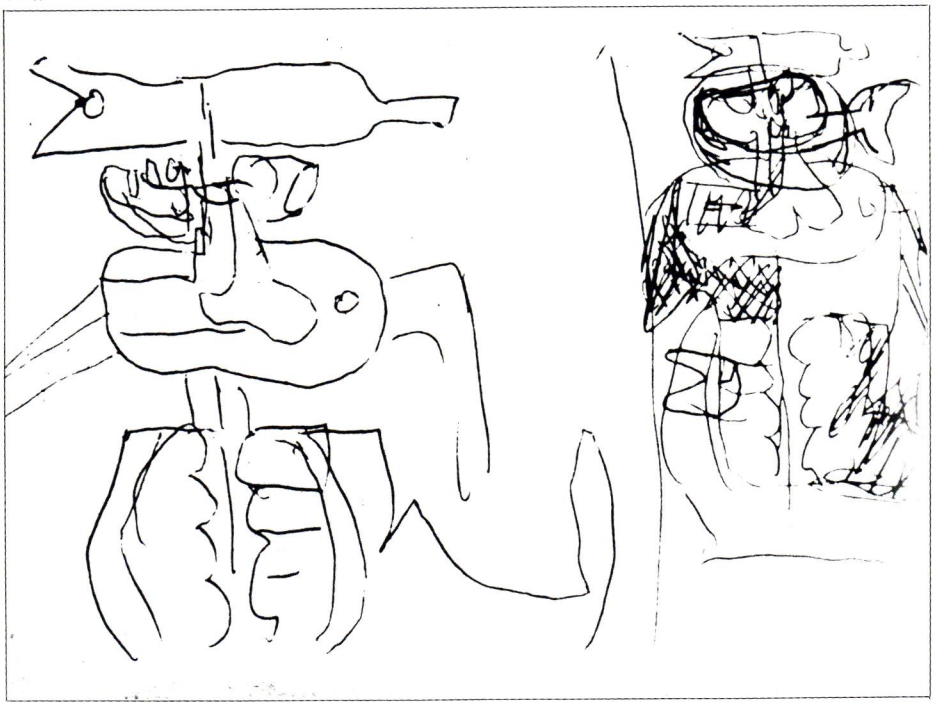


20b

18 Unité, *print no. 2, Taureau image. Le Corbusier, 1953. From* Taureaux Paintings, *1952–1957.*
19 Taureau IV, *Le Corbusier, 1950. From* Taureaux Paintings, *1952–1957.*
20a, 20b Drawing, study for 1940 still life, Le Corbusier. Shows ear as a handle of an acoustical vessel.

21 Composition with Logarithmic Spiral, *painting, Le Corbusier, 1928.*
22 Unité, *Print no. 1, Le Corbusier, 1953.*

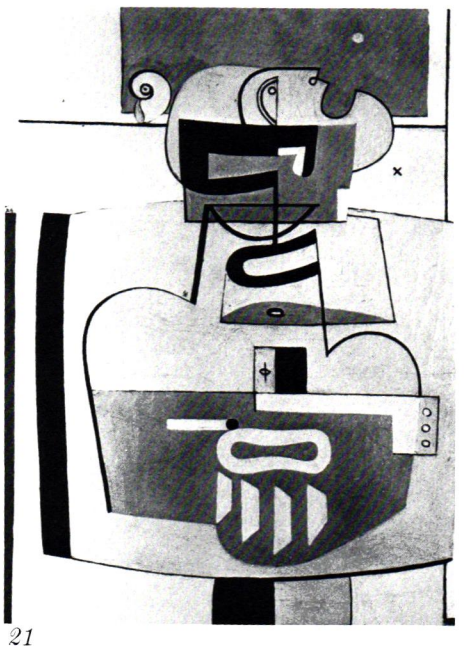
appropriately, the young bull takes its place on the right hand side of the face of the demonic Medusa head, signifying in a more positive way the regenerative powers of darkness, the alchemical *nigredo*. It is this secretive, occult level of meaning that has been overlooked in Le Corbusier's architecture of orientation according to solar processes,[20] so prominent after the Marseilles Unité apartments.

Because the profound refuge is
in the great cavern of
sleep that other side of
life in the night. As
the night is rich in
the warehouses the collections the
library the museums
of sleep! woman passes
Oh I was sleeping, excuse me!

The Taureaux Paintings 1952–1957

The mediating alchemical link between opposed forces—the sun and the moon, the spiritual and the material—was developed further in the great series of paintings called the *Taureaux*, or Bull paintings, done from 1952–1957 (fig. 19). The idea for this theme occurred when, in an airplane over the Indies, Le Corbusier rotated ninety degrees, from a horizontal to a vertical position, a 1922 Purist bottle picture that he had reworked in 1940 just after a stay in the Pyrenees (fig. 20). This produced the most explicit example of the ear as a handle of an acoustical vessel which both gives and receives.

The basic symbolic ingredients of the fifteen or more *Taureaux* paintings can be most succinctly reviewed with reference to plate two in the *Unité* suite of prints, executed in 1953, which begins with a woman hugging a bull (figs. 18, 22).[21] In the upper area, above the horizontal line, probably representing a horizon of a sea or ocean, is the wing-like, double concavity of the moon goddess's upraised arms, which we know from subsequent transformations are meant to be read simultaneously as pendulous breasts, the nipple supplying, as we shall see, the eye of an upturned head. Interlocked with this form, which reads



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23 Taureau I, *painting, Le Corbusier, 1952.*

inversely as a positive and negative shape, are three sets of bull's horns. The highest of the three horns is seen in profile, while the other two are presented in plan or seen from above. Actually only one half of the middle horn is seen, and it seems to be inserted at a forty-five degree angle between the right angle scan of the other two as a partially mature form. These three horn motifs and the moon goddess are most directly related to a small bull's head whose camouflaged shape is identified by the two adjacent circles just below the horizon as its nostrils.

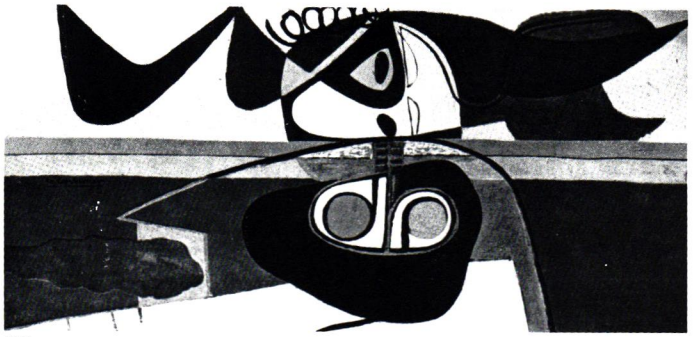
The resolution of the *Taureaux* image is in the tripartite unity of the moon goddess and the small bull's head with a larger bull's head which becomes noticeable only when the compositions are inverted (in alchemical terms, through a pair of ninety degree angles). When this is done both bulls' heads are found to fuse at the nostrils, which explains why one spirals up and one spirals down. This image provides a reflective, mirror-like reciprocity basic to the dualistic and circular process of death and rejuvenation in alchemy. The larger, incomplete bull's head, which is inverted below the horizon, represents the white bull which came out of the sea and subsequently mated with Pasiphäe. (Incidentally it is interesting that the double reversed spiral motif of the nostrils was a common decorative motif in Minoan art).

Beyond this immediate level of association with Cretan mythology, the *Taureaux* images can be more fully explained only when one discovers that just below the horizon, in the same area as the great inverted bull's head, they hide an oblique portrait of Le Corbusier. As another instance of the philosopher's stone transformed into an *imago lapis,* this portrait motif possesses the equinoctial meaning of Libra (in French *la Balance*), Le Corbusier's own astrological sign, marrying in a binding equinoctial pattern the solar bull of summer with the lunar goddess of winter to produce the primal mercurial child or minotaur of spring.

In addition to these four forms (the moon goddess, the small and large bulls' heads, and the stone portrait head) one can find a fifth, quintessential shape. On the horizon, or just above, falling in the upper part of the small Taurus head, is another, more human version of the stone head, but drawn with a double, split face and looking aspiringly at the zenith of the heavens. This head motif implies a body below the horizon, recalling the figure mentioned before, formed around 1928 out of a bottle revived or reworked around 1940, the *homunculus* perhaps created out of a mercurial vase (*vas hermetis*, fig. 21). Le Corbusier's projection of this figure upward so that it subtends the horizon, escaping the earthly, merely material regions, would seem to represent a sublimated portrait reference to himself as the mercurial bird, or raven (*avis hermetis*).[22] It is important that the bird-child dominates the bull imagery in the period after 1957. The bird-child springing from the loins of a recumbent figure, which doubles for a landscape, as in the first image of the *Poème,* is the first plate in the suite of prints entitled *Cortège* done in 1960 at Chandigarh. Rather than replacing the primal bull child or minotaur, the beak-like physiognomy of the bird-child becomes its alchemical fulfillment or complement. Their integral relation had been assured from the first *Taureaux* paintings in which the rock or material attribute of the bull was always a beak-like nose, no matter how compact its material identity (fig. 23).

The Woman and the Strange Bird

The alchemical dualism of Le Corbusier's mythic image of himself as primal child, whether bull or bird, does not provide a pure dialectical balance between the opposed forces of sun and moon. Both the minotaur and mercurial raven are closer to the regressive, dark, female principle called the *nigredo* (an original seminal black state which is also called the raven's head or *caput corvis*).[23] After the *Taureaux* series of paintings, which continued to be worked out sporadically in a minor series of prints, Le Corbusier did a number of grand ensembles called the *Icone,* featuring the central moon goddess image of the Swiss mural, but in an aggrandized form (fig. 24).[24] Here the moon goddess or primal mother exists in monumental isolation, as in *Icone* 1-3, or placed in the tripartite context of the Swiss mural, with the flanking forms abbreviated or only suggested, as in the 1957 tapestry called *The Woman and the Strange Bird* (fig. 25).[25]



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The all-embracing symbolic purpose of the moon goddess had been established early in Le Corbusier's final period. In 1950, he did a drawing for a sculpture called *L'enfant est là*, (*The Infant Is Here*), a work which would lead to the last and most encompassing of his symbols, the Open Hand monument of Chandigarh (fig. 26). This critical image derived from a series of works of the thirties and forties representing the embracing primal couple (fig. 27). The female figure contained within her body an early, perhaps unconscious version of the bird-like child, but facing down. This important dualistic theme was the direct source for the Capricorn of the Swiss mural. In *L'enfant est là*, the original configuration is reversed and rotated ninety degrees, and the male figure virtually excluded. As a result, the beak-like profile of the primal child has been directed horizontally. It is, however, about to be forced vertically up to the sky through another ninety degree rotation by a thrust of the female hand under its head, so assertive that the fingers and the mouth fuse into a new unit, a sublimated acoustical act of giving and receiving.

It is the growing, systematic symbolism of the mother goddess image and her aspiring primal bird-child that allows the rock portrait to evolve into a more spiritualized form. This is celebrated in the last image of the *iconostase* at level G. Within a squarish circle, a hand is drawing a green cross, ostensibly an homage to the right angle, but this is too static and finite an interpretation. On a higher sublimated level, one recognizes that the squarish circle is broken at one point on the left, supplying along the circumference the mouth of the stone head motif. It is now, however, an empty dematerialized object. The cross shape represents the four elements and the red arrow below, pointing toward another version of the cross outside the empty silhouette, symbolizes the mathematical value of "greater than" the four elements, or, in this case, five, the quintessence. As in orthodox alchemy, the beginning is somewhat equivocally the end, an *opus circulatorum*. One begins with the philosopher's stone and ends with the philosopher's stone, but at a higher level of purification, and only after seven eternally repetitive stages of sublimation.

The change in identity which brought the stone head alchemically closer to the spiritual nature of the raven in its upward ascent (*ascensus*) is the result of Le Corbusier's continuous involvement with revising the seminal forms and relations of the Swiss mural. The basic ingredients of the Swiss mural are recapitulated in the 1957 tapestry cartoon *The Woman and the Strange Bird*, but in a composition that subtly gives almost exclusive prominence to the moon goddess, as in *Icone* 1-3. The Taurus head at the left is reduced to a tall narrow door motif fused with the total darkness of the left third of the composition. The rectilinear, geometric shape of the left is derived from the stone head which originally related to the Taurus head, but only as a part, its ear. The ear or part has now become the whole, replacing the Taurus head, allowing attribute to become essence. The relation of the door motif to the stone head is confirmed by the way the white circle representing the eye is accompanied by a long white shape for the mouth with Le Corbusier's signature.

In the same year as *The Woman and the Strange Bird* occurs the tapestry *Footsteps in the Night* (fig. 28). In this work, the Taurus head from the left side of the Swiss mural becomes dominant as a great polygonal version of the stone head in which the hatchet-faced image of Le Corbusier with its protruding eyes close to the edge of the profile is more literally evoked. In contrast to the black lunar version of the previous example, this head appears as an opening in the blackness of night. It is cleaved through the middle by what seems to be a horizon line, suggesting the sublimated separation of sky from earth and the onset of a solar rather than a dark lunar order. The gold above is solar light. The lower half is colored with white, green, blue, and red, the alchemical color of zone D, *fusion*. Even more than in section G of the *Poème*, the dualistic, binary nature of the philosopher's stone is clear, but with emphasis on the *lapis aethereus*, the ethereal stone.

The Iconography of Ronchamp and the Philips Pavilion: Architecture 1950–1957

The most complete utilization of the fully developed sym-

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24 Icone III, *painting, Le Corbusier, 1956.*
25 The Woman and the Strange Bird, *tapestry, Le Corbusier, 1957.*
26 L'Enfant est là, *drawing, Le Corbusier, 1950.*

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27 Alma Rio, *painting, Le Corbusier, 1949.*
28 Footsteps in the Night, *tapestry, Le Corbusier, 1957.*

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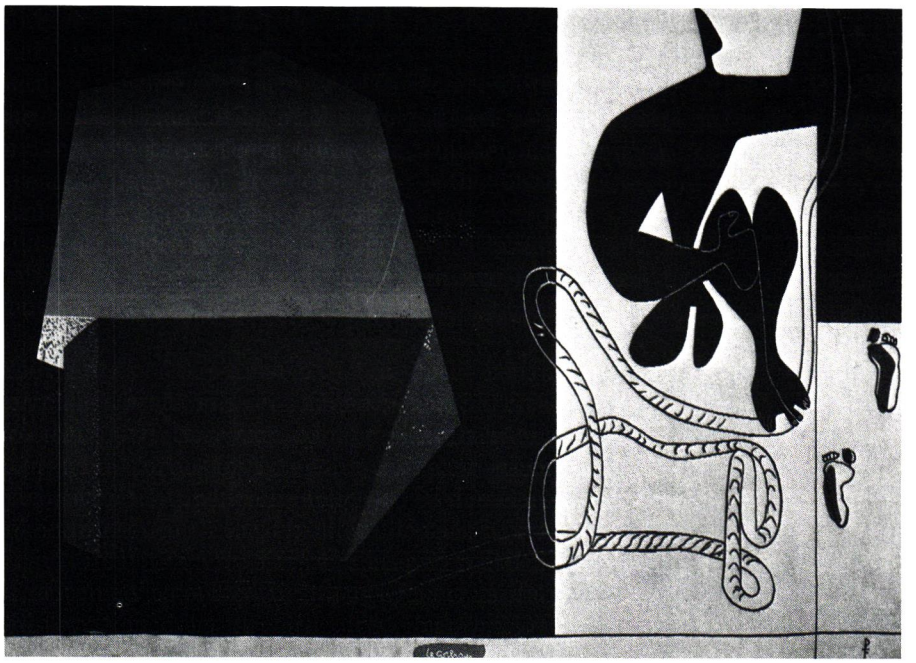

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bolism of the *Poème de l'angle droit* occurs with the creation of the pilgrimage church of Notre-Dame-du-Haut, Ronchamp, the first drawings for which appear in spring or May, 1950.

The symbolic morphology of the Ronchamp program is crystallized in the towers, which are not bell towers as might be expected, but monumental light wells. One may also consider them alchemically as sound sublimated into light, the reverse process of the *acoustique plastique* which turned the light phenomenon of perception into the more concrete one of sound.[26] Significantly, there are towers facing in three of the cardinal directions: east, west, and north (fig. 29). The fourth missing ear or *conque* motif is supplied by the south facade itself, the importance of which is emphasized not only by its being flared out as a receptive surface but also by its orientation toward the primal *niveau*, or horizontal, of the Mediterranean (as Le Corbusier says a *vue frontale au sud*) (fig. 30). The direction toward the south not only suggests the water level as the ultimate physical reference of equilibrium, but symbolizes a universal harmony in the sky above as a more metaphysical spiritual domain. Once again the program arises from the *Poème*:

The face turned toward the sky
considers the space ineffable
until now beyond grasp.

The southern facade engages the southern sky ruled by Capricorn, which, as we saw in the case of the Swiss mural, rules the winter quadrant of the zodiac as a dualist sign uniting reflectively the sky and earth. The Capricorn image in section C of the *Poème* is thus described:

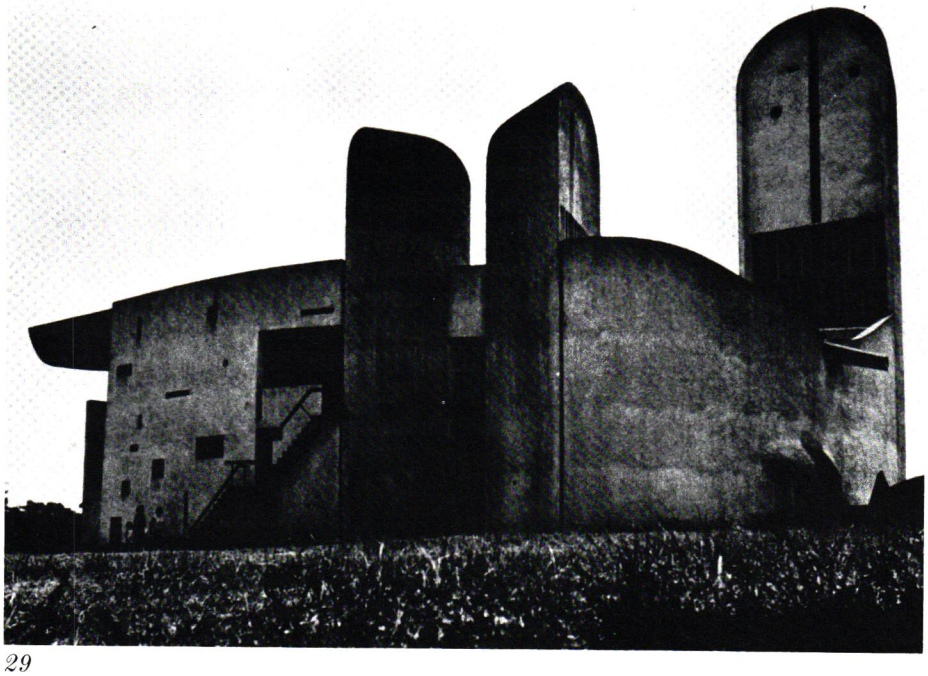
As all becomes strange
and transposes
transports itself high
and reflects on
the plan of happiness

A symbolically infused architectural form, the great prow-like thrust of the roof profile of the southern facade almost certainly represents Capricorn's single horn, the Cornucopia, a motif characteristic of Capricorn when portrayed as a unicorn (*licorne*), another prime alchemical symbol of the dualistic work of Mercury. The profile of the south roof is a virtual copy of the Cornucopia motif in the Swiss mural, where it runs under the hip of Capricorn.[27] It is, however, the connection of the Cornucopia with Le Corbusier's Taurus theme that is important. The prominence of the Cornucopia shape of the roof from this direction seems to evoke the famous set of Taurus horns of consecration that once prefaced the major southern approach to the Palace of Minos.

The consistency of Le Corbusier's symbolism is demonstrated further when one realizes that the open altar, to the right of the southern facade, is facing in the direction of the east zodiac sign of Aries. Aries rules the spring sector of the zodiac, but, as is consonant with Le Corbusier's search for primitive origins, this function originally belonged to the constellation of Taurus.[28]

The relation of the *Poème* to Ronchamp as its symbolic exegesis is revealed in looking again at the top center image of the *iconostase*, representing the Modulor Man, just above the alchemical circle (fig. 31).[29] The circle, upon closer inspection, is found to have two kinds of everted fragments. The fragments from the lower left and upper right are extracted from along the circumference of the circle. The fragments from the upper left to lower right are taken from along a diagonal cleavage across the diameter of the circle. The diagonal running from northeast to southeast breaks the white circumference line so that there are two gaps. In terms of a zodiacal reading, this introduces a discontinuity after winter in the south and summer in the north, uniting spring with summer and fall with winter. Further, the discrete symbolic geometry of the right angle scan of the southeastern quarter of the building is explicitly generated by the sheared-off profile of the roof along the eastern end of the northern side, which secretly reappears in the perpendicularly recessed roof profile above the south door, which in turn pivots on center through a right angle from right to left.

29 Chapel at Ronchamp, Vosges. Le Corbusier, 1950–1953. North side.
30 Chapel at Ronchamp, south side.
31 Modulor Man.



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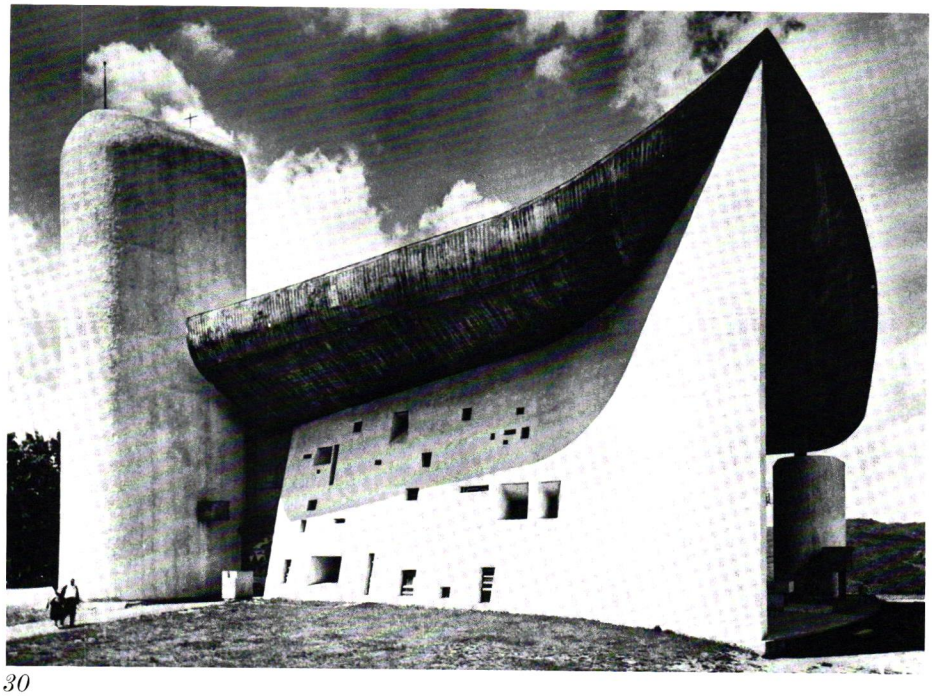

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32 Chapel at Ronchamp, north side.
33 Taureau, *print, Le Corbusier, 1963.*
34 Chapel at Ronchamp, west side.
35 Chapel at Ronchamp, southeast corner of roof profile.

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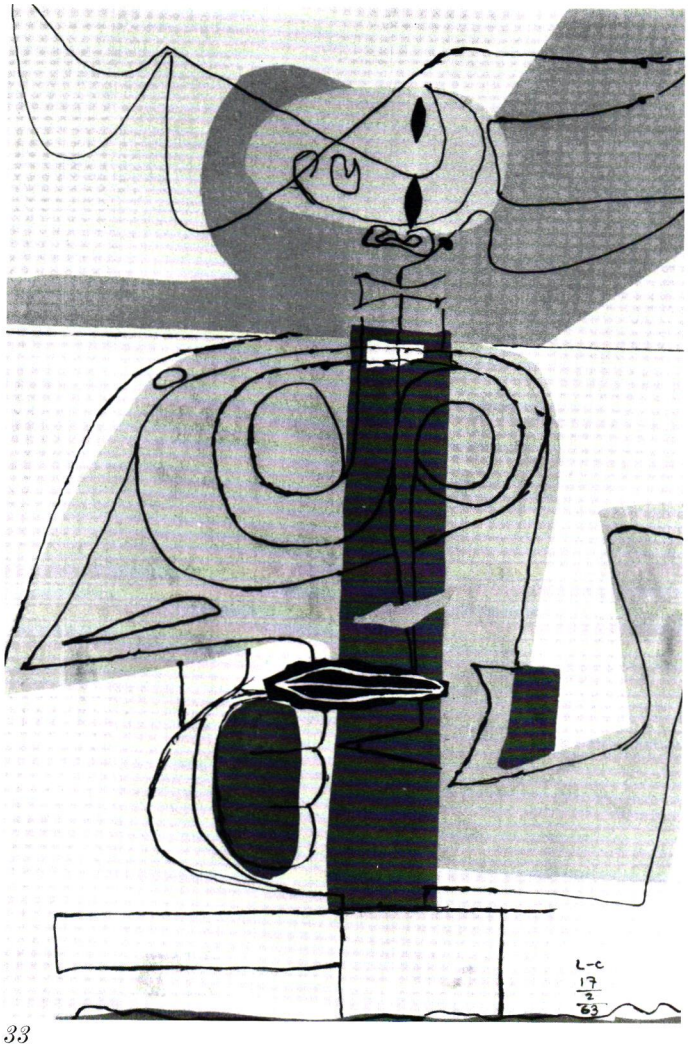
With this consistently developed pattern of meaning, one can translate the meaning of the great south "constellated" wall (*mur "constellé"*), peaking up at the southern corner like one of the artist's Purist book motifs, and now pulled back to reveal the new cosmic year by admitting a great shaft of golden light. This suggests that the sun's meridian is the philosopher's sword cleaving the philosopher's egg or stone, creating a new stage in the transubstantiation of matter. Le Corbusier suggests this himself when he observes that at certain times of the year the sun crosses the meridian with greater disruptive impact: "Depending on the angle at which the sun strikes the meridianal curve, the seasons collide abruptly or succeed one another with imperceptible transitions."

The alchemical transformation of the cold, dry, and unproductive qualities of winter into the warm, moist, and fructifying properties of spring is crystallized in the southeastern corner where the southern and eastern roofs meet at one point (fig. 35).[30] Le Corbusier describes this subtle relation as having taken as much compositional juggling as the whole design of the capital of Chandigarh. This juncture represents the way Cornucopia, which is actually a separate constellation from Capricorn, falls strategically in the heavens between the winter constellation of Capricorn and the spring Taurus constellation. The eastern open altar facade certainly represents spring since the right horn of the Taurus constellation shares just one star at its tip with the constellation of the Cornucopia (usually known as Auriga).[31]

The rest of the building seems to follow the same zodiac cosmology. The back or northern side is abruptly cut off, perhaps to de-emphasize the rear of the building so that the orientation to the south is more dominant (fig. 32). Equally plausible is the hypothesis that the northern side is an imitation of the northern, or summer, zodiac sign of Cancer the crab. This possibility is supported by Le Corbusier's statement that he took a crab shell as the inspiration for the roof.[32]

On the west the final meaning of Ronchamp's encompassing program is revealed as a self-portraiture. The west, whose symbol is Libra or fall and the architect's zodiacal sign, has the balance or *niveau* of the underground water cistern. The water spout projecting off the western side of the roof, which fills the sculptured reservoir of the cistern above ground, can be read in three distinct but interrelated ways, symbolizing the alchemical union of sun, moon, and the creation of the primal Mercurial child (fig. 34). The water spout with its middle diaphragm division, or septum, can be read simultaneously, first as the double cusps of the moon goddess in an upward gesture, then as the horns of the original solar bull, or the E-shaped ear motif of the upturned head of the primal infant, as this occurs in later print versions of the *Taureaux* (fig. 33). Significantly, there are three geometrical shapes in the cistern: two triangles, perhaps symbolizing the old and young reborn bull, and a larger cylindrical oval, symbolizing the female goddess. The small triangular or pyramidal volume in particular codifies the presence of the primal family by falling in between the two larger male and female shapes.[33]

That the symbolism of Ronchamp was not just the result of a particular church program is indicated by Le Corbusier's other major commissions of the time, such as the monastery of La Tourette and the Philips Pavilion erected at the 1958 World's Fair at Brussels. In symbolic concordance with alchemical doctrine, the semi-detached chapel on the north of La Tourette is designed according to the septenary pattern, differentiated into sets of four and a dominant three. This organizational mode is clearly revealed by the introduction of daylight into the chapel. On the southern side of the chapel, light is directed through seven diamond-shaped funnels arranged in a group of three and a group of four (fig. 37).[34] At the back of the chapel, additional light is admitted through rectangular windows, three on the north side and four on the south side. The most significant feature of this scheme is the way light is admitted into the side chapel protruding on the north (fig. 38). Three obliquely banked, round funnels draw in a diffused northern light through openings which are colored red, dark blue, and white. These colors are close to the red, black, and white of the female triad in antiquity.[35]



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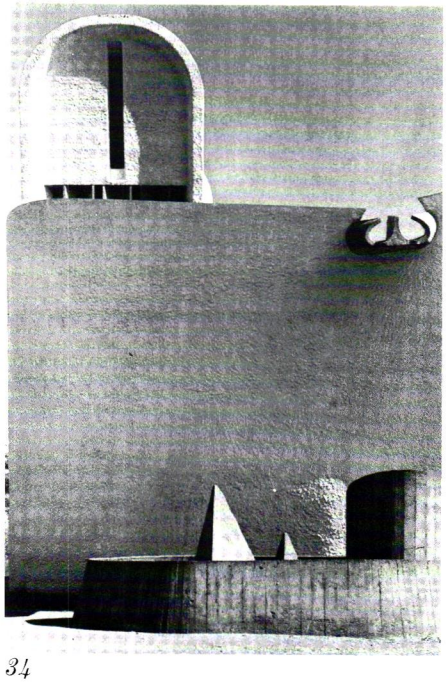

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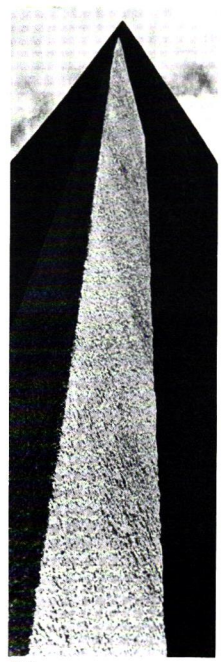

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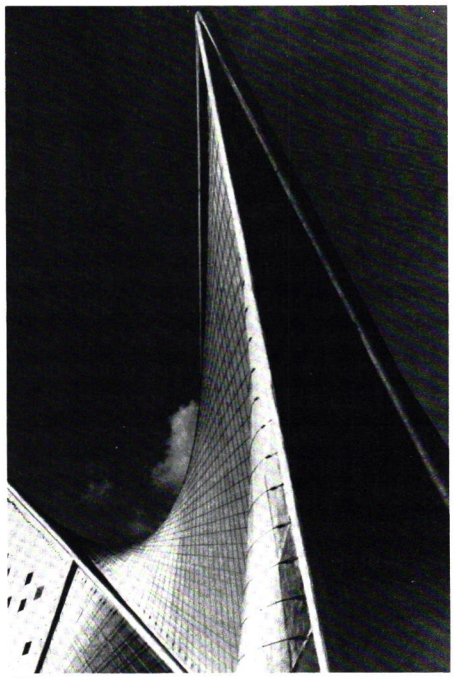
The Philips Pavilion on the other hand is a triple-masted hyperbolic paraboloid structure derived from the profile of the mother goddess as in *Taureau* I (figs. 36, 23). The plan was referred to as a raven's stomach. Inside, a light and sound show, consisting of astrological signs, was projected on the dark ceiling structure.[36] The program, documented in Le Corbusier's book on the structure, commences with the sacrifice of the bull and moves toward the triumph of the bird-hand motif. Significantly, this program, which employs all the signs and images of the *Poème*, was divided into seven states of meaning.

Chandigarh and the Open Hand

The government sector of Chandigarh is the most circumspect testament of the symbolic mode in Le Corbusier's art and architecture. In spite of the scale and complexity of this project, and the fact that it was still incomplete at Le Corbusier's death—fifteen years after the original commission—the coherence of its symbolism was clear from the outset. The program was crystalized in his first Chandigarh drawing of March 1951 representing a native woman carrying in a back pack a child gesturing up to the full immensity of the sky (fig. 39). The meaning of this gesture is revealed by the shape and disposition of the major structures of the government sector, which in their turn elicit the full and potential meaning of the Swiss mural. More precisely they translate the Swiss mural according to zone C of the *Poème*, but as a five, rather than a three part order.

The key to the Chandigarh order is the Assembly building, finalized around 1956. Prefaced by a great portico, it was composed of seven bays enclosing eight monumental piers that, seen from the city, are great bulls' heads (fig. 40). This theme is confirmed by the great enamel doorway which, like the Ronchamp door, sweeps out a right angle as it pivots on center (fig. 43). On the inside mural one finds the archetypal story of the sacrificial bull worked out in the dark context of the female triad.[37] In the lower left hand corner there are three, geometrically expanded, Modulor arcs running parallel to a bull's head whose eye is over a labyrinth-type spiral, duplicating the closing image in the *Poème*, but not on the solar red. The red



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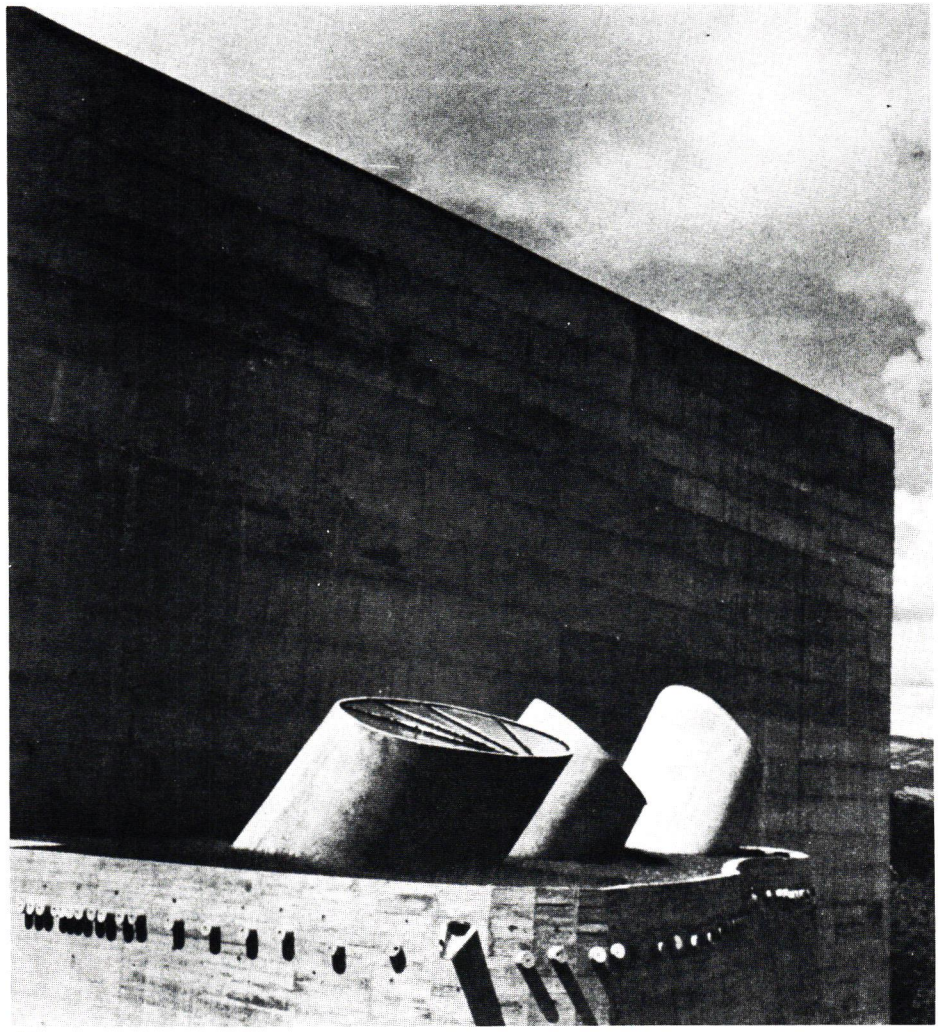

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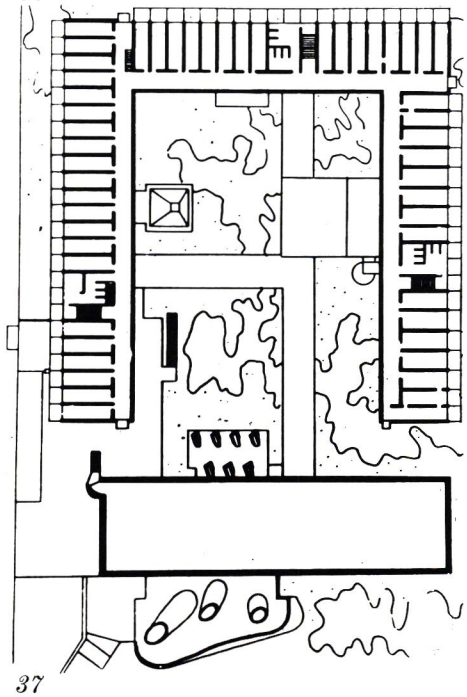

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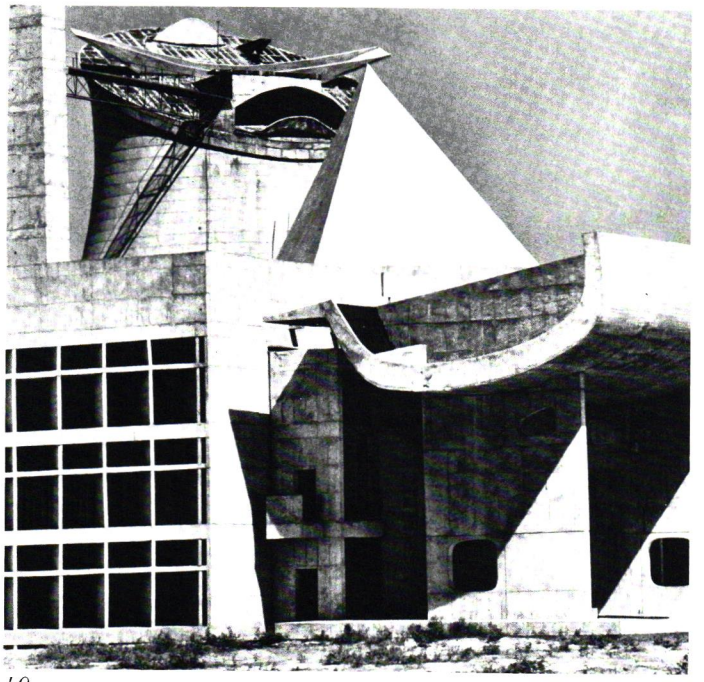
appears as a dominant factor on the outside door celebrating the emergence of the male solar cult (fig. 42). The high and low arcs of the summer and winter sun are caught in the brilliant, red solar background of the upper half. The underlying relation of the sun to the older moon cult is demonstrated in the organization of the lower half of the enamel mural, below the dark sky and horizon in the middle. The middle of the bottom half has a focus of a red sphere within two concentric bands, the innermost solar gold and the outermost dark blue. This creates a triadic order that is bisected by a tree vertically cleaved into black and white halves, perhaps the alchemical tree associated with Mercury and the alchemical enterprise, and toward which faces, to the right, the raven with Le Corbusier's signature.[38]

The symbolic complement of the Assembly building is the Secretariat, which takes in, according to Le Corbusier, the extreme left part of the capitol as a precinct. This forces the viewer to look up at the sky rather than toward the horizon, as was usually the case in Le Corbusier's roof-top architecture up to the Marseilles Unité. Significantly, the Secretariat is transubstantiated by artificial mounds which, when one approaches from the city, cut off its physical relation to the ground. In the early studies, this building had a set of horns facing the city. These were extensively complemented inside by an identical motif over the visitors' doors. The relation of the Secretariat and the Assembly is implied by two other considerations. First, the Assembly portico facing the city is only the right half of the bull's head, suggesting the Secretariat's identification with the young bull in zone C of the *Poème*.[39] Secondly, the theme of the young bull is found in the alignment of the end of the Assembly portico with the truncated assembly tower and the pyramid in between, roughly duplicating, but at monumental scale, the primal configuration of the Ronchamp cistern.[40] One can only surmise that the strange sun-breaker design in front of the entrance hall of the Secretariat is the half-formed crescent or upward-turned mouth of the primal infant (fig. 41).

Complementing the old and new bull or primal infant



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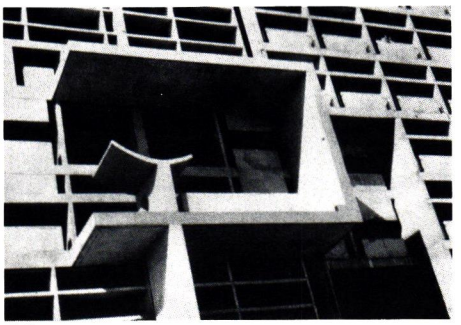
36 Philips Pavilion, Brussels. Le Corbusier, 1958. Roof profile.
37 Monastery of La Tourette, near Lyon. Le Corbusier, 1953–1959. Plan.
38 La Tourette, light funnels over north side of altar.
39 Drawing of the site at Chandigarh with a figure. Le Corbusier, March 1951.
40 Assembly Building, Chandigarh. Le Corbusier, 1953–1956. End view of portico.



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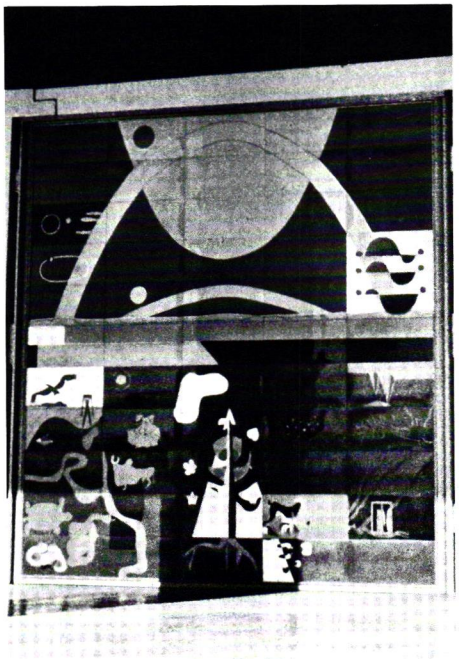

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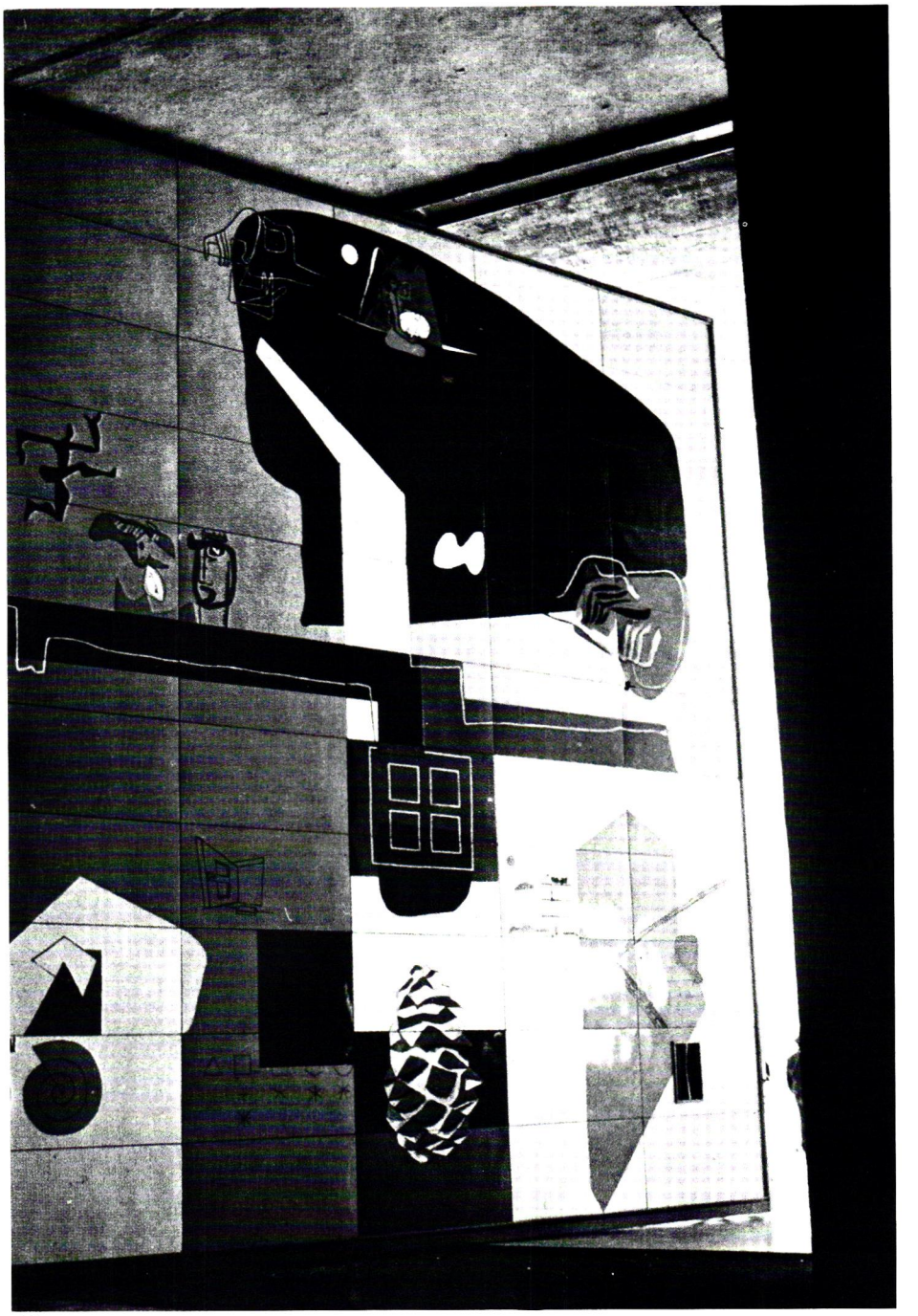

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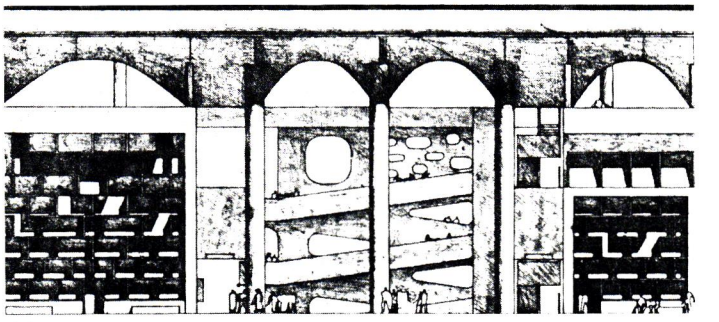

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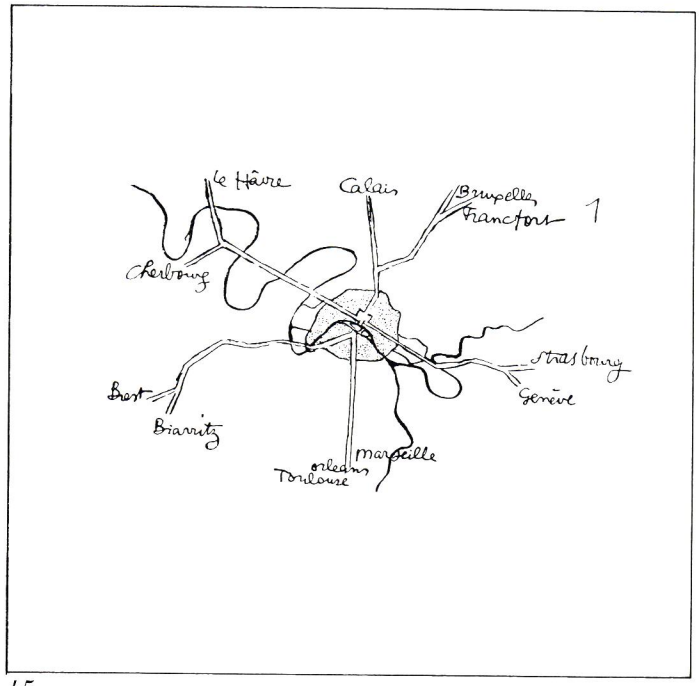
41 Secretariat Building, Chandigarh. Le Corbusier, 1953. Sun breaker at the center of the facade.
42 Assembly Building. Decorative enamel doorway (outside), 1962.
43 Assembly Building. Decorative enamel doorway (inside), 1962.
44 High Court Building, Chandigarh. Le Corbusier, 1952.
45, 46 Plans of Paris, with five old routes. Le Corbusier, 1937.
47 The Open Hand Monument, Chandigarh. Le Corbusier, 1952–1954. Project drawing.
48 Firminy-Vert Youth Center, France. Le Corbusier, 1962–1965. Wall relief.



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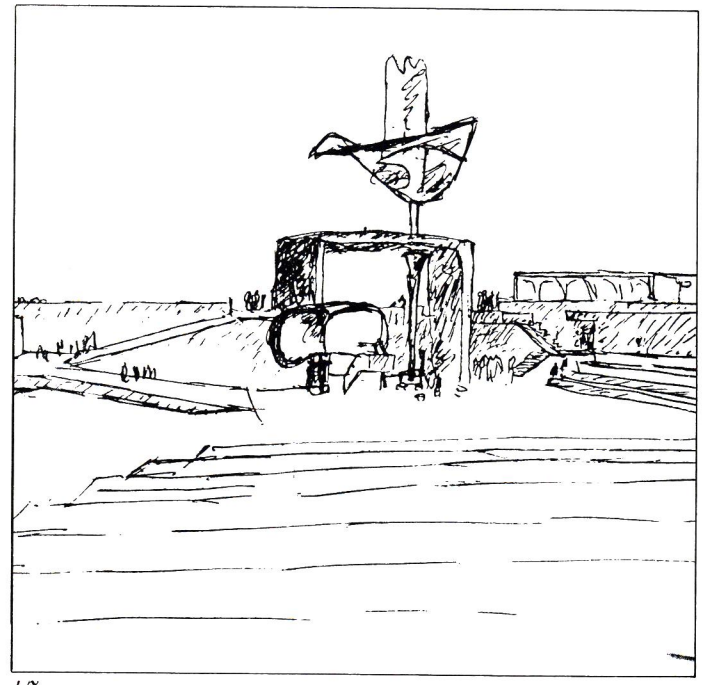

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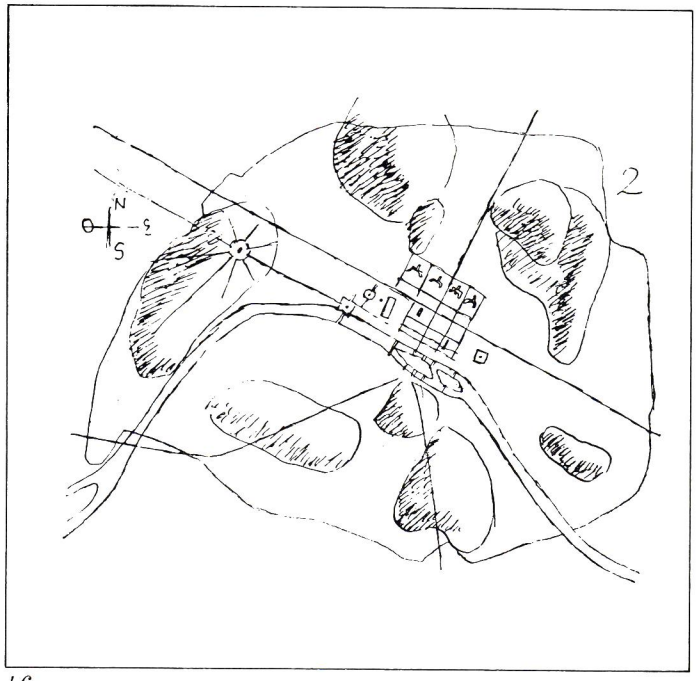

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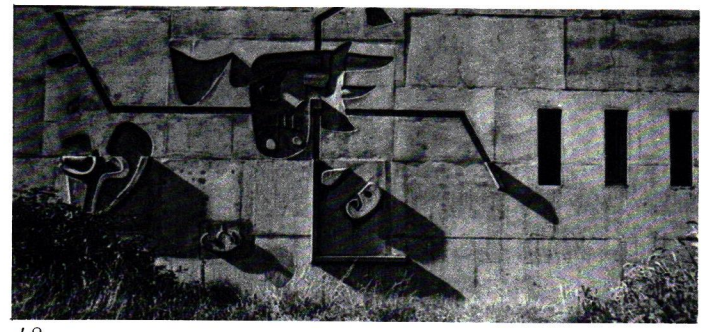


48

theme at the left is the Museum of Human Knowledge, which as the center of the Capitol is endowed with an esplanade of cosmic symbols.[41] On the top of the museum is a horizontally poised crescent which would seem to represent the central moon goddess image of the Swiss mural, but without the assertive female element of the three prongs. This rooftop structure was intended to be used for cosmic or lunar festivals.

To the extreme right is the High Court with its triadic set of great portico columns. The female symbolism of this building is concealed from the city approach by the blind console ends of the building (in contrast to the Assembly building, fig. 44).[42] The open barrel vault between the three column-piers can be compared to the downward plunge of Capricorn toward the primal child, as in the fifth zone of the *iconostase*. This cyclical alchemical symbolism is reinforced by the appearance behind the entrance piers of the rampway with openings in the form of the stone head and raven's head, but in inverted order with respect to the same forms that supplied the eye and mouth of the Assembly portico.

The key to the entire five-part arrangement of the Capitol is the Open Hand monument, originally intended for the space between the female structures of the Museum and the High Court (fig. 47). This is placed in the same position as the hand in the Swiss mural. The Open Hand is a composite symbol which not only makes a vertical gesture to the sky but also simulates the horizontal thrust of the flying dove-like bird traditionally associated with the moon. This spiritual intent seems to be confirmed by the opening in the undercroft supporting the Open Hand; an ensemble which resembles in the last two levels, the F and G, of the *iconostase*. This form would have directly engaged the visitor's attention on arrival from the city.[43]

Reconciling the bull with the bird, the Open Hand and indeed the entire Capitol relates ultimately to two sculptures which Le Corbusier did in Venice in the year before he died. These were called *Bucrania*, or bulls' heads, but they were also birds' heads.[44] Finally achieving his status as a mythic bird (first envisioned in 1908), Le Corbusier could now proceed in a manner for which he had criticized the Beaux-Arts architects in the twenties—that is to say, he could indulge in planning from the air. For now he had found a way of superimposing a symbolic aspect from the air. We see this at once in the late works such as the Carpenter Center at Harvard or the Venice Hospital which were both derived from rotating the zodiacal pattern that he formulated in his wall mural for the Firminy-Vert Youth Center (fig. 48).[45] Such shifts in meaning were appropriate to an architect whose Libra sign approached the constellation of *corbeau*, the raven and whose Latin spelling came close to his abbreviated name, "Corbu." Le Corbusier felt that his work would be finished when he would find himself in the celestial spheres amid God's stars.

1. The material for this article derives from a comprehensive exhibition of the graphic works of Le Corbusier held at Georgia State University in Atlanta, January 1977, "Le Corbusier: Images and Symbols of the Late Period, 1947–1965." The catalogue for this exhibition was entitled *Le Corbusier: Myth and Meta-Architecture*. The author was aided in this enterprise by his students, graduate and undergraduate. In particular, Mrs. Nancy Stephenson contributed greatly to the factual content of the material and is at present preparing an exhaustive annotated guide to the imagery and themes of the *Poème de l'angle droit*. The translations of the *Poème* are literal and follow the original non-punctuated structure.

2. Le Corbusier, "Unité," *L'Architecture d'aujourd'hui* (special issue), April, 1948, p. 11, "Truly the key to my artistic creation is my pictorial work begun in 1918 and pursued regularly each day. The foundation of my research and intellectual production has its secret in the uninterrupted practice of my painting. It is there that one must find the source of my spiritual freedom, my disinterestedness, my independence, and the faithfulness and integrity of my work."

3. The study of alchemy had been revived as a vital area of scholarship in the thirties and by the mid-forties had reached its highest level of accomplishment with the writings of Carl Jung and his Zurich circle of friends and associates. The masterpiece of this trend, Jung's *Psychology and Alchemy*, appeared in 1944. This work was followed by Jung's *Alchemical Studies* and the *Mysterium Conjunctionis*, both of which dealt with the fundamental dualistic process of alchemy symbolized by Mercury or Hermes. By 1947–48, at the critical juncture of Le Corbusier's career, this material appeared in studies of mythology dealing with the transformation theme of the mother goddess and the birth of the primordial child. Jung's alchemical literature influenced such important books of the time as Robert Graves's *The White Goddess*, Paul Senard's *Le Zodiaque*, and the French edition of Harding's *Women's Mysteries*, all of which appeared in 1948. Generally it is extremely significant that alchemical themes pervaded the *Esprit Nouveau* journal edited by Le Corbusier and dedicated supposedly to technological issues.

4. In 1946 (second ed., 1953) appeared René Guénon's *La Grande Triade* dealing with occult meaning of Mercury as the *mediateur* between opposites.

5. Jung, *Psychology and Alchemy*, p. 293. Time and again the alchemists reiterate that the opus (or alchemical work) proceeds from the one and leads back to the one, that it is a sort of circle like a dragon biting its own tail. For this reason the opus was often called *circulare* (circular) or else the *rota* (wheel). Mercurius stands at the beginning and end of the work. He is *prima materia*, the *caput corvi*, the *nigredo*: as dragon he devours himself and as dragon he dies, to rise again as the *lapis*.

6. Le Corbusier's choice of the term *iconostase* to refer to the *Poème*'s table of contents reveals his intent that it be read as a quasireligious document. In Russian orthodox churches the *iconostase*, or screen of icons, separates the altar from the nave. It serves to veil those elements of the eucharist ritual which only the priests, or initiates, can witness, and to reveal the liturgical promise of salvation in a visual form as accessible to the congregation.—Nancy Stephenson

7. It is in level D, colored red, the alchemical symbol of fusion, that Le Corbusier explicitly mentions the alchemists. Zone D mediates the relation between the top four and bottom three zones. Three and four are the most important numerical constituents of the alchemical seven, especially when associated with the mythological themes of the zodiac. This numerological symbolism already operated with the Marseilles Unité, designed for the seven ages of man and for a traffic system of seven routes. Nor should it be deemed accidental that the *Poème* took seven years' writing.

8. In the last pages of *The Modulor*, completed in the fall of 1948, Le Corbusier discusses an almost metaphysical level of architectural design, using the compass and the set square or right angle. Respectively, these two forms are basic attributes to Mercury who, as a *triunus* figure, reconciles the contrary forces of darkness and light, moon and sun. The compass is the circle of the alchemical opus and the set square is the ninety degree rotation within the circle, or *vas hermetis* (of one element into another): "Let all be one in one circle of vessel." It is hardly coincidental that one of Le Corbusier's last major problems in working with the anthropomorphic values of the Modulor was the rotation of the right angle through the double square. This problem is covered in depth in *Modulor II* published in 1955.

9. Besides the caduceus, Mercury was symbolized by the Cornucopia and the stones which were removed from the traveler's road. Mercury or Hermes was also the *psychopompos*, who escorted the dead to the underworld, or in special cases such as that of Persephone retrieved them back. New scholarly material on Mercury, which supported the revival of alchemy, began to appear from 1945–1950. In 1945, A. J. Festugière published the first of his four volume *La révélation d'Hermès Trimégiste*.

10. The water imagery of zone A, *milieu*, is indeed the *aqua mercurialis* because it demonstrates the circular process, *opus circulatorum*, in which base matter is spiritualized and spirit is materialized in a continuous exchange of *ascensus* and *descensus*. In this symbolic system, it is significant that the Modulor Man, already established as a surrogate for Mercury, is found in the middle of Zone A of the *iconostase*, above and to the right of a quartered circle. To his left in the *iconostase* are two women, one blue and one red, flying horizontally in the sky as water clouds. In his analysis of the A–G septenary Jung states that the central point A, the origin or goal, is the "ocean or great sea."

11. The Algiers project was symbolized already in the early thirties by Le Corbusier's first representations of Capricorn. This was appropriate to a project located in the far south. The Algiers project was the anchor to a series of projects on a meridian arc stretching from the north to the south. It was the fifth or quintessential project, across the ocean from the European mainland, perhaps a reference to Capricorn's occult symbol, the pentagram or five-pointed star.

12. Jung, *Psychology and Alchemy*, p. 234. "And by whatever names the philosophers have called their stone they always mean and refer to this one substance, i.e., to the water from which everything originates and in which everything is contained, which rules everything, in which errors are made and in which the error itself is corrected. I call it 'philosopical water', not

ordinary water but *aqua mercurialis*."

13. This Swiss mural, divided vertically into seven sections, should be contrasted initially with the large mural done on the end wall of his Rue de Sèvres studio, representing a monumental woman looking up, arms behind her head, next to a large open shell. Compared to the Sèvres mural, the Swiss mural is less reminiscent of the acoustical dynamic geometry of the thirties, which morphologically identified the involuted reproductive system of the female figure with the water balance mechanism of the inner ear, in particular the seashell-like cochlea. The comparison of these two murals is unavoidable because the middle square of the third zone C, *chair* (flesh), illustrates the Rue de Sèvres mural, but in a five-part sequence bracketed at each end by the images of the Swiss mural. This relation is intensified by the fact that the single square of the fourth zone D directly underneath the Rue de Sèvres figure is another version of the image from the right of the Swiss mural, but is shown flying vertically down, where it intercepts the original central image of the Swiss mural on the central fifth zone.

14. This autobiographical relation is substantiated by Le Corbusier's mention of his dog *Penceau* (pencil, pen) who went mad and had to be killed, or slaughtered like a sacrificial animal, perhaps, for example, like a bull, the next theme in the *Poème*.

15. This configuration originated during Le Corbusier's exile from Paris in 1940 when he stayed in the Pyrenees village of Ozon.

16. In conjunction with the symbol Capricorn, the zodiacal sign of winter, the bull is the life of the spring equinox, not according to the standard sign of Aries the Ram, but according to the ancient historical tradition at the time the zodiac was formed. Le Corbusier was well aware of this tradition from his early reading of an 1880 edition of C. Flammarion's *Astronomie populaire*, found in his own library, p. 51: "At the beginning of our era, the equinox arrived at the first stars of Taurus, the sign of the equinox for forty-three hundred years before our era. It is probably during that epoch that the first contemplaters of the heavens formed the zodiac because in ancient myths the Taurus is associated with the sun's fecundation of the seasons and the products of the earth." In the thirties Le Corbusier observed in regard to color symbolism that red is the color of the Taurus that sleeps in us and blue the sense of eternal calm (brought to my attention by Nancy Stephenson).

17. The three-part nature of the moon goddess was an important issue in C. G. Jung's and C. Kerenyi's *Einführung in des Wesen der Mythologie*, first published in 1941 in Amsterdam, Leipzig, and Zurich: "Hence the third of the year cannot be explained as a mere allegory of the agricultural process. The threefold division is inextricably bound up with the primitive form of the goddess Demeter, who was also Hecate, and Hecate could claim to be mistress of the three realms." In this context, it is likely that the Swiss mural is symbolic of the cognate regeneration themes of the mysteries of Eleusis occurring over three days. The moon goddess would be Demeter, and Capricorn the Core, or Persephone her daughter, who spends one third of the year, the winter months, with Hades, until brought back in Spring by Hermes. The hermetic process of alchemy was usually thought to be successfully undertaken and completed in March and April.

18. Le Corbusier's first explicit reference to the Pasiphaë legend is in a painting started in 1928, and reworked from 1939–1940, with what seems to be a white bull's head on the right half and a classical female head on the left. This image is the source of page 128 in the *Poème* and plate 20 of the *Unité* suite, which begins with a woman hugging a bull. In 1961 Le Corbusier did a print called *La Femme Rose*, in which the name of Pasiphaë appears with that of Ariadne her daughter, who helped Theseus destroy the Minotaur; so mother and daughter account in a circular way for birth and death.

19. The interlocking of the young and mature bulls' heads to form a single composite symbol can perhaps be correlated with Le Corbusier's relief mural incised into the concrete elevator shaft of the Nantes-Rézé Unité of the early fifties. In emblematic profile are shown the two balconies of his standard apartment dwelling, with one L-shaped balcony cantilevered out over the other. The lower and more recessed balcony profile supports a Modulor Man. It is likely that this profile represents the right horns of the small and large bulls' heads. This is confirmed by the fact that the chest markings of the Modulor Man have a continuous line under the pectoral muscles in the form of a horn motif. The nipples are the eye and the linked stomach muscles the nose and mouth, a formation which roughly coincides with the minotaur head already discussed in Man Ray's photo.

The central image of the *iconostase* at zone B supports this analysis. It has a similar configuration of balconies. Only the top one has an upturned right-angle bent horn motif. Many cross references suggest that this image, which reduces a whole *unité* structure to three floors, is a symbol of the primal bull family. The three floors are solar red, relating to the *iconostase* image to the right, which shows the high and low, new and old sun of summer and winter respectively. In the central panel, the *unité* structure is topped with the blue three-prong gesture of the mother goddess, which also serves as a bull's horn. At the bottom, the vertical shaft of the *unité* is anchored in a horizontal ground line, which splits a recumbent female figure whose solar plexus is marked by a diminutive Modulor Man. Another Modulor Man appears on the middle floor and seems to mark the right eye of the bull's head. Literally and symbolically, this is a convincing attribute since the "bull's eye" term comes from the right eye of the Taurus constellation, in which the star Aldebaran was the center of the original zodiac. This interpretation suggests that the left image of zone B with the Modulor Man is also a bull's head, the shell motif being the left eye and the Modulor Man the right eye, as in the central image. Even this head is composite since the red and blue suggest Mercury, whose sign was a bull's head composed of a crescent facing, acting as the horns of a round solar disk head, which rests on the cross symbolizing the four earthly elements. The relation of the Taurus to the male-female symbolism of Mercury can also be explained by the fact that Hermes's mother Maia was one of the seven sister stars called the Pleiades, for which the Taurus constellation was famous.

20. This lunar symbolism is suggested by Le Corbusier's insistence that the Marseilles Unité was started and finished in the fourteen days of October 1947 and 1953 respectively, during his own equinoctial month of birth. This dating may be taken as an

alchemical reference to the twenty-eight day moon cycle, but composed of only waxing days. Nor should it be overlooked that his most important symbol of the early forties, the design for the Ascoral association, was based on the fourteen day pattern of the waxing and waning of the moon. In the late fifties, he rotated this pattern from a horizontal to vertical position so that the realm of the architect fell into the darker blue side and the engineer into the red side. This vertical version allowed the two crescent moons to form the eyes, one open and one closed, of a double or split face.

21. This line version, simpler to read, appeared as the first image in the last section of the *Poème*. It is significant that both graphic versions come closest to *Taureau* no. 4, done in 1953, the same year the *Poème* was being finished and the *Unité* suite completed. It was *Taureau* no. 4 that Le Corbusier used in his 1960 book *Creation is a Patient Search* to demonstrate the evolution from the Purist picture.

22. The subtle relation of the earthly bull to the aspiring bird-infant is clearly developed in the *Unité* suite and in the alchemical context of constant cyclical reversals. No. 18, third from the end, called *Les Oiseaux*, the birds, shows the upturned head of the primal infant with the heads of the other two aviary parents reassuringly behind. No. 19 shows three bulls' heads stacked one above the other and colored with five different colors. The last print of the *Unité* suite, no. 20, repeats in circular fashion the same bull-woman theme as no. 1, but presumably at a higher level of sublimated development; it portrays a composite double face composed of the bull's and woman's head, both springing from a pine cone. The pine cone was associated by Le Corbusier early on with the temple of Delphi, originally presided over by the earth or moon goddess. As such, the pine cone symbolizes an involuted female principle, the *omphalos*, or world navel.

23. It is of utmost importance that the late suites of Le Corbusier prints published after the *Poème* and *Unité* were done on black grounds, symbolic of the *nigredo*. This alchemical meaning is confirmed by Le Corbusier's last great suite of prints called *Panurge*, 1962, with five plates repeating in summary the themes of the fifties. Le Corbusier referred to this work as a "*livre de la quinte essence*" based upon the symbolic number three, signifying three continents joined by the ocean, and the tripartite human relation of mind, body, and soul. The first of the five prints was called *Glasses of the Quintessence*.

24. The dominance of the primal mother is discussed repeatedly in Schuré's *Les grands initiés* (in Le Corbusier's library) and in the context of rock and oak (there are many oak leaves in the *Poème*). "Until that time [the time of Rama or Aries], man had considered woman as a wretched slave, whom he overburdened, or as the turbulent priestess of the oak and rock, from whom he sought protection and who ruled him in spite of himself . . . It was the holy night, the Night-Mother, when people await the rebirth of the sun and the year."

25. The *Icone* were complemented by a variety of other pictures and prints of the time called *Naissance d'un taureau* (*Birth of a Bull*), where a small bull's head issues forth from the fructifying lap of the moon goddess, portrayed as a triple-masted tent-like form enveloped in primal darkness.

26. As acoustical principles of form which were consummated and transcended in *The Modulor*, and which are the dominant theme of his sculpture, it is probable that these forms are adaptations of a radar-like mechanical device, even though such a metaphor belongs more to the earlier periods. Indeed, in his 1935 book *Aircraft*, a photograph of a three-lobed, primitive radar device is referred to as acoustical conch shells (again forms drawing on the primal water symbolism of the ocean). "Like the ear of a dog or of a horse the three sounding conches turn their tympana to the various quarters of the horizon . . . the marvelous mechanical devices of human beings are only a reflection of the mechanisms of nature."

27. The preeminence of this symbolic form as a celestial sign is accentuated by the way the approach view of Ronchamp is truncated from the south by an artificial hill or mountain (one of Le Corbusier's *montagnes artificielles*, originally *collines artificielles*), a device which Le Corbusier used in his late period to accentuate the upper profile of his buildings, made them symbolic rather than physical structures, and giving, after thirty years, full expression to the *mécanique spirituelle* which took his architecture beyond science or mechanics. Its greatest use was at Chandigarh.

28. The transition from the zodiac ruled by Taurus to that ruled by Aries was, like the transition from the moon to sun cult, another topic readily accessible in *Les grands initiés* by Schuré: "'War on the Ram', shouted Thor's supporters, 'War on the Bull', shouted Ram's friends. A fearful war was imminent."

29. The importance of the alchemical *jeu* or *opus circulatorum* was stated in Le Corbusier's 1957 book on Ronchamp: "Counterpoint and fugue-music—grand music—undertake to look at the images upside down, or turn them a quarter angle. You will discover the game."

30. This alchemical program can be found in the "technological" journals that he edited and contributed to in the twenties—for example, *L'Esprit Nouveau*, in an article by Allendy and Leforgue on "La Pensée Primitive": "If the circle is the Absolute. . . . The cross represents the division of the circle, the phases of the cycle in perpetual revolution, the seasons, the cardinal points of the compass, the climates, the hot, the cold, the humid, and the dry, that is, the elements and by consequence nature with its periodic cycle of vicissitudes. For thousands of years, the human spirit has worked upon such symbolic correspondences without exhausting their richness, producing such philosophical systems as Hermeticism."

31. This suggests that the window on the east or open altar side holding the statue of the Madonna represents the bull's eye or central star of the Taurus constellation, which once began the ancient zodiacal year (a topic popularized at the middle of century by the books of Ceril Fagen). In this context, the truncated, empty shell on the northeast corner is the missing bell tower, announcing the change from the three- to four-part, or solar, year (in one tradition the Minotaur was killed between the third and fourth attempts to sacrifice to him the seven girls and seven boys of the old lunar order). When seen from the seven-stage pyramid that Le Corbusier installed to the northeast of Ronchamp, this incomplete but maturing tower seems to provide by visual coincidence the base of the southern tower, which also faces north toward Cancer ruled by the moon. As a residual

water sign, the truncated tower reads in plan as a meandering line, also known in geology as an ox bow. This relates to the fact that Taurus is ruled by Venus, as is Libra on the west with the water cistern. Significantly, the first drawings for the truncated bell tower on the northeast corner show a form locked in the coils of a great snake form, recalling the altar of Delphi once ruled by the snake priestess before being taken over by Apollo and his hyperborean inhabitants of the north.

32. Actually the crab shell leads one to suspect that there is a deeper, more encompassing alchemical model for Ronchamp, based not on a crab but on a turtle shell. Ronchamp may be related to the musical instrument that Hermes made out of a turtle shell with cow and sheep gut strings and gave to Apollo, the apostle of the sun cult who took over the temple of Delphi from the mother goddess priestess, who sat on a tripod. This connection entices one to relate the seven strings of Hermes's instrument to the seven beams which support the roof of Ronchamp.

33. This primal imagery is carried out more visibly on the enamel murals of the southern door, especially the outside mural facing toward the winter sky of Capricorn. On the outside mural, the fundamental interaction of the sun and moon is expressed by a red and blue hand. The blue (lunar) hand on the right is lower, and seems to be subordinated to the power of the red (solar) hand higher on the left. Nevertheless, the actual relation is one of reciprocity or the subtle domination of the moon. This dominance of the female is evident in the pentagram just above the blue hand. Not only is the whole composition of the doors, inside and out, as well as the plan of the building based upon the pentagram, but the pentagram was traditionally associated with Capricorn. It is this pattern of meaning that gives scope to Le Corbusier's words: "Sun, moon, the convex pentagram, the starry pentagram, clouds, sea-meanders, windows, and two hands." One can suppose that the convex or indented pentagram on the left symbolizes the masculine sun and the concave or starry pentagram, the female moon. Significantly, the convex pentagram is less explicitly developed.

34. It is likely that the asymmetrical elongation of these light funnels should be related to birds' heads, specifically, ravens' heads, the first stage of alchemical process. This suggests that the markings on the three light wells on the other side are ravens' feet or claws.

35. The total program is revealed by the projection of the pyramid of the novitiates' chapel out of the cavern of the cloister, which is broken into four parts by a zodiacal crosswalk. The chapel, in the critical southeast corner, is the young Taurus. With La Tourette, Le Corbusier rejected the horizontal for the vertical view of space.

36. The program of the Pavilion was divided into a circle of four hundred eighty degrees, instead of the normal three hundred sixty. Both patterns are related, however, as multiples of one hundred twenty degrees, producing an alchemical four to three relation.

37. In the upper left-hand quadrant of the inside mural, the she-goat and bull's head appear conjunctively, in close symbolic alliance with the winged image of the flying, horned moon goddess. Even more clearly than before, and in an expanded mythological context, the moon goddess in her relation with Capricorn binds fall and winter together in a primitive triadic year. The biographical content of this symbolism is expressed in the way Capricorn—the sign of winter and in alchemical literature an anatomical sign of the human knees—points to the knees of the jumping man. In this tightly organized context, the jumping man would seem to be an image of the architect, a Libra, the zodiacal sign of balance (in French *la Balance*) associated with the lower torso as the center of gravity and representing the equinoctial balance of fall.

38. It seems likely that the red circle is another manifestation of the bull's eye motif. This becomes a particularly convincing reaffirmation of Le Corbusier's involvement with symbolism when one observes the three sets of horn-like branches coming out of the tree, each terminating with a symbol, and, including the top of the tree, summing to the mystical number seven. Appropriately, the tree symbolically marks the physical axis on which the door rotates.

39. This relates to only the outside or flanking piers. In all, there are eight piers forming seven spaces, with the door falling in between the first four and last three when seen from in front. The piers can be read in sets of three or four, depending upon whether the Taurus eye motif at the top of each pier is located toward the front or back. The central pair has the eye motif outside; the two flanking pairs have it toward the back; a fourth pair, with eyes on the outside, resembles a great rise bringing together the two end piers, indicating the change from a three- to four-part solar order. Significantly, the end piers face to the left like the waxing crescent moon.

40. This composite arrangement approximates very closely the Hermetic chalice.

41. Originally, the Museum of Human Knowledge was a larger structure called the Governors' Palace, a program scrapped because it was politically and economically unfeasible. That the Museum of Human Knowledge may have a female character is suggested by a passage, already cited, from the *Poème* that relates the dark side of life to woman and the museums of the past.

42. The triadic symbolism is apparent in the arrangement of the niches along the end walls of the High Court.

43. As a symbol of Le Corbusier's own hand, this image can be traced back to the beginning of the second period around 1928–1930 when he did the drawing for *Hand and Flint*, which forms the preface to the 1935 *Radiant City*. Peculiar to Le Corbusier's own hand is the fact that the center two mounds were fused. Unlike most people, he did not have a separate mound at the base of each finger with its own planetary designation. When such fusing occurs, it is called the Mount of Libra, Le Corbusier's own zodiacal sign. Not only did he frequently, and cryptically, display his right hand in photos, as when celebrating the publication of *The Modulor*, but he used the sign of Libra (which has often been likened to the yoking of the setting sun in the West) in the last pages of *The Modulor* as a sign not of equality, but of the independent balance of two distinct entities.—Nancy Stephenson

44. Although these are not autograph works, everything about them was dictated by Le Corbusier. The bases and cases were

designed not just for display. Both *Bucrania* rest on black laminated wood bases that are prow-like in form, reflecting literally and figuratively the long, tapered, bird-like head above. The black bases symbolize the *nigredo* or primal blackness, while the clear glass heads represent spiritualized matter. The plastic cases are meant to convey a reflective watery surface, an expression of the ultimate eremitic principle that "what is below is like what is above." Not only were these works done in a city that floated on water, but in Le Corbusier's third Venetian glass work the heavy plastic case of the base carries a green pine cone, a found object which suggests a Venetian water buoy, and acts as a reflective watery surface. This sculpture is important because it expresses the final state of symbolic form, the transformation of the primal family toward the dominance of the male Taurus or solar parent rather than the female moon goddess. In the middle a ruby-colored, bird-like child engages with his beak a transparent bull's ear, avoiding the blue female form at the left which seems to be neglected or eclipsed. The potentiality of this meaning expands as one observes the differences between two *Bucrania*. The small *Bucranium* is blue and rests on a base whose black, lower wooden structure has five layers capped by a congruent, clear plastic layer divided horizontally into the numerological symbolism of the primitive lunar triad. The large *Bucranium* has a black wooden base composed of the full alchemical septenary capped by a clear plastic zone divided into the quintessential five.

45. The Firminy-Vert mural is based upon a sculpture called *La Mer*, a work dominated by the upturned head of the bird-child. The mythic and alchemical nature of this image is confirmed by Le Corbusier's statement made in Paris in July 1965, a month before his death while swimming in the Mediterranean: "We must rediscover man. We must rediscover the straight line, the axis wedding fundamental laws: biology, nature, cosmos. Inflexible straight line like the horizon of the sea." Water, rather than representing a material or horizontal earthly realm, is a vertical reflecting plane of the celestial realm above. In circular fashion, these late developments recapitulate the first image of the *Poème* where a reclining figure, the lower part of its body immersed in water, creates an archetypal transformative landscape. The reflective relation of earth to sky was definitively symbolized by the way the stone head portrait (fig. 2) of Le Corbusier was derived from the old plan of Paris, girdled by the medieval walls. As a reflective projection of a celestial order the eye motif was supplied by the later location of the Place de l'Etoile and by the five old routes that form the hand motif reaching up to the heavens (figs. 47, 48).

Figure Credits

1–48 © *S.P.A.D.E.M., Paris/V.A.G.A., New York, 1980.*

1–48 Courtesy the author.

3 Reprinted from *L'Esprit Nouveau*, no. 8 (New York: Da Capo Press, 1968).

7 Reprinted from *Aurelia Occulta Philosophorum* (Rome: Basilius Valentinus, 1613).

In one sense, all buildings may be seen as texts to be read by their viewers. Criticism of these object-texts may, if it merely describes the building, simply provide a filter through which the viewer is asked to conduct his reading. But if this second text develops in itself a truly critical reading of the object, it ceases to be an interpretive description and becomes, for the viewer, a parallel and equally important text to that of the building. That is, rather than reading the building through the lens of the criticism, the viewer is placed between two texts and forced to mediate between them, confronted as it were now with two texts and two authors.

The concept of typology has in recent criticism formed an especially useful device for the construction of such critical texts. It has opened an investigation into the relationship between object and viewer—a relationship which all too often in the '-isms' of architecture remained unchanged. This essay by Stuart Cohen and Steven Hurtt ostensibly develops its argument within such a typological framework. In so doing it posits itself in the form of a second or other text. However, this essay ignores the new textual structure being proposed in the building itself and also positions itself as an interpretive description.

Taking the same starting point as Cohen/Hurtt, with Le Corbusier's drawing of the Acropolis as it appears in Vers une architecture, *we can construct both a new reading of that object and a new position for reading. Thus, another classification of typological elements presents itself in Le Corbusier's work. These elements are the horizontal datum (as seen in the plinth of the Acropolis), the vertical plane (as represented by the columns of the Parthenon), and the dialogue of these grid elements with natural form as represented by the mountains in the drawing. It is the latter element which is the key to an understanding of Ronchamp within the changed object-viewer relationship posited by Le Corbusier's work.*

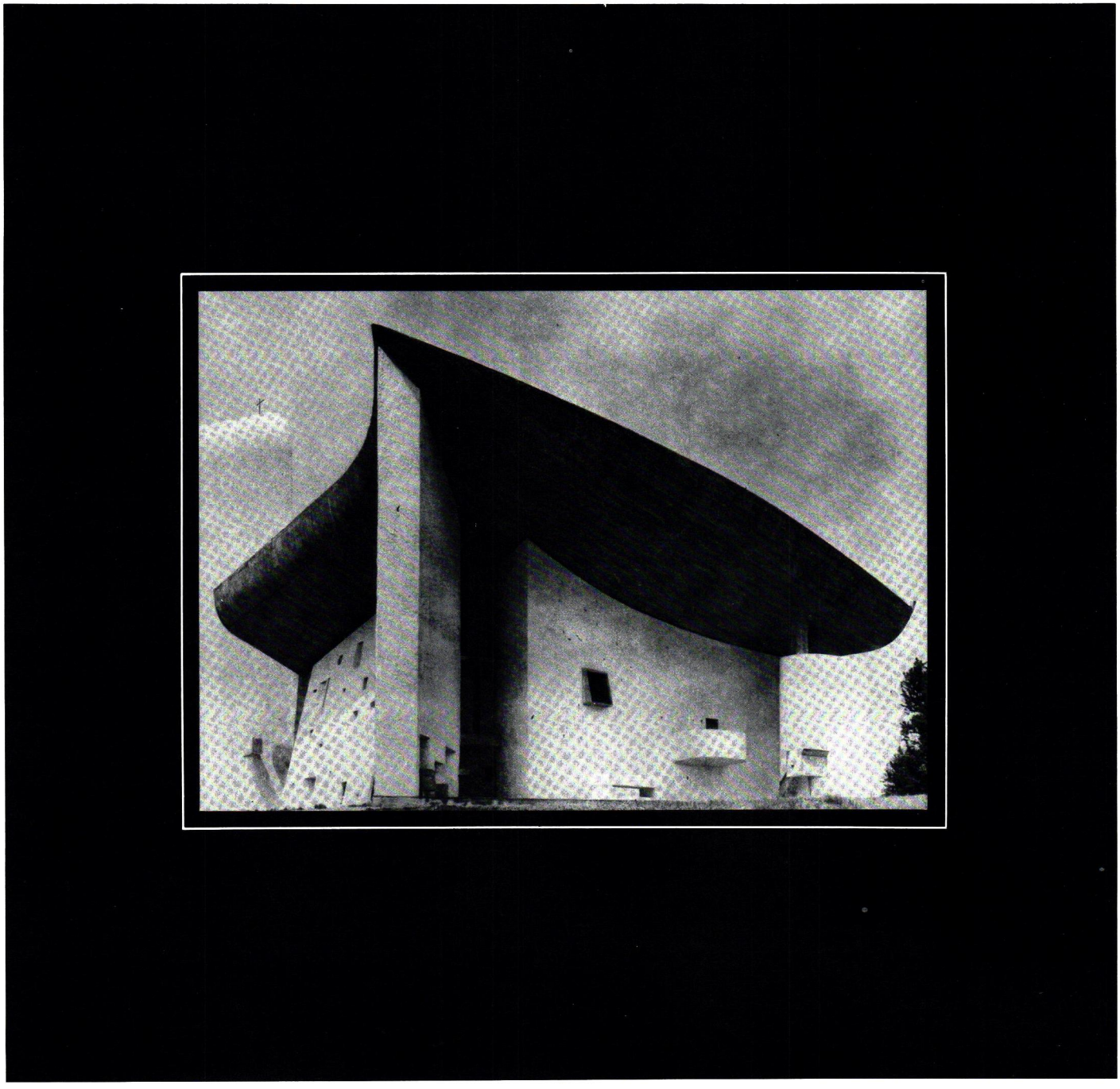
In early houses, Poissy and Garches, the horizontal datum and the vertical plane (as a frontal surface or grid of columns) are the dominant references. The man-made grid becomes the reference for and container of natural form which here first appears in a compressed state as a free-form plane.

By the time of the Assembly Building at Chandigarh, the free-form plane has become transformed into a full-blown volume—a volcanic mountain. But despite its volumetric purity, the mountain remains metaphoric, encased as it is in an unyielding grid of columns and planes. The mountain only becomes 'real' in its final transformation at Ronchamp where it is deprived of its volumetric purity and the grid reduced to a metaphoric status. Only the pattern of small rectilinear windows on the rear facade gives testimony to the presence of a grid which holds and distorts the otherwise natural profile of the volume.

Such a reading implies not only a typological development, but a shift in Le Corbusier's form of modernism. Now the vertical and horizontal datums are internalized and thrown into disequilibrium, which reflects a distancing from his former hierarchical and stratified compositional mode. The architecture is no longer merely a visible manifestation of man's reason but becomes a suspended object between man and nature.

It is precisely the typological clarity and continuity in Le Corbusier's work that exposes this rupture, and it is the possibility of a second text, as potentially represented by Cohen and Hurtt's writing, which would force the reader from his former position as a consumer of narrative. Then he too would become a suspended object in a relativistic structure of man, nature, and texts.
P.D.E.

1 (frontispiece) The Pilgrimage Chapel of Notre Dame du Haut, Ronchamp. Le Corbusier, 1950–1953.



1

The Pilgrimage Chapel at Ronchamp: Its Architectonic Structure and Typological Antecedents

Stuart Cohen and Steven Hurtt

The Pilgrimage Chapel of Notre Dame du Haut at Ronchamp (fig. 1) has been frequently described in terms of emotions and visual metaphors: ships, praying hands, megalithic tombs.[1] However, to understand the chapel in relation to Le Corbusier's work it is necessary to examine one of the ideas that is continuous throughout his architecture and planning. This is his interpretive use of the Athenian Acropolis (cf. figs. 2–4) as a model and a source for his spatial types. For it is Le Corbusier's interpretation of buildings as metaphorical acropolises that suggests a framework for examining the chapel at Ronchamp.

In *Towards a New Architecture*, the Acropolis is used to represent Le Corbusier's symbolic, formal, and social ideas. He prefers its open space to the enclosed space of the traditional city and proposes the construction of civic complexes planned along the spatial and axial principles of the Acropolis. These formal principles are the siting of freestanding buildings in relation to axes established by the landscape and existing buildings to define rather than enclose exterior space. Le Corbusier believed in the symbolic and typological equivalency of the temple and the house. He attributed the ultimate form of both to a process of evolutionary perfection or natural selection. Further, for Le Corbusier their equivalency served to symbolically sanctify the dwelling of the individual within a collective society. Thus he could extend his metaphorical use of the Acropolis to a wider range of building types.

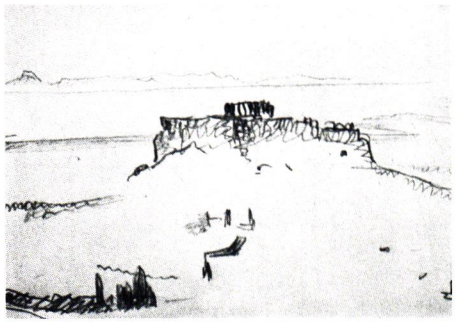
"On the Acropolis of Athens the lawgiver places temples: sounding boards of the surrounding mountains. The root of their forms was in men's humble huts."[2] "You may see in some archaeological work the representation of this hut, the representation of this sanctuary: it is the plan of a house, or the plan of a temple."[3] Le Corbusier illustrates the hut/temple in two forms (fig. 5): one is a tent, a fabric or skin hung over a frame creating a gable form; the other is round with an upward spiraling roof. These forms enclose two basically different kinds of space, one having a horizontal axis, the other vertical. These hut/temples were of interest to Le Corbusier because, abstracted into primary spatial units, they could be grouped and repeated. Because of this formal property he likened the individual home to the biological "cell." The hut/temple and the "cell" are equated throughout Le Corbusier's work, and it is the combination of this primary "cell" in its various spatial types that is the basis of all his buildings. While a wide range of "cells" are presented as models or object types in Le Corbusier's books, there exists an ideal abstract version, the cube, which is symbolically related to the earth and the four cardinal directions, and whose models of volumetric definition bear a close resemblance to these recurring spatial types. These are the *frame* (space defined by the intersection of the cube's six sides); the *Dom-ino* (space defined by the parallel planes of the floor and the ceiling); the *megaron* (space defined by two walls); and the *roof* (space defined by the configuration of the overhead surface).

The last of these, the *roof*, is the least discussed and most important of Le Corbusier's spatial types in relation to the chapel at Ronchamp. A consideration of Le Corbusier's buildings as composites of his spatial types[4] suggests that Ronchamp may be understood as a combination of the *roof*, the *frame*, and the *megaron*. Typological analysis also suggests a way of seeing Ronchamp as a reinterpretation of the Parthenon, a similar combination of these spatial types to which Le Corbusier attached special importance.

To identify the complex metamorphosis that occurs in the chapel at Ronchamp it will be helpful to consider the specific properties of both Le Corbusier's spatial types and of his paradigmatic acropolis.

The *Dom-ino* (see fig. 6) is a concrete frame of columns and floor slabs that defines a horizontal slice of space between parallel floors and ceiling planes. While this form shares some of its symbolic meaning with Le Corbusier's other types as an *imagini mundi*, its specific symbolism derives from its successive horizontal planes. At the Villa Savoye these may be seen as underworld (*pilotis*) assigned to machines and servants, a middle world of living accommodations and garden, and a roof terrace or "paradise" which is the terminus of the continuously ascending ramp.

2 Acropolis, Athens. Sketch by Le Corbusier.
3, 4 The chapel at Ronchamp by Le Corbusier, 1950.
5 Primitive tents. Sketches by Le Corbusier.
6 Dom-ino house prototype. Le Corbusier, 1914.



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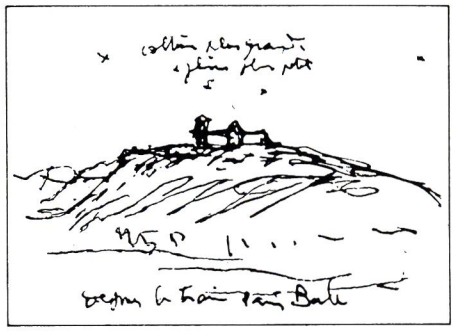

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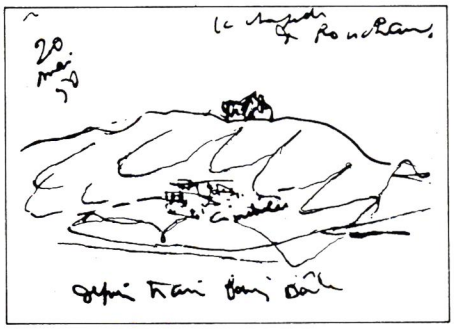

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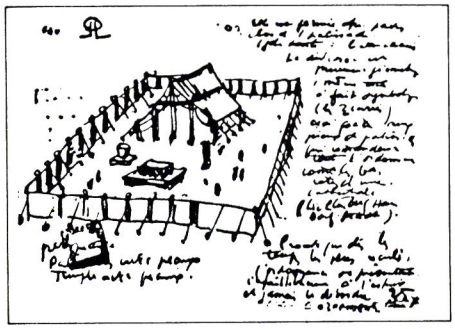

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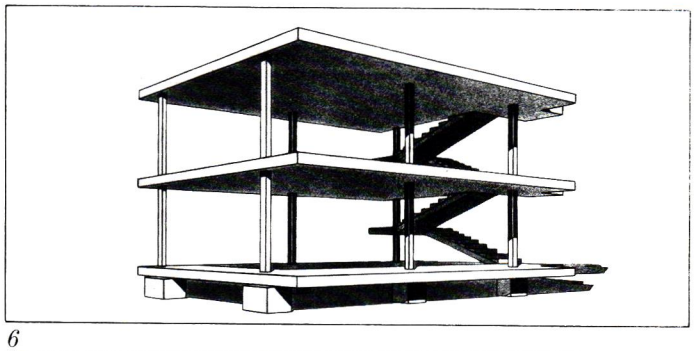
The *frame* (fig. 7) in its purest form defines a 226 × 226 × 226 cm. cubic volume scaled to the human body by its Modulor dimensions and formed by metal members bolted together. The independent frame is a late development despite the theoretical and spatial independence of columns and walls implied by the Maison Dom-ino. While before 1926 the frame is implied by horizontal wall openings or is revealed, freestanding, in roof terraces or as *pilotis*, at this point it is usually integral with the plane of the wall. The independence of frame and enclosure first begins to be fully exploited in Maison Cook of 1926. The frame is the most literal of Le Corbusier's *imagini mundi*, for the single cube of space it encloses may be taken to be symbolic of the world unfolding from a center toward the four cardinal points. In the 1938–1939 "Ideal Home" Exhibition in London, the frame contains symbols of "sun," "space," and "greenery," those elements of paradise that Le Corbusier wished to incorporate into his "new world."

The *megaron* is a volume defined by parallel walls. In Le Corbusier's earliest projects for the Maison Citrohan (fig. 8),[5] the megaron is first proposed as a narrow, row house-like space for artist's accommodations and studios. Later it assumes a basilica form for public buildings such as the Boîte à Miracles of the Tokyo Museum project. The megaron's walls are a metaphor for the horizons—elements of spatial definition in the natural world.[6]

The *roof* type is a covering that provides symbolic as well as real shelter and is most characteristically a gable or a shallow vault. Both these forms occur in either a normal or inverted position. Inverted, the forms draw attention to their periphery and beyond.[7] The gable roof is related symbolically to pyramid and mountain forms, while the vaulted roof, first used in Le Corbusier's Villa Au Bord de la Mer of 1916 and in the Maisons 'Monol' of 1920 (figs. 9, 10), is associated with the dome of the sky and the symbolism of the circle.[8] The latter, quite appropriately, is inverted to become the curving roof at Ronchamp.

Nearly all of Le Corbusier's roof types occur in conjunction with either a frame or megaron structure. The gable roof is derived from the nomad's tent and the primitive

7 Patent diagrams showing the principle of the frame 226 × 226 × 226. Cell-like inhabitable space structured by series of L-shaped steel forms.
8 Maison Citrohan. Le Corbusier, 1920.
9 Maisons 'Monol' (two storey). Le Corbusier, 1920.
10 Maisons 'Monol' (single storey).



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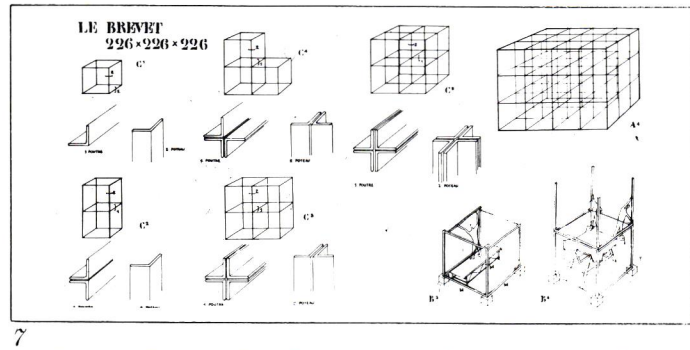

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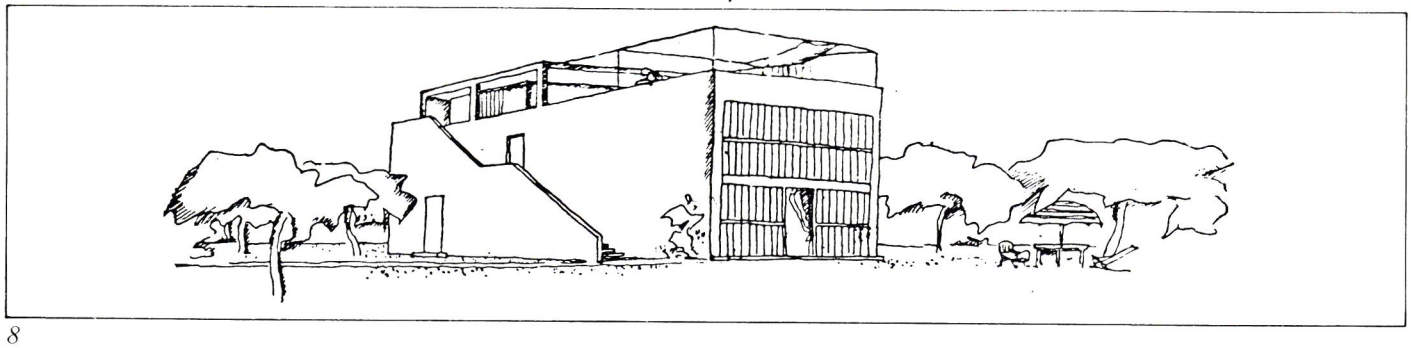

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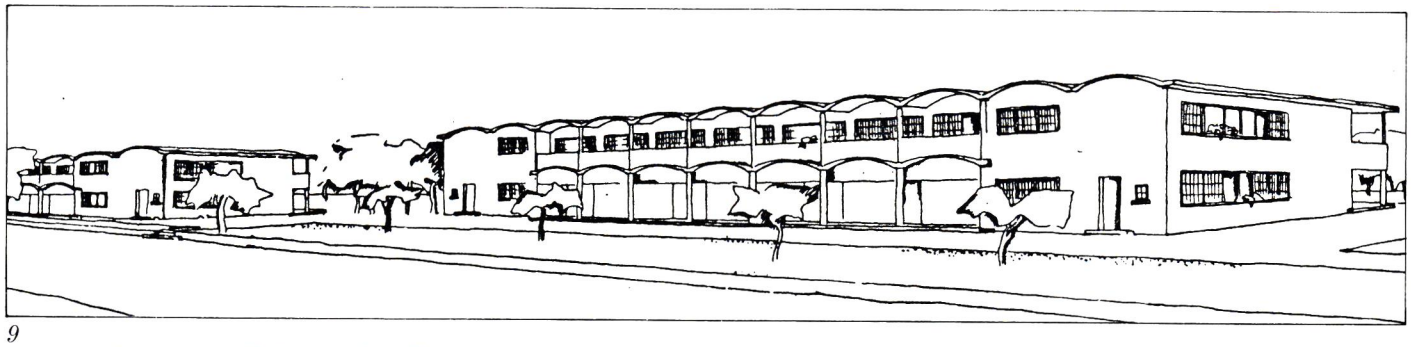

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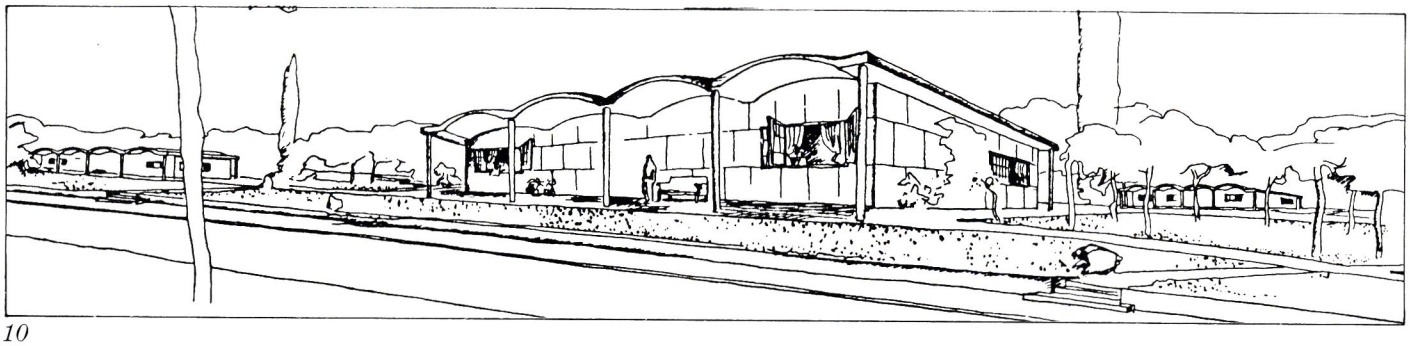

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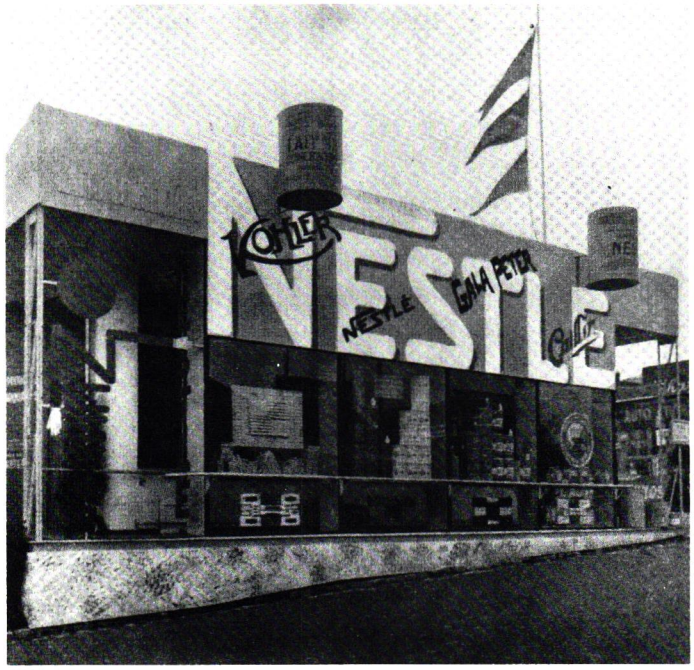

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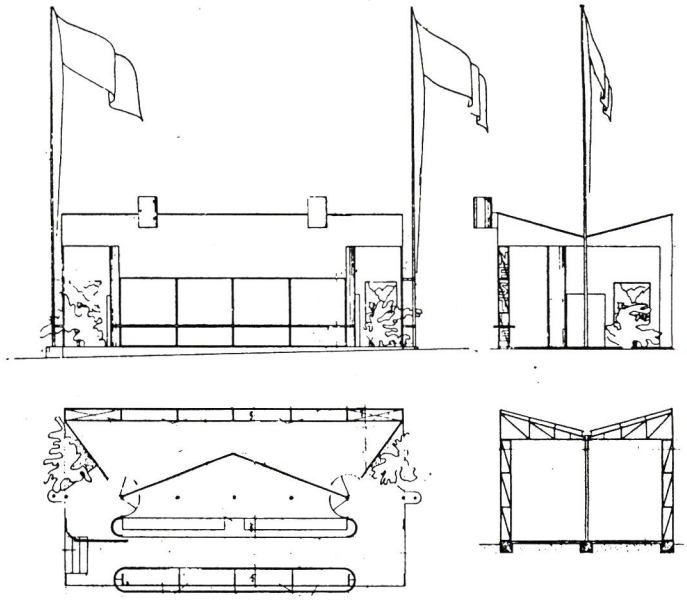

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huts Le Corbusier admired. The earliest versions of the inverted gable are the Nestlé Pavilion of 1928 (figs. 11, 12), the Errazuris House in Chile (1930), and the Maison aux Mathes (1935). More developed at a much later date, it becomes the parasol roof of the Heidi Weber Pavilion (fig. 13) in Zurich, four hyperbolic paraboloid surfaces joined together to produce an intersection between a normal gable on one axis and an inverted gable on the opposing axis. In Le Corbusier's successive uses of this form, emphasis on an open tent-like quality is maintained and an outward spatial emphasis is increased. The double axis and the square, rather than the elongated form itself is first explored for the Exposition de Liège project of 1939 (fig. 14). In this version, a section similar to an airplane wing is converted into a truss acting as an edge beam for the roof slung between them. This results in a centralized form having the characteristics of a shallow inverted dome, suggesting the draped cloth of a tent. Here the vertical supports are first moved away from the corners to the mid-points of the sides. In the 1950 design for Porte Maillot, the parasol roof emerges in its final form, which is the same as that used for the projected pavilions for the Tokyo Museum and Heidi Weber. It is, however, the Pavillon des Temps Nouveaux of 1937 (fig. 15) which is Le Corbusier's most literal interpretation of the tent-sanctuary which he had illustrated in *Towards a New Architecture* (see fig. 16). Here the structure is longitudinal and is entered on the main axis with the exterior "tent posts" guyed to the ground. The roof, rather than being a gable, is supported by cables hung in a catenary curve, creating an inverted vault form.

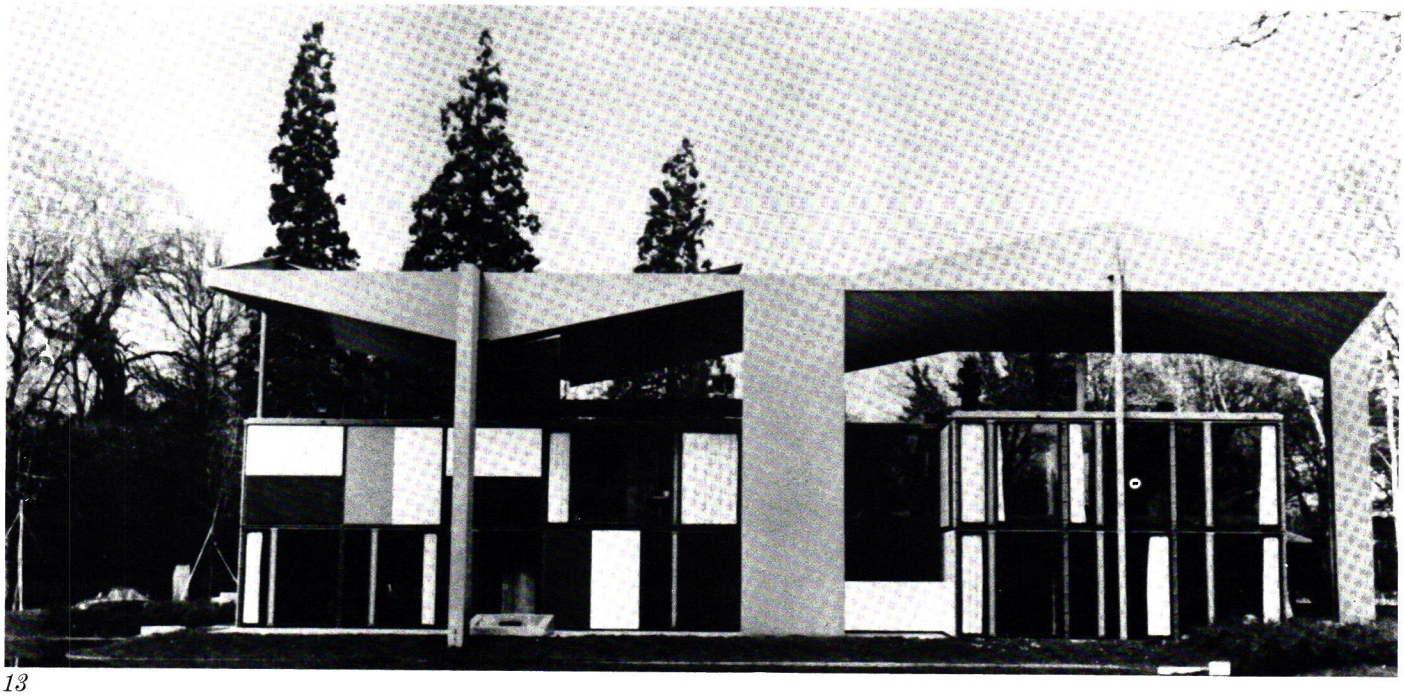
Le Corbusier's spatial types—the frame, the Dom-ino, the roof, and the megaron—serve as archetypes for his work. Individual buildings are composed from them either singly or in combination. When they are used singly but assembled within one civic complex, they take on an overall symbolic meaning that can be inferred only when they occur alone; they become the requisite elements of a symbolic acropolis. The earliest example is Le Corbusier's Mundaneum project of 1929.[9]

In the Mundaneum (or Cité Mondiale) the most prominent

11 Nestlé Pavilion. Le Corbusier, 1938. Portable exhibition.
12 Nestlé Pavilion. Elevations, section, and plan.

13 Heidi Weber Pavilion, Zurich. Le Corbusier, 1963–1967. West facade.

14 French pavilion at the Exposition de Liège, Belgium. Le Corbusier, 1939. Elevation.
15 Le Pavillon des Temps Nouveaux. Le Corbusier, 1937. Early elevation.



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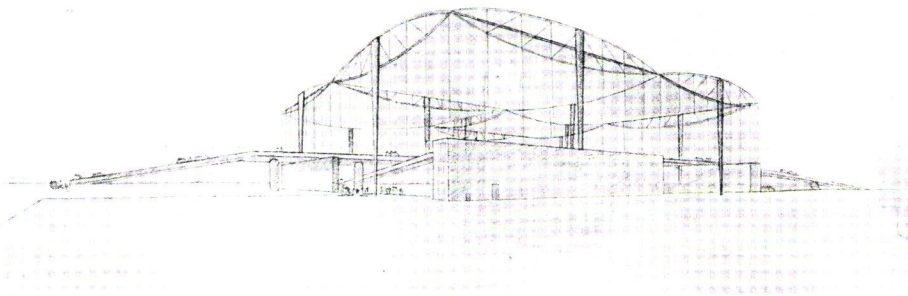

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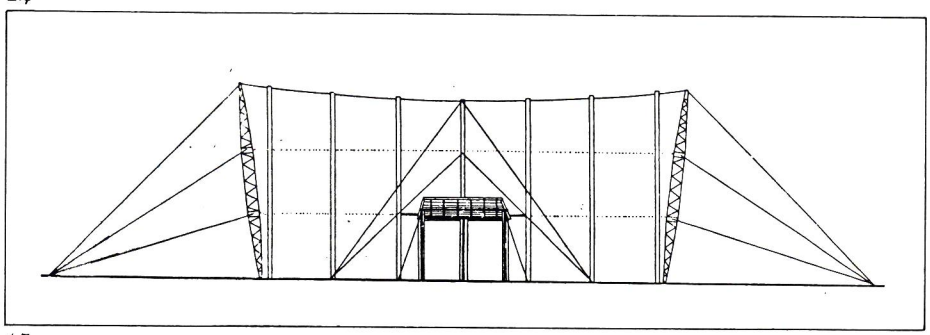

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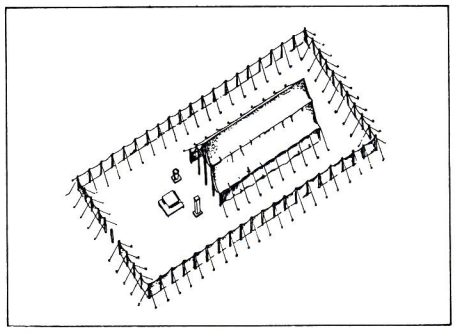
16 Primitive temple. Sketch by Le Corbusier.
17 War memorial, Ronchamp. Stone ziggurat to the east of the chapel.
18, 19 Ateliers d'Artistes, project. Le Corbusier, 1910.
20 Mundaneum (Cité Mondiale), Brussels. Le Corbusier, 1929.
21 'Endless' Museum, Philippeville, North Africa. Le Corbusier, 1939. Prototype used for the Tokyo Museum.
22 'Box of Miracles', Tokyo Museum, Le Corbusier, 1956.
23 Chapel at Ronchamp. Le Corbusier, 1950. East/west section.
24 'Box of Miracles', Tokyo Museum. Sketch by Le Corbusier.



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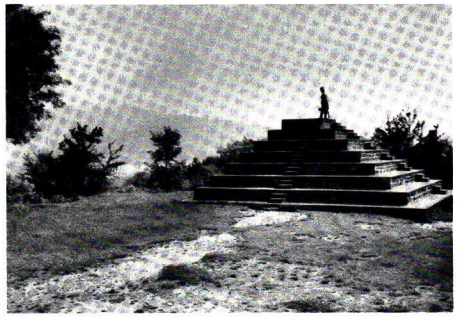

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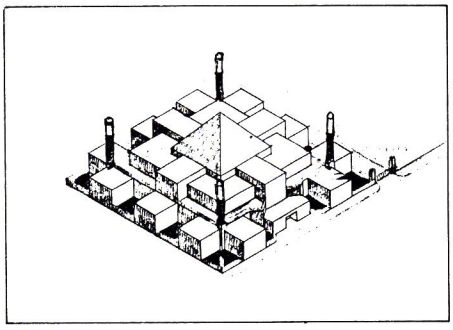

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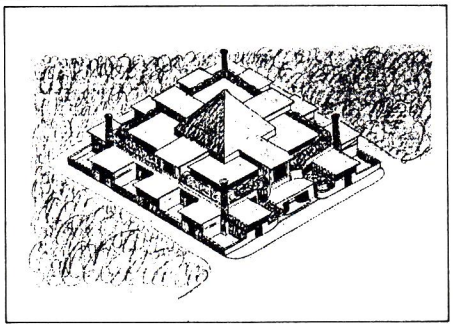

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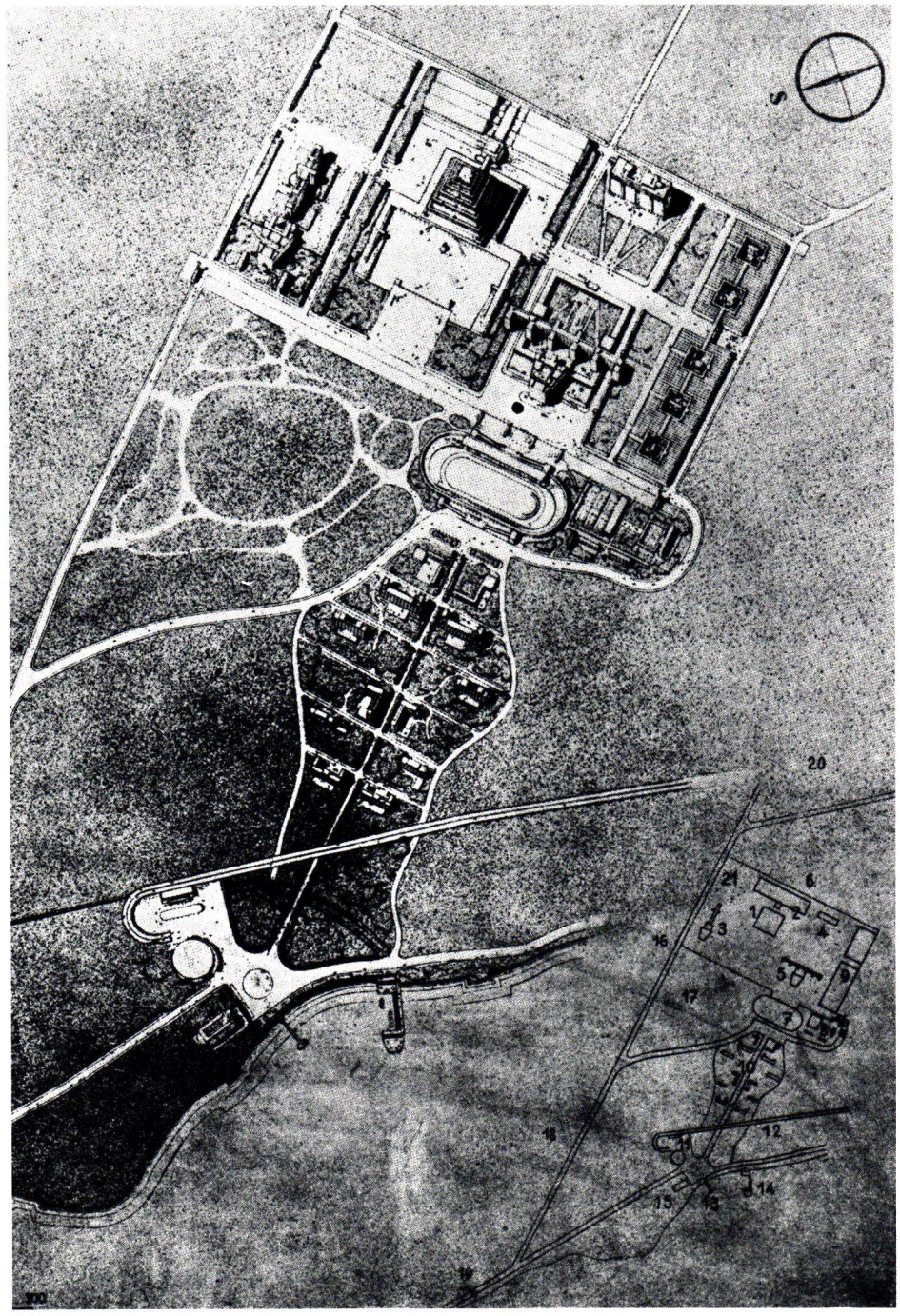

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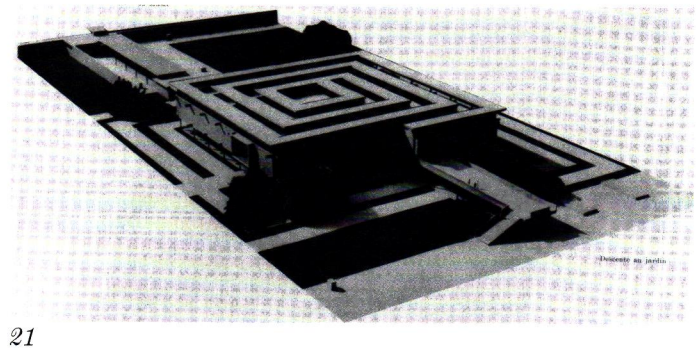
element is the Musée Mondiale (fig. 20). Its form of a ziggurat recalls the Ateliers d'Artistes project of 1910 (figs. 18, 19) published as Le Corbusier's first architectural design. The use of this form as a museum has a double meaning. It is symbolic of the Acropolis itself; and as a "cosmic mountain" it assumes the role of a point of passage from the profane space of this world to the sacred space of the sky. Regarded as a necropolis, the pyramid as museum enshrines the past. Similarly, at Ronchamp the stone ziggurat to the east of the chapel is a memorial to the war dead (fig. 17).

Flattened, the spiral of the Musée Mondiale becomes the "Endless Museum" used in both the city center of the St. Dié project and the project for the Tokyo Museum complex (fig. 21). This spiral form is associated with the growth curve, the form of shells, and the golden section, recurring themes in Le Corbusier's work. When compressed, the meaning of the pyramid is contained in its spiral circulation implying ascent or penetration to the center of the world. Like other buildings utilizing the Dom-ino construction system, the Endless Museum is divided into an underworld of *pilotis*, a middle-world unfolding from the center, with a central space opening to the world above, here at Tokyo through a skylight rather than a roof terrace.

In the Tokyo Museum project the roof type appears as a temporary exhibition pavilion, while the megaron auditorium proposed for the Cité Mondiale and St. Dié become the Boîte à Miracles, which has the same form as the chapel of the Monastery of La Tourette. The Boîte à Miracles with its indoor-outdoor stage and seating (fig. 22) is similar to the earliest scheme for the chapel at Ronchamp (fig. 23) with its indoor and outdoor altars and rampart-enclosed pilgrims' yard. Typologically the megaron may be seen as a cella having certain perceptual properties that allow for its simultaneous presentation as a facade and as a cubic volume as if seen in "three-quarter" view (fig. 24). In the Tokyo Museum project (fig. 27) when the theater is approached frontally, the slope of the roof suggests a perspectived recession away from the observer, making the orthogonally sited buildings appear to



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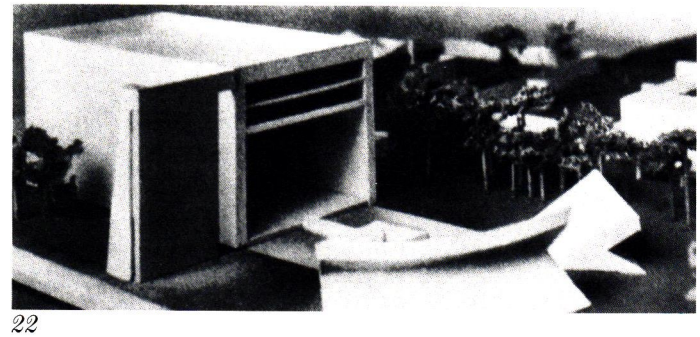

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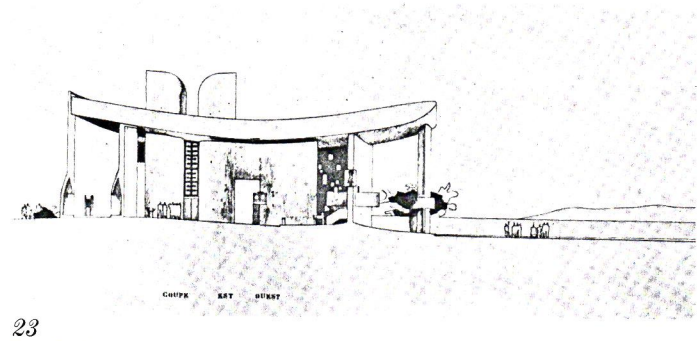

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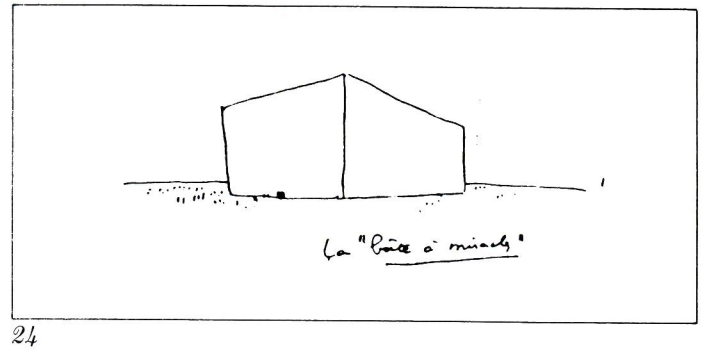

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be "turned toward one another" like the temples on the Acropolis. In 1923 Le Corbusier wrote, "The axis of the Acropolis runs from the Piraeus to the Pentelicus, from the sea to the mountain[10] . . . because they are outside this forceful axis, the Parthenon to the right, the Erechtheum to the left, you are enabled to get a three-quarter view of them, in their full aspects[11] . . . the temples are turned toward one another making an enclosure, as it were, which the eye readily embraces."[12]

For Le Corbusier the issues to be addressed by the Pilgrimage Chapel were clear. The site was an acropolis (figs. 28, 29), thus it called for the use of his spatial types. The specific types to be used would be selected and interpreted in terms of the traditions of Catholic worship.

"The chapel is constructed," he wrote, "on the last bastion of the Vosges falling away to the plain of the Soan below, on a hill which is called a 'high place'. In earlier times pagan temples were built there, then, Christian chapels—pilgrims' chapels; so it was down the centuries."[13] He continued, "One begins with the acoustics of the landscape, taking as a starting point the four horizons. . . . The design is conceived in harmony with these horizons—in acceptance of them."[14] The building thus called for a sacred "cell," a nomad's hut/temple composed of his metaphorical acropolitan elements—universal forms that would be capable of "evoking a poetic response." He wrote, "This is a place of prayer . . . a vessel of intense concentration and meditation."[15]

But the relevant spatial types raised a conflict between the centralized church (roof) and the longitudinal church (megaron), as Le Corbusier realized in *Towards a New Architecture.* He wrote, "Greeks by origin came to Rome to build S. Maria in Cosmedin. The design is merely that of the ordinary basilica, that is to say the form in which barns and hangars are built. This tiny church commands your respect."[16] "Finally St. Peter's should have had an interior which would be the monumental climax of S. Maria in Cosmedin. The Medici Chapel at Florence shows on what a scale this work, whose pattern had been so well established, could have been realized."[17]

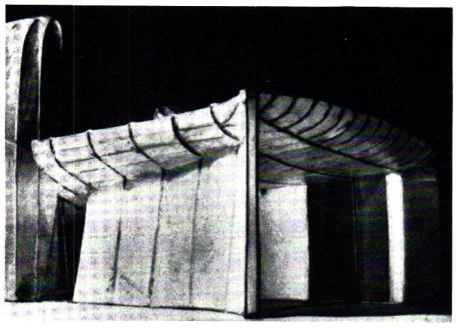
That the chapel at Ronchamp would be Le Corbusier's most personal and intensely felt reformulation of the Acropolis seems inevitable. Here he could construct all the elements of his architectural cosmology.

In the first scheme for Ronchamp it is the roof that dominates. Shown in a wire and paper model (fig. 25) that looks like the wing structure of an airplane, the model's roof recalls the cross section used in the tented project for Liège. However, where the roofs for Liège and the Heidi Weber Pavilion span two directions, Ronchamp relates directly to the Pavillon des Temps Nouveaux where the roof spans one direction between supporting columns, with its downward curvature emphasizing the longitudinal axis of the space below.

Like all of Le Corbusier's pavilion roofs, the roof at Ronchamp is not held up by the walls beneath it, but by a column structure. Wall and roof are visually separated by a narrow ribbon window and the enormously massive walls, deprived of any structural function, are understood as symbolic elements enclosing a megaron volume. Successive stages in the development of Ronchamp's design reveal a struggle to resolve the conflict between these two dominant types, the megaron and roof, in terms of both meaning and perception.

Ronchamp is seen first from the valley that its site commands. From the road, views of it are denied. It is then approached obliquely on foot and, like the Parthenon, seen volumetrically in three quarter view (figs. 26, 33). The Maison des Pèlerins briefly obscures the chapel's prow-like corner and the main facade seems almost frontal. When the Maison des Pèlerins, acting as a propylaeum, is passed, the corner of the chapel comes back into view and the obliqueness of the approach is exaggerated by the perspectival convergence of the slope of the ground and the angled roof. Simultaneously a frontal impression is created by the chapel's windows (fig. 35). The focus of attention is on two windows high up on the main facade. The inner surface of these windows conforms to the perspective one would have of windows cut into a deep wall seen from the front. As more of the wall comes into view,

25 Chapel at Ronchamp. Wire and paper model.
26 Chapel at Ronchamp. Northwest (entry) facade.
27 Tokyo Museum project. Le Corbusier, 1956.
28 Chapel at Ronchamp. Le Corbusier, 1950. Aerial view.
29 Acropolis, Athens. Aerial view.



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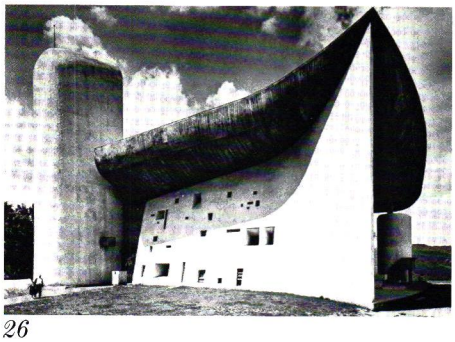

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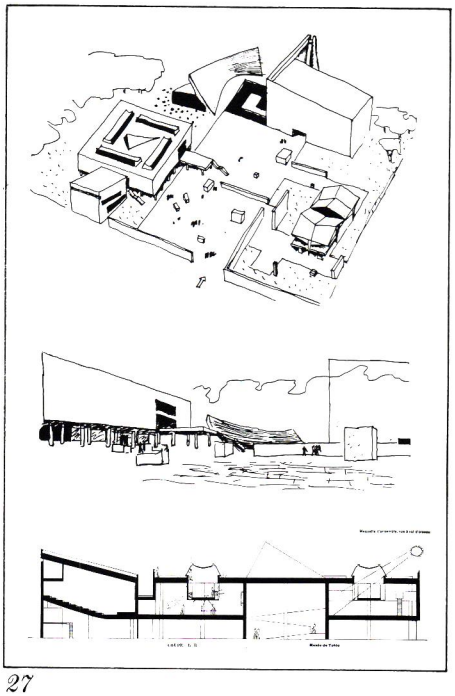

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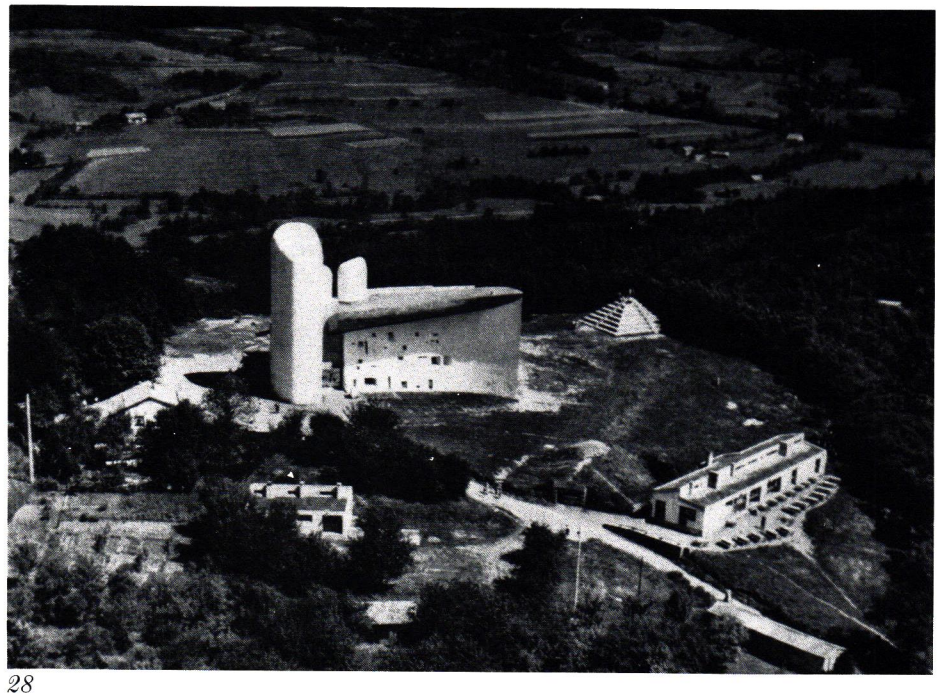

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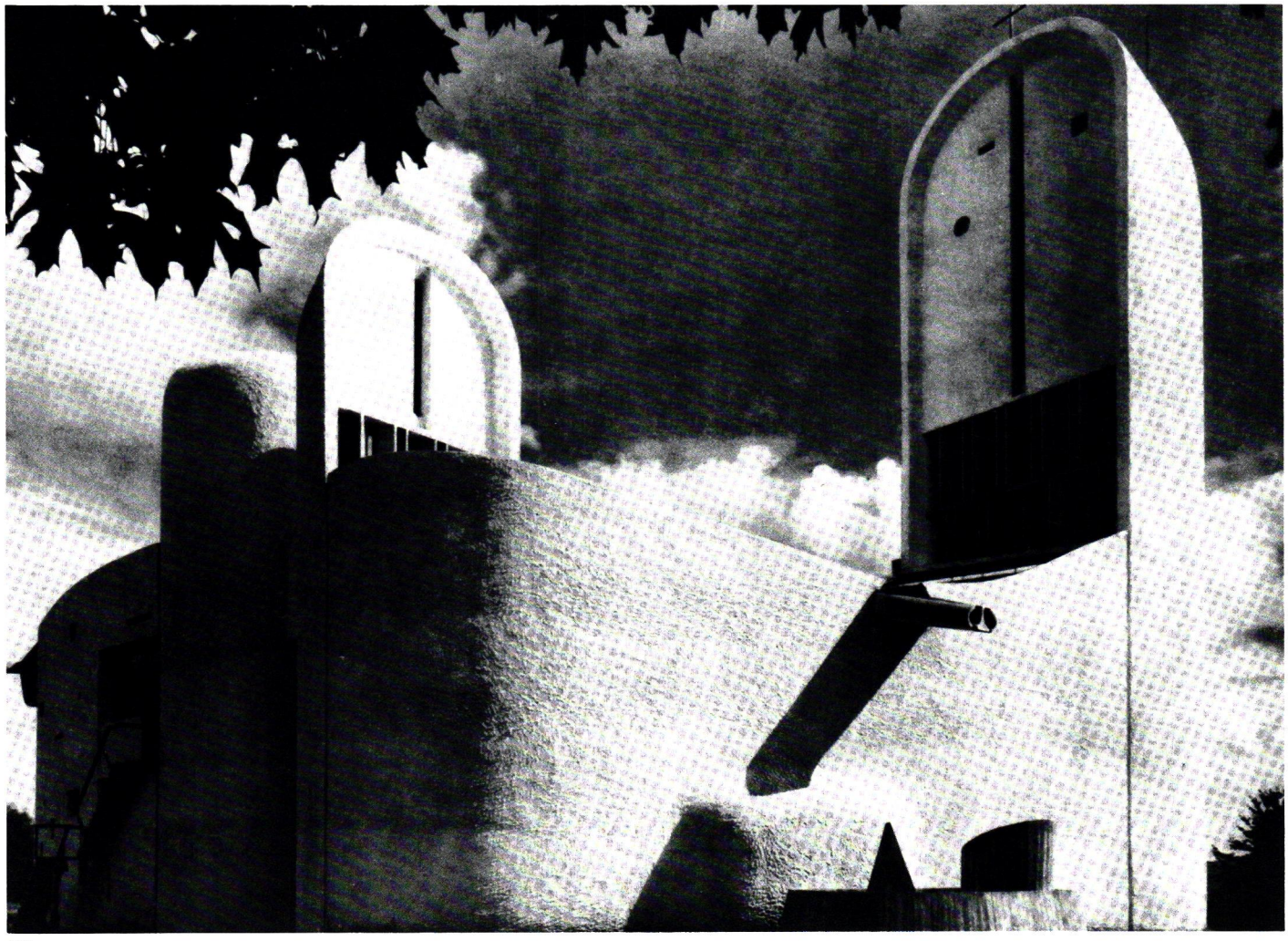
30 Chapel at Ronchamp. Le Corbusier, 1950–1953. West facade.
31 Chapel at Ronchamp. Development drawing of north elevation.
32 Chapel at Ronchamp. North elevation as built.
33 View of the Parthenon, the Erechtheum, and the Statue of Athena in front of the propylea.
34 Chapel at Ronchamp. Model of early scheme showing northwest facade.
35 Chapel at Ronchamp. Exterior view of the chapel's window wall.



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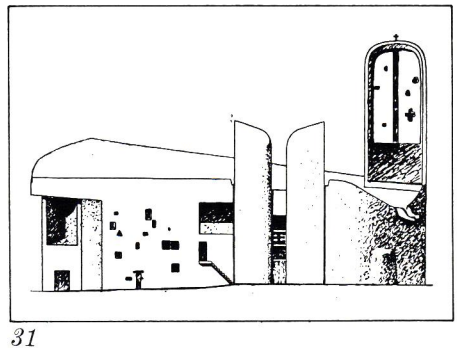

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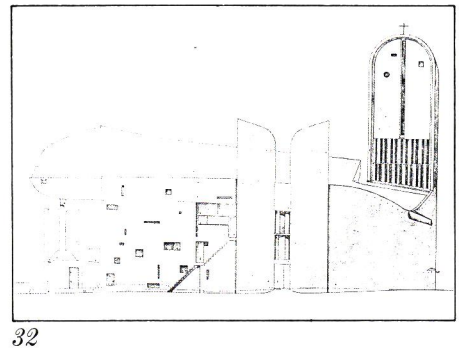

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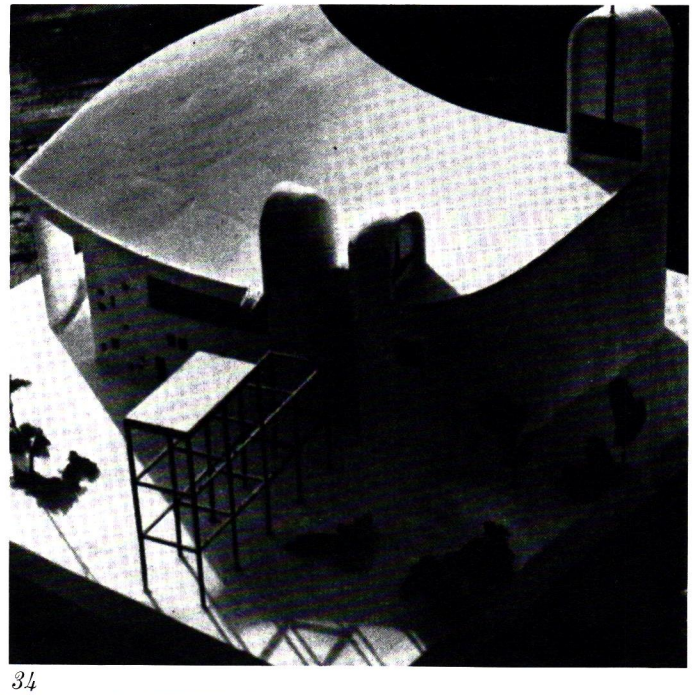
this impression is substantiated by the conformity of the other major groupings of large windows to the same general visual system. The inner side surfaces of the windows to the right of the facade seem to vanish in perspective to the left, those to the left vanish to the right; and the single, high, central window appears as if in one point perspective. The visual effect of these deep windows is to momentarily flatten the apparent angularity of the wall.[18]

Continuing, the path levels off and bends away from the chapel door, leading the approach around behind the building. Like the spiral approach to the entrance of the Pavillon Swisse in Paris or to that of La Tourette, one is confronted by a wall and then obliged to go around it. As Ronchamp's tower is passed, the rear of the chapel bends away to the right and one is pulled in that direction by the space opening to the horizon. The rain pool (fig. 30), a microcosm of the world with its ocean and miniature mountain-pyramids,[19] pushes movement away from the chapel into the center of the open space between it and the trees. Arriving on the opposite side of the chapel, one faces east on axis with the symbolic stone pyramid. Every visual cue suggests the completion of a continuous external promenade before entering the chapel. In earlier schemes, this was not the case; a campanile-like metal frame intended as a bell tower was to mark the entrance (fig. 34). The effect of this freestanding frame in the earlier scheme, which was placed perpendicular to the path of movement, was to terminate the spiral approach and facilitate entrance in a manner axially opposed to that movement. Its deletion indicates Le Corbusier's recognition of the pilgrims' yard rather than the chapel's interior as the major space at Ronchamp. When the campanile-frame was removed (or absorbed into the body of the church), making the separation of megaron and roof types clearer, the direction of the exterior stairway on the north wall was also reversed to visually direct movement toward the stone pyramid and outdoor altar (figs. 31, 32).

Passing around to the front of the chapel, one enters Ronchamp's principal space, the pilgrims' yard. The ground slopes away from the outdoor altar toward the southeast and down the axis of the valley. The grass



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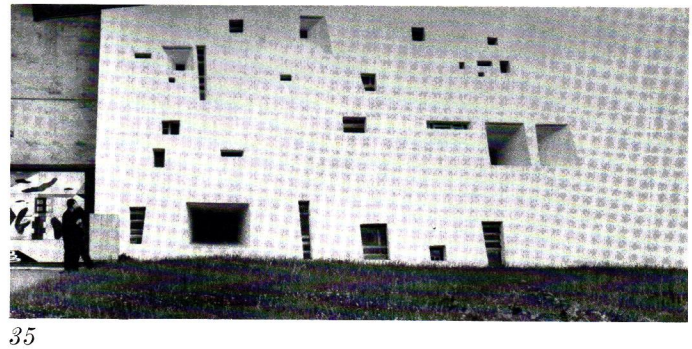

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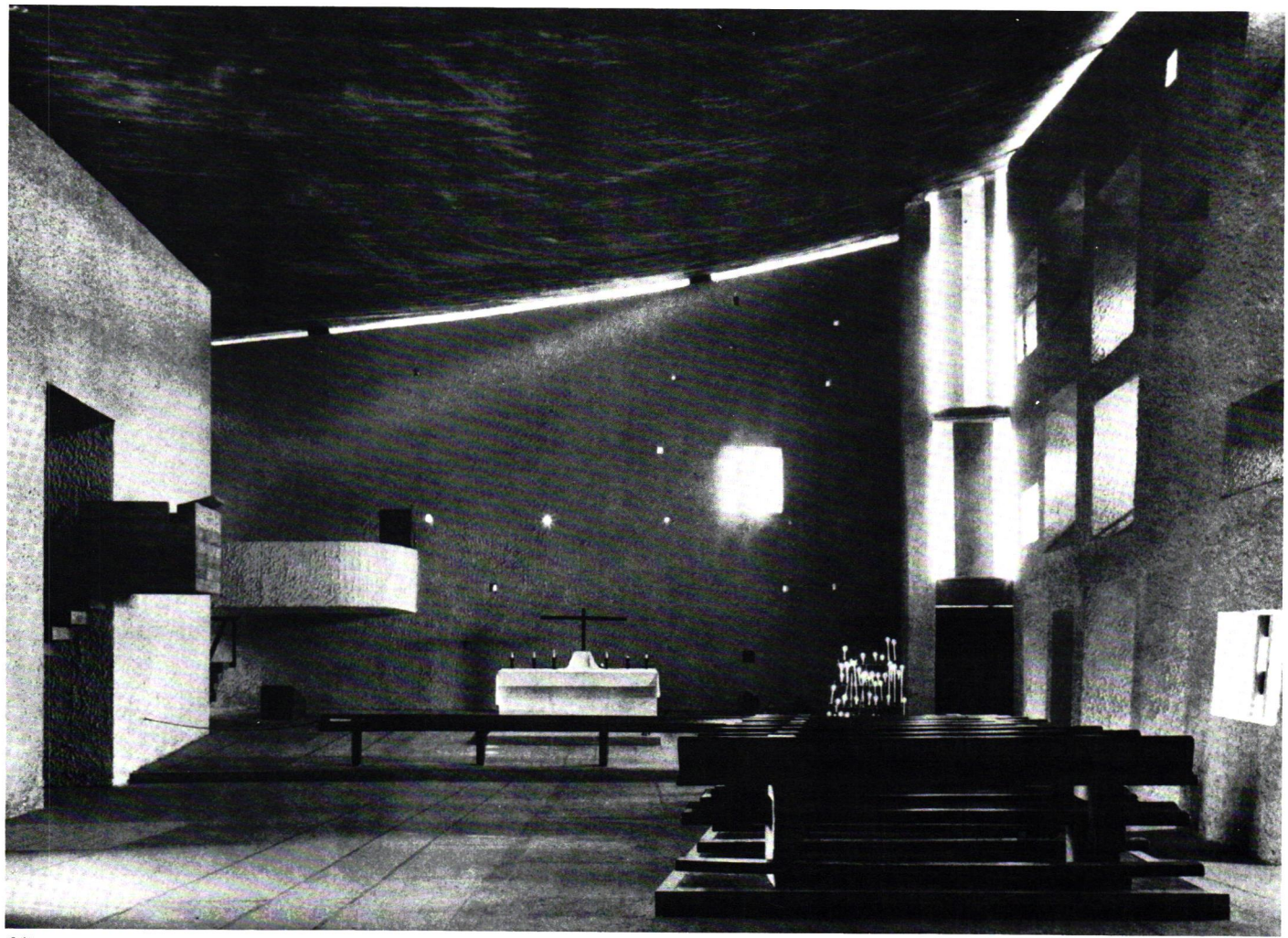
covered roof of the Maison des Pèlerins acts as an altar to the landscape, the valley, and the distant hills. The force of Le Corbusier's words is evident: "These landscapes with their four horizons are a presence; they are your hosts. To these four horizons the Chapel addresses itself—this is to compose with the infinite resources of the landscape."[20] Entering this "amphitheater of the horizons" one turns to face the chapel and its outdoor altar. From here nothing is seen except the altar's shallow apsidal space (fig. 36). Like an exedra, this outdoor apse collects the "force" of the landscape and suggests the existence of a grand scale exterior space whose definition is completed by the surrounding mountains. The wall in the landscape, bent to collect and disperse the force of the distant hills, is for Le Corbusier an "emotional disposition . . . a mental bias and characteristic act."[21] About the Pavillon Swisse he had written, "Notice how the slight curve in the wall gives a suggestion of tremendous extent, seems to pick up by its concave surface the whole surrounding landscape and to establish a relationship that carries its effect far beyond the actual bounds of the architecture itself."[22]

The altar space appears deeper than it actually is. The profile of the roof curving downward into the slightly concave wall produces this illusion of depth, while the opposing curvature of the leading edge of the roof describes an arch against the sky, suggesting a vault or "dome of heaven" over the outside altar. In the earlier schemes for Ronchamp, the downwardly inflected portion of the chapel roof was to lie perpendicular to the axis of the nave. In the final scheme the inflection occurs along the axis of the nave with the lower portion at the rear of the church, reconciling the directionality of roof and megaron forms. The effect of this change in relation to the church's form is manifested in the perceptual experience of the chapel's interior space.

The immediate impression upon entering the chapel is of its cubic volume. But this cubic impression is not what one has expected from the curving exterior. Above, the concrete roof, which dips slightly inward, seems to float, tent-like, detached from the south wall by a ribbon of light. The roof is similarly detached from the wall that

36 Chapel at Ronchamp. Le Corbusier, 1950–1953. Rear wall of chapel.
37 Interior view of the rear wall of the chapel.
38 Interior view of the entry wall of the chapel.



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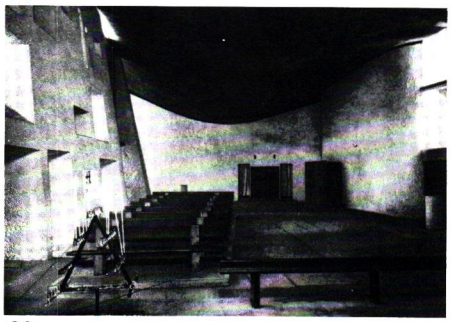

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lies behind the altar, and it is the line of intersection between this wall and the roof that is important. The wall, concave on the exterior, should appear to bend in upon the space, yet it does not. Its intersection with the roof describes a line of curvature which optically contradicts and flattens the real curvature of the wall (fig. 37). Turning to face back along the axis of the chapel, one has the impression that the space is extended lengthwise by the convergence of the floor, the roof, and the side walls, culminating in an illusionistic apsidal space (fig. 38). The underside of the roof makes a curving intersection with the rear wall, causing it to appear to bend back in space. Its actual flatness is asserted by the doors to the confessional. This suggests a reinterpretation of the chapel's plan: through "optical adjustments" Ronchamp is transformed into the spatial equivalent of a Latin cross church. The approach, entry, and processional occur off the main axis of the church, allowing for the placement of the altar at the narthex end. This facilitates the display of the statue of the Madonna, a relic of the former church on this site, behind both the interior and exterior altars. The crossing is inscribed in the floor pattern and the illusionistically implied apsidal space equates the side chapels with the transepts of a cross-shaped church.

The spatial readings of Ronchamp consequently include not only Le Corbusier's recurrent types—the roof, the megaron, and the frame—but also archetypical Christian church forms, a centralized "cell" of space below a centralized "roof" form, and a longitudinal nave with axial and transverse apses. Moreover, the church embodies not only elements of the Christian church but those of archetypal sacred places of worship. These elements, *imagini mundi*, are the formal components of Le Corbusier's architecture and constitute a personal cosmology which may be seen to be present in all his major works.

That the chapel at Ronchamp has been seen by critics as a "crisis in rationalism"[23] is understandable. Rarely has such a complex conception of the mind been rendered in such emotionally charged terms. So compelling is the emotional experience and so strong is the multiplicity of suggested images that it is difficult to consider the chapel in other terms. While it has been our intention to offer a conceptual interpretation of Ronchamp, the chapel's other aspects are no less important to an understanding of Le Corbusier's work. He made this clear when he wrote, "Intelligence and passion: there is no art without emotion, no emotion without passion. The business of Architecture is to establish emotional relationships by means of raw materials. Passion can create drama out of inert stone."[24]

Source Note
The original research and observations for this article were made while the authors were graduate students under Colin Rowe at Cornell University 1966–1967. Many of the observations here were stimulated by Rowe's article on the Monastery of La Tourette.

Notes

1. "The art historical roots of Ronchamp reach back beyond archaic Doric and Mycenaean precedents to the scattered remains of the Bronze Age to suggest . . . a freestanding megalithic tomb." John Jacobus, *Twentieth Century Architecture: The Middle Years, 1940–1965* (New York, Praeger), p. 86. "From one vantage point the body of the church resembles the prow of a huge ship." *Arts and Architecture 75*, Feb., 1958, p. 15. "The apt comparison is with the megalithic tombs of the barrow builders of an earlier culture . . . . One can even find the ship . . . which here appears as the prow of the Ronchamp nave. Here, however, it is no longer one of the greatest accomplishments of modern engineering in steel, but the Ship of Life or of the Soul, according to one's particular belief, riding time and eternity." John Alford, "Creativity and Intelligibility in Le Corbusier's Chapel at Ronchamp," *The Journal of Aesthetics & Art Criticism*, 14 (1958), pp. 293–305. "All sorts of images seem to be suggested—a nun's cowl, a monk's hood, a ship's prow, praying hands. . . . The anxiety of the critics can be compared to that of archaeologists who have discovered a beautifully articulated text they know to be nonsense." Charles Jencks, *Le Corbusier and the Tragic View of Architecture* (Cambridge: Harvard University Press, 1973), p. 152.
2. Le Corbusier, *The Home of Man*, (Paris: La Palatine, 1965) p. 34.
3. Le Corbusier, *Towards a New Architecture* (New York: Praeger, 1959), pp. 66–67. For Le Corbusier "There is no such thing as primitive man; there are only primitive resources. The idea is constant, in full sway from the beginning," p. 66.
4. In his article on the monastery La Tourette, Colin Rowe suggested that many of Le Corbusier's buildings might be seen as a "cross fertilization" of the Dom-ino and Citrohan (megaron) projects.
5. "The background of these houses [Citrohan] is obvious. They are essentially Mycenaean megara, pure space containers, with three closed planes and one wall of glass. . . . In the Mycenaean palace it had been engulfed in a labyrinthine maze, and its

As Paul Ricoeur writes in his book History and Truth, *"The fight against colonial powers and the struggles for liberation were, to be sure, only carried through by laying claim to a separate personality; for these struggles were not only incited by economic exploitation but more fundamentally by the substitution of personality that the colonial era had given rise to. Hence, it was first necessary to unearth a country's profound personality to replant it in its past in order to nurture national revindication before the colonialist's personality. But in order to take part in modern civilization, it is necessary at the same time to take part in scientific, technical, and political rationality, something which very often requires the pure and simple abandonment of a whole cultural past. It is a fact: not every culture can sustain and absorb the shock of modern civilization. There is the paradox: how to become modern and to return to sources; how to revive an old, dormant civilization and take part in universal civilization?"*

In his analysis of one of the unbuilt monuments of Le Corbusier's late career, Alex Gorlin touches on the ramifications of this paradox and in so doing reminds us of Le Corbusier's progressive disenchantment with the promise of the machine age, a doubt which first emerges in the late twenties. As Vers une architecture *makes clear Le Corbusier never thought of this modern civilization in exclusively positive terms. Instead, like the Neoclassicists before him and like his more immediate masters, Perret and Garnier, he sought to reconcile the precepts of technical logic with the law of classical order, and this reconciliation between the engineer's aesthetic and architecture was to take place in an occidental perspective. Thus he was to see the profiles of the Parthenon as plates of polished steel.*

And yet the ultimate references of the Ville Contemporaine of 1922 were Egyptian rather than Hellenic. The calm Mediterranean nostalgia of Garnier's Cité Industrielle unifying private patio and public polis *was here transformed into two different cities: the* petit bourgeois *workers' suburbs laid out beyond the green belt according to Sittesque principles, on the one hand, and on the other, the Pharonic vistas of the Cartesian city—the skyscrapers of monopoly, capitalism masquerading as the* stupas *of Angkor Wat. Unlike Garnier's city—layered into the slope of an escarpment—this is the* tabula rasa *city spread-eagled across the desert, the sublime vision of Boullée transformed into an obsession with the horizon.*

In the unbuilt Governor's Palace a whole range of devices are intended to establish a tabula rasa *of Egyptian if not Indian dimensions. These vary from ornamental lakes which double the profiles of buildings through reflection to sunken earthworks which effectively elevate the built horizon so that structures appear to hover like ships at sea or caravansaries in the midst of the desert.*

But the real genius of Le Corbusier lies in his early realization that "modernity" is but a moment, and that even a hétéroclite architectonique *can be orchestrated so as to yield a number of precisely interlocking metaphors which may go a long way toward reconciling the apparent opposition of culture and civilization. The mediation between East and West evident in the Governor's Palace converges with the insight of Ricoeur when he wrote: "Man's history will progressively become a vast explanation in which each civilization will work out its perception of the world by confronting all others. But this process has hardly begun. It is probably the great task of generations to come. No one can say what will become of our civilization when it has really met different civilizations by means other than shock of conquest and domination." And yet as Le Corbusier remarked while working on Chandigarh, "What is the meaning of Indian style in the world today once you accept machines, trousers, and democracy?"*
K.F.

1 (frontispiece) The Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. Exploded view of the model. A symmetrical axis clearly organizes each level, capped at the top by the inverted curve of the viewing platform. From the bottom the elements are: brise-soleil; *colonnade behind* brise-soleil; *glass curtain wall; level two, the ceremonial rooms and side walls; level three, guest apartments; level four, the governor's apartment; channels for water drainage; level five, the roof garden; and the viewing platform* (barsati).

1

An Analysis of the Governor's Palace of Chandigarh

Alexander C. Gorlin

The pyramidal mass of the Governor's Palace was to be placed directly against the silhouette of the Himalayas (figs. 1–16), at the apex of the capital city of Chandigarh. By presenting the palace as the "crown of the capital,"[1] Le Corbusier emphasized its function as the city's symbolic focus. Its position at the edge of Chandigarh was intended, like the Egyptian pyramids, to define the boundary between civilization and nature. Yet despite its importance it was the single government building of the capital complex of Legislative Assembly, High Court, and Secretariat that was not built.

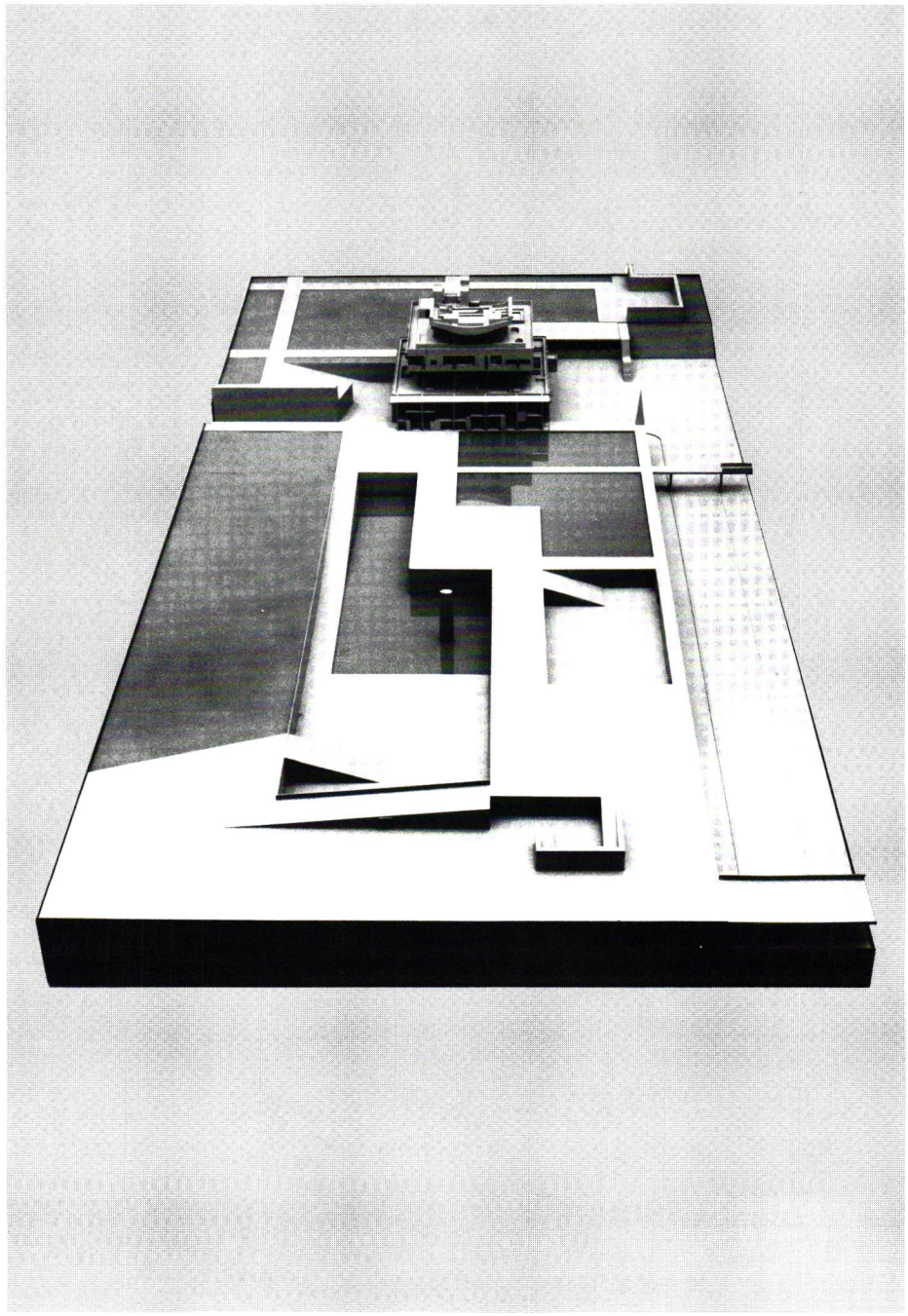
In his attempt to bring modern architecture to India, Le Corbusier synthesized certain native mythical themes with machine age myths of the early twentieth century, fulfilling in Chandigarh his statement that "new cities are also in part ancient cities." Proposing the metaphor of the city as a biological organism in the image of man, as in *The Radiant City* of 1935, Le Corbusier appears in a photograph holding a plan of Chandigarh beside the Modulor figure.[2] Reiterating the theme, the Governor's Palace is appropriately presented next to its turbaned Indian modelmaker. The theme of the city as body, the capitol as head, and the palace as crown is further articulated in the actual plan by three pairs of axes, with water mediating between each set (fig. 17). A canal divides the axis linking the city and capitol, pools separate the capitol from the palace, and within the building itself an elevated water trough to catch the monsoon rains detaches the rectilinear base from the hovering curve of the viewing platform (*barsati*). As expressed in the original sketches of Chandigarh, the play between right angle and tensed curve is most clearly realized in the silhouette of the Governor's Palace. A similar relationship appears in the section of the High Court, the portico of the Legislative Assembly, and the form of the Monument of the Open Hand.

Connected by footbridge to the palace is the plaza and sculpture of the Open Hand. It is a personal symbol equally of Le Corbusier and of Buddha, whose open hand indicates blessing. Its path of approach virtually mirrors that of the Governor's Palace, although in conception they are reversed (see fig. 4); the path to the palace is conceptually solid while the path to the Open Hand is a recessed void. The visual work, previously analyzed by Le Corbusier as "measurable elements in harmony or opposition,"[3] is in Chandigarh characterized by a complementary play of formal oppositions. Through this means, the stepped pyramid, which the Governor's Palace resembles at one level, is reinterpreted in a way which takes such traditional formal references and places them in tension with their modern counterparts.

The palace is situated at the end of an enclosed precinct of multi-level gardens and pools (see fig. 2). This seemingly ancient forecourt of giant ramps, stairs, and obelisks rising from the water belies its modern articulation. The original sketches show a static, symmetrical approach to the palace, while in the final design the axis is broken, creating a shifting series of plazas before the palace. The garden is framed in plan by two interlocking L's, a form derived from the rotation of the arms of a spiral. The pedestrian ascends the Martyr's Ramp to find the distant palace visually thrust forward. The garden levels fall away in shearing blocks as the reflecting pools double their height, creating a foreground and plinth for the palace, which enforces the image of a temple on an acropolis (fig. 18). Descending the spiral ramp, a counter-spiral activates the procession to the palace. The collapsed arms of the spiral compress its centripetal force into a dynamic push-pull effected by the pressing forward of the pools against their static frames (fig. 19). As the three plazas shift to the left, the palace oscillates between two obelisks, a cylinder, and a pyramid, shifting the eye to the mountains and the Open Hand monument to the right. Finally the dense symmetrical mass of the palace wrenches the eye to the center, to settle in the curve of the *barsati*, an elevated valley framing the Himalayas (figs. 20, 21, 25).

The purpose of this forecourt was to visually link the palace with the plaza between the Assembly and High Court. Le Corbusier feared that "by optical illusion this distance would be disastrously increased," so that the palace would be lost in the background. In this "linking of distant objects,"[4] the deep space of the traditional processional axis is visually compressed through perspective dis-

2 Governor's Palace, Chandigarh. Le Corbusier, 1950–1951. The model of the palace and its site at the scale of 1/8"=1'. The ramp of the Monument to the Martyrs is in front. Two levels of gardens and water pools face the palace. Pedestrians enter along the shifting series of squares in the center, automobiles enter along the straight road to the right.
3 Plan view of the model.
4 Diagram of the relationship between the Governor's Palace to the left and the Monument to the Open Hand to the right. Note the similarity of form in the locking L's and the conceptual reversal in terms of solid and void.
5 The elements of the model of the Palace distributed over the site.



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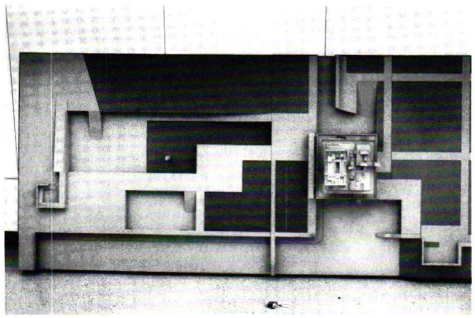

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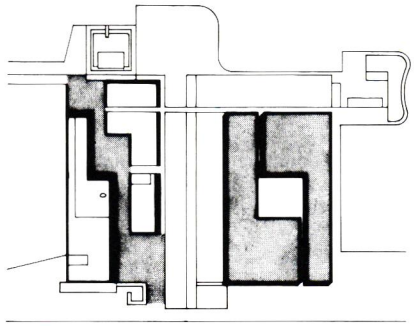

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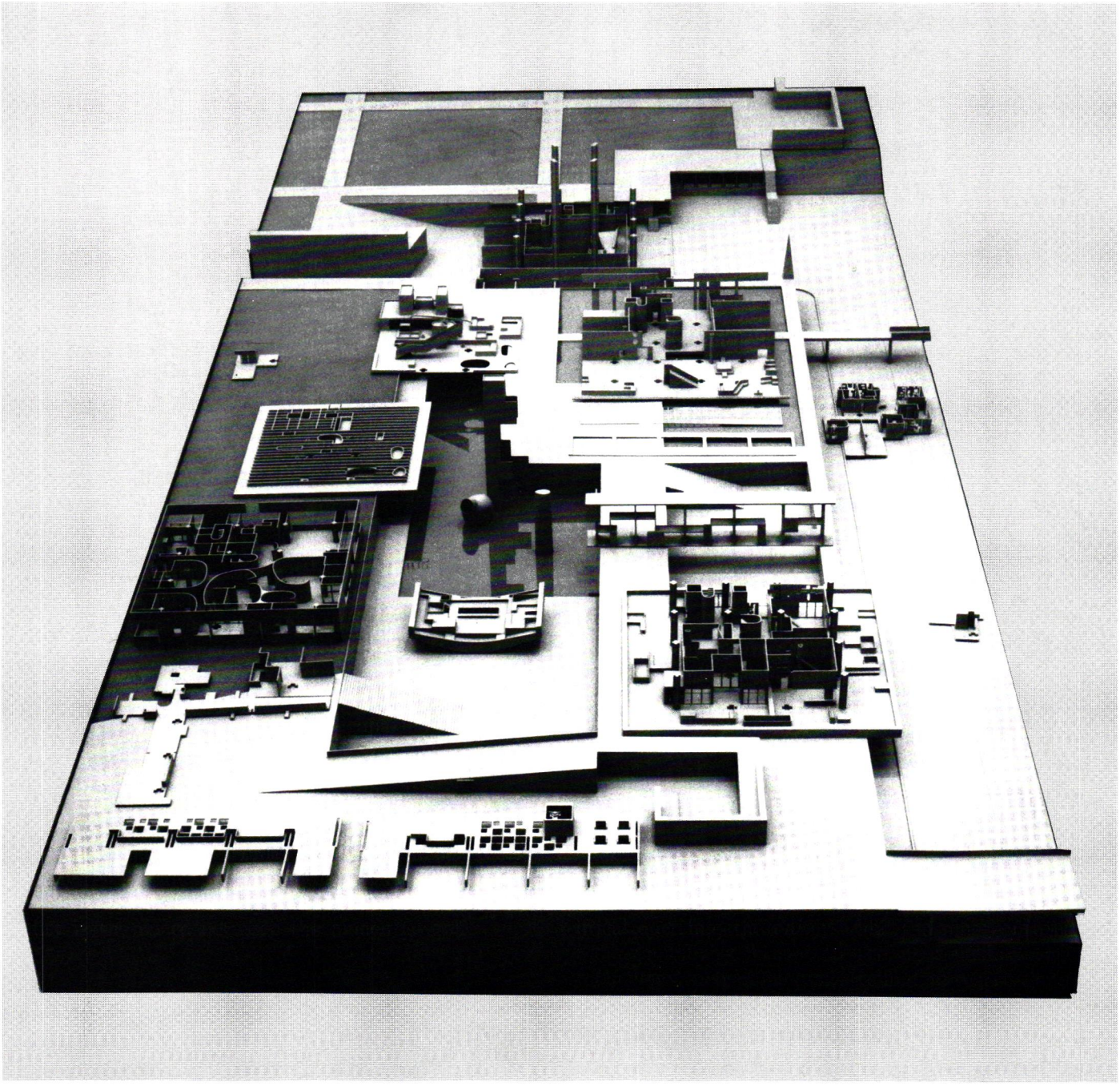

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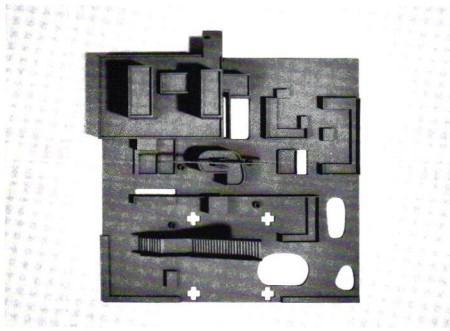

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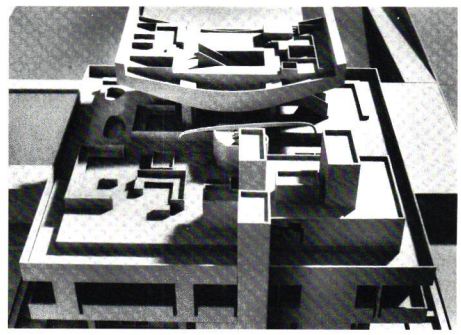

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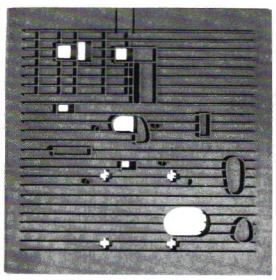

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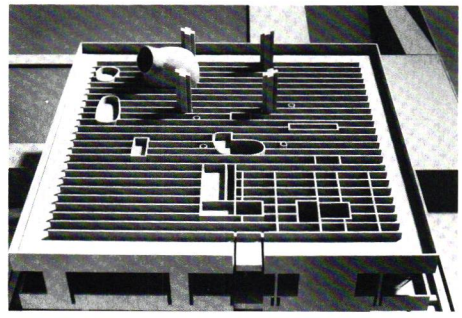

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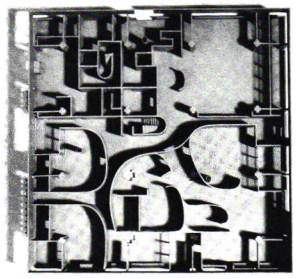

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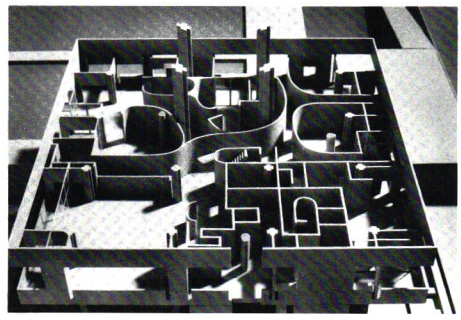

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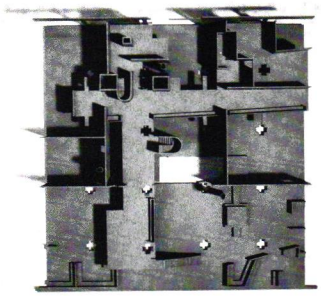

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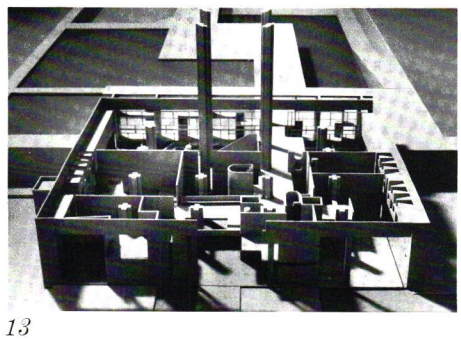

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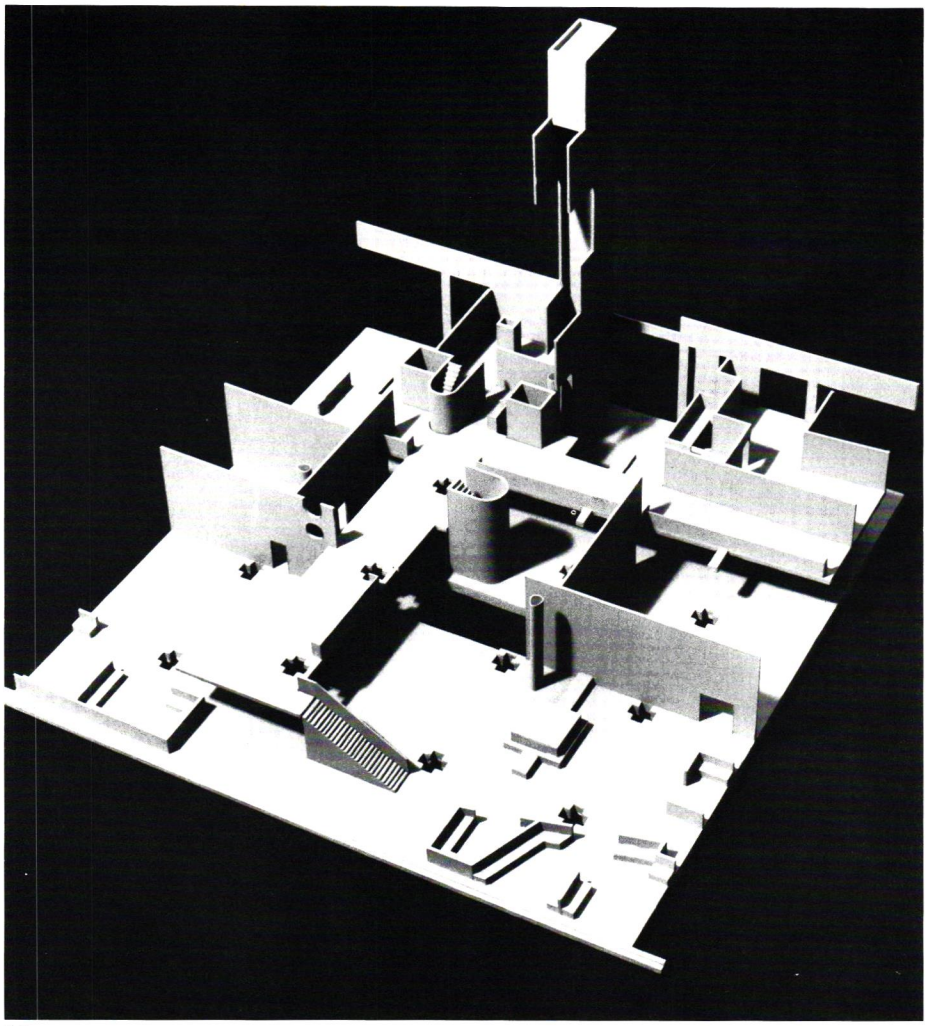
6 Governor's Palace, Chandigarh. Le Corbusier, 1950–1951. Level five, the roof garden. The large hole in the lower right corner is for the prayer room (puja), *the others for planting.*
7 The palace from the rear. Water surrounds the roof garden accommodating the surplus of the monsoon season.
8 Sub-surface for draining surplus water in the monsoon season.
9 Removing the roof garden level reveals the drainage subsurface. The prayer room rises between two of the four columns that support the viewing platform.
10 The governor's apartment looking down from the front.
11 The governor's apartment from the rear.
12 Level two, the ceremonial rooms. The principal facade is at the bottom.
13 View over the governor's private office to the double height reception hall beyond.
14 Level two, rooms for state receptions, entrance hall for pedestrians to the front. The musician's mezzanine leads to the governor's private office. The elevator shaft rises in the back.
15 Level one, view showing vehicular entry passing beneath main support columns to the viewing platform (barsati). *Pedestrian entry is from the right on an upper level.*
16 Level two, the mezzanine is inserted between the nine-square column grid and pushes through the side wall to provide a balcony for gubernatorial addresses.
17 The central axis of Chandigarh. Each of the three divisions of the axis exhibits the body/head duality, separated by a "zone" of water. In the section of the palace this "zone" is constituted as a monsoon lake; in the plan of the capitol it appears in the ornamental lakes dividing the Governor's Palace from the High Court and Assembly buildings, etc.



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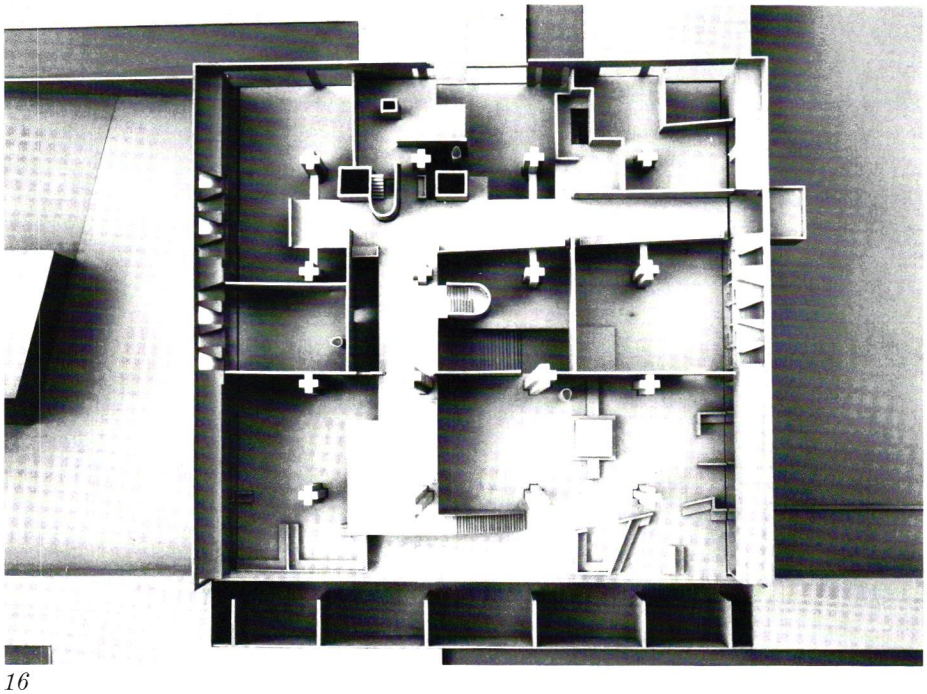

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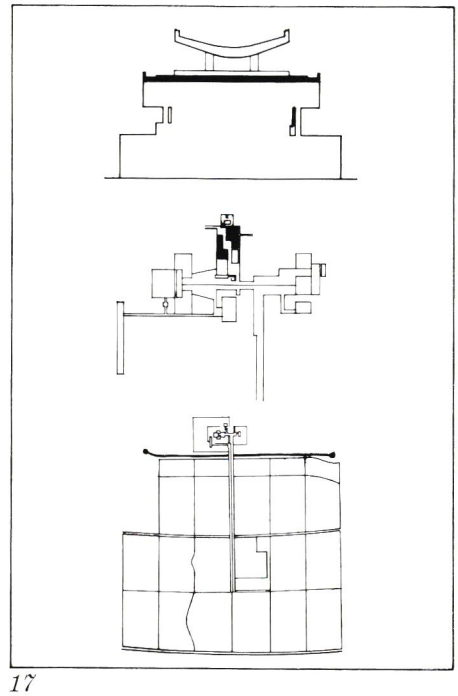

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tortion. Looking toward the palace, the reflected incline of the ramp forms a horizontal pyramid, its position facing the viewer neutralizing the perception of distance (see fig. 18). At the far end, the pyramidal obelisk terminates the converging path, effecting the illusion of a vertical tilt of the perspective. Completing the triad are the reflections of the obelisk and the palace, each forming a diamond suspended between water and sky (fig. 24).

Inside the garden, the counter-illusion to increased distance is developed as the side wall, ramp, and stair reflect and slant into a perspective pyramid of great depth. The contrast between actual and implied depth is clear in the separate views allowed to the pedestrian and the automobile. From the road one sees the palace atop the flank of the garden wall, diagonally foreshortened in perspective. Reproducing this relationship, though only implying depth, is the frontalized diagonal of the Martyr's Ramp (figs. 26, 30). The entire site summarizes these perceptual vibrations in the yin-yang formation of the two interlocking L's; the convergence of the one, increasing the illusion of distance, is countered by the divergence of the other.

This dialogue between traditional deep space and modernist shallow space, signified by the perspective pyramid of the Renaissance and its Cubist inversion, is evident on the facade of the Museum of Knowledge,[5] designed to occupy the site of the Governor's Palace after the palace was rejected (figs. 22, 23). Here the actual frontal plane of the cube is countered by the arrangement of the stair screens into a triangle of implied depth, while on the rear facade is an inverted triangle. In the Governor's Palace, the actual depth of the volumes of the stepped pyramid is opposed by the conceptual shallowness of the planar containers and the column grid, which create a series of interlocking volumes that imply the envelope of the original cube. These spatial layers set up an implied vertical base plane to the horizontal contraction of the pyramid. Along the vertical axis, a triple series of inverted and upright pyramids extends the argument between perspective pyramid and its inversion. With water again acting as a datum, three pyramids spring from the base pool, visually lifting the volumes of the palace (figs. 27, 28). The vertical movement is halted and reversed by the centrally tensed, inverted curve of the *barsati*, creating a tremendous concave-convex pressure, barely contained within the implied pyramidal boundary (fig. 29). Its inverted form is echoed in the pyramid hung from the elevated water trough and in the reflected image of the palace (fig. 31). The solid, right angled base is inverted in outline within the curved void above, itself reversed in the solid curve of the prayer room below (figs. 32, 33).

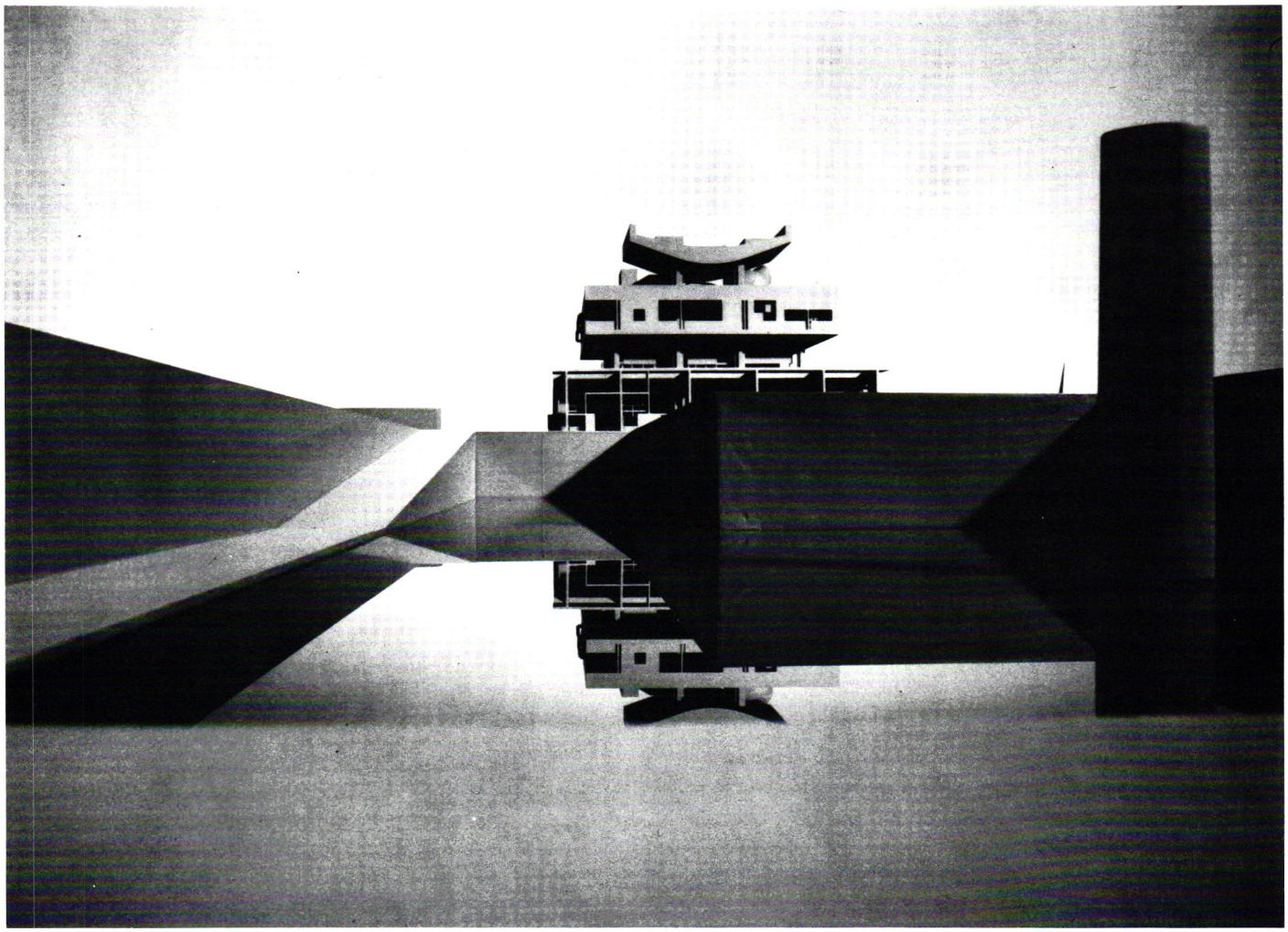
Solid and void are further utilized to flatten the pyramid through a figure-ground reversal of the rectangular punctures of the upper level with the similarly sized and shaped panels on the *brise-soleil*. The upper frame is proportionally reduced, giving the impression of the voids denying their immateriality and popping out in space to the frontal plane below. Tiny, square windows between these levels provide a distant background for this illusion to occur. At night the relationships are reversed; the voids become white floating rectangles in the black sky (figs. 34, 36).

In the development of the elevations, the dual articulation of both solid and plane again contrasts traditional and modern conceptions of volume. Separated into their horizontal and vertical components, the volumes of the palace become equally a conceptually modern construction of thin planes and a series of pyramiding, stacked solids. For example, in the cantilevered level of the governor's apartment, the extension of the incised, punctured plane above and its slotting below are opposed by the diagonal cut of the corner indicating solid (fig. 35). This double meaning is clear in the massive side walls, where the canted medieval windows are produced by the shift of two screen walls of proportionally related squares, conceptually sandwiching a thickness between themselves.[6] Mondrian's dictum that the reality is the space between the planes is here amplified.

The extraordinary complexity of the palace's monumental pedestrian entry is articulated within a frame of strict bilateral symmetry. Countering the symmetric frontality of this facade is an asymmetric rhythm of solids and voids,

18 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. View from lower reflecting pool, palace on acropolis-like podium. The fragmented form of the ramp and the accompanying shadows are completed as images through reflection in the water.

19 Diagram of the garden plan showing its conceptual derivation from the pinwheel form.



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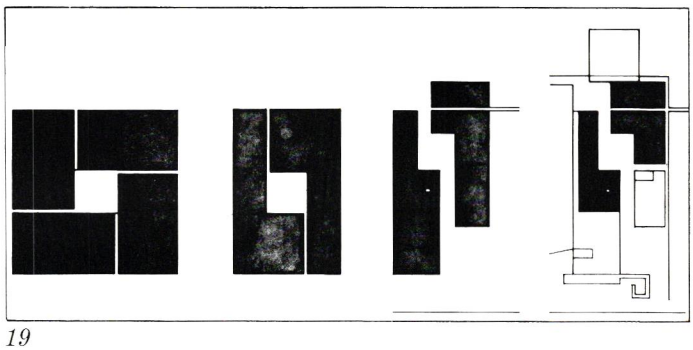

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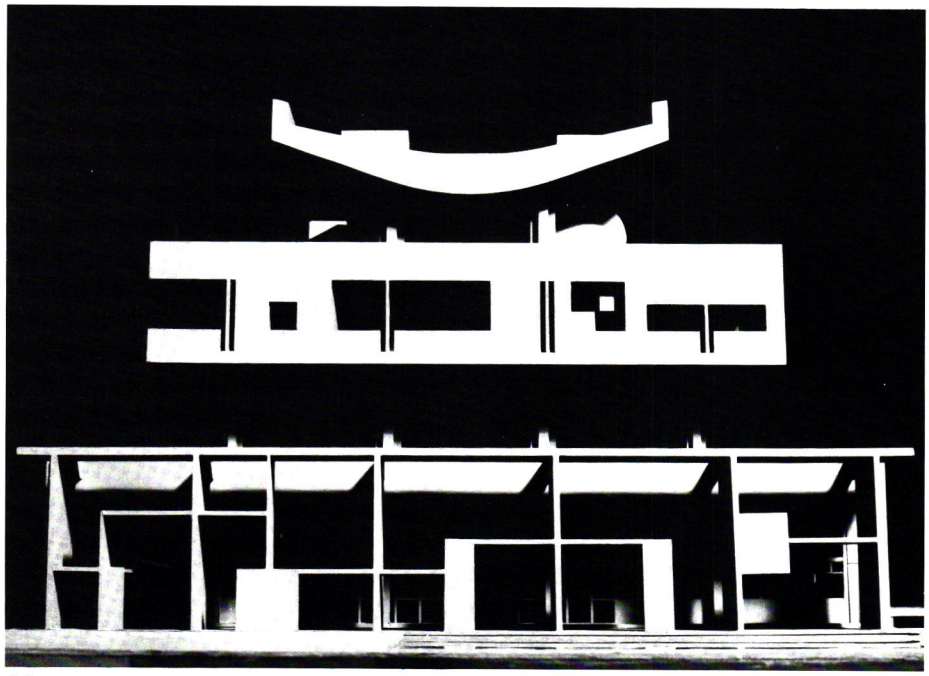

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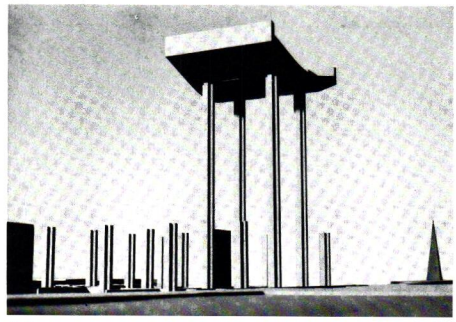

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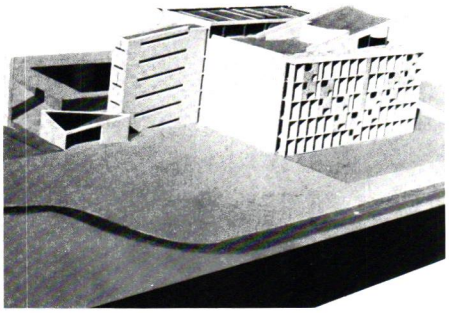
20 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. Front elevation of the palace showing the change from the open grid of the brise-soleil *to the closed form of the governor's apartment above. This compositional contrast is terminated by the viewing platform.*
21 The viewing platform atop its four columns. As the model is disassembled, the imagery becomes more ancient.
22, 23 Model of the Museum of Knowledge proposed by Le Corbusier for the site of the palace after the latter scheme was rejected by the governor.
24 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. Reflection of the palace in the upper pool. The pyramidal obelisk to the right is an abstraction of the palace's geometry—a pyramid completed in reflection to form a diamond.
25 The viewing platform. A stair leads to this elevated platform, the city on one side and the mountains on the other. The hollow box-like forms are for planting.



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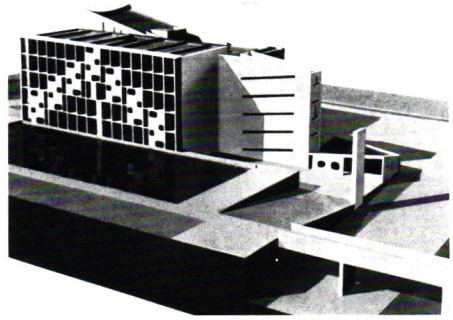

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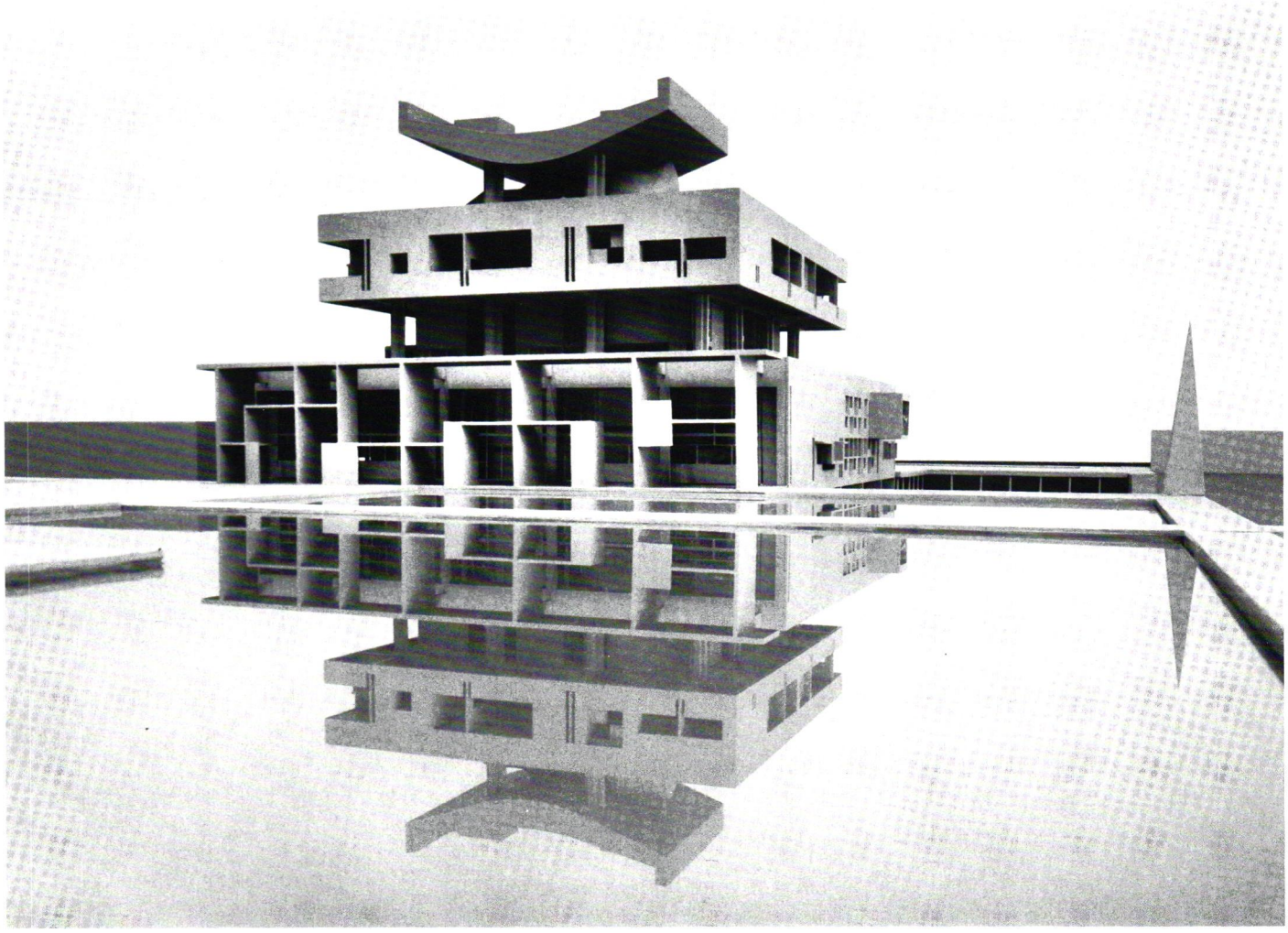

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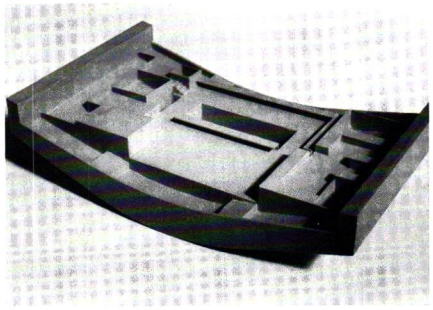

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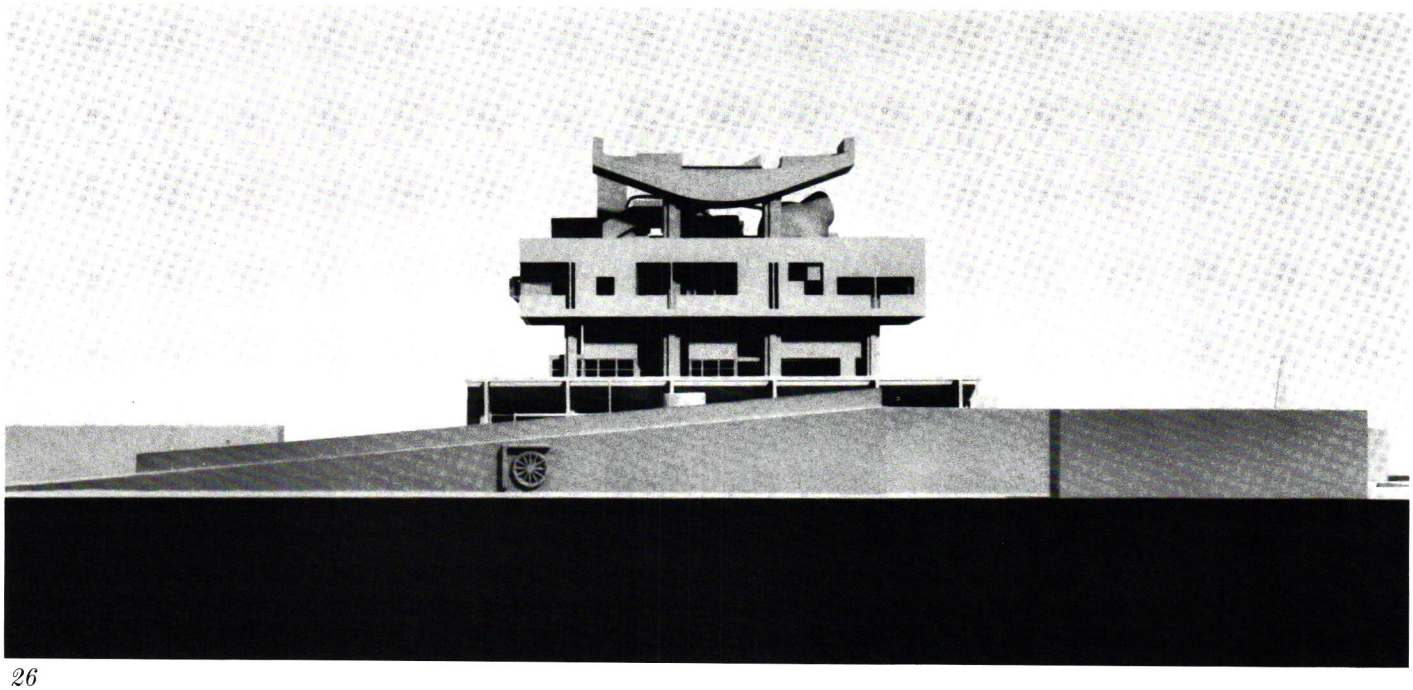
26 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. View of the palace from the ramp of the Martyr's Monument. The pedestrian sees the palace frontally against the backdrop of the Himalayas.
27 Diagram showing the initial contraction of the lower floors thereby elevating the volumes of the governor's palace.
28 Implied boundary of stepped pyramid and geometrical envelope of golden triangle.
29 Opposition between levitation and baroque-like concave-convex pressure.
30 From the road, the habitual marine "reference" of the battleship appears.
31 Triad of inverted triangles, the third is implied by the reflection in the water.



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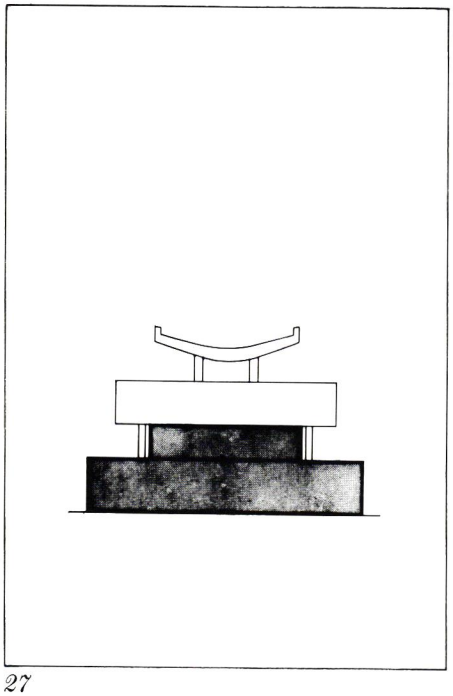

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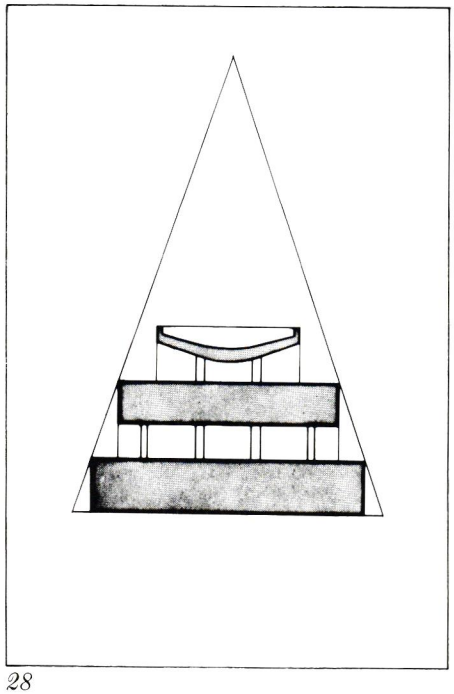

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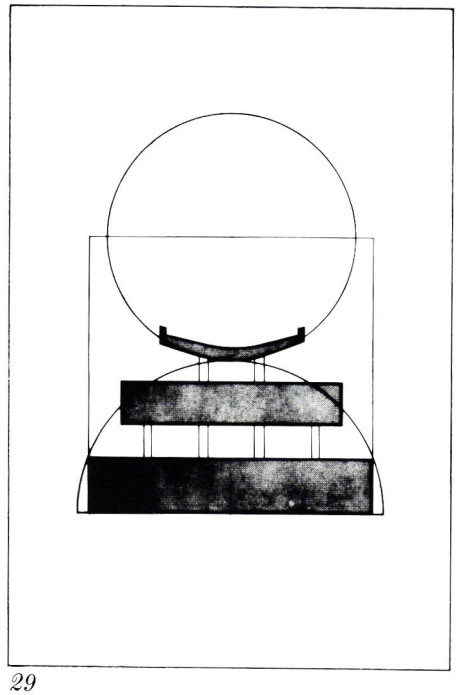

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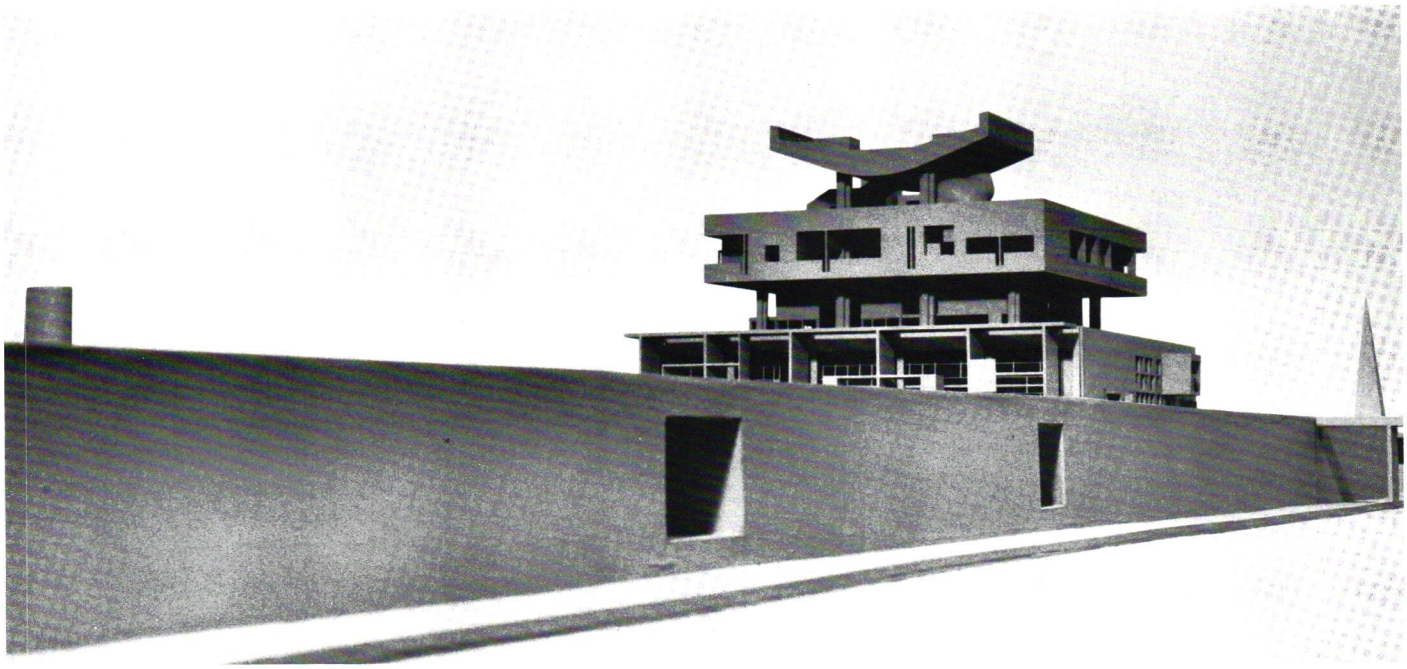
32 Solid-void reversal of rectilinear forms.
33 Similar reversal of curves, the solid mass of the prayer room inverted in the void-arc of the viewing platform.



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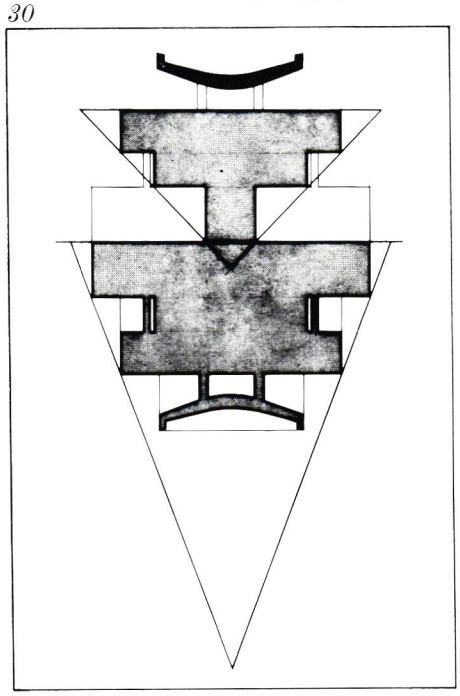

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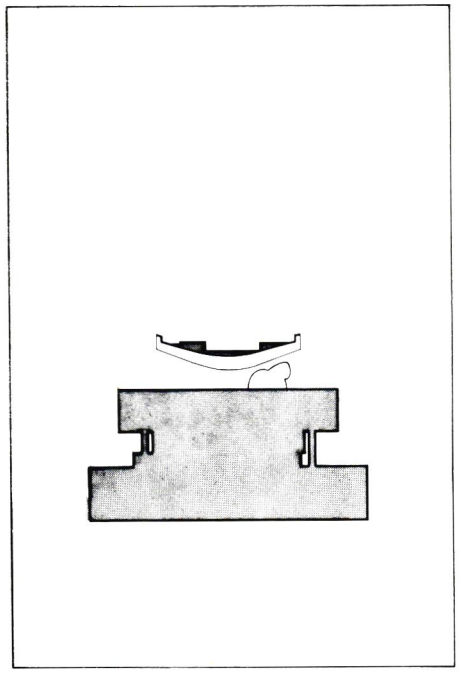

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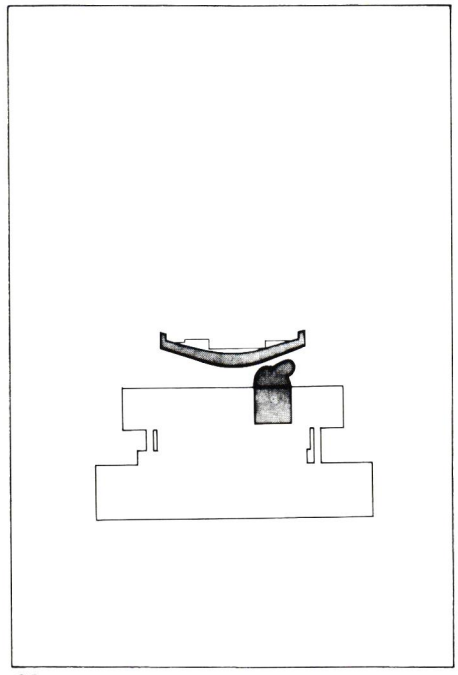

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34 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. The palace at night.
35 The two walls of the reception level. Ronchamp-like windows are cut into the thickness which is itself undercut to show the hollow nature of its construction.

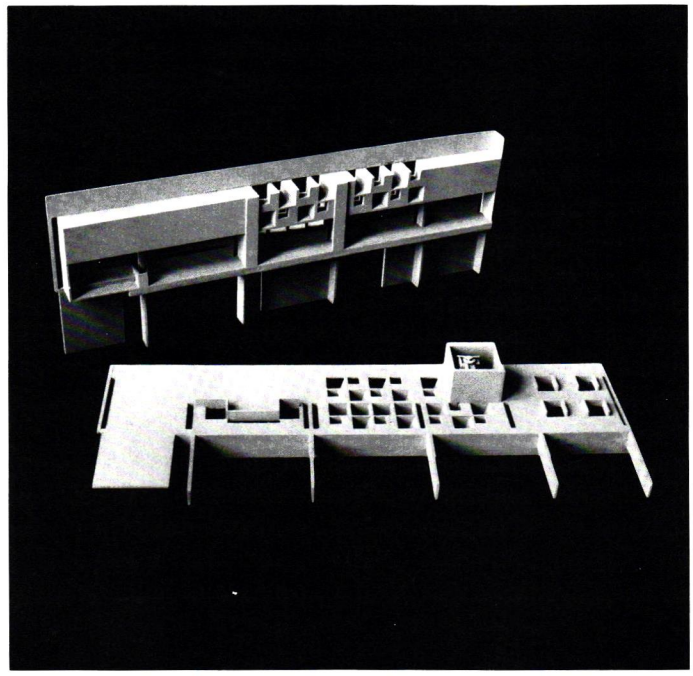
36 Figure-ground reversal of window voids with similarly proportioned panels on the brise-soleil. *This helps to consolidate the composition across the vast spaces of the capitol.*

34

rotating the eye to the sides. At the sides the condition of the symmetric core is reversed to a dominant asymmetry, created by the addition of *barsati*, *brise-soleil*, and elevator tower. Through this additive-subtractive ordering method, symmetry and asymmetry become variations of each other, two seemingly opposed conditions resolved into one.

This dual articulation characterizing the formal strategy of the Governor's Palace can be contrasted with Le Corbusier's World Museum of the Mundaneum presented in 1927. Here the stepped pyramid is too close to its historical prototypes; as Le Corbusier writes, "its spiraling tiers recall Ninevah or Mexico."[7] In the Governor's Palace, the highly developed tension between past and present serves both to preclude the literalness of historicizing quotation and to provide a link with Indian thought. Thus, Hindu philosophy, dualistic in nature, invests certain formal oppositions like solid-void with religious significance as models of universal truth. Perhaps it was Le Corbusier's own dualistic mode of thought that enabled him to establish conceptual parallels with the ancient forms and meanings elaborately developed in Hindu philosophy.

The symbolism of the palace can be understood as Le Corbusier's conscious confrontation with India as he attempts to conjure ancient sacred themes alongside modern myths. It is an approach which explores the capability of certain forms to accept meaning. In many instances, related images are introduced late in the design, and the overlay of such interacting, seemingly contradictory images is eventually resolved in the personality of Le Corbusier. For Le Corbusier, the experience of India had a personal meaning. He publicly avowed the "necessity of satisfying Indian needs and ideas rather than imposing Western aesthetics and ethics,"[8] and later spoke of "possible contact, in Chandigarh, with the essential delights of Hindu philosophy, fraternity between the cosmos and living beings."[9] Uniting the symbolism of the palace is Le Corbusier's metaphysical theory concerning harmony propounded in *Towards a New Architecture*, in which he links man, architecture, and the machine. Both significant architecture and certain machines are "felt to be harmonious



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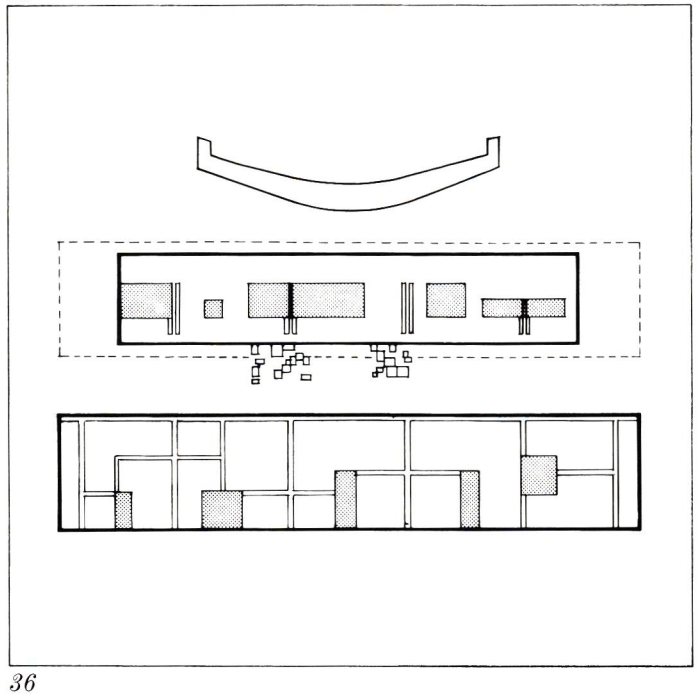

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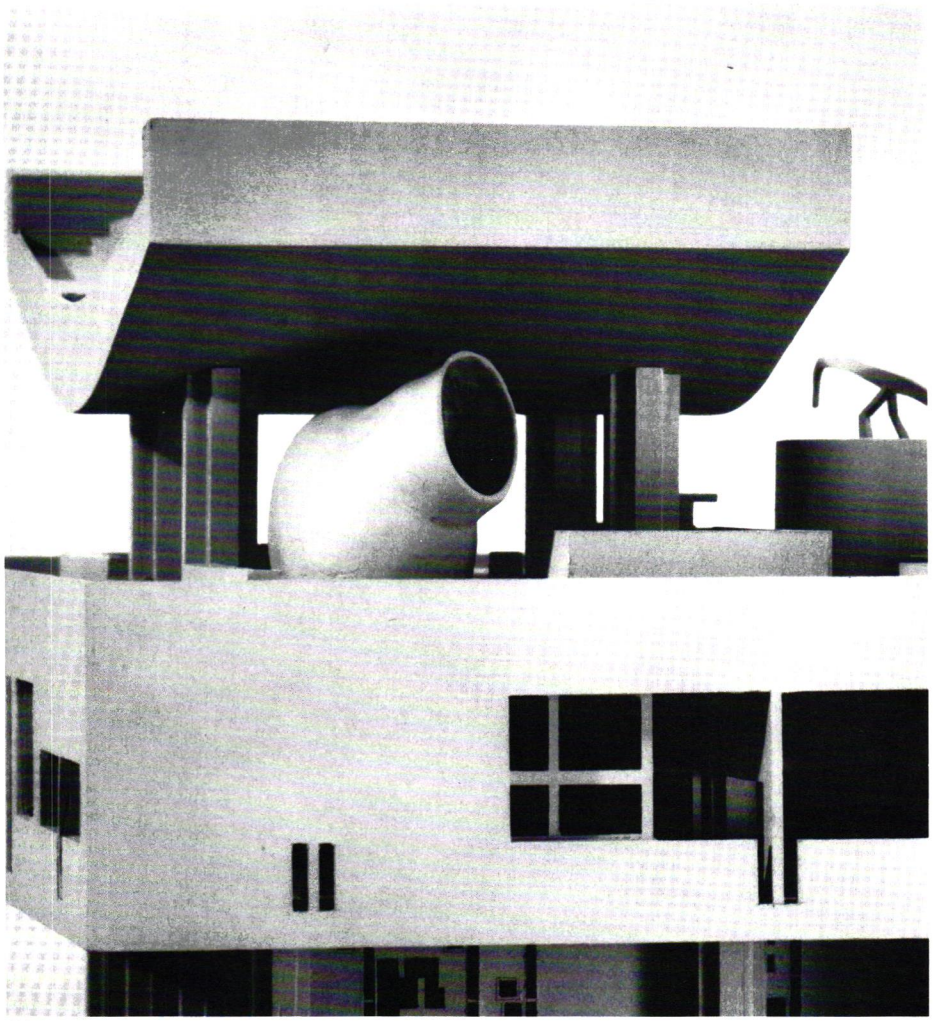
because they arouse, deep within us and beyond our senses, a resonance, a sort of sounding board which begins to vibrate. An indefinable trace of the Absolute which lies in the depths of our being." Harmony, then, is "a moment of accord with the axis which lies in man, and with the laws of the universe—a return to universal law." Both the airplane and the Parthenon had "recovered the axis."[10]

Thirty years later in the Governor's Palace, Le Corbusier confronts his modern metaphysic with traditional Indian conceptions of the sacred. Le Corbusier's axis uniting man, architecture, and the machine is joined to the mythical theme of the central axis of the world and man. In its complex pyramidal massing about a central axis and its crowning of the triple axes of the capitol, the Governor's Palace reinterprets the sacred themes of transcendence in both its communal and individual variants.[11] The stepped pyramid as the axis of the universe and the world mountain linking heaven and earth are analogous in Indian mythology to the body of the Universal God. In yogic thought, each individual is a microcosm of the world whose own central axis enables him to ascend to the Divine within, liberating himself from material nature. Of the various sets of overlaid imagery revolving about these themes, the first evidence appears in Le Corbusier's drawing for a concrete bas-relief depicting the front facade of the Governor's Palace held between a bull and the crescent moon (fig. 46). As the only work of his architecture considered special enough by Le Corbusier to be taken out of context and isolated as a symbol, the bas-relief's significance unfolds in relation to its adjacent signs.

The relationship between the curve of the *barsati* and the horns of the bull is given by Le Corbusier in sketches of bulls adjoining sketches of the "plastic conception of the capitol" (figs. 38, 39), and quite literally in one of his "Taureau" paintings of the early fifties entitled *Atlas Chandigarh*. In the context of Hindu iconography, the bull, the crescent moon, and other images in the palace coalesce about the symbolism of the Hindu god Shiva. As one of the Hindu Trinity, Shiva manifests and unifies the duality of existence, simultaneously the sensuous cosmic dancer and the chief ascetic. It is through the symbolism of Shiva that the Hindu set of images are ordered in the Governor's Palace. For the bull, his horns crowning the palace, is Nandi, the animal vehicle and emblem of Shiva.[12] The curving *barsati*, the "horns" now of the crescent moon, again indicates Shiva, and in section, the prayer room takes the form of the most common Sivaite symbol, the lingam or phallus (figs. 37, 40, 41, 42–45). It is usually grouped with its feminine counterpart, the inverted triangle of the *yoni*. Thus in the palace the prayer room is attached to the base of the central inverted triangle, together lingam and *yoni*, solid and void, signifying the duality in Hindu thought. Finally there is the extraordinary correspondence of the curving walls of the governor's apartment to the sign "OM," sound and embodiment of Shiva as the Absolute (figs. 48–50). Virtually the same shapes as the Algiers apartment blocks, they are here rearranged to take on new meaning.[13] Although the sign does not appear in the first design, its introduction elaborates meanings latent in the idea of the Palace as a Hindu temple.

The references to Shiva as the specific deity of the Governor's Palace is explained by his role as the chief yogi, and thus in charge of the esoteric yoga doctrine of the Kundalini. This is conceived to be a serpent power residing in the base of the spine which through yoga exercises is forced up the central axis of the body in two intertwining spirals (recalling the red and blue spirals of the Modulor). It passes through a number of lotus centers or *chakras* in pursuit of the goal of liberating the Self by unification with the Divine. It is in the symbol of the highest *chakra* that the placement of the Hindu images is established. The images appear in the palace in the same relationship as in the *chakra* symbol (see figs. 17, 47). At the peak of the vertical axis where the *barsati* crowns the palace, the crescent moon surmounts the inverted *yoni* triangle, complemented within by the lingam and the sign of Om, together symbolizing the transcendent state where "one witnesses divine revelations day and night."[14] The biological analogy of Chandigarh as body and head is extended to the metaphysical; the experience of the building, spiraling from dark to light, is ordered as a mystical journey within the self, beginning at the center of Chandigarh



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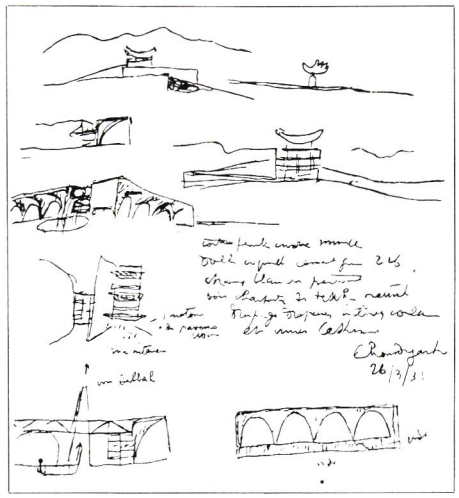

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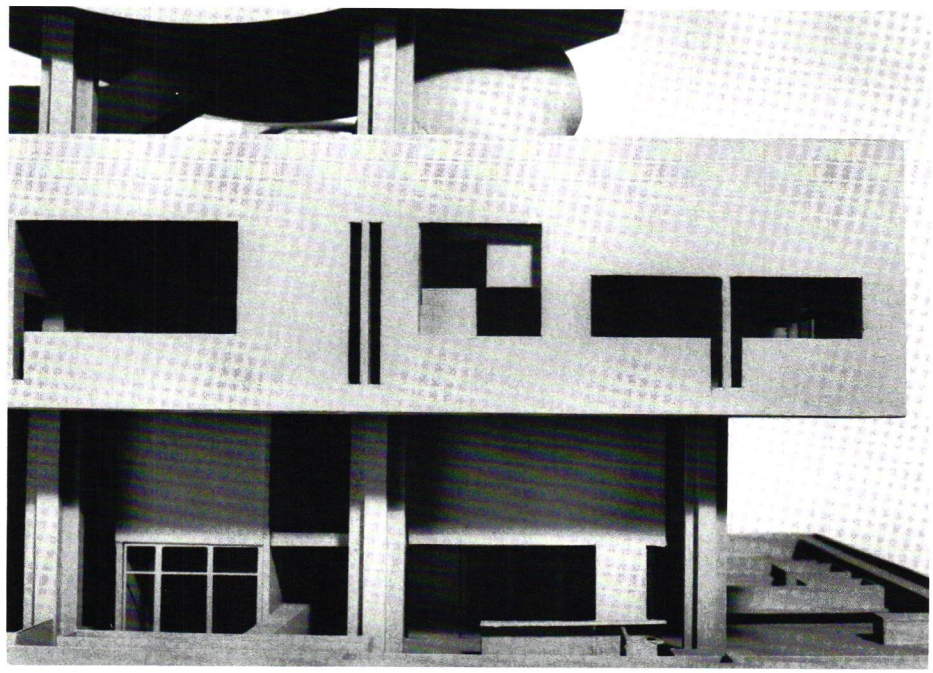
37 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. The palace roof garden. The prayer room rises from the base of the governor's apartments. This lateral view of the viewing platform shows its similarity in form to the entrance portico of the assembly building.

38 Sketches by Le Corbusier of bulls, an iconographic source of Chandigarh's imagery.
39 Initial sketches for the Governor's Palace, Open Hand, High Court and Assembly buildings.

40 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. Detail of the front elevation. The prayer room huddles under the curve of the viewing platform.
41 Section through the palace showing the phallic shape of the prayer room.
42 The prayer room's opening is angled to the morning light.
43 The columns, obelisk, and walls recall the imagery of Persepolis.
44 View of the palace from the vehicular entry. As opposed to the symmetrical front elevation, this side is asymmetrical. The viewing platform is advanced forward, and the elevator shaft recessed with respect to the central axis.
45 Alternative view of the dissembled model shown in fig. 43.
46 Sketches for concrete bas-reliefs showing the elevation of the palace between the crescent moon and a bull, demonstrating the palaces strong iconographic significance.



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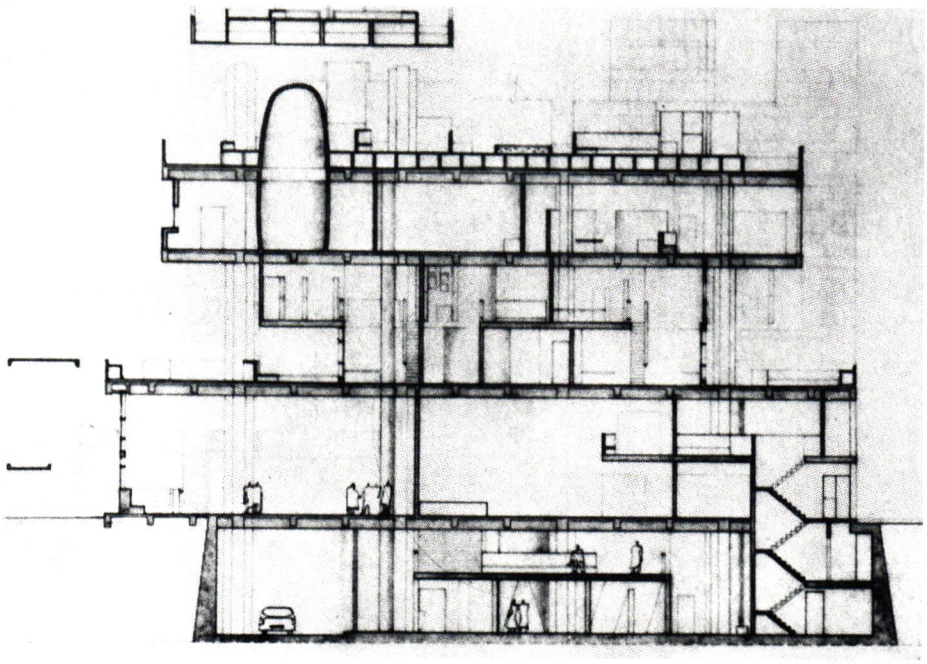

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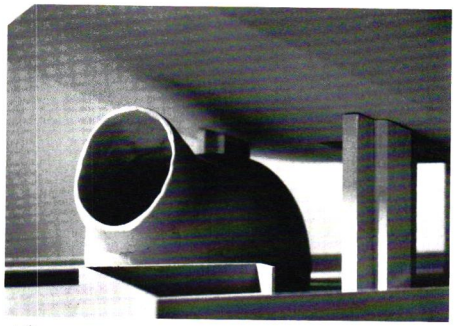

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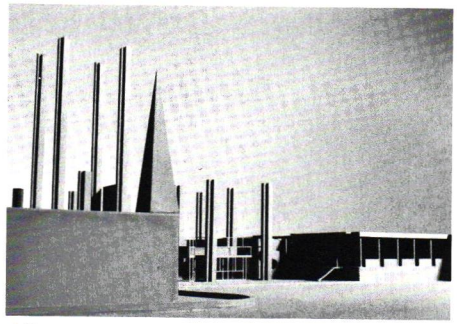

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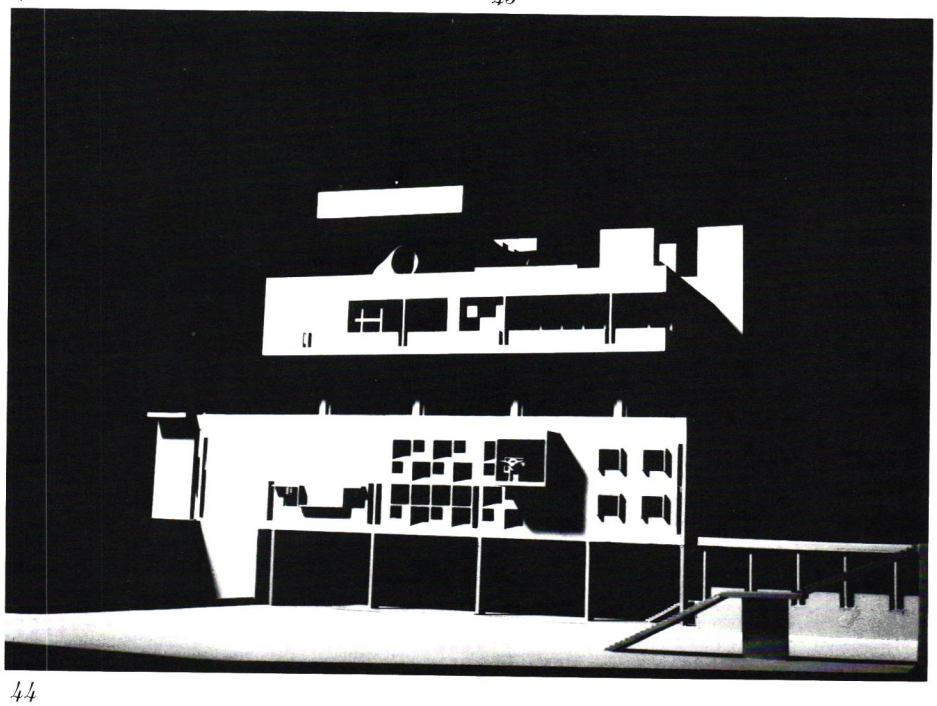

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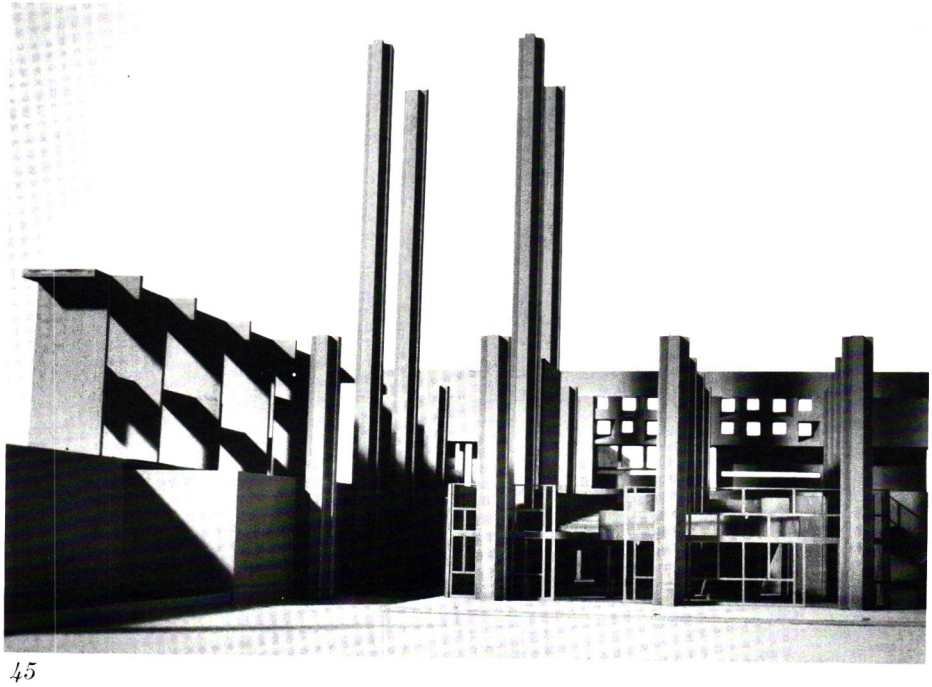

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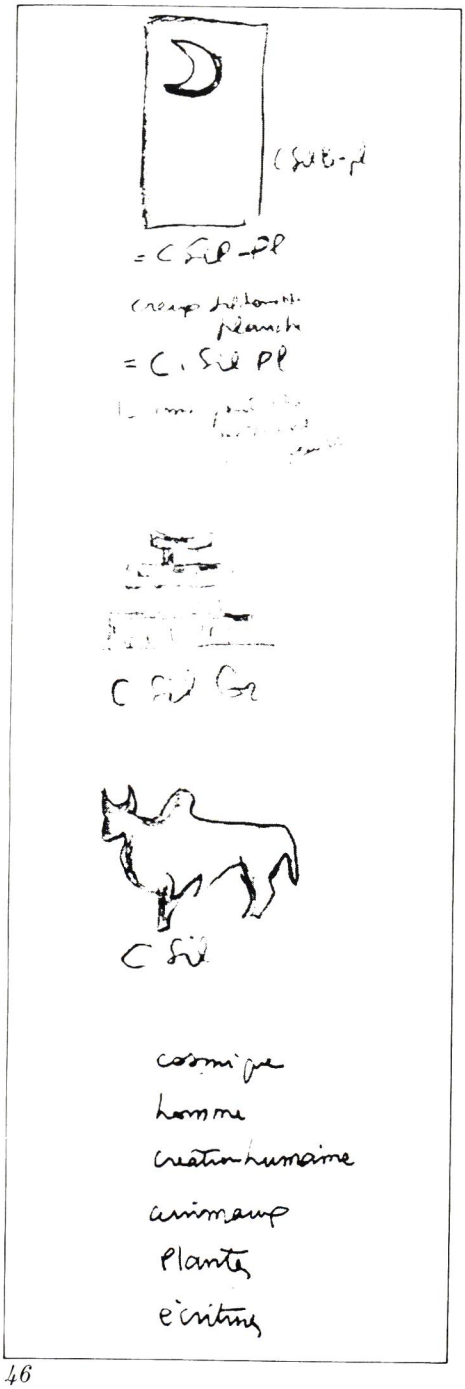
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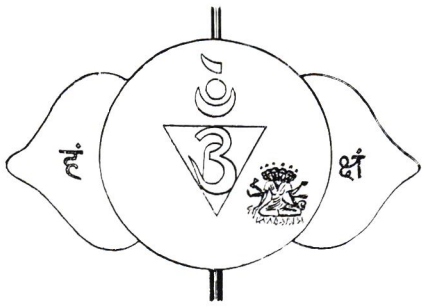


47

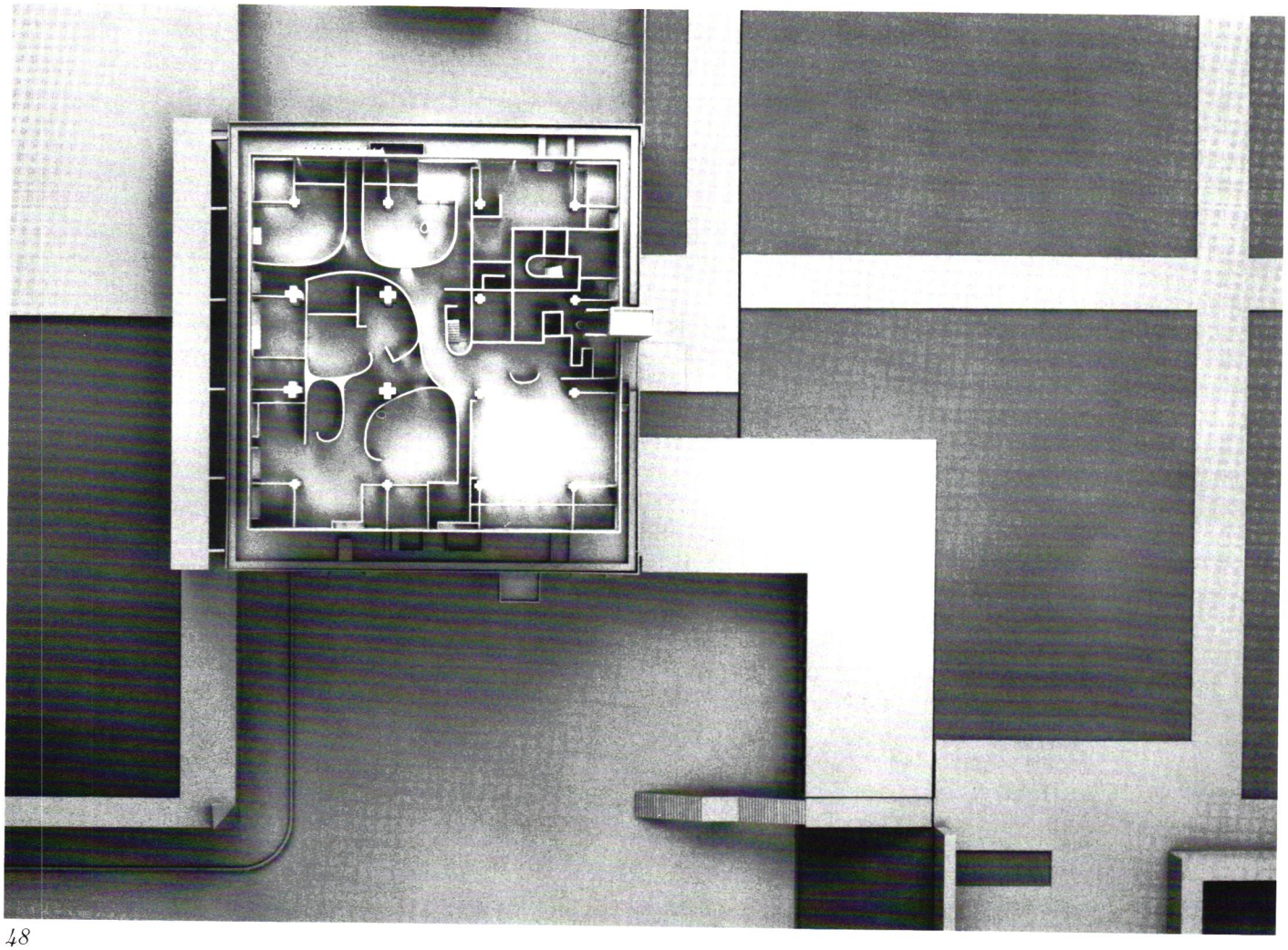
and culminating above the roof of the Governor's Palace.

As Mircea Eliade writes, "the phases of the moon give us, if not the historical origin, at least the mythological and symbolic illustration of all dualisms."[15] Thus the image of the moon in the palace is countered by that of the sun in a set of ancient symbols from the East and West.[16] As the Tibetan *yogin* attempts to unify the symbolic opposites of sun and moon, Le Corbusier takes the form of the *barsati*, already articulated as horns and crescent moon, and infuses it with the image of the Egyptian sun boat (fig. 54).[17] The diagonal of the ramp facing the palace visually severs the curving boat from its columnar base. Sailing up the ramp, it recreates the daily journey of the Egyptian sun god Ra across the sky. The vertical thrust of the supporting columns through the elevated water trough mirrors the Egyptian painting of morning, where a god rises from the primeval waters, his raised arms holding aloft the boat of the sun (fig. 55). On the side of the ramp is a symbol that is equally the Buddhist Wheel of the Sun and the Law. Yet another ancient reference made by the *barsati* and columns, it appears on the ceremonial gate at Sanchi. In the Buddhist search for Nirvana and the Egyptian pursuit of immortality, the theme of the transcendence from mundane reality to a higher plane of existence is joined to the Hindu symbolism.

Corresponding to the ancient images of water (solar boat) and sky (crescent moon) are two twentieth century icons, the ship and airplane. Believing they touched the metaphysical axis of man, Le Corbusier equated them with sacred architecture of the past. The pedestrian views the ancient solar boat and the sculpture of the wheel on the ramp below as if gesturing to the cars speeding by. For from the road, the flank of the garden wall and the Palace atop its plinth become the hull and superstructure of a battleship or aircraft carrier (see fig. 30). The image of the Villa Savoye, the "machine for living," here becomes the captain's cantilevered bridge of the ship of state. Completing the machine imagery is the shift from water to sky. As the auto turns left to the lateral view of the columns lifting the *barsati* above the cantilevered volume, the image of the struts, wing, and cabin of the Farman

47 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. Diagram of the chakras of the Kundalini yoga. The highest chakra includes all the major symbols of the Governor's Palace—the crescent moon surmounting an inverted triangle within which are the lingam and the sign of Om.

48 Plan view of model showing the governor's apartment, the grid of the governor's garden, and the L-shaped office block.
49 Detail of a corner of the model showing the prayer room rising from the upper curving wall.
50 The sign of Om. Its shape recalls the curvilinear walls of the plan of the governor's apartment.



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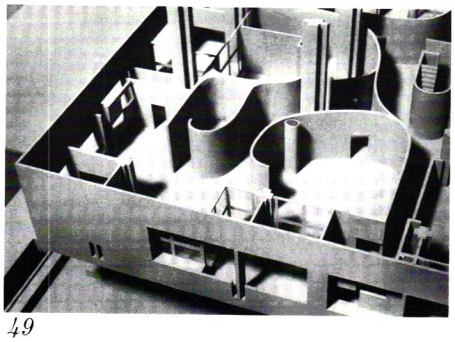

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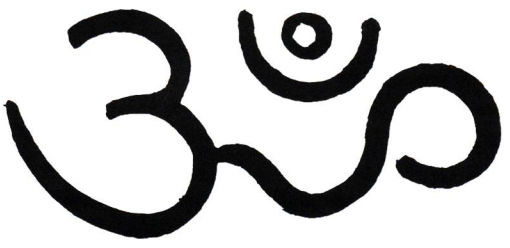

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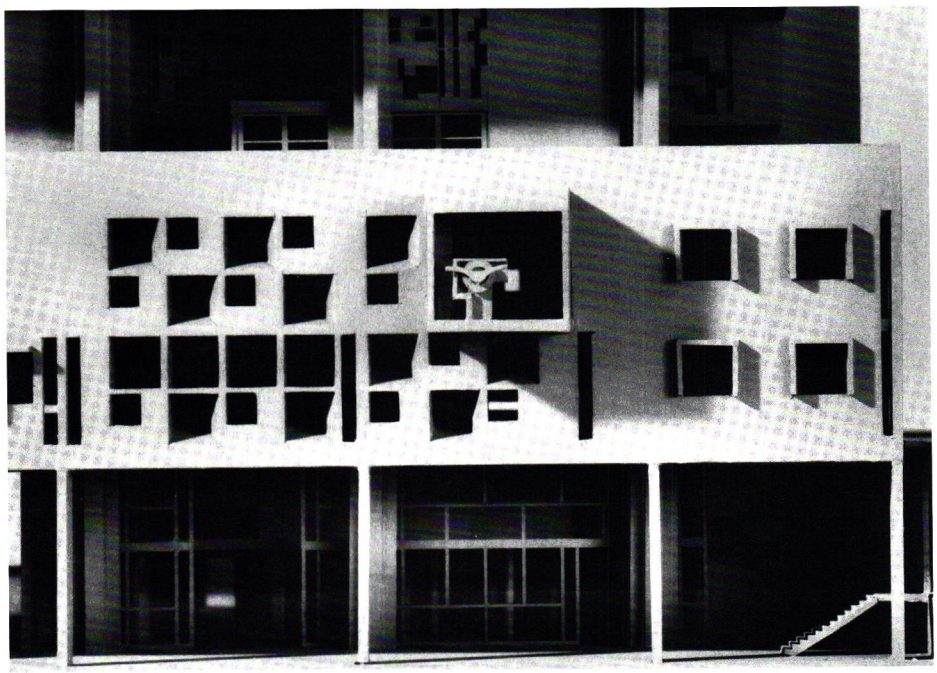

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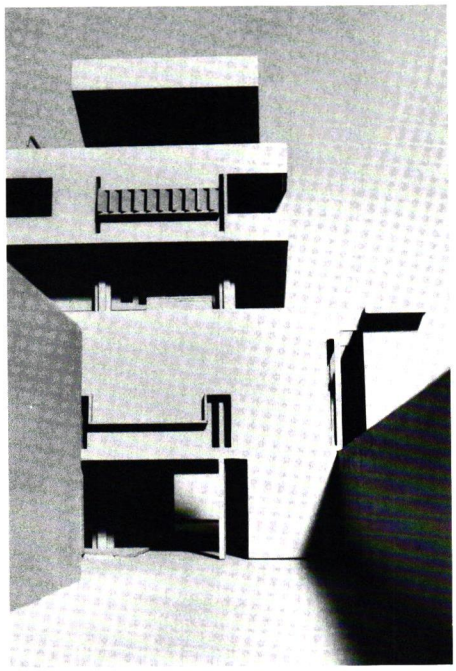

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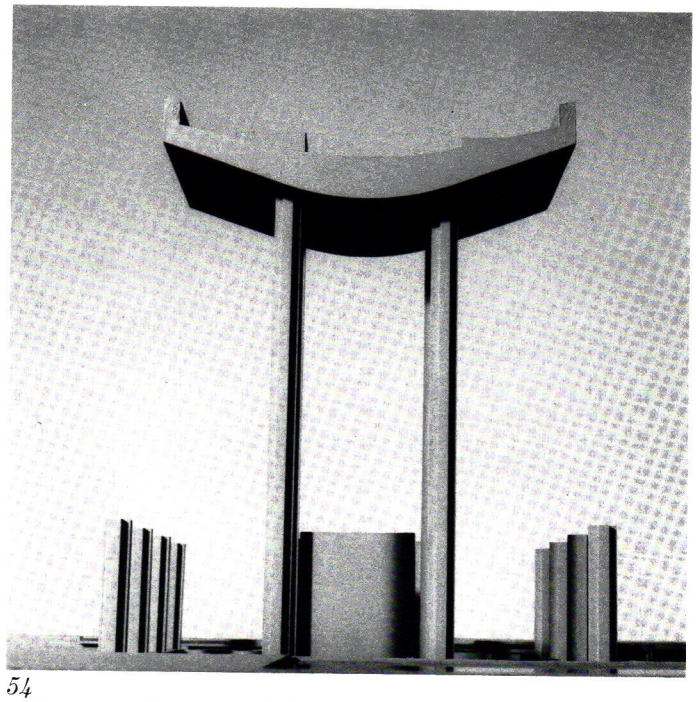
51 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. The sculpture facing the vehicular entry embodies the overlapping meanings of the palace. In one form it incorporates a plane's propeller, a ship's steering wheel, a solar boat, and the horns of the bull.
52 View of the palace from the pedestrian access. Elevation can be compared with the airplane in fig. 53. Le Corbusier contrasts the ancient images of the sun boat, which the pedestrian views frontally, with the modern image of the airplane.
53 The Farman "Goliath" from Towards a New Architecture, *visible from the road.*
54 Viewing platform atop its columns.
55 The Egyptian boat of the sun held aloft by Ra, with the scarab pushing up the sun disk.

Goliath in *Towards a New Architecture* appears. As in his book *Aircraft*, Le Corbusier pays homage to the machine which recovered the axis (figs. 52, 53).

Embodying the overlapping meanings of the palace in a single form is the sculpture facing the vehicular entry (fig. 51). At once it is the plane's propeller, the ship's steering wheel, the solar boat, and the horns of the bull—all united in the personal imagery and symbolic aspirations of Le Corbusier. Again, at the summit of the Governor's Palace, atop the central stair, the sculpture of a bird, archetypal antagonist in both East and West of the serpent, in his Kundalini and Modulor guise (fig. 57). In its location it recalls the Temple of Borobadur in Java, where the life of the Buddha is traced to his final Nirvana. The bird's stance is that of the raven, the *corbeau*—alias Le Corbusier, now the "Corbuddha." In this pun on his name, Le Corbusier is the heroic, Divine Architect, the one who will bring modern architecture to India and give form to native ideas.[18]

It is in this context that Sigfried Gideon wrote of Chandigarh as the realization of the "attempt to meet cosmic, terrestrial and regional conditions,"[19] giving a more profound meaning to a modern architecture that professed to have international significance. Rather than ignoring the problem of foreign iconography or dealing with it in a superficial way as in Gropius's Middle Eastern projects of the 1950's, Le Corbusier proposes a universal solution, neither condescending to Eastern culture nor inimical to his own Western culture. Interestingly, the precedent already existed in the Punjab, of which Chandigarh was to be the capitol. As part of the Gandhara region, Western artists from the Roman Empire were once imported there, and created some of the first images of the seated Buddha. In this century, recovering from a century of British colonialism, Chandigarh was seen by Nehru as a symbol of the future. Observing that Indian architecture was an imposed foreign mix of Tuscan and Classic on "a proud culture with a thousand year history" incapable of creating its own architecture, Le Corbusier sought to "satisfy Indian needs and ideas," while "not letting folklore stand in the way of an architecture of reinforced concrete."[20] This



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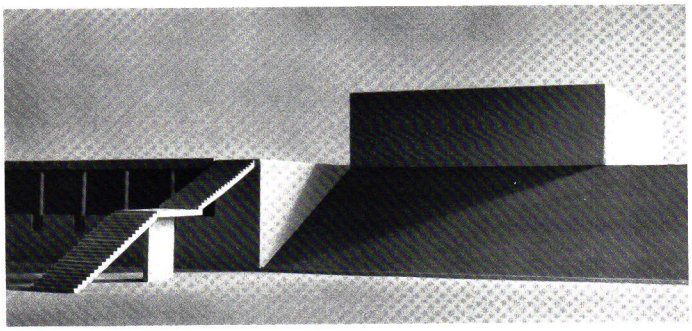
56 The steps leading to the governor's garden.
57 Governor's Palace, Chandigarh. Le Corbusier, 1950–1953. The sculpture atop the central stair can be interpreted as Le Corbusier in his guise as the raven.



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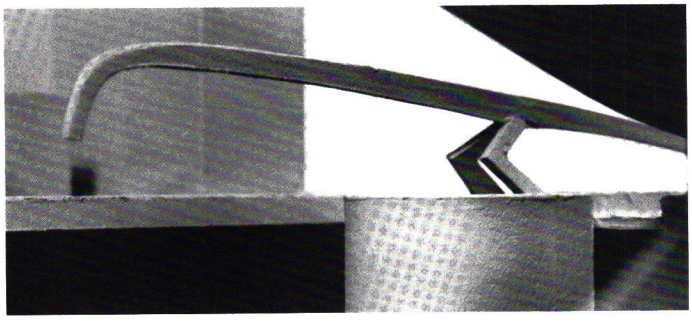

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dualistic attitude is resolved in the Governor's Palace where Le Corbusier recognized the crossculture validity of certain mythical themes, creating a sacred work embodying the highest symbolic beliefs of Hindu culture while synthesizing them with ancient and modern Western myths. Thus Le Corbusier's physical isolation of the Governor's Palace from other buildings on the site becomes clear; as a sign to be imprinted in the concrete of Chandigarh, it is a modern symbol of the attempt to transcend culture and self, its references to traditional imagery highlighting its new, inclusive meaning. As Mircea Eliade writes, "each new valorization of an archetypal image crowns and consummates the earlier ones."[21] Just as the apparent contradiction between the bull's horns and the crescent moon had in the past been resolved, so Le Corbusier attempted to fuse these images with the machine, united in the mythical notion of transcendence (fig. 56).

Therefore, in its deepest sense, the Governor's Palace represents the idea of architecture as a challenge to man. In contrast to the Baroque palaces where man stood at the center, here the focus is shifted to the center within, which can only be reached by an inner struggle. By placing man's image on the Governor's Palace, Le Corbusier identified this work with the theme of his last essay: "when you finally get down to it, the dialogue, the basic confrontation, can be formulated like this, man face to face with himself, the wrestling of Jacob and the Angel within the human soul."[22]

Ironically, the mighty theme proved its own undoing, the governor chose to live in town and the palace was not built. The tragedy is that in Chandigarh, India, the challenge was not met.

Notes
1. Le Corbusier, *Oeuvre Complète 1952–1957*, ed. W. Boesiger (Zurich: Girsberger, 1957), p. 102.
2. The metaphor extends to a correspondence between the form of the giant-scale, cruciform columns of the Governor's Palace and the similar shaped apartments at the "head" of the Radiant City.
3. Le Corbusier, *The Modulor* (Cambridge: The MIT Press, 1954), p. 219.

4. Le Corbusier, *Oeuvre Complète 1946–1952*, ed. W. Boesiger (Zurich: Girsberger, 1952), p. 142.
5. The Museum of Knowledge, whose program as an electronic information center was proposed by Le Corbusier, transforms the metaphorical dialogue of ancient and modern of the Governor's Palace into a more literal form, although the Wheel of the Sun and the Law on the Martyr's Ramp and Indian flag also symbolized knowledge. Le Corbusier's late interest in electronics and high technology resulted in a similar transformation of the basically primitive form of Ronchamp into the more mathematical Philips Pavilion, where a sound and light show destroyed all perception of interior form. And in the Olivetti factory project of 1962, the theme is the dialogue between human brain and computer.
6. The idea for the windows of the Governor's Palace was first developed at Ronchamp, although in the Palace they are rationalized into a grid rather than scattered as in Ronchamp.
7. Le Corbusier, "In Defense of Architecture," *Oppositions 4*, (October 1974), p. 104.
8. Le Corbusier, *Oeuvre Complète 1946–1952*, p. 114. In the presentation of the St. Baume project in 1946, a memorial to the Virgin Mary hollowed into a mountain, there is a collage including a Hindu temple with the inscription, "a reconnecting with the past."
9. Le Corbuser, *Last Works* (New York: Praeger Publishers, 1970), p. 174.
10. Le Corbusier, *Towards a New Architecture* (New York: Praeger Publishers, 1972), pp. 192, 196.
11. In Le Corbusier's transformation of ancient types, the stepped pyramid of the Governor's Palace, formerly the exclusive domain of royalty and priests, is opened to the public both physically and symbolically. The governor's private apartments are sandwiched between the public entry and roof garden atop the pyramid. And the symbolic references to Yoga in the palace combine the role of the palace as a public monument with the idea of individual enlightenment in yoga.
12. Le Corbusier was evidently aware of Nandi the bull in 1946, as a statue of the bull appears in a presentation of an exhibition of oriental art. In the Governor's Palace, Nandi is also in the iconographically correct position—facing the court in a balcony adjacent to the governor's office.
13. In the context of Moslem culture, the curving forms of the Algiers apartment blocks can be interpreted as Islamic calligraphy, again in a play of the traditional against the modern.
14. Ramakrishna in Joseph Campbell, *The Mythic Image* (Princeton: Princeton University Press, 1974), p. 380.
15. Mircea Eliade, "Patterns in Comparative Religions," in *Myths, Rites, Symbols*, eds. W. Beane, W. Doty (New York: Harper & Row, 1976), p. 404.
16. Relating to the duality of sun and moon is the remarkable resemblance between the plan of Chandigarh and the Aztec city of Teotihucan. Corresponding to the positions of the Governor's Palace and Assembly are the pyramids of the Moon and Sun along the axis of the Street of the Dead.
17. In the *Modulor*, Le Corbusier praised Egyptian art for its "elegance, austerity, and implacable firmness." Egypt provides a rich source of ambiguous images for the Governor's Palace: the new democratic capitol takes on aspects of the tomb in the stepped pyramid, the obelisks, and the multiple meanings of the *barsati* as solar, lunar, and funereal boat.
18. In section, the statue is the compass, the medieval sign of God as architect of the universe, as in William Blake's engraving of the *Ancient of Days*.
19. Sigfried Giedion, *Space, Time and Architecture* (Cambridge, Mass.: Harvard University Press, 1967), p. 568.
20. Le Corbusier, *Oeuvre Complète 1952–1957*, p. 51.
21. Mircea Eliade, "Images and Symbols, Studies in Religious Symbolism," in *Myths, Rites, Symbols*, p. 454.
22. Le Corbusier, *Last Works*, p. 173.

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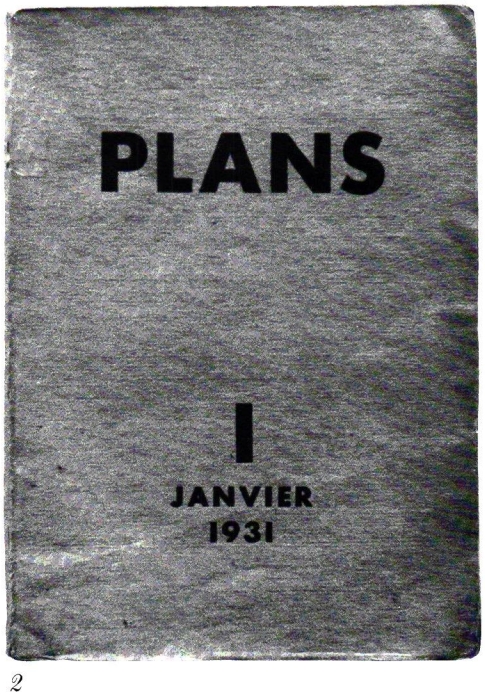
The author wishes to thank Max Hyder from Cooper Union for help on the model.
The model of the Governor's Palace was made by the author.
37, 38 Reprinted from Le Corbusier, *Oeuvre Complète 1946–1952* (Zurich: Editions Girsberger, 1964).
44 Reprinted from Le Corbusier, *Oeuvre Complète 1952–1957* (Zurich: Editions Girsberger, 1964).
47 Reprinted from Joseph Campbell, *The Mythic Image* (Princeton: Princeton University Press, 1974).
52 Reprinted from Cyril Aldred, *Tutankhamun's Egypt* (London: BBC, 1972).
54 Reprinted from Le Corbusier, *Towards a New Architecture* (New York: Praeger, 1960).

184

INVITE
A L'ACTION

PAR LE CORBUSIER

1



PLANS

I

JANVIER
1931

2

Bibliography: *Plans*, 1–13 (1931–1932); *Plans* (bi-monthly), 1–8 (1932); *Bulletin des Groupes Plans*, 1-4 (1933)

Mary McLeod

Introduction

Although articles and books about Le Corbusier are proliferating at an ever increasing rate, one dimension of his career has been virtually ignored in current discussion of his work: his participation in the publication of two syndicalist journals, *Plans* (1931–1932) and *Prélude* (1933–1935.[1] As *Esprit Nouveau* a decade prior had played a seminal role in the first phase of the Modern Movement, namely the creation of a new architecture, *Plans* and *Prélude* had a critical part in the second phase, the propagation of a twentieth century urbanism. Not only were Ville Radieuse and Ferme Radieuse first published in these reviews, their basic conception was closely related to the political position expounded by the editorial committee.

It must first be noted that the two reviews, though of particular importance to architects, were only two of a long series of small publications proclaiming a new social order. Syndicalism, the radical French labor movement, was no longer dominated by one central organization, the Confédération Générale du Travail (C.G.T.), but was expounded in all its different manifestations in a series of small journals, including among them the technocratic *l'Homme nouveau* and *Plans du 9 Juillet*, the doctrinaire *l'Ordre nouveau*, the humanist *l'Homme réel*, and Mounier's Catholic *Esprit*.[2] The themes proclaimed by these publications—*esprit, révolution, nouvel ordre, jeunesse du monde*, and *fédération de l'Europe*—extended beyond the label of syndicalism, always a movement of rather vaguely defined principles, to what some French historians have labeled the *esprit de 1930*. Young intellectuals, disillusioned with both parliamentary democracy and the Communist Party, united around such reviews in a dream to bypass traditional oppositions and rejuvenate French society. The *esprit de 1930* was a movement of syncretism in which political oppositions and ideologies obliterated each other and in which the spirit was more important than currents of thought.[3] Robert Aron and Arnaud Dandieu in their work *La Révolution necessaire* perhaps best summarized the generalities of the era, "when order is not in the order, it must be in revolution; and the only revolution that we envision is a revolution of order."

Plans

The first issue of *Plans* appeared in January 1931.[4] It was, at least during its first year of publication, an opulent magazine, averaging over a hundred pages an issue. Each number contained a large supplement of photographs of avant-garde architecture and painting printed on glossy sheets; the typography was spacious (titles were composed in the newly designed "Europe" type); the presentation, about which Le Corbusier was most vocal, was elegant. It was the only political review of the era which seemed to enjoy a significant budget. From the start *Plans* enjoyed a certain intellectual success. Circulation quickly reached seven or eight thousand, and both the French and foreign press cited its articles.

The founder and predominant spirit of the review was Philippe Lamour, an articulate young lawyer, then only twenty-eight. Several years prior, he had belonged to Georges Valois's *Faisceau des Protecteurs et des Combattants*, known as the "Blue Shirts." One of the first proto-fascist groups in France, it proclaimed a new alliance between socialism and nationalism, seeking to mobilize the energy of a wartime society to build a "constructive and expansive peacetime economy." After an impressive start, the group soon became split by internal conflict and by contention arising from opposition to Charles Maurras's *Action Française*. Lamour himself was excluded from the *Faisceau* in 1928. He then attempted to found the *Parti Fasciste Révolutionnaire*. With its immediate failure and an increasing disillusionment with political parties, he turned to journalistic pursuits. Besides writing *Entretiens sous la Tour Eiffel* (1929), a rendition of the received Sorrelian doctrine, and directing a collection of *Editions de la Renaissance de Livre*, he published with Henri de Jouvenal a new cultural review called *Grande Route*.[5] Although the magazine was of short duration, it provided an outline for his next undertaking, *Plans*. It was at this time that he first collaborated with Le Corbusier, who contributed an article on the Maison Minimum to the first issue.[6]

In 1930, Lamour met an associate of Le Corbusier's, Jeanne Walter, who was interested in creating a luxu-

rious literary and artistic review.[7] Lamour convinced her to extend the project's scope to include his own social interests. Their objective was to define a *culture moderne* in its grandest sense. All current possibilities, whether political, economic, scientific, or artistic, were to be considered. The editorial board itself was to reflect this diversity. Besides Jeanne Walter, the director, and Philippe Lamour, the editor-in-chief, it included Hubert Lagardelle, François de Pierrefeu, Dr. Pierre Winter, and Le Corbusier.

Lagardelle, who had been the editor of the prominent intellectual review *Mouvement Socialiste* (1899–1914) and author of *Le Socialisme ouvrier* (1911), which became one of the chief documents of French syndicalism, acted as the chief political spokesman of the magazine. He had retired from public life by the late twenties only to emerge at Lamour's request to propagate once again his vision of a new social order. As an editor of *Plans* and later *Prélude*, he moved syndicalism to the right, which was less a reflection of Sorel's search for moral heroism or Mussolini's search for action than a search for new organic institutions to replace democracy. He came to realize that syndicalism could only be effective if it passed beyond the boundaries of the labor movement; labor, after all, was still a minority in France. The crisis of democracy affected the whole nation. During the thirties, Lagardelle served as a counselor to the French government at the embassy in Rome, and in 1943 he moved fully to the right when he became the Vichy Secretary of State for Labor.

Dr. Winter, the former chief surgeon of the Faculty of Medicine in Paris, contributed articles on health, sports, and urbanism to *Plans*. He was acquainted with Lamour through his past activities with Valois's *Faisceau* and the *Parti Fasciste Révolutionnaire*. In the twenties, besides having contributed articles to Valois's paper *Le nouveau siècle*, he wrote articles for *l'Esprit nouveau* expounding the virtues of vigorous exercise and a healthy physique. A practitioner of his own theory, he organized an exercise gymnast group with his neighbor Le Corbusier. The two played basketball twice a week from 1920 to the outbreak of World War II.

Finally, François de Pierrefeu, the administrative director of the large engineering firm Enterprises des Grandes Travaux Hydraulique, contributed articles on the general economic environment. Among the earliest to acknowledge the importance of Le Corbusier's urban studies, he published in 1932 the first monograph on Le Corbusier and Pierre Jeanneret.[8] With his company he became involved in the technical and financial studies to determine the feasibility of the Algiers and Nemours plans. Later, he was to collaborate with Le Corbusier on the text *La Maison des Hommes*. Like the architect, he became immersed through his participation on the Comité Latournie (Committee of Inquiry on Housing and Building Construction) in the internal struggles in Vichy.

Le Corbusier himself was anxious to pursue the urban studies that he had commenced in *l'Esprit nouveau*. In fact, he proposed that *Plans* assume the remaining financial holdings of the earlier journal.[9] For Lamour's review he wrote from January 1931 to July 1932 eighteen articles on urbanism. Many of these were later published in section four of *La Ville Radieuse*.

Plans was initially divided into three sections, each issue prefaced with an editorial, "La Ligne Générale." The first section, comprised primarily of articles by the editorial committee, concentrated on presenting general political and social doctrine. It was here that Le Corbusier outlined on glossy plates the tenets of Ville Radieuse, while Lagardelle and Lamour expounded the principles of *l'Homme réel* and regional syndicalism, appealing to the *jeunesse du monde*.

The second section, reflecting the initial interests of Jeanne Walter, contained articles on the arts. Arthur Honegger wrote on music; André Boll on the theater; René Clair and Fernand Léger on film; and Maurice Reynal on painting. Although many of the contributors were sympathetic to syndicalist ideas, *Plans*, like *l'Esprit nouveau*, welcomed articles from such disparate figures as Jean Giraudoux, Fillipo Marinetti, Karel Teige, Marcel Breuer, and Walter Gropius.

The last section, "Facts," was devoted to political, economic, and scientific reports. They discussed the American Depression as well as the "new movements"—fascism, communism, and national socialism. Aldo Dami, one of the contributors, was especially prophetic when he asked in an article in April 1931, a time when Hitler was generally regarded as a buffoon, "Dans un an l'aventurier HITLER sera-t-il Monsieur HITLER?"[10]

The dominant theme, as in so many of the reviews of the thirties, was an *ordre nouveau*. The economic crisis of 1929 had not only brought about the collapse of the old order, but also the birth of a new *esprit*. Capitalism, materialism, and the bourgeoisie, the United States—all represented, with their narrow interpretations of man, remnants of a past culture. With a deep dedication to progress, the editors declared that the recent developments in science, technology, and economics would bring a new epoch in which man would once more be whole. From this perspective, fascism, national socialism, and communism were not clearly distinguished; they were three different but parallel dimensions of "the rupture with the ancient world and the search for an order."[11]

The review's hope and appeal was directed toward the world's youth. Across all divisions and nationalities, youth were to unite in the fight for a new world against the "artificial bloc tained with *l'esprit ancien*." Rather naively, Lamour believed that a new generation, freed of the narrow prejudices, recriminations, and vindications of the World War I veterans, would forget patriotic fanfare and concentrate on the construction of a new world federation.

The method, as the title announced, was to be 'plans'. Abstaining, in the syndicalist tradition, from precise political doctrine, the editors, like the nineteenth century Saint-Simonians, looked to the new fields—economics, technology, urban planning—to find a prescription for the *ordre nouveau*. Few words were more fashionable in the thirties than "plan."[12] The C.G.T., the neo-socialists, and the frontists of Bergery all elaborated plans; technical organizations and a planned economy would solve those social problems where politics had failed. Marcel Déat, a contributor to *l'Homme nouveau*, wrote: "In our present European and national crises, 'planisme' is the term which applies with exactitude to France."[13]

However, with the exception of several proposals including Le Corbusier's Ville Radieuse and Lamour's strategy for federation, the nature of the 'plan' remained somewhat vague; the editorial committee limited itself to the affirmation of a short series of principles. After six months of publication the review summarized the "first steps" to the "construction of a civilization based on the industrial age and the collectivity which it engenders . . . *une civilisation humaine*":

1. Judicial foundations which consider man not as an isolated individual but in terms of the social group to which he belongs and with which he is closely bound:

a) Political institutions emerging from the rational grouping of individuals in their natural units, organized according to their respective interests. *L'homme réel.*

b) An economic organization based upon ownership, considered not as an absolute right, but as a function. The substitution of economic freedom, which is the anarchy giving rise to misery, for a rational, unitary and generalized organization for production and distribution. *L'économie du plan.*

2. An ethic of the personality substituted for the ethic of the material. Work is not an end in itself. The goal of man is not the unlimited production of goods and the possession of money. Work is no more than a convenience which must serve to procure the material comforts requisite to man's physical dignity and the leisure permitting him spiritual dignity: the culture of the personality.[14]

With regard to international affairs, *Plans* was adamantly pacifist, devoting considerable space—including all of issue no. 6—to the problem of world peace. The regional syndicalist movement called for the abolition of present political boundaries and the establishment of new admin-

istrative federations based on natural divisions—rivers, climate, or racial differences. Le Corbusier himself reiterates this position in an article in *Prélude*,"Les graphiques expriment."

The editors of *Plans* were not content with just writing and publishing their viewpoints, they were also strongly committed to political action. In October 1931 Lamour established *Cercles d'Amis de Plans*, a federation of regional groups in France and adjoining countries dedicated to the implementation of the *ligne générale*. The organization held meetings and lectures in Brussels, Geneva, Zurich, Berlin, Hamburg, and Cologne. Shortly afterward in November 1931, the editors announced their collaboration with the staff of *Ordre nouveau* to form the *Comité d'Action Plans-Ordre Nouveau*, which was to be the first step toward a *Front Unique de la Jeunesse Européen*. It too was committed to the *"lutte révolutionnaire en commun," "retour à l'homme réel," "fédéralisme," "besoins réels et sains,"* and *"esprit."*[15] But despite such general aims, the group soon ended in disputes concerning Nazi Germany. Lamour, no longer sympathetic to the German "experiment," wanted to smuggle arms to those groups fighting Nazism. The more cautious *l'Ordre nouveau* group called instead for more rigorous doctrinal preparation.

With this turn to political action, *Plans* itself began to take an increasingly stern ideological stance. In April 1932 Lamour eliminated the initial tripartite division of doctrine, art, and facts and concentrated the review almost entirely on political and economic issues. The format itself changed, a result in part of the reduced financial support caused by the separation of the Walters. Each number, now appearing bi-monthly, consisted of thirty-two pages of newsprint, twenty-one by twenty-seven centimeters. It was at this point that Le Corbusier's participation, despite his attendance of meetings of "les Amis de *Plans*," began to diminish.[16] His articles appeared only intermittently, and his name, along with those of Pierrefeu, Winter, and Lagardelle, were no longer listed on the back side of the magazine cover. Instead, figures such as Georges Dupeyron, Louis Dupuis, Armand Colombat, Jean Longueville, and Maurice Paz, the last a former dissident of the Communist Party, took on a greater role, giving the publication a more decidedly leftist slant. If the first series of *Plans* (January 1931–March 1932) found its roots in the "magnificent *Mouvement Socialiste*" created before the war by Sorel, Lagardelle, and the syndicalists, the second series, as the historian Loubet del Bayle points out, evoked the Communist *Groupe Clarté* founded after the war by the novelist Henri Barbusse.[17]

With the increased participation of militant Marxists, *Plans* lost much of its originality as a synthetic review of *culture moderne*. In September 1932 the magazine collapsed financially and ceased publication. Lamour, after yet another attempt to reestablish publication (*Bulletin des Groupes Plans*, February 1933–May 1933), returned to the legal profession and contributed occasionally to the communist review *Mondes*. Twenty-two years later he was to renew contact with Le Corbusier in conjunction with a project of the Compagnie d'Aménagement de la région du Bas Rhone-Languedoc, of which he had become president. Le Corbusier, Winter, Pierrefeu, and Lagardelle continued their joint collaboration in 1933 with another review, *Prélude, organe de comité central d'action régionaliste et syndicaliste*, which for two more years continued to explore many of the themes proposed in *Plans*.

Notes

Author's acknowledgment: I would like to thank Elizabeth Giot at the Fondation Le Corbusier, Paris, for her help on this bibliography—M. McLeod.

1. *Prélude* refers to its political position as "regional syndicalism," indicating the emphasis on regional groupings in their proposed society. But even in *Plans* the term "syndicalism" only indirectly relates to the earlier trade union movement. For greater clarification of syndicalist principles in the thirties, see Mary McLeod, "Le Corbusier and Algiers" in this journal.

2. *L'Homme nouveau* (no. 1, January 1934), like *Plans* and *Plans du 9 Juillet*, offered a technocratic approach to the economic and social crisis. The writings of Hyacinth Dubreuil (*Standards*, 1929; *Nouveau standards*, 1931) are perhaps most representative of this approach. Besides the editor Georges Roditi, contributors included Marcel Déat and Drieu La Rochelle, both Fascists, Louis Vallon, an early leftist Gaullist, and Pierre Corval, a Catholic Socialist.

Plans du 9 Juillet (no. 1, January 1934) was primarily the work

of a number of young government bureaucrats, many of them associated with the group *X-Crise*. The review's stance was synthetic and moderate in tone, the presentation of principles being somewhat reminiscent of a government program. Jules Romains wrote the preface of the first issue.
Jean de Fabrègue's journals *Réaction* (no. 1, April 1930) and *Combat* (no. 1, January 1935) might also be included in this group of small intellectual reviews published during the thirties. More conservative in their politics, they emerge directly from the Action Française tradition. Other magazines which share common characteristics are *Les nouvelles équipes* (1933), edited by Christian Pineau; *La lutte des jeunes* (1934), founded by Bertrand de Jouvenal; and *Révolution constructive*, whose contributors included Georges Lefranc, Robert Marjolin, and Claude Lévi-Strauss.
For an account of these reviews see Jean Touchard, "L'esprit des années 1930: une tentative de renouvellement de la pensée politique française," *Tendances Politiques dans la vie française depuis 1789* (Paris: Hachette, 1960), pp. 89–118.
L'Ordre nouveau (no. 1, May 1933) was the platform of the "*Ordre nouveau*" movement founded by Arnaud Dandieu several years prior to the publication of the review. The *Ordre nouveau* group joined with the participants of *Plans* in the fall of 1931 to establish a *Front Unique de la Jeunesse Européen*, which was to fight for "a return to *l'homme réel*" and the establishment of a "genuine European federation." Among the many members who later served on the editorial board were Arnaud Dandieu, Robert Aron, Alexandre Marc, Daniel-Rops, Denis de Rougement, and René Dupuis. The review, in contrast to other French political journals of the thirties, tended to be doctrinaire and somewhat esoteric, presenting a kind of 'catechism' for the new political state.
L'Homme réel (no. 1, January 1934), so called after Lagardelle's new vision of man, was directed by P. Ganivet (a pseudonym for A. Dauphin-Meunier). The former editors of *Plans*—Lagardelle, François de Pierrefeu, and Le Corbusier—all contributed articles to this small review of "syndicalism and humanism."
Esprit (no. 1, October 1932), edited by Emmanuel Mounier, a devout Catholic, emphasized spiritual values as the premise of a new social order. In opposition to both individual and collective materialism, the review posited "human community" as its ultimate objective.
3. See Touchard for a summary of the distinguishing features of the *esprit des années trentes*.
4. Most of the following account of *Plans* is drawn from Jean Louis Loubet del Bayle, *L'Esprit de 1930* (dissertation, Faculté de Droit et des Sciences Economique de l'Université de Toulouse, 1968). The author is also indebted to Philippe Lamour with whom she spoke on June 28, 1977, Paris.
5. For a description of Henri de Jouvenal's life, see Binion, *Defeated Leaders*. As a journalist de Jouvenal attempted to move syndicalism from a proletarian to a national movement. After World War I, he organized the Confederation of Intellectual Workers, served as a member of the Senate and as a delegate to the League of Nations, and edited *Revue des Vivantes*, a veteran's review.
6. Le Corbusier and Pierre Jeanneret, "Analyse des 'Elements fondamentaux du problème de la Maison Minimum' Août 1929," *Grand Route*, 1, March 1930, pp. 26–36.
Other contributors included Georges Roux, Francis Delaisi, Philippe Lamour, Robert Guiette, Eric Hurel, and André Cayette; several were to contribute the following year to *Plans*.
7. Jeanne Walter was the wife of a French architect, Jean Walter. Lamour married their daughter Geneviève in the course of the magazine's publication.
8. François de Pierrefeu, *Le Corbusier and Pierre Jeanneret* (Paris, 1932).
9. Letter, June 26, 1931, from Le Corbusier to E. N. Lamour, E. N. archives, Fondation Le Corbusier.
10. *Plans*, 4, April 1931, p. 31. Also see Loubet del Bayle, p. 126.
11. *Plans*, 3, March 1931, p. 7.
12. The radical Gaston Bergery organized the Front Commun during the Stavisky scandal of the winter of 1933–1934. Designed to attract "non-proletarian elements of the population," its goal was to attack the "industrial and financial oligarchy." See David Thomson, *Democracy in France Since 1870* (London, 1969).
13. *L'Homme nouveau*, January 1, 1935, as quoted in Touchard, p. 95.
14. *Plans*, 7, July 1931, p. 6.
15. René Dupuis and Alexandre Marc, Manifesto for the *Front Unique de la Jeunesse Européen*, cited by Loubet del Bayle, p. 129. For a description of the collaboration of *Plans* and *l'Ordre nouveau* see Edmond Lipiansky, "L'Ordre Nouveau," *Ordre et Démocratie* (Paris: Press Universitaires de France, 1967).
16. Le Corbusier's last article in *Plans* was an interview with the Amis des Plans in Geneva, May 31, 1932. See *Plans* (bimonthly), 5, July 1932, pp. 8–10. His diminished interest in the journal has been attributed in part to his disappointment with its new format.
17. *Groupe Clarté* was a group of individuals who allied themselves with the principles espoused in the journal *Clarté: Bulletin française de l'Internationale de la Pensée* (no. 1, October 11, 1919). Founded by Henri Barbusse, Paul Vaillant-Couturier, and Raymond Lefebre, the group was strongly anti-militarist and anti-imperialist and in its first years Socialist in orientation. After the formation of the Communist Party, the group generally supported its policies.

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1, 2 From *Plans*, 1, January 1931.
3, 4 From *Plans*, 2, February 1931.
5, 6 From *Plans*, 3, March 1931.
7–9 From *Plans*, 4, April 1931.
10, 12 From *Plans*, 5, May 1931.
11 From *Plans*, 6, June 1931.
13, 14 From *Plans*, 7, July 1931.
15, 18 From *Plans*, 8, October 1931.
16, 17 From *Plans*, 9, November 1931.
19, 20 From *Plans*, 10, December 1931.
21, 22 From *Plans*, 11, January 1932.
23–26 From *Plans*, 12, February 1932.

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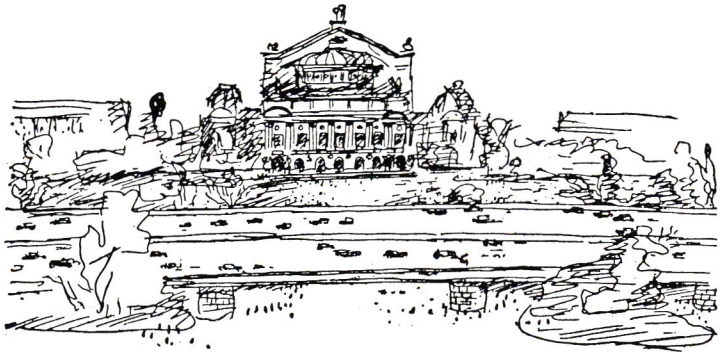
Compiled by Mary McLeod

3

4

***Plans,* 1, January 1931**
La Ligne Générale, p. 7.
Philippe Lamour, "Notions claires pour une civilisation occidentale," p. 13.
Hubert Lagardelle, "De l'homme abstrait à l'homme réel au delà de la démocratie," p. 24.
François de Pierrefeu, "Le paradoxe pour une économie humaine," p. 33.
Pierre Winter, "La médecin, science de la santé," p. 39.
Paul Vasseur, "Notes sur le Sport," p. 44.
Pierre Latercier, "Esthétique de l'Automobile," p. 46.
Le Corbusier, "Invite à l'action," p. 49. [Reprinted in *The Radiant City* (New York: Orion Press, 1967), p. 147.]
Jeanne Walter, "Sur les arts et les lettres," p. 69.
Arthur Honegger, "Du cinéma sonoré à la musique réele," p. 74.
Fernand Léger, "A propos du cinéma," p. 80.
André Boll, "L'impasse du théâtre contemporain," p. 89.
Maurice Raynal, "De La Fresnaye à Fernand Léger," p. 94.
Georges Lelong, "A propos de la Voie royale," p. 113.
Chroniques [reviews of Giraudoux], p. 117.
Faits, p. 122.
Aldo Dami, Occident, "Grief du vaincu," p. 123.
Pierre Dominique, U.R.S.S., "L'avenir des Soviets," p. 133.
Philippe Lamour, U.R.S.S., "A propos d'un prétendu dumping soviétique," p. 140.
René Sudre, Sciences, "L'énergie des mers et les resources de la planète," p. 145.
Nouvelles du mois, p. 154.
Désordre [quotations by Dr. Allendy, Rodin, Lenine, Mussolini], p. 158.

***Plans,* 2, February 1931**
La Ligne Générale, p. 5.
Stéphane Bauer, "Le Plan quinquennal soviétique et sa portée européene," p. 13.
François de Pierrefeu, "Des marchandises," p. 25.
M. Martiny, "L'Homme rationnel," p. 32.
Walter Gropius, "Sur la construction des théâtres modernes," p. 45.
Le Corbusier, "Menace sur Paris," p. 49. [Reprinted in *The Radiant City*, p. 98.]
Georges Pitoeff, "Le metteur en scène," p. 67.
Marco Brille, "'La vie du poète', film de Jean Cocteau," p. 73.
Philippe Lamour, "Une mauvaise plaisanterie," p. 77.
Chroniques, p. 80.
Lucien Farnoux-Reynaud, "Déflation sentimentale," p. 82.
Georges Dupeyron, "Nouvel âge littéraire," p. 86.
Chroniques, p. 89.
J. Weldon Johnson, Pour notre Plaisir, p. 113.
Georges Roux, Occident, "Le Drame Germano-Polonais," p. 119.
Philippe Lamour, U.S.A., "Crise aux Etats-Unis," p. 129.
Claude Autant-Lara, U.S.A., "Notes de voyage à Hollywood," p. 136.
Egon Erwin Kisch, "Epopée," p. 141.
René Sudre, Sciences, "L'énigme des rayons cosmiques," p. 145.
Nouvelles du mois, p. 153.
Ordre, p. 157.
Désordre, p. 159.



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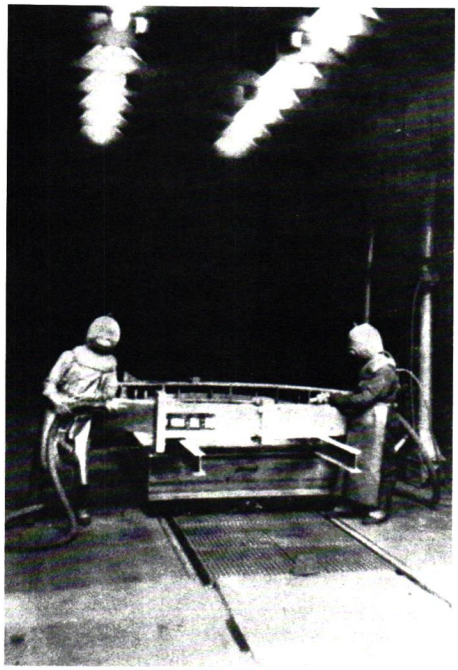

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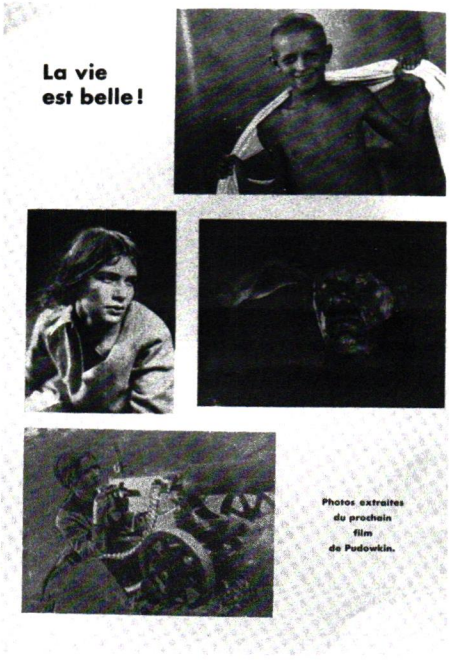


6

***Plans*, 3, March 1931**

La Ligne Générale, p. 5.
Hubert Lagardelle, "L'homme réel et le Syndicalisme, au delà de la démocratie," p. 11.
Will Grohmann, "L'Esprit de la jeune génération en Allemagne," p. 18.
François de Pierrefeu, "Esquisse d'une production harmonique," p. 24.
Le Corbusier, "Vivre (Respirer)," p. 33. [Reprinted in *The Radiant City*, p. 104.]
Docteur Allendy, "Métastases et Substitutions morbides," p. 49.
Jacques Copeau, "Renaissance du Théâtre," p. 58.
Michel Saint-Denis, "La Compagnie des Quinze au Vieux-Colombier," p. 60.
Philippe Lamour, "La Fin du déluge," p. 63.
A. Barsacq, "Le Dispositif scénique du Vieux-Colombier," p. 70.
André Obey, "Le Viol de Lucrèce," p. 74.
Quelques livres, quelques hommes [chronicles by Robert Lévy, Georges Dupeyron, Jean Picart le Doux, etc. . . .], p. 81.
Arthur Hoerée, "La Musique et l'État social," p. 89.
Pour notre Plaisir, p. 113.
Lettres allemandes, p. 120.
Chroniques, p. 122.
Francis Delaisi, Occident, "La Guerre du blé," p. 127.
Philippe Lamour, U.S.A., "Méans. La Mort étrange du président Harding," p. 139.
Philippe Lamour, Occident, "France," p. 138.
G. B. Méans, U.S.A., "La Récolte des pots-de-vins chez les Bootleggers," p. 140.
Claude Autant-Lara, U.S.A., "La Première de 'City Lights'," p. 142.
U.R.S.S., "L'U.R.S.S. en construction," p. 144.
Georges Dupeyron, U.R.S.S., "Une Enquête en Russie," p. 148.
René Sudre, "Les Bêtes qui se déguisent," p. 151.
Sciences, "Standards: Loi et Unité," p. 159.

***Plans*, 4, April 1931**

La Ligne Générale, p. 5.
Philippe Lamour, "Jeunesse du Monde," p. 9.
Aldo Dami, "Hitler," p. 20.
François de Pierrefeu, "Les Racines de Gandhi," p. 32.
M. Martiny and Pierre Winter, "Les Grilles cosmiques de l'homme," p. 43.
M. Martiny and Pierre Winter, "Esquisse de quelques tempéraments," p. 48.
Le Corbusier, "Vivre (Habiter)," p. 49. [Reprinted in *The Radiant City*, p. 112.]
Robert de Ribon, "Sur l'esthétique," p. 67.
Dialogue avec Dufy sur sa peinture, p. 71.
Jeanne Walter, "Le Viol de Lucrèce," p. 78.
Chroniques, p. 84.
Revue des Revues, p. 88.
Revues allemandes, p. 90.
Jeanne Walter, Cinéma, p. 91.
Arthur Hoerée, Musique, p. 95.
Rudyard Kipling, Pour notre Plaisir, p. 113.
Philippe Lamour, Occident, "Hongrie: La Grande injustice," p. 117.
A. André de la Far, Occident, "La Tragédie de Trianon," p. 119.
Philippe Lamour, Occident, "L'Italie Fasciste, état corporatif," p. 130.
Notes, p. 134.
U.S.A., p. 138.

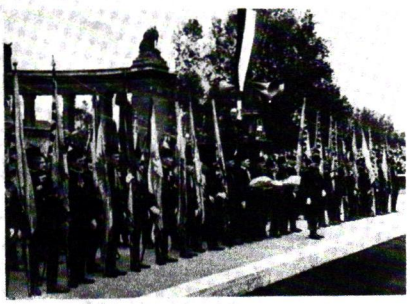
ITALIE

« La liberté, discipline volontairement consentie, au profit d'un ordre approuvé »

8

Hitler

Mussolini



HONGRIE

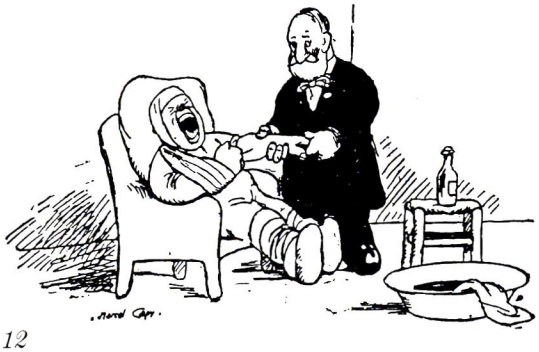
Le Comte Bethlen parle devant le tombeau du soldat inconnu hongrois.

9

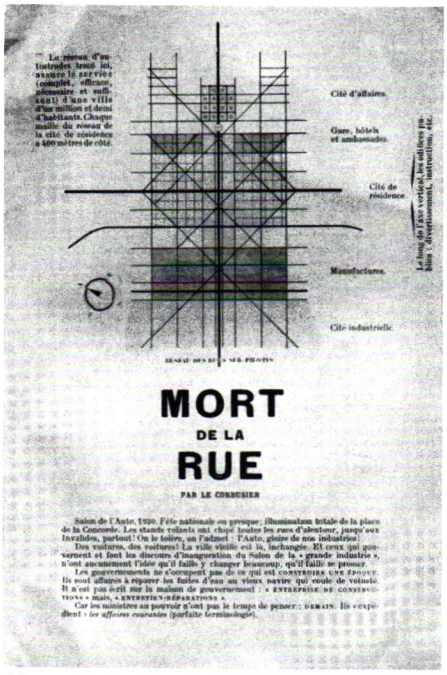
U.R.S.S., p. 139.
A. André de la Far, Orient, "Les Japonais reculent en Mandchourie," p. 144.
René Sudre, Sciences, "Le Voyage autour de la lune," p. 146.
Nouvelles du mois, p. 153.
Le Corbusier, Ordre, "Il est juste temps," p. 157. [Reprinted in *The Radiant City*, p. 156.]

***Plans*, 5, May 1931**
La Ligne Générale, p. 4.
Hubert Lagardelle, "La fin d'une culture," p. 9.
François de Pierrefeu, "De l'or et de la culture," p. 17.
Philippe Lamour, "Une culture? Oui," p. 25.
André Philip, "Le Racisme aux Etats-Unis," p. 31.
A. Thooris, "Rapports de l'homme avec le monde," p. 44.
Le Corbusier, "Mort de la rue," p. 49. [Reprinted in *The Radiant City*, p. 119.]
Friedrich Nietzsche, "Ce que l'on appelle l'éducation classique," p. 66.
René Clair, "Étape du Cinéma," p. 69.
Philippe Lamour, "'City Lights' de Charlie Chaplin," p. 74.
Cinéma: Chroniques, p. 81.
Théâtre, p. 87.
Robert Lévy, "Fantastique et Fantaisie," p. 88.
Chroniques, p. 92.
Revue des Revues, p. 94.
Revues et livres allemandes, p. 96.
Jean Giono, Pour notre Plaisir, p. 113.
Pierre Latercier, "Culture et Enseignement," p. 119.
"Culture et Enseignement: Les discours et les faits," p. 127.
"Et le sport? Giraudoux nous répond," p. 133.
Stéphane Bauer, U.R.S.S., "Les conditions du travail en U.R.S.S.," p. 136.
Notes, p. 138.
Chroniques, p. 140.
U.S.A., "Racisme aux Etats-Unis," p. 142.
Notes, p. 146.
Occident, "Italie," p. 147.
M. Benès, "Tchécoslovaquie," p. 143.
René Sudre, Sciences, "Les sourciers et leur baguettes," p. 150.
Nouvelles du mois, p. 156.

***Plans*, 6, June 1931**
Heinrich Mann, "Depuis que les derniers sont tombés," p. 7.
Thomas Mann, "La Guerre," p. 9.
Philippe Lamour, "Faites l'Europe sinon faites la guerre," p. 13.
Georges Roux, "Le conflit franco-italien et son sens profond," p. 31.
A. André de la Far, "Derrière le paravent japonais," p. 42.
François de Pierrefeu and Pierre Winter, "Chimie," p. 46.
Pierre Latercier, "Les hommes et la guerre," p. 61.
Le Corbusier, "La guerre? Mieux vaut construire," p. 65. [Reprinted in *The Radiant City*, p. 343.]
Jean Picart le Doux, "Le guerre ce sont nos parents," p. 68.
Georges Altmann and Philippe Lamour, "Le cinéma et la guerre," p. 71.
Pierre Daye and Georges Dupeyron, Chroniques, p. 76.



12



10

11

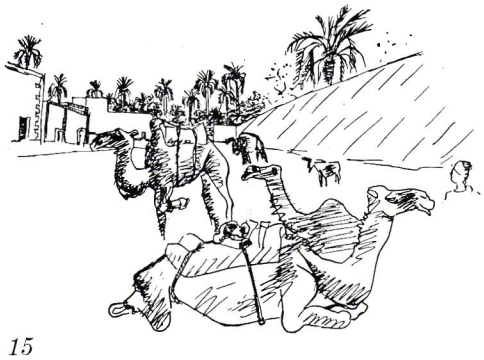
Littérature de paix, p. 80.
Richard Aldington, "L'épilogue," p. 97.
Maurice Duhamel, "Le mythe du désarmement," p. 102.
E. Poidebard, "Quis ut Deus?" p. 106.
L.-C. Emile Mayer, "Le danger aéro-chimique," p. 115.
Aimé Blanc, "L'illusion des cartels internationaux de producteurs," p. 121.
"Les armements de la Petite Entente," p. 129.
Alphonse Schwartz-Megyesi, "Lettre de Budapest," p. 130.
Discussion de budget de l'Air, p. 133.
René Sudre, "La chimie et la guerre," p. 137.
Philippe Lamour, "Une erreur," p. 147.
Philippe Lamour and Robert de Ribon, "Notes de Voyage en Europe centrale," p. 149.
La Ligne Générale, p. 157.

***Plans*, 7, July 1931**

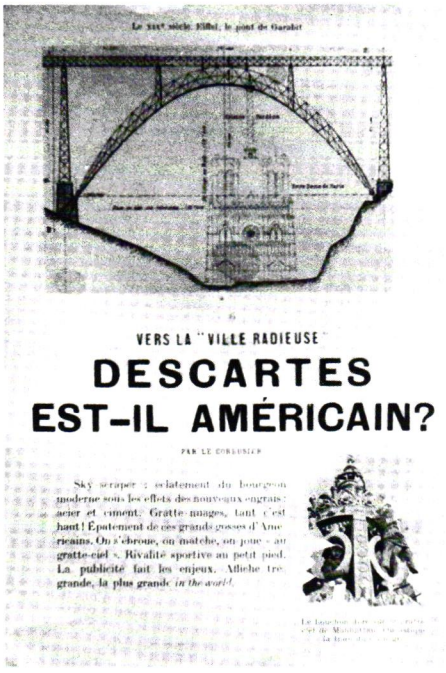
Première Étape, p. 4.
René Dupuis, "Le problème de l'Europe et la question de l'État," p. 11.
Robert de Ribon, "Quelques notes sur la production et la population," p. 17.
André Lamandé, "L'Espagne écartelée," p. 22.
Georges Dupeyron, "Réflexions sur un livre essentiel," p. 23.
Docteur Mouezy-Eon, "Le dynamisme vital et les forces cosmiques," p. 33.
Arthur Honegger, "Pour prendre congé," p. 43. Cinéma, p. 46.
Le Corbusier, "Descartes est-il américain?" p. 49. [Reprinted in *The Radiant City*, p. 127.]
Hélène Nostitz, "Allemagne: Quelques impressions sur l'architecture moderne de Berlin," p. 65.
Marcel Breuer, "Aménagement des places et carrefours (Place de Potsdam)," p. 68.
"Une intéressante expérience d'urbanisme," p. 70.
Philippe Lamour and Pierre Viénot, Quelques hommes et quelques livres, p. 71.
Revue des revues, p. 81.
Revues allemandes, p. 85.
Revues italiennes, autres revues étrangères, p. 86.
Chroniques, p. 87.
Fillipo Marinetti, "La nouvelle sensibilité," p. 88.
Pour notre Plaisir, p. 113.
P. Méquet, U.R.S.S., "L'U.R.S.S. en 1930," p. 117.
Notes, p. 132.
Camille Dahlet and Philippe Lamour, Occident, "Controversé sur l'Anschluss," p. 136.
Claude Marq, Occident, "Un mouvement social en Allemagne," p. 140.
Notes, p. 145.
Alphonse Schwartz-Megyesi, Occident, "Lettre de Budapest," p. 141.
René Sudre, Sciences, "Le système nerveux des plantes," p. 151.

***Plans*, 8, October 1931**

Vers la deuxième étape, p. 5.
Aimé Blanc, "Inventaire Equinoxe 1931," p. 14.
Philippe Lamour, "Lettre à Aron et Dandieu," p. 21.
Robert Aron and Arnaud Dandieu, "Le cancer américain," p. 36.
Dr. Joseph Roy, "Une grande valeur biologique: l'absence," p. 43.



15



13

STALINE.
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14

Le Corbusier, "Une nouvelle ville remplace une ancienne ville," p. 49. [Reprinted in *The Radiant City*, p. 135.]
Karel Teige, "L'architecture moderne en Tchécoslovaquie," p. 67.
Georges Dupeyron and Hubert Lagardelle, Quelques livres, quelques hommes, p. 81.
Revues allemandes, p. 87.
Cinéma, Théâtre, p. 87.
Le Corbusier, "Retours . . . ou l'enseignement du voyage," p. 92. [Reprinted in *The Radiant City*, p. 10.]
Jean Picart le Doux, "Barcelone," p. 109.
Pour notre Méditation, p. 112.
Précisions, p. 130.
Roland Maspétiol, "Les conditions économiques d'une collaboration européene," p. 134.
A. André de la Far, "L'alert de Moukden," p. 137.
U.R.S.S., p. 141.
Parmi tant d'autres, p. 144.
"*Plans* et la situation danubienne," p. 147.
"*Plans* et la presse," p. 151.
Les Amis de *Plans*, p. 158.

***Plans*, 9, November 1931**
Philippe Lamour, "Du voyage d'Amérique au plan européen," p. 6.
Hubert Lagardelle, "Capitalisme," p. 16.
Robert Aron and Arnaud Dandieu, "Violence et Révolution," p. 24.
J. M. Gabriel, "À la recherche du réel," p. 29.
Daniel-Rops, "Abstraction et spiritualité," p. 36.
Pierre Winter, "Les conditions psycho-physiologiques du travail," p. 41.
Le Corbusier, "L'élément biologique: la cellule de 14m. par habitant," p. 49. [Reprinted in *The Radiant City*, p. 143.].
"La renaissance du théâtre: Les 'Quinze' sont à Paris," p. 66.
Georges Altmann, "Ehrenburg, chroniqueur du monde moderne," p. 70.
Georges Dupeyron and Jeanne Walter, Chroniques, p. 75.
Georges Altmann, Jean Longueville, and Philippe Lamour, Cinéma, p. 80.
Pierre Latercier, "L'esthétique nouvelle: Une oeuvre technique ordonnée," p. 88.
Francis Delaisi, "Proposition d'un plan économique européen," p. 107.
Francis Delaisi, Angleterre, "La crise anglaise," p. 128.
Harold Laski, Angleterre, "La vraie liberté," p. 131.
U.R.S.S, p. 137.
Allemagne, "La trahison d'Hitler," p. 141.
A. André de la Far, Proche Orient, "Revendications Bulgares," p. 141.
René Sudre, "Le mois scientifique," p. 146.
"L'Ordre Nouveau," p. 149.
"Vers le Front Unique de la Jeunesse Européene," p. 152.
Les Amis de *Plans*

***Plans*, 10, December 1931**
Hubert Lagardelle, "Supercapitalisme," p. 7.
Philippe Lamour, "La révolution allemande est commencée," p. 13.
François de Pierrefeu, "France-Allemagne: Deux aspects de la question," p. 24.
Aldo Dami, "Quelques remarques," p. 43.
N. Pendé, "Les quatres biotypes humaines dans l'orientation professionnelle," p. 54.

18

16

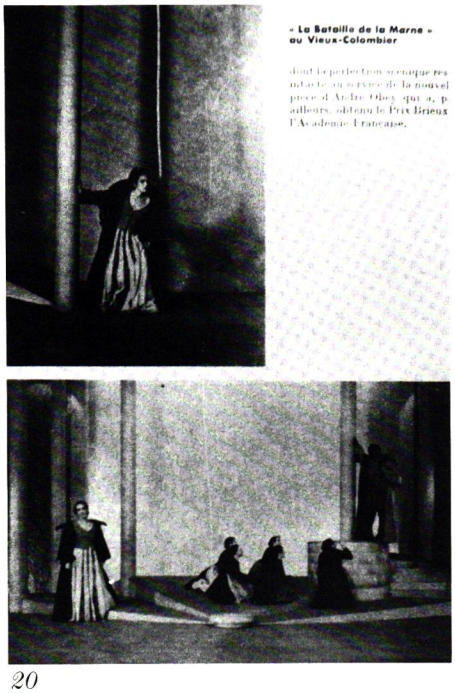
17

Philippe Lamour, "Berlin-Hiver 1931," p. 74.
Jean Picart le Doux, "L'oeuvre de Frans Maseréel," p. 79.
Aimé Blanc, Chroniques, "Destin du siècle," p. 80.
Philippe Lamour and Jeanne Walter, Cinéma, p. 87.
Le Corbusier, "Décisions," p. 93. [Reprinted in *The Radiant City*, p. 147.]
Karl Marx and Frederic Engels, Pour notres Méditation, p. 109.
Pierre Latercier, "Un livre révélateur: Les réprouvés," p. 114.
Otto Strasser, "Le manifeste du Front Noir," p. 116.
Georges Dupeyron, "À propos du 'Cancer Américain'," p. 123.
Henri Dubreuil, "Le spectre de l'égalité," p. 125.
"La situation actuelle des U.S.A.," p. 131.
"L'U.R.S.S. en construction," p. 132.
A. André de la Far, Yugoslavie, "La comédie d'Alexandre," p. 134.
"Lettre de Belgrade," p. 136.
"Lettre de Prague," p. 138.
René Chatillon, "La crise agricole européene," p. 139.
"Lettre de Budapest," p. 141.
Philippe Lamour, "La question du légitimisme," p. 143.
Hubert Lagardelle, France, "Le vin dirigé," p. 146.
Philippe Lamour, "La question de l'or," p. 149.
La "grande presse," p. 152.
Précisions sur l'Ordre nouveau, p. 153.
Les Amis de *Plans*, p. 155.

***Plans*, 11, January 1932**
Construire, p. 5.
Philippe Lamour, "Et le désarmement," p. 10.
Uttmann von Elterlein, "L'Allemagne en 1931," p. 25.
Louis Martin-Chauffier, "Notes sur le travail," p. 37.
René Dupuis, "L'Ordre," p. 39.
Docteur Mouezy-Eon, "Les bases biologiques et physiques de la génération," p. 45.
Mario Meunier, Pour notre Méditation, p. 54.
Georges Dupeyron, "De la fausse à la vraie révolution," p. 57.
Le Corbusier, "En marge de Krupp et due Creusot," p. 60.
Fernand Léger, "Chicago," p. 63.
Pierre Latercier, "Spectacles 1931," p. 73.
Lettres allemandes, p. 92.
Jacques Kayser, "Le désarmement," p. 95.
Pierre Dominique, "Une nouvelle république bourgeoise," p. 96.
Georges Roux, "L'oeuvre sociale de l'Italie nouvelle," p. 96.
A. Mariategui, "La doctrine politique d'Eugénio d'Ors," p. 112.
"Une rentrée significative," p. 116.
Hubert Lagardelle, "Ententes internationales de producteurs," p. 120.
Les Amis de *Plans*: La rencontre de Francfort, p. 125.

***Plans*, 12, February 1932**
Philippe Lamour, "La grande peur de l'an 1932," p. 7.
Hubert Lagardelle, "Sources du syndicalisme," p. 14.
René Dupuis, "De la notion de propriété," p. 22.
M. Martiny, "Médecin, Tradition, Avenir," p. 32.
Le Corbusier, "Hollande," p. 37.

19

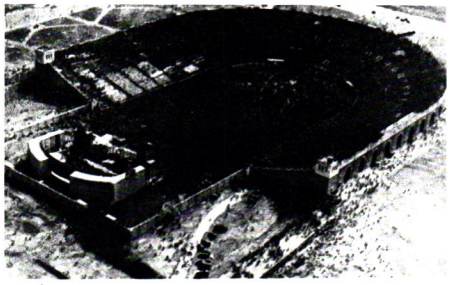


20

Mario Meunier, "Le Travail et la Vie," p. 43.
Pierre Joseph Proudhon, "Initiation au travail," p. 45.
"Paris? Oui," p. 49.
Georges Dupeyron, "Contre l'idée de permanence en littérature," p. 59.
Chroniques [by Jacques Kayser, Pierre Daye, Pierre Dominique], p. 64.
Armand Colombat, Du Cinéma, p. 72.
Ilya Ehrenbourg, En Espagne, p. 79.
"Un homme qualifié," p. 94.
"La Comédie de Genève," p. 95.
A. André de la Far, "La guerre en Asie," p. 101.
U.R.S.S., "Projet d'un second plan quinquennal," p. 104.
Georges Dupeyron, "L'argent dans la politique," p. 108.
"Dans l'anarchie parlementaire," p. 114.
Le Congrès de Francfort, p. 118.

***Plans*, 13, March 1932**
Philippe Lamour, "Position," p. 6.
Pierre Winter, "Travail et Sport," p. 20.
Mario Meunier, "Goethe, esprit universel," p. 28.
Le Corbusier, "Spectacle de la vie moderne," p. 37. [Reprinted in *The Radiant City*, p. 176.]
Pierre Millet, "Vingt et un ans," p. 54.
Alexandre Marc, "Prise de conscience révolutionnaire," p. 59.
Notes, p. 69.
Philippe Lamour, "L'un de nous: Pierre Freyssinet," p. 70.
Pierre Latercier, Le cinéma, p. 73.
Arthur Hoerée, Quelques disques, p. 77.
Yves Farge, "L'art et les marchands," p. 79.
Aux Champs, p. 85
Le Comte de Bresson, "Pour une voie d'eau transcontinentale," p. 94.
Les Transports, p. 109.
A. André de la Far, "Memel," p. 113.
U.R.S.S., p. 115.
V. Petrikowa, "Lettre de Prague," p. 118.
Philippe Lamour, "Le scandale de Genève," p. 120.
Pierre Latercier, "L'avion, moyen de transport," p. 122.
L'Action, p. 126.
Pour *Plans*, bi-mensuel, p. 128.

***Plans* (bi-monthly), 1, April 20, 1932**
Deuxième Étape, p. 4.
De l'autre coté de la barricade, p. 5.
Alexandre Marc, "Primauté de la personnalité," p. 6.
Le Corbusier, "Illustration contemporain de l'urbanisme des temps modernes ou le sauvetage de Paris par l'Avenue des Maraîchers," p. 9.
Henri Dubreuil, "Esquisse pour une société fédérale, enquête sur un système représentatif," p. 11.
Philippe Lamour, "Lettre du pays sain," p. 16.
Georges Dupeyron, "Révolte contre les anciens mythes," p. 18.
Pierre Latercier, "A propos d'un livre d'Hitler," p. 20.
"Au cinéma," p. 21.



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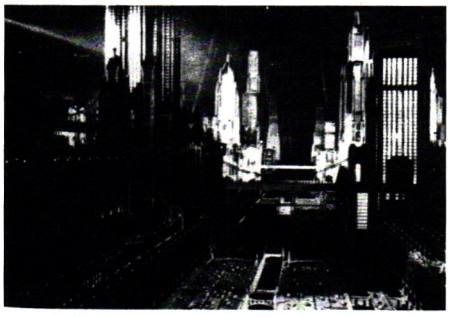
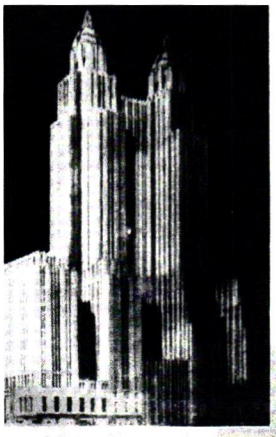


NEW-YORK EN L'AN 2000 : Ceci n'est qu'une maquette de cinéma ; elle a coûté 5 millions de francs.

21



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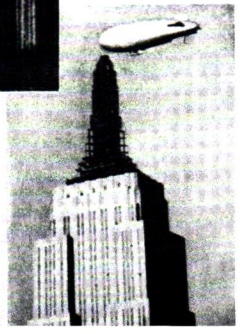

Amérique.

22

"Les rues, les routes et les hommes," p. 22.
René Levy, "Pour une eugénique légale," p. 23.
"Italie, la confusion idéologique du régime," p. 25.
"Ceux qui commencent à comprendre," p. 26.
Les beautés de la "grande presse," p. 28.
Le Mouvement, p. 29.

***Plans* (bi-monthly), 2, May 15, 1932**
La Grand Parade, p. 3.
"Dans la forêt de Bondy," p. 4.
Denis de Rougement, "La violence bourgeoise," p. 5.
René Dupuis, "Révolution et 'patrie'," p. 8.
"Entre autres: Les Messieurs de la famille," p. 11.
A. Alexandre, "U.S.A. 1932," p. 12.
Pierre Winter, "Il y avait ce dimanche," p. 17.
Pierre Lhombre, "A l'heure où paraîtront ces lignes," p. 17.
Louis Dupuy, "Toi citoyen no. x," p. 19.
Georges Dupeyron, "Les Livres," p. 20.
Georges Altmann, Le Cinéma, p. 22.
Jean Longueville, "La leçon des élections allemandes," p. 24.
Aldo Dami, "Lettre de Genève," p. 26.
Tibor Köves, "La question du Danube," p. 28.
"Le mouvement aux abonnés," p. 31.

***Plans* (bi-monthly), 3, June 1, 1932**
Pour la nouvelle unité, p. 1.
A. Nalpanis, "L'après-guerre romantique," p. 3.
Les beautés de la "grande presse," p. 6.
Aldo Dami, "Enquête sur un système représentatif," p. 8.
Pierre Hubermont, "J'annonce l'âge d'or," p. 10.
René Levy, "Et Allemagne?" p. 14.
René Dupuis, "Le partis révolutionnaires allemande et le virus libéral," p. 16.
Pierre Latercier, "Un scandale dans le cinéma. Vers la dictateur des marchands de navets," p. 18.
Armand Colombat, Cinéma, p. 20.
Georges Dupeyron, La chose écrite, p. 23.
De l'autre côté de la barricade, p. 25.
"L'édifiante aventure de Mme. Hanau," p. 26.
Bulletin d'information fédéralistes, p. 29.
Le Mouvement, p. 30.

***Plans* (bi-monthly), 4, June 15, 1932**
"Est-il vrai?" p. 3.
Les beautés de la "grande presse," p. 3.
Maurice Paz, "L'école des transfuges," p. 5.
Denis de Rougement, "Les 'petits purs'," p. 6.
Jean Longueville, "Pour une nouvelle unité en Allemagne," p. 8.
Pierre Winter, "La Santé," p. 11.
Philippe Lamour, "Nuit sur le drachenfels," p. 13.
Georges Dupeyron, La chose écrite, p. 16.
Pierre Latercier, "Autour d'une monde, La vogue du roman policier," p. 17.

23

Charles Glachant, Le Cinéma, p. 22.
Aladin, "Et demain," p. 23.
Aldo Dami, "D'un condamné à mort," p. 25.
P. C. Biver, "U.S.A., Encore et Toujours," p. 27.

***Plans* (bi-monthly), 5, July 1, 1932**
Maurice Paz, "Essai de psychanalyse sociale," p. 3.
Philippe Lamour, "Destin de la jeunesse," p. 5.
Le Corbusier, "Thèse, questions et réponses," p. 8.
Georges Dupeyron, "Bassesse de la critique," p. 11.
La chose écrite, p. 11.
Pierre Latercier, "La rajeunissement de la politique," p. 13.
Armand Colombat, "La lampe merveilleuse," p. 15.
"Sur les planches de théâtre au faubourg," p. 18.
Upton Sinclair, "Le martyre de Sacco et Venzetti," p. 20.
Jean Longueville, "Carnet de route du fascisme allemand," p. 26.
Pierre Millet, "Le statut catalan," p. 31.

***Plans* (bi-monthly), 6, July, 15, 1932**
Maurice Paz, "Tour d'horizon," p. 6.
Les beautés de la "grande presse," p. 4.
A. Rossi, "Quelques faces du prisme allemand," p. 6.
Suzanne Sailly, "Collaborateurs ou successeurs," p. 11.
Philippe Lamour, "Lettre du pays sain—d'un colline en Gascogne," p. 12.
Georges Dupeyron, La chose écrite, p. 15.
Pierre Latercier, Cinéma, p. 16.
Armand Colombat, Cinéma, p. 17.
Roger Fauré, Musique, p. 18.
Philippe Lamour, "Lettre ouverte à M. Chiappe," p. 19.
Louis Vallon, U.S.A., "Moyen âge du nouveau monde," p. 21.
U.R.S.S., p. 22.
En Belgique, p. 26.
Aldo Dami, "Bilan du Désarmement," p. 27.

***Plans* (bi-monthly), 7, August 1, 1932**
Philippe Lamour, "Bonnes Vacances," p. 1.
"Vous, M. Herriot qui êtes, dit-on, un honnête homme," p. 2.
Jean Longueville, "L'Hitlerisme au carrefour," p. 4.
Suzanne Sailly, "L'Édifiant tragi-comédie du procès Gorguloff," p. 8.
"Autour du procès," p. 12.
Paul Jorland, "Crise de l'esprit," p. 13.
René Levy, "En Lisant," p. 15.
Aimé Blanc, "Désaroi des Intellectuels," p. 16.
Pierre Latercier, Cinéma, p. 17.
Philippe Lamour, "La Querelle des 'Atlantide'," p. 18.
Armand Colombat, Cinéma, p. 19.
Magdeleine Paz, "Crise aux U.S.A.," p. 21.
Sherwood Anderson, "La Terreur au Kentucky," p. 21.
De l'autre coté de la barricade, p. 26.
Philippe Lamour, "En dehors et au-dessus des subtilités de la politique, il y a l'honneur et la dignité de Paris," p. 27.

24

Gaston Bergery, "Le Bilan de Lausanne," p. 28.
Bulletin d'informations fédéralistes, p. 31.
"Pour un grand organe indépendant," p. 32.

***Plans* (bi-monthly), 8, August and September 1932**
Philippe Lamour, "Fédéralisme et autonomie," p. 1.
Les beautés de la "grande presse," p. 4.
Jean Longueville, "L'Allemagne au tourant," p. 7.
Boris Goldenberg, "Allemagne 1918–1932," p. 9.
Maurice Paz, "Lettre de Province: Qu'elle serait belle . . . sous la République," p. 12.
Georges Dupeyron, La chose écrite, p. 14.
Armand Colombat, "La lampe merveilleuse," p. 16.
Pierre Latercier, "Les mystères de l'affaire Gorguloff," p. 19.
"Et voici, en France, la 'question du blé'," p. 22.
Alfredo Gradilone, "En Italie: Un document symtomatique," p. 24.
Aldo Dami, "Contribution à une enquête sur la représentation," p. 28.

***Bulletin des Groupes Plans*, 1, February 1933**
Regain, p. 1.
Ce mois-ci, p. 2.
Victor Deznai, "Les régions naturelles de l'Europe," p. 3.
Pierre Latercier, "Contre la presse asservie," p. 7.
Bernard Gervaise, "Apocalypse," p. 10.
Norbert Bezard, "Plans et tracés," p. 11.
Philippe Lamour, "Témoignages et constats," p. 13.
Philippe Lamour, "Pour dissiper une équivoque," p. 15.

***Bulletin des Groupes Plans*, 2, March 1933**
Désordre, p. 1.
Aldo Dami, "Les régions naturelles de l'Europe," p. 3.
Norbert Bezard, "Réflexions du campagnard, la monnaie nouvelle," p. 6.
Pierre Latercier, "Contre la presse asservie," p. 7.
Jean Prévost, "Ordre et désordre. L'illusoire securité," p. 8.
"Documents: La crise agraire," p. 10.
"U.R.S.S.: Un 'plan' au pays du 'Plan'," p. 12.
"En Italie," p. 15.

***Bulletin des Groupes Plans*, 3–4, April–May 1933**
Allemagne Numéro Special
"L'Allemagne est fasciste," p. 3.
(Camarade Allemand), "Synthèse de l'Hitlerisme: origines, évolution, conséquences," p. 7.
"*Plans* avait raison," p. 14.
Philippe Lamour, "Destin de la jeunesse allemande," p. 15.
"Faiblesse de la contrainte," p. 18.
"Dérapages," p. 19.
Philippe Lamour, "Le Mot et l'image," p. 20.
Etudes et documents, "Memento de l'Hitlerisme," p. 21.
U.R.S.S., p. 30.
"Petite chronique du désordre: Des chemins de fers," p. 31.

Index to Authors:
***Plans,* 1–13 (1931– 1932);**
***Plans* (bi-monthly), 1–8 (1932);**
***Bulletin des Groupes Plans,* 1–4 (1933)**

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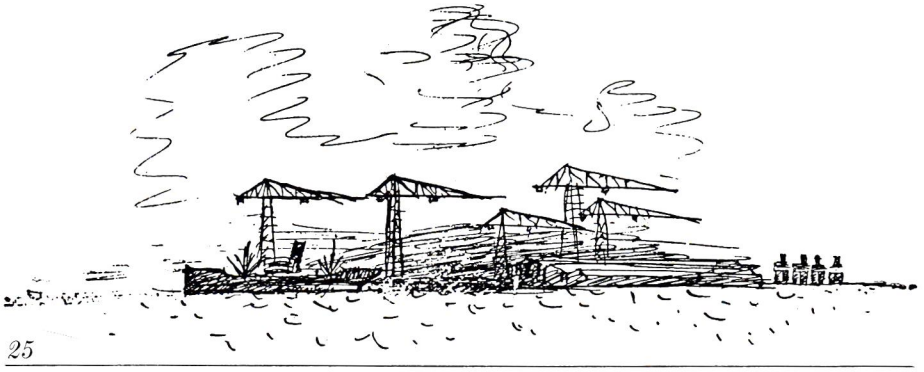
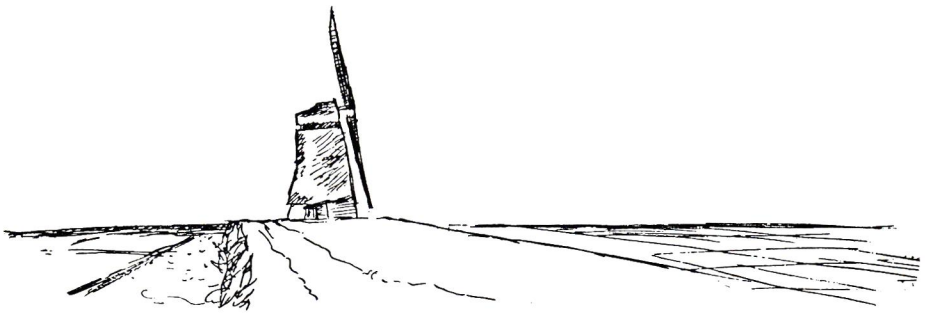


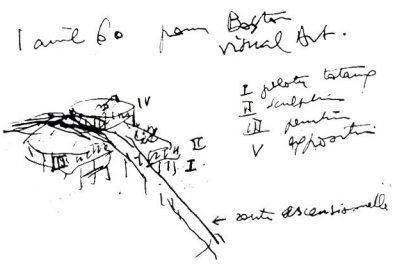
25



26

Aladin. *Plans* (bi-monthly), 4.
Aldington, Richard. *Plans*, 6.
Alexandre, A. *Plans* (bi-monthly), 2.
Allendy, Docteur. *Plans*, 3.
Altmann, Georges. *Plans*, 9; *Plans* (bi-monthly), 2.
Altmann, Georges and Philippe Lamour. *Plans*, 6.
Anderson, Sherwood. *Plans* (bi-monthly, 7.
Aron, Robert and Arnaud Dandieu. *Plans*, 8, 9.
Autant-Lara, Claude. *Plans*, 2, 3.
Barsacq, A. *Plans*, 3.
Bauer, Stéphane. *Plans*, 2, 5.
Benès, M. *Plans*, 5.
Bergery, Gaston. *Plans* (bi-monthly), 7.
Bezard, Norbert. *Bulletin*, 1, 2.
Biver, P. C. *Plans* (bi-monthly), 4.
Blanc, Aimé. *Plans*, 6, 8; *Plans* (bi-monthly), 7.
Boll, André. *Plans*, 1.
Breuer, Marcel. *Plans*, 7.
Brille, Marco. *Plans*, 2.
Chatillon, René. *Plans*, 10.
Clair, René. *Plans*, 5, 12.
Colombat, Armand. *Plans*, 12; *Plans* (bi-monthly), 3, 4, 5, 7, 8.
Copeau, Jacques. *Plans*, 3.
Dahlet, Camille and Philippe Lamour. *Plans* (bi-monthly), 6.
Dami, Aldo. *Plans*, 1, 4, 10; *Plans* (bi-monthly), 2, 3, 4, 6, 8; *Bulletin*, 2.
Dandieu, Arnaud and Robert Aron. *Plans*, 8, 9.
Daniel-Rops, *Plans*, 9.
De Bresson, le Comte. *Plans*, 13.
De la Far, A. André. *Plans*, 4, 6, 8, 9, 10, 12, 13.
Delaisi, Francis, *Plans*, 3, 9.
De Ribon, Robert. *Plans*, 4, 7.
De Ribon, Robert and Philippe Lamour, *Plans*, 6.
De Rougement, Denis. *Plans* (bi-monthly), 2, 4.
Deznai, Victor. *Bulletin*, 1.
Dominique, Pierre. *Plans*, 1, 11.
Dubreuil, Henri. *Plans*, 10; *Plans* (bi-monthly), 1.
Dufy, Raoul. *Plans*, 4.
Duhamel, Maurice. *Plans*, 6.

Dupeyron, Georges. *Plans*, 2, 3, 6, 7, 10, 11, 12; *Plans* (bi-monthly), 1, 2, 3, 4, 5, 6, 8.
Dupeyron, Georges and Hubert Lagardelle. *Plans*, 8.
Dupuis, René. *Plans*, 2, 7, 11, 12, 13; *Plans* (bi-monthly), 2, 3.
Dupuy, Louis. *Plans* (bi-monthly), 2.
Ehrenbourg, Ilya. *Plans*, 12.
Farnoux-Reynaud, Lucien. *Plans*, 2.
Farge, Yves. *Plans*, 13.
Fauré, Roger. *Plans* (bi-monthly), 6.
Gabriel, J. M. *Plans*, 9.
Gervaise, Bernard. *Bulletin*, 1.
Giono, Jean. *Plans*, 5.
Giraudoux, Jean. *Plans*, 5, 7.
Glachant, Charles. *Plans* (bi-monthly), 4.
Goldenberg, Boris. *Plans* (bi-monthly), 8.
Gradilone, Alfredo. *Plans* (bi-monthly), 8.
Grohmann, Will. *Plans*, 3.
Gropius, Walter. *Plans*, 2.
Honegger, Arthur. *Plans*, 1, 7.
Hoerée, Arthur. *Plans*, 3, 4, 13.
Hubermont, Pierre. *Plans* (bi-monthly), 3.
Johnson, J. Weldon. *Plans*, 2.
Jorland, Paul. *Plans* (bi-monthly), 7.
Kayser, Jacques. *Plans*, 11.
Kisch, Egon Erwin. *Plans*, 2.
Kipling, Rudyard. *Plans*, 4.
Köves, Tibor. *Plans* (bi-monthly), 2.
Lagardelle, Hubert. *Plans*, 1, 3, 5, 9, 10, 11, 12.
Lagardelle, Hubert and Georges Dupeyron. *Plans*, 8.
Lamande, André. *Plans*, 7.
Lamour, Philippe. *Plans*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13; *Plans* (bi-monthly), 1, 4, 5, 6, 7, 8; *Bulletin*, 1, 3–4.
Lamour, Philippe and Georges Altmann. *Plans*, 6.
Lamour, Philippe and Camille Dahlet. *Plans* (bi-monthly), 6.
Lamour, Philippe and Robert de Ribon, *Plans*, 6.
Laski, Harold. *Plans*, 9.
Latercier, Pierre. *Plans*, 1, 5, 6, 9, 10, 11, 13; *Plans* (bi-monthly), 1, 3, 4, 5, 6, 7, 8; *Bulletin*, 1, 2.
Le Corbusier. *Plans*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13; *Plans* (bi-monthly), 1, 5.
Léger, Fernand. *Plans*, 1, 11.
Lelong, Georges. *Plans*, 1.
Levy, René. *Plans* (bi-monthly), 1, 3, 7.
Lévy, Robert. *Plans*, 5.
Lhombre, Pierre. *Plans* (bi-monthly), 2.
Lomov, G. *Plans*, 12.
Longueville, Jean. *Plans* (bi-monthly), 2, 4, 5, 7, 8.
Lunatcharsky, Anatole. *Plans*, 8.
Mann, Heinrich. *Plans*, 6.
Mann, Thomas. *Plans*, 6.
Marc, Alexandre. *Plans*, 13; *Plans* (bi-monthly), 1.
Mariategui, A. *Plans*, 11.
Marinetti, Fillipo. *Plans*, 7.
Marq, Claude. *Plans*, 7.
Martin-Chauffier, Louis. *Plans*, 11.
Martiny, M. *Plans*, 2, 12.
Martiny, M. and Pierre Winter. *Plans*, 4.
Marx, Karl and Frederic Engels. *Plans*, 10.
Maseréel, Frans. *Plans*, 6.
Maspétiol, Roland. *Plans*, 8.
Mayer, Emile. *Plans*, 6.
Méans, G. B. *Plans*, 3.
Méquet, P. *Plans*, 7.
Meunier, Mario. *Plans*, 11, 12, 13.
Millet, Pierre. *Plans*, 13; *Plans* (bi-monthly), 5.
Mouezy-Eon, Docteur. *Plans*, 7, 11.
Nietzsche, Friedrich. *Plans*, 5.
Obey, André. *Plans*, 3.
Nalpanis, A. *Plans* (bi-monthly), 3.
Nostitz, Hélène. *Plans*, 7.
Paz, Magdeleine. *Plans* (bi-monthly), 7.
Paz, Maurice. *Plans* (bi-monthly), 4, 5, 6, 8.
Pendé, *Plans*, 10.
Petrikowa, V. *Plans*, 13.
Philip, André. *Plans*, 5.
Picart le Doux, Jean. *Plans*, 6, 8, 10.
Pierrefeu, François. *Plans*, 1, 2, 3, 4, 5, 10.
Pierrefeu, François and Pierre Winter. *Plans*, 6.
Pitoeff, Georges. *Plans*, 2.
Poidebard, E. *Plans*, 6.
Prévost, Jean. *Bulletin*, 2.
Proudhon, Pierre Joseph. *Plans*, 12.
Reynal, Maurice. *Plans*, 1.
Rossi, A. *Plans* (bi-monthly), 6.
Roux, Georges. *Plans*, 2, 6, 11.
Roy, Dr. Joseph. *Plans*, 8.
Sailly, Suzanne. *Plans* (bi-monthly), 6, 7.
Saint-Denis, Michel. *Plans*, 3.
Schwartz-Megyesi, Alphonse. *Plans*, 6, 7.
Sinclair, Upton. *Plans* (bi-monthly), 5.
Strasser, Otto. *Plans*, 10.
Sudre, René. *Plans*, 1, 2, 3, 4, 5, 6, 7, 9.
Teige, Karel. *Plans*, 8.
Thooris, A. *Plans*, 5.
Vallon, Louis. *Plans* (bi-monthly), 6.
Vasseur, Paul. *Plans*, 1.
Viénot, Pierre and Philippe Lamour. *Plans*, 7.
von Elterlein, Uttmann. *Plans*, 11.
Walter, Jeanne. *Plans*, 1, 4.
Winter, Pierre. *Plans*, 1, 9, 13; *Plans* (bi-monthly), 2, 4.
Winter, Pierre and M. Martiny. *Plans*, 4.
Winter, Pierre and François de Pierrefeu. *Plans*, 6.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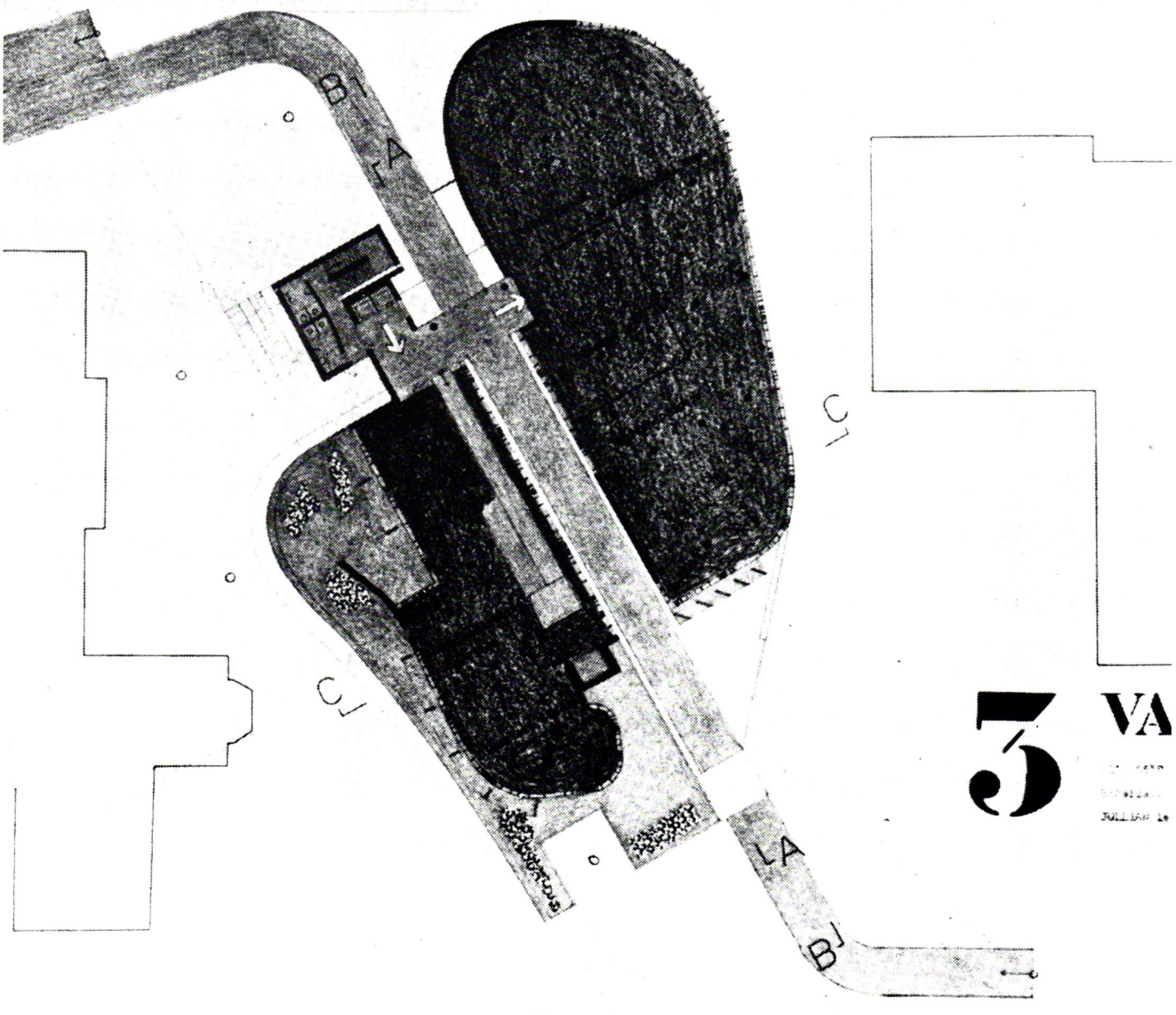
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1

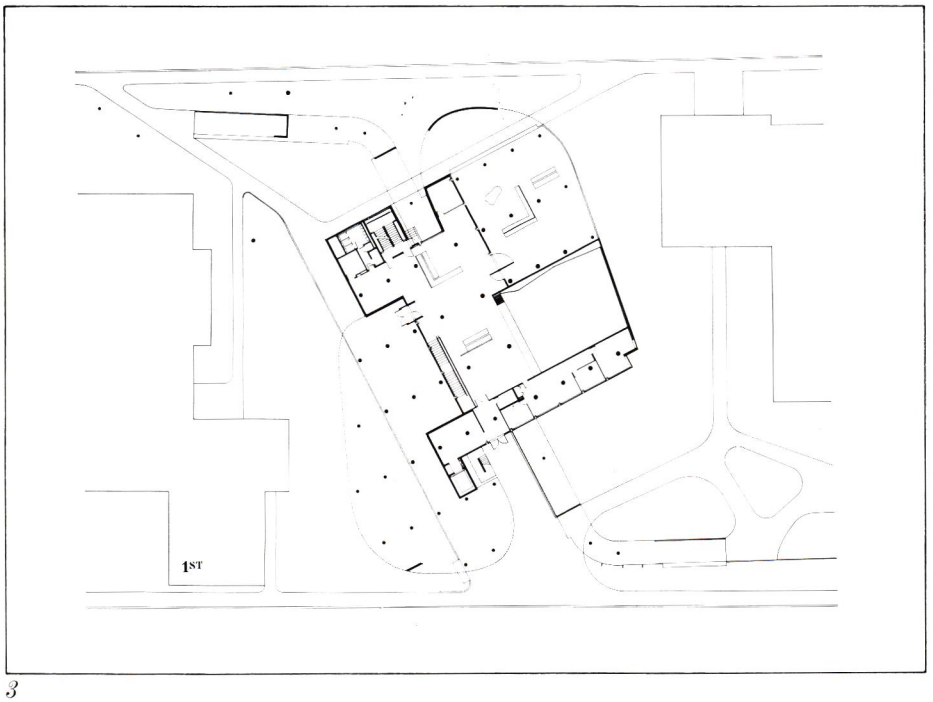
The Carpenter Center for the Visual Arts, Cambridge, Massachusetts. Le Corbusier, 1961-1963. Documentation.

Alan Chimacoff, Fred Koetter, Randall Korman, and Werner Seligmann.

The "old man," however, has performed even better than we had all expected, and all of us here in Cambridge are in a state of euphoria.
A.D. Trottenberg, 20 June 1960.

Considerable modifications were made between the earlier project of 1961 and the building as completed in 1963. These drawings prepared by Alan Chimacoff, Fred Koetter, Randall Korman, and Werner Seligmann are the first complete documentation of the building as finished. The principal changes between the two stages are given under each caption.

1 Roof and site plan.
2 Perspective drawing.
3 First floor, not shown in the initial design.
4 Second floor. An additional exhibition hall has been added to the Quincy Street side. The void connecting the basement lecture hall has been reduced and the atelier facing onto Prescott Street becomes subdivided into administrative offices in the final version of the scheme.



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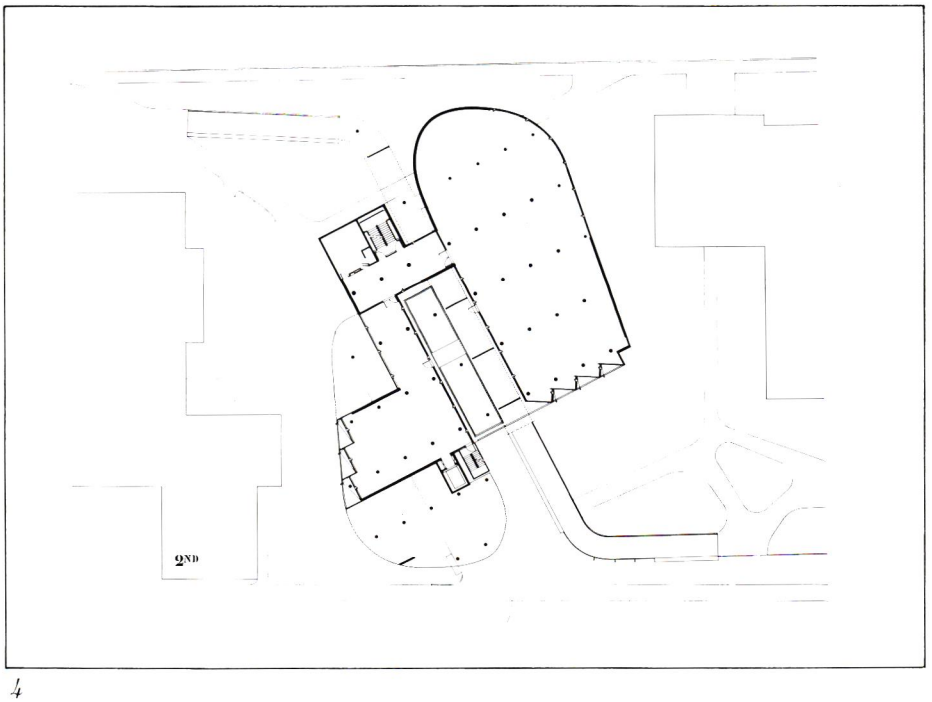

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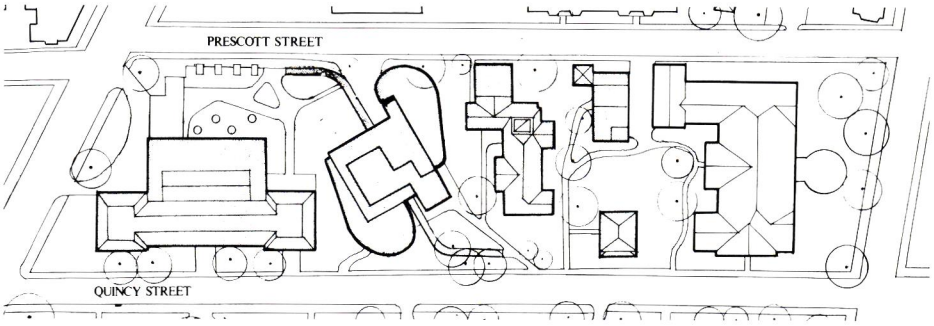

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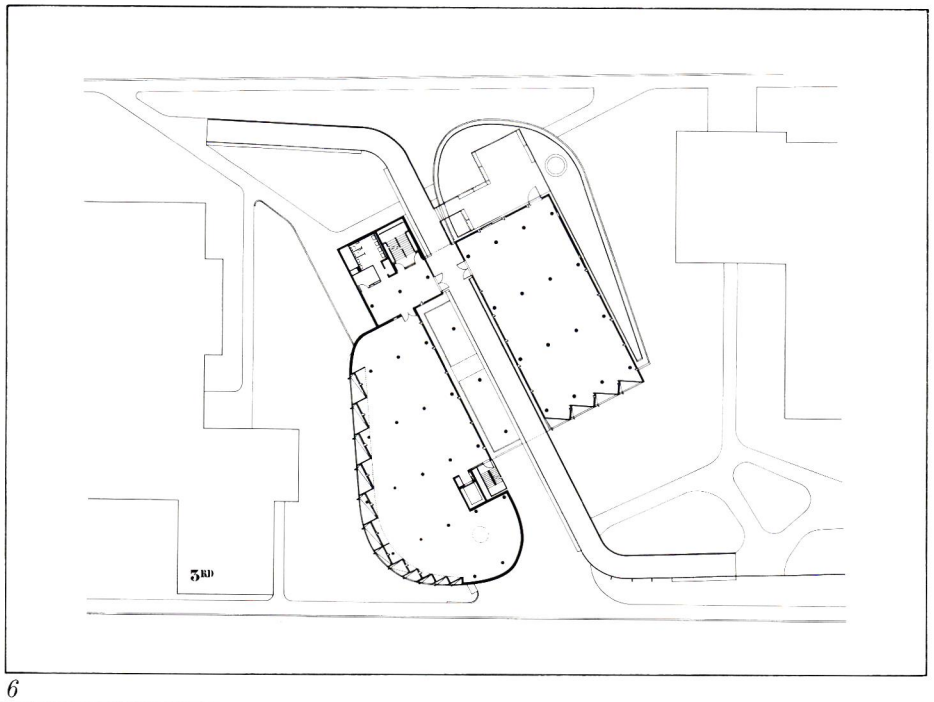
5 Carpenter Center, Cambridge, Mass. Le Corbusier, 1961–1963. Site plan, Prescott and Quincy Streets.



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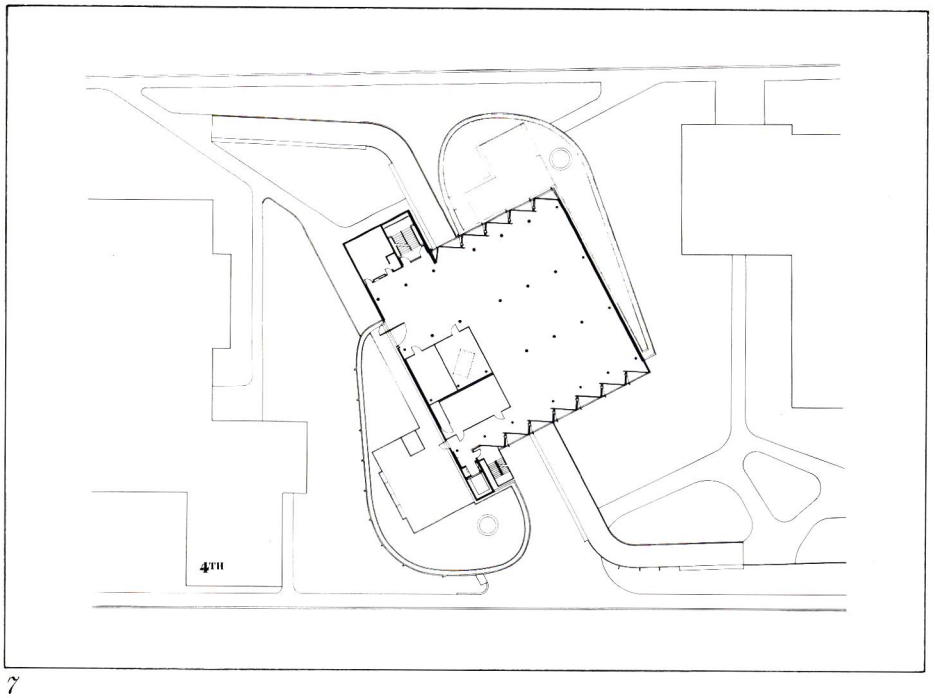

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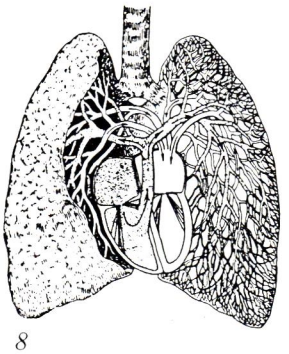
6 Third floor. Studios as in the initial design.
7 Fourth floor. Studios as in the initial design. The primary modification is the omission of an internal ramp connecting the third and fourth floor studios.



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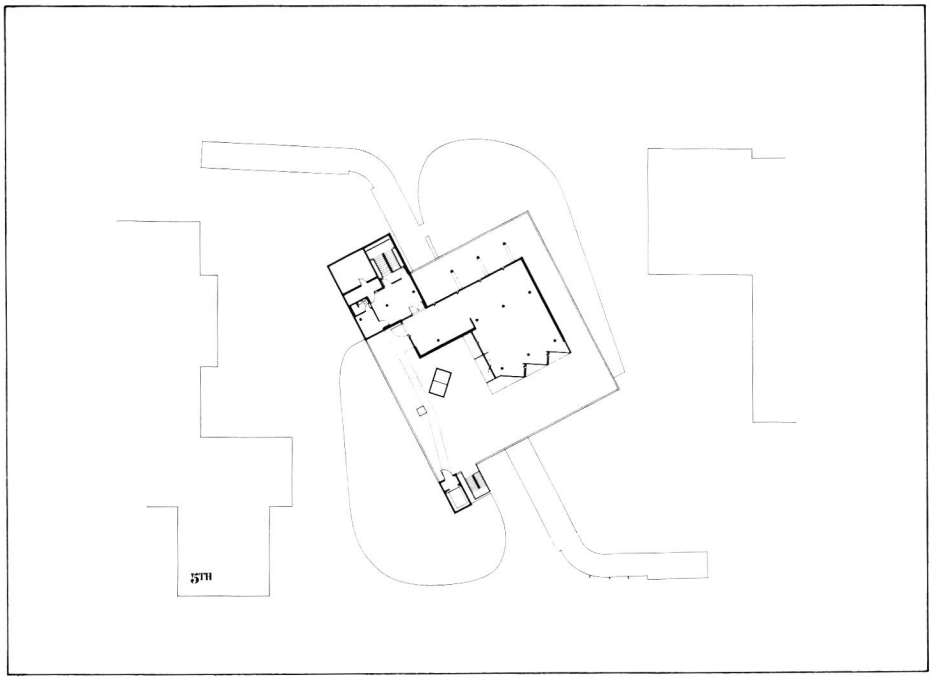
8 A pair of lungs from Le Corbusier's book Urbanisme *(1925). Here lungs have metaphorical significance as a model for the city whose air and traffic circulate freely, and whose greenery and open space allow it to "breathe."*



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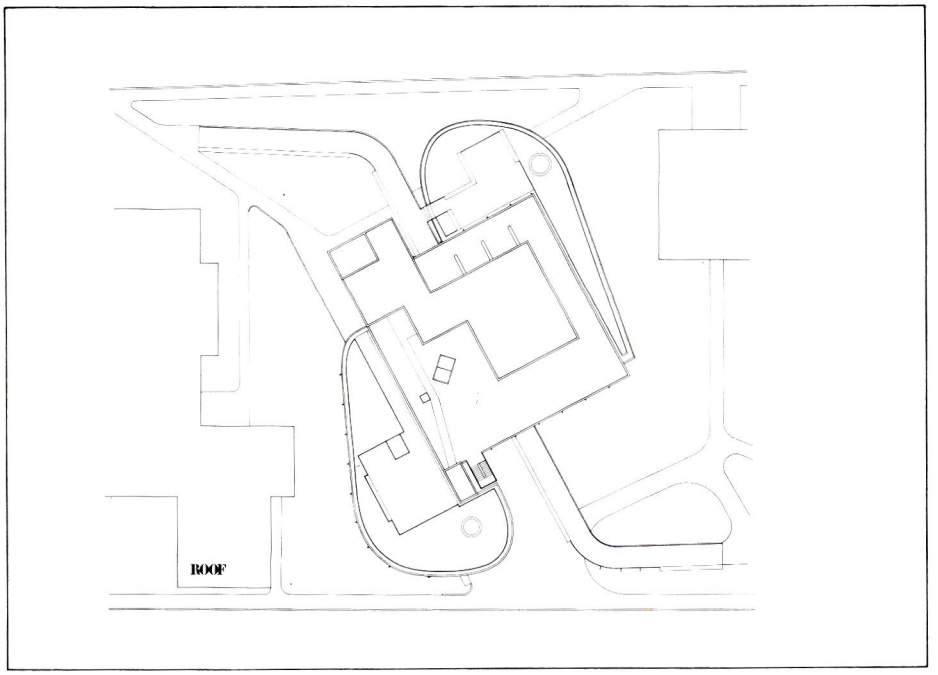
9 Fifth floor. One large studio volume as in the initial design. However, the overall area is reduced by the provision of faculty offices.
10 Roof level.



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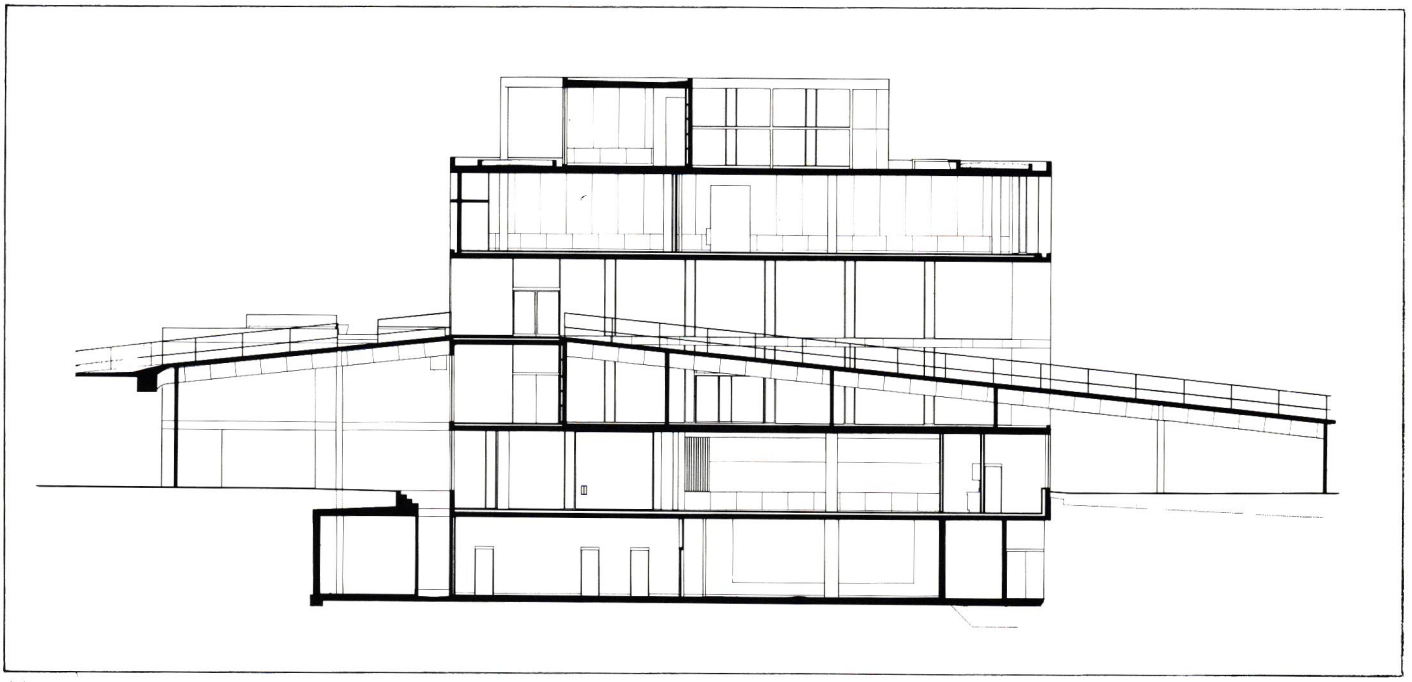
11 Carpenter Center, Cambridge, Mass. Le Corbusier, 1961–1963. Longitudinal section through entry ramp.
12 Transverse section through studios and entry ramp.



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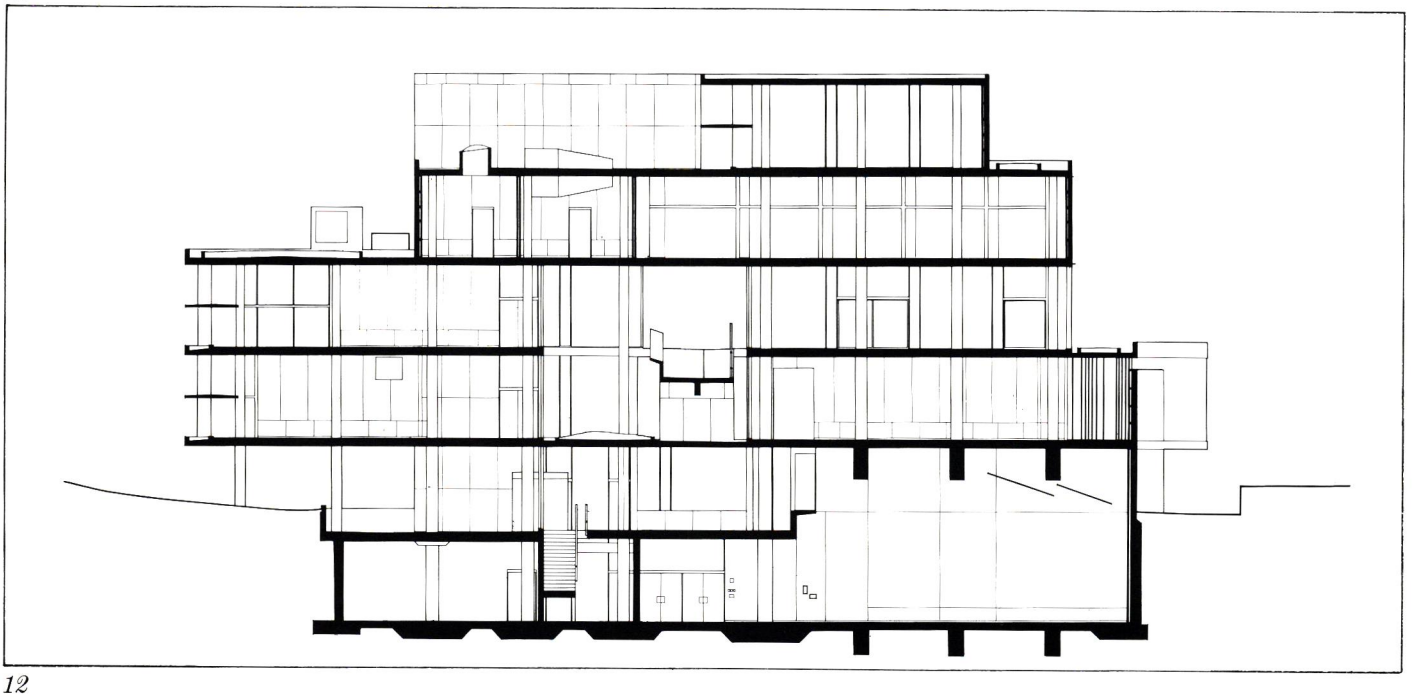

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13 Section through stair tower and studios.
14 East elevation.
15 Sketch of lecturer. Le Corbusier, n.d.

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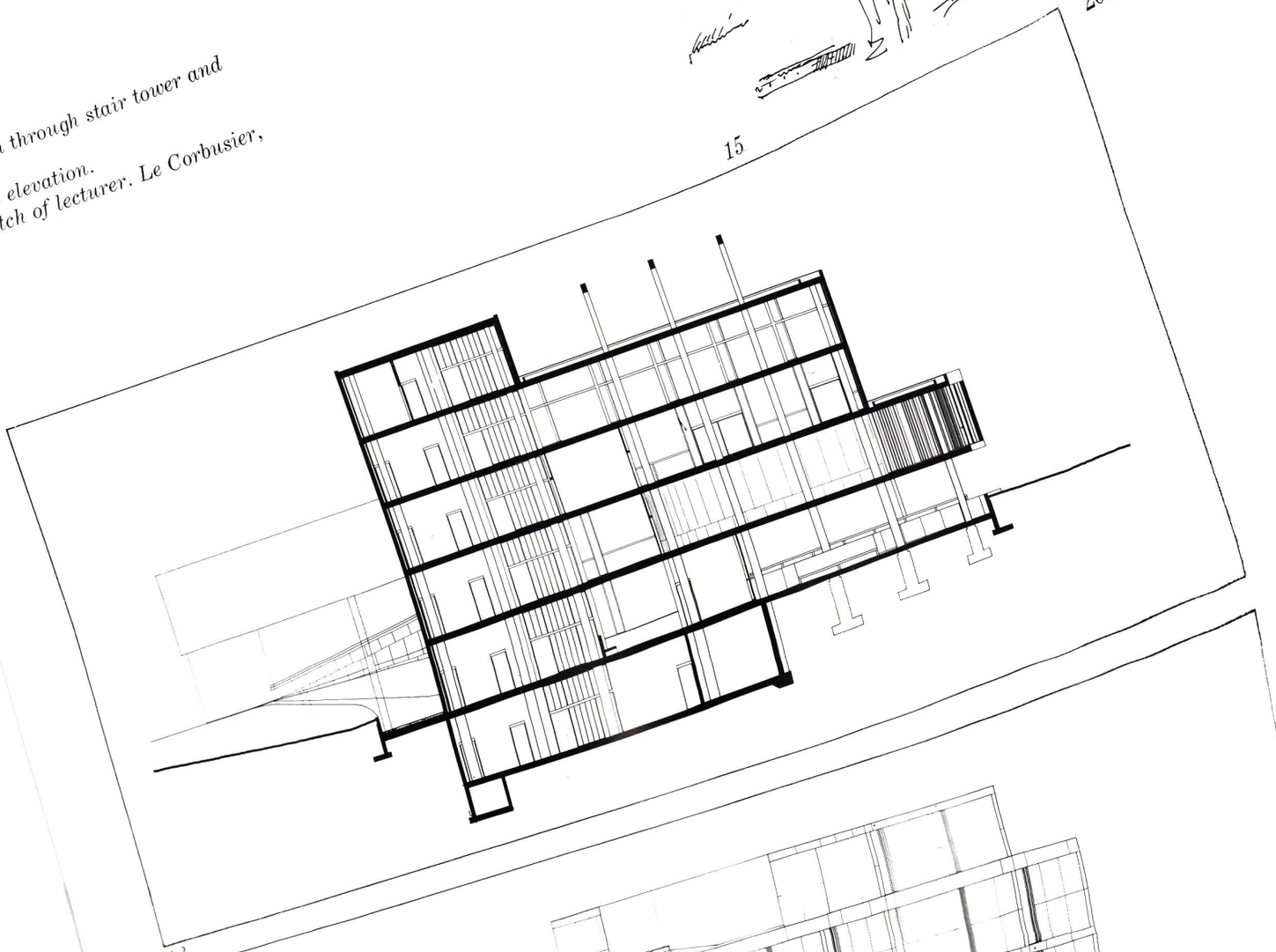

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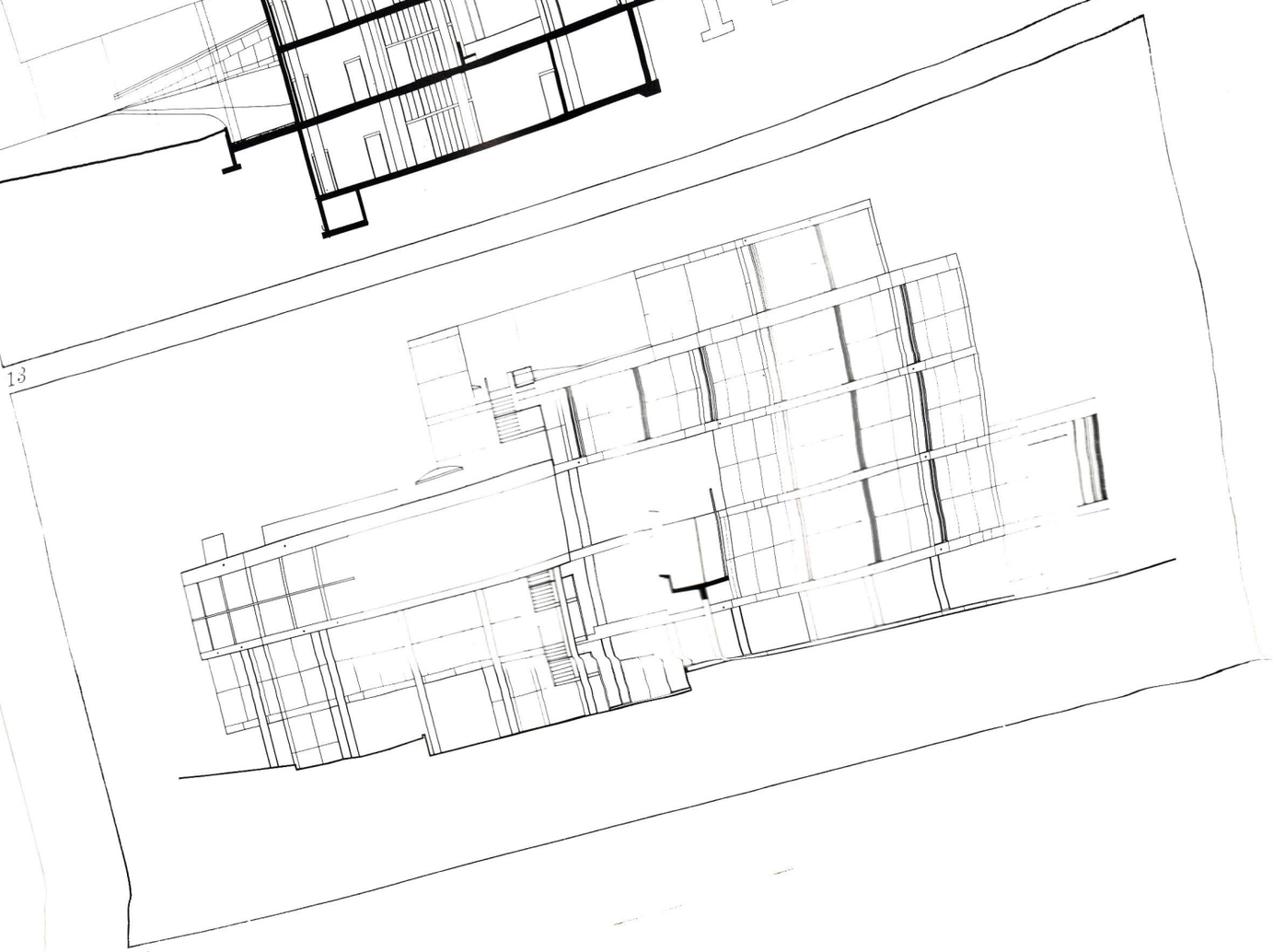

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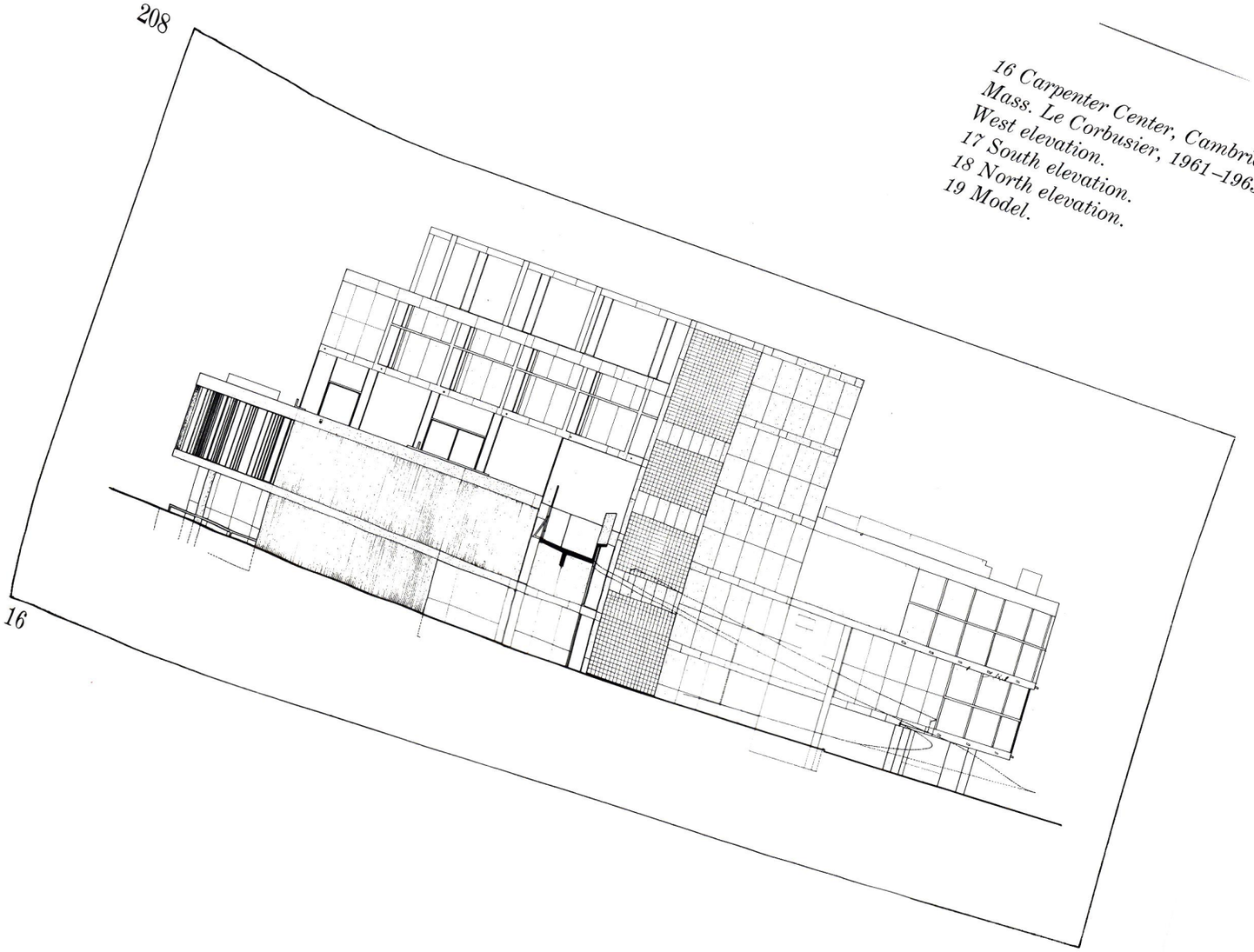
16 Carpenter Center, Cambridge, Mass. Le Corbusier, 1961–1963.
West elevation.
17 South elevation.
18 North elevation.
19 Model.



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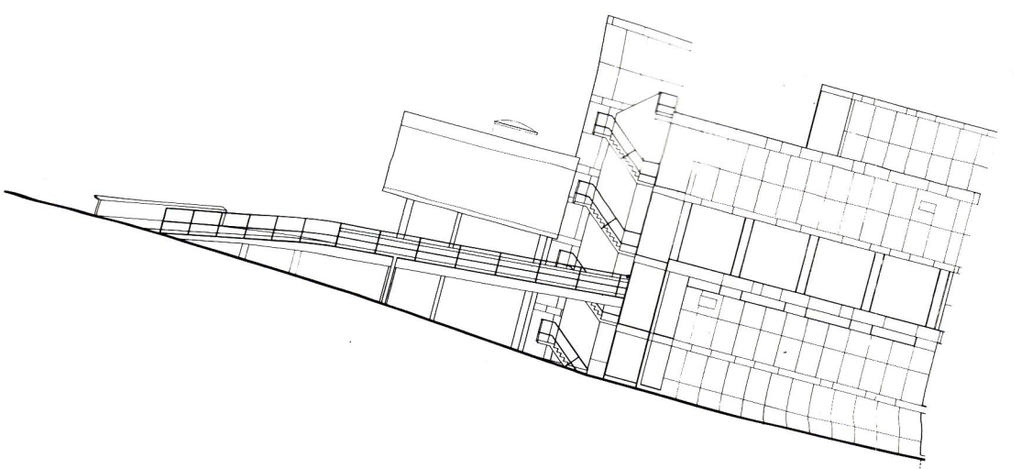

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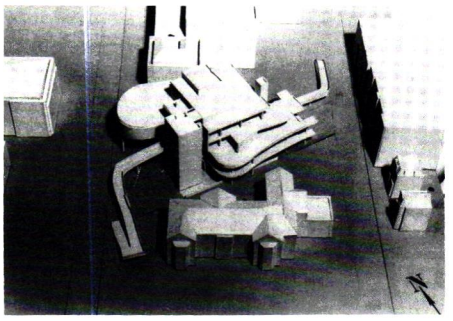

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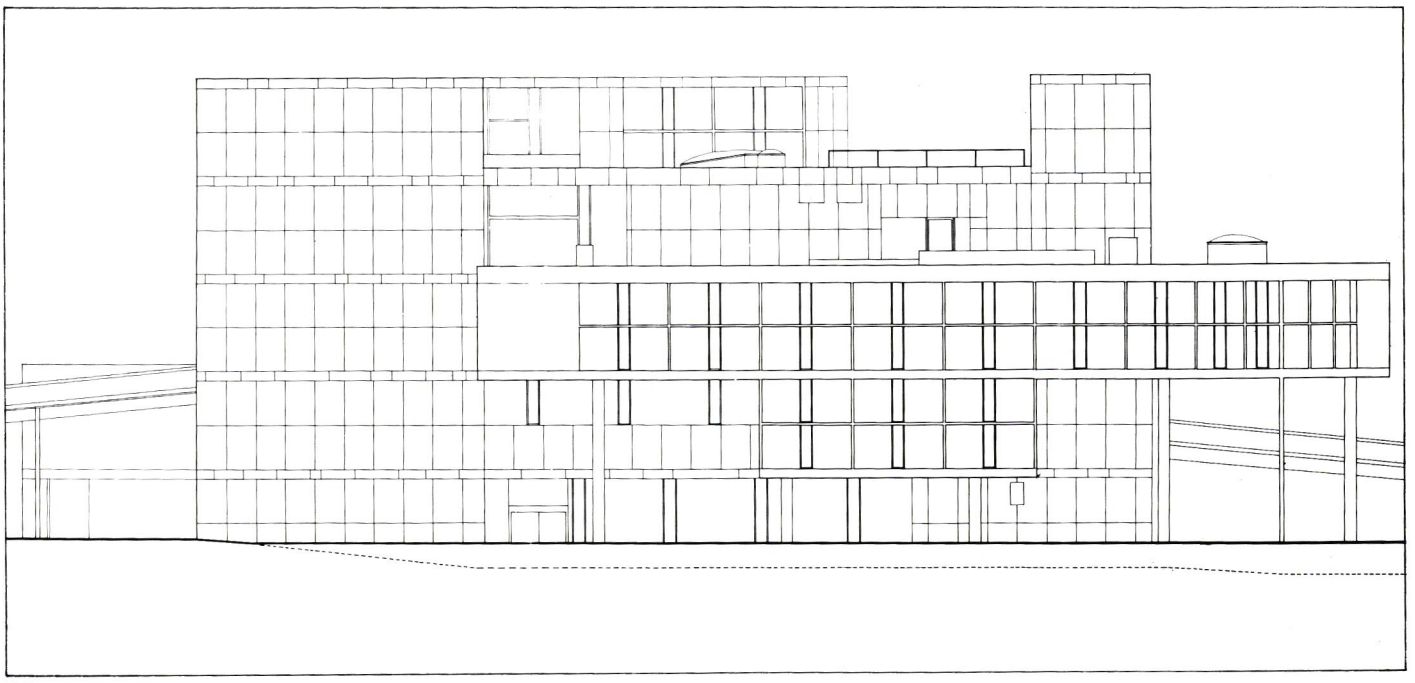

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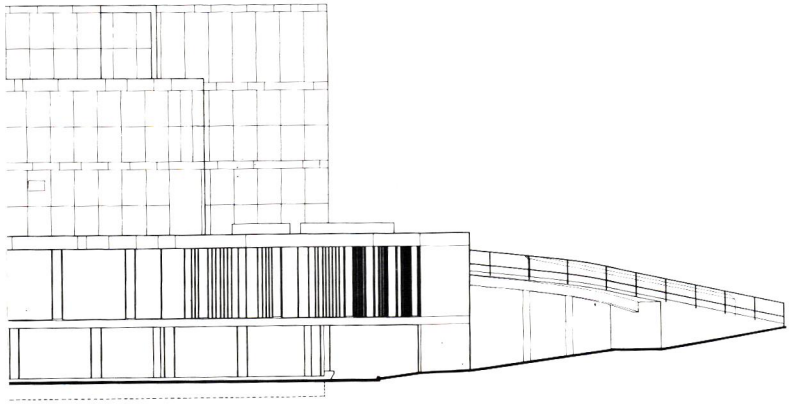
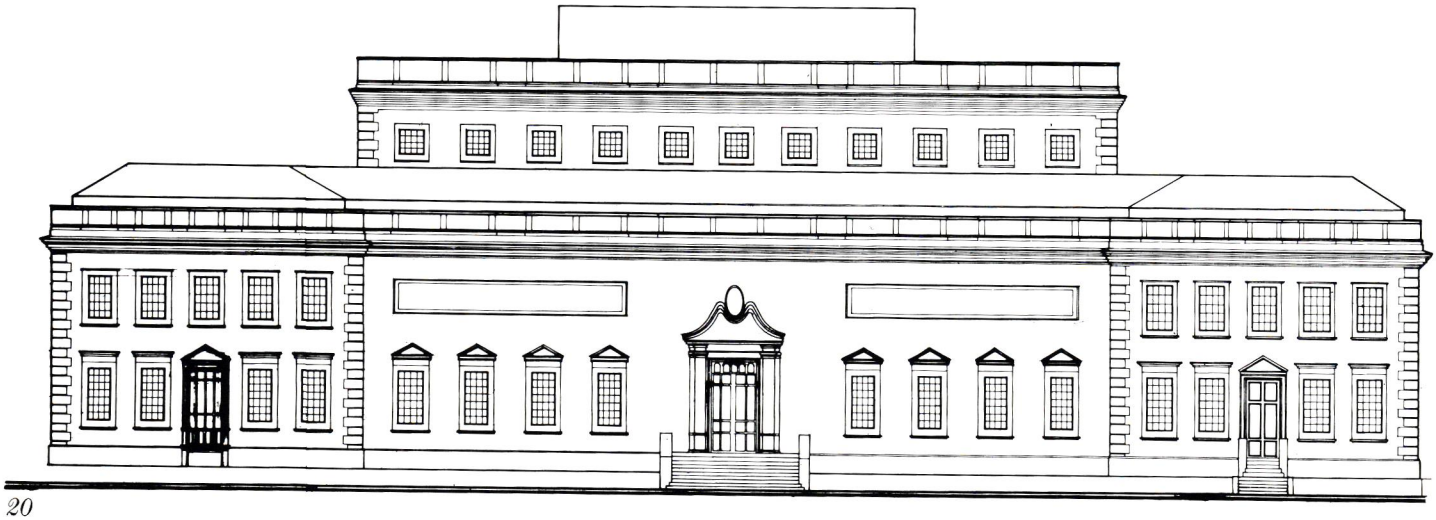


20 Carpenter Center, Cambridge, Mass. Le Corbusier, 1961–1963. Elevation from Quincy Street.
21 Elevation from Prescott Street.



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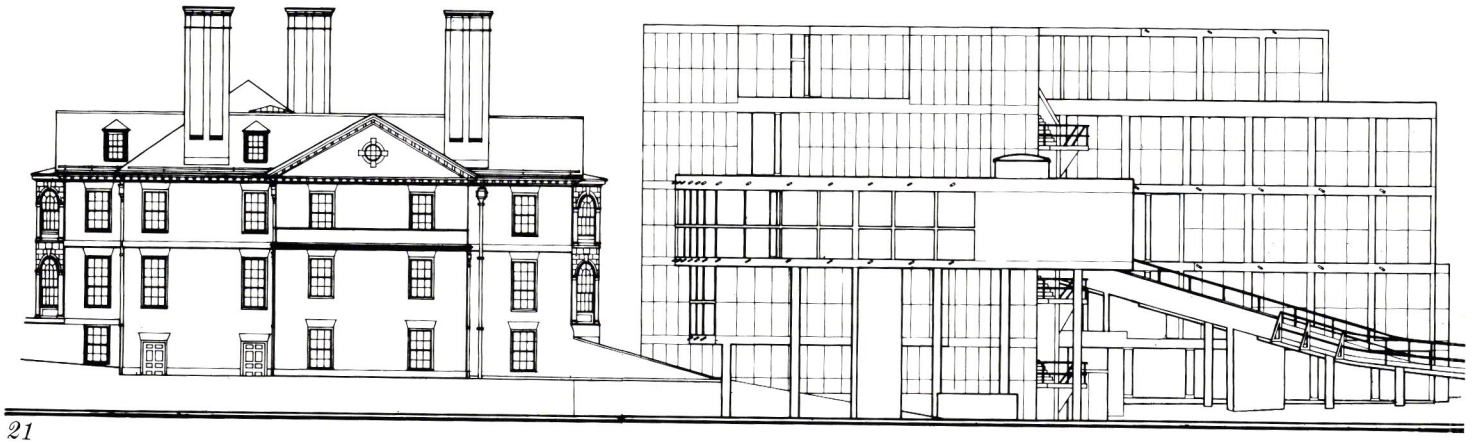

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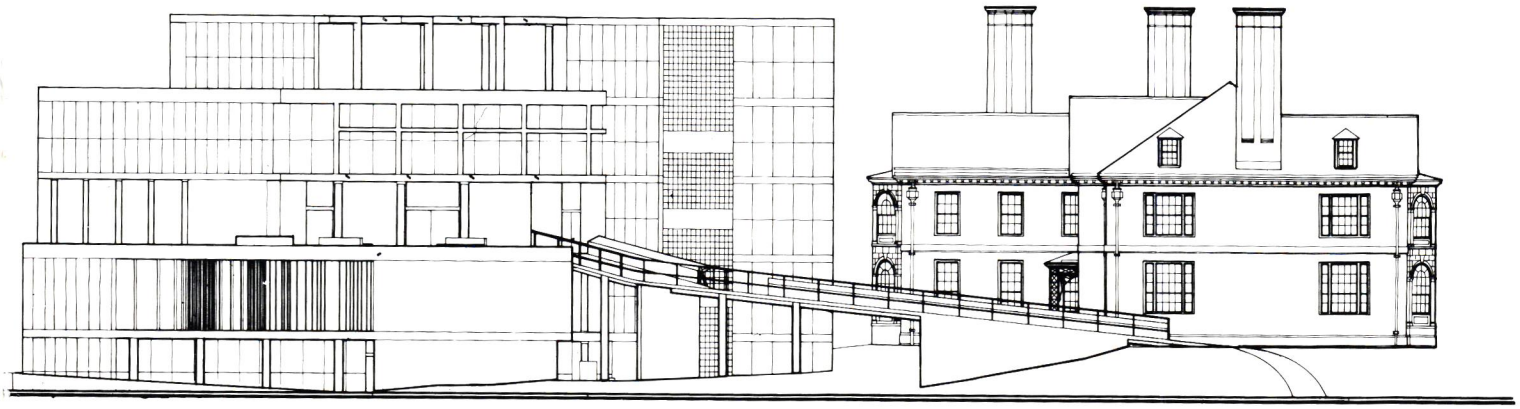
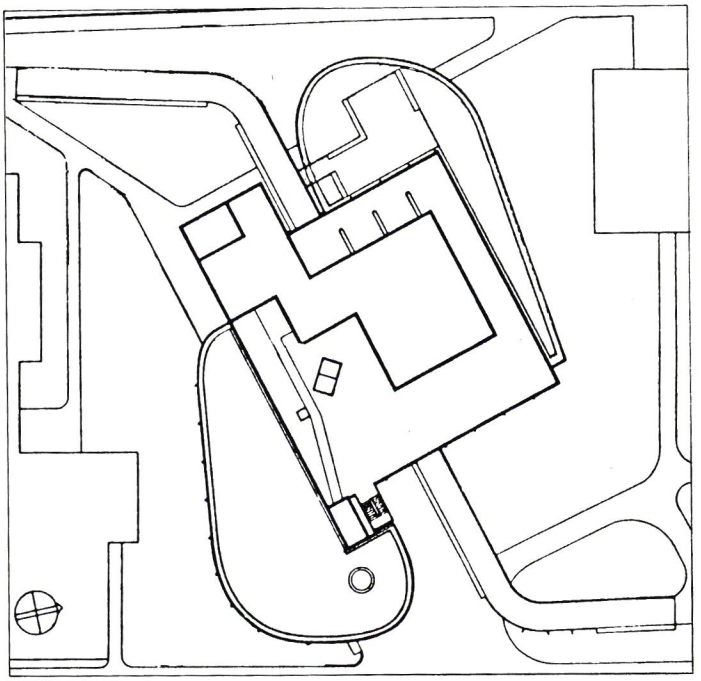
Figure Credits
2, 5, 19 © *S.P.A.D.E.M., Paris/ V.A.G.A., New York, 1980.*
1, 3–14, 16–18, 20, 21 Drawings by Alan Chimacoff, Fred Koetter, Randall Korman, and Werner Seligmann.
2, 15, 19 Reprinted from Eduard Sekler and William Curtis, Le Corbusier at Work: The Genesis of the Carpenter Center for the Visual Arts *(Boston: Harvard University Press, 1978.*



1 The Carpenter Center for the Visual Arts, Harvard University, Cambridge, Mass. Le Corbusier, 1964. Site plan.
2 Juan Gris, Guitar and Fruit Dish, *1919. 23½ × 28¾. Private collection.*



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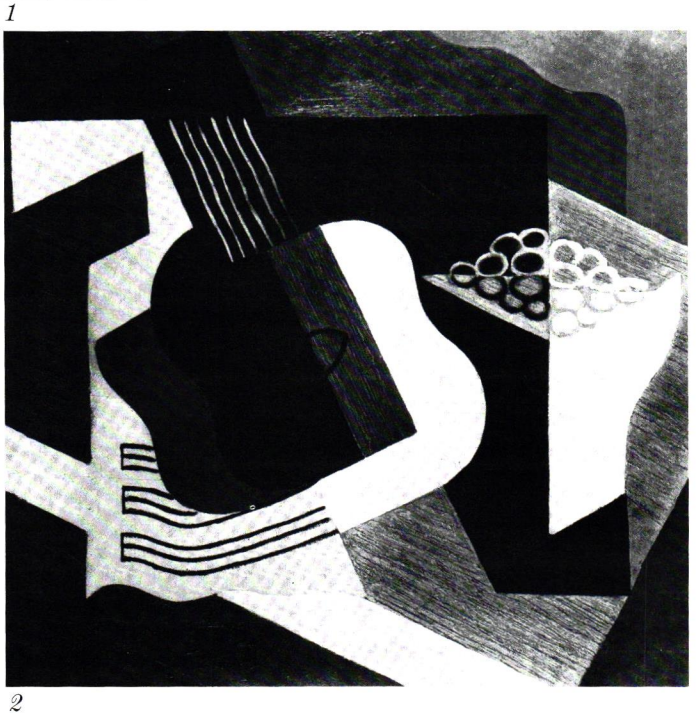


2

Le Corbusier at Work

Eduard Sekler and William Curtis. *Le Corbusier at Work: The Genesis of the Carpenter Center for the Visual Arts.* 1978, Boston, Harvard University Press. 357 pp., $35.00.

Fred Koetter

And when finally you get down to it, the dialogue, the basic confrontation, can be formulated like this: man alone face to face with himself, the wrestling of Jacob and the Angel within the human soul. There is only one judge, one's own conscience, that is, yourself. One may be a nobody or a somebody, but one can go from the repellent to the sublime. It depends on each individual, from the very beginning . . . .
Le Corbusier
Nothing Is Transmissible But Thought, *1965.*

In word and in building, Le Corbusier preached for some fifty years his magnificent doctrine of architecture and life which remains, to this day, the most pervasive and enchanting message of twentieth century architecture. Through his buildings and their ever-present 'lesson, of architecture', he challenged the senses the intellect, and the spirit of the observer. On Quincy Street, Cambridge, he preaches still. The Carpenter Center for the Visual Arts stands today, some sixteen years after its completion and fourteen years after its author's death, as a willful instrument of provocation and instruction.

Now as the creative furor which surrounds the Carpenter Center begins to subside and as, in the words of author Sekler, personal time gives way to historical time—it would seem inevitable that a well intended scholarly task force should venture forth and through "a comprehensive review of accurate information" attempt to record the story of this great building. *Le Corbusier at Work: The Genesis of the Carpenter Center for the Visual Arts* is the result of this effort. In the words of the authors "the contributors to this volume hope that their attempt at a multi-disciplinary approach to the history of a twentieth century building will pave the way for many others to follow." Such would seem to be a worthwhile and responsible enterprise.

The Carpenter Center is a unique vehicle for just such an enterprise, for the entire venture—from Harvard's first decision to erect a place for the arts to the dedication of the finished building—has been extensively documented. More importantly, the fact that the building was built through a collaborative effort between Le Corbusier's Paris studio and José Luis Sert's Cambridge office—generating an immense body of correspondence, notes, and drawings—greatly reinforces the possibility of the intended comprehensive review. Following an introduction by Sekler and capped by a highly useful collection of appendices (notes, illustrations and correspondence lists, line drawings of the finished building), the book is divided into three general sections: a "Description of the Building" and a "History of the Design" both written by William Curtis, and a section entitled "Interpretation and Evaluation" which falls into three subsections authored by Eduard Sekler, Rudolph Arnheim, and Barbara Norfleet.

Whatever may be its larger aims in terms of providing a model for "others to follow" or its forays into the thin air of "interpretation and evaluation," the book's primary value, I believe, lies in the area of documentation and description. By far the most convincing and interesting section of the book is Curtis's largely descriptive "History of the Design." Here an overall sense of the building's conception and realization takes form. From Harvard's initial commitment to build and the day by day struggles of Le Corbusier and his chief collaborator G. Jullian de la Fuente to the finished project, this descriptive narrative comes close to delivering a picture of the often messy and erratic reality of the emergent building. An initial scheme was poetically conceived by Le Corbusier only to be undermined by programmatic demands and continuing problems with regard to the internal building organization. The final design, more or less as realized, was essentially put together in nine days. In anticipation of a January 20, 1961, visit by Sert to review the definitive design, Le Corbusier and Jullian worked feverishly to resolve the first scheme—already presented to the Harvard committee—only to find that "by the evening of the 10th [January], the first project lay in ruins." January 11, termed by Jullian as "la journée de la crise," was also the day that their backs were to the wall, Le Corbusier juggled the internal arrangements of the building, "stepped in and made the decision. He simply made a tracing on a loose sheet of the large curved studio facing Quincy Street, flipped the form over on its end, and tucked it alongside the main ramp facing Prescott Street." The scheme was set. Eight days later they were ready for Sert.

They then proceeded to make final presentation drawings, which, according to Jullian's recollections, carried Le Corbusier's dictum, "Do these plans so they will think I am a real architect." Having pulled the project from the sort of chaos with which most architects are familiar enough to a level of conceptual resolution which is rare, Le Corbusier was then to regroup his polemical forces and his instincts for public relations sufficiently to declare, "[these prints] are the result of a crystallization of my relative ideas concerning the architectural drawings of our epoch." There could be no question as to the 'correctness' of the scheme.

The flat descriptive quality of the text, together with a proliferation of in-process sketches and drawings running more or less in tandem with the description, delivers a sense of the great man at work, which, I believe, constitutes the real contribution of this book and gives it its claim to significance. But when authors Curtis and Sekler attempt to speculate about the architect's larger intentions or provide quasi-analytical commentary upon the building and its pedigree, the results are disappointing indeed. Such commentary tends, by and large, to be generally routine, often oversimplified, and, because of

this, at times even misleading. There is perhaps a question here as to the book's intended audience. That is, while the documentary substance of the book is without doubt a valuable addition to the world of Corbusian scholarship, its theoretical content tends to operate on the level of survey course generalizations—hardly rising above the level of primary Corbusian folklore.

Curtis points out, for instance, that Carpenter Center (like the bulk of Le Corbusier's buildings) operates not just as a building but as a complex urban metaphor; that as a piece of didactic manifesto, the building was also a specific urbanistic message to America (ramps, freeways, etc.); that "collage principles" are at work in the building; and that Le Corbusier worked and thought in terms of "solution types" and "element types." Likewise, in Professor Sekler's "assessment" of the building, we are told that there is a strong relationship between Le Corbusier's architecture and his painting; that there are recurrent formal themes in his paintings, such as a pair of interlocking wine glasses, which prefigure the plan arrangement of the Carpenter Center; that his paintings and later his buildings tended to move from mechanistic (Purist) to organic formal references; and that late in life, Le Corbusier seemed to return to the fineline precision of his earlier work. While all of these generalizations carry some degree of substance, they hardly embody any fresh information or unexpected insights. They tend rather, in their suggestions of definitive statement, to smother the possibilities of further inquiry and critical speculation which a building such as Carpenter Center certainly elicits.

When interesting or provocative observations are made, they are seldom followed through. Curtis suggests, for instance, that the great central ramp, which penetrates the building at its third floor, is also "a fantasy of another order, involving the fulfillment of a primordial dream of the Modern Movement in painting and sculpture: projection of the spectator into the heart of the work of art to experience its facets, illusions, and ambiguities from within." Implied here is some fundamental connection between Le Corbusier's buildings and paintings involving what seemed to be an ongoing desire on his part to establish and exploit an equation between the frontal building facade and the structure of the two dimensional painted surface. Whereas most buildings are necessarily entered literally at the bottom of the facade-field (at the ground), the painting may be visually entered at its center—at the inherent center of gravity of its compositional field. The Carpenter Center ramp may thus be interpreted as a phenomenal "bridge" which allows an airborne observer to physically enter the building as the eye might enter a painting.[1] One wishes that suggestions such as these, hinted at but not expanded, had been carried forward in one way or another. Along these same lines, Curtis makes that tantalizing observation that in the first project "the independence of one curved floor from another in the curves on the exterior of the building, each layer swaying out and back, oblivious structurally of the layers below and above it" could be seen as an unprecedented exterior expression of the free plan. This is an exciting observation, but, here again, it is not developed beyond the basic statement.

Additional intriguing but unelaborated observations are made by Curtis with regard to the building's column grid, where columns which vary in size supposedly according to the weight borne by them in fact have little relationship to actual loads but deliver the impression of "apparent" weight. Certainly this condition could have been put into the larger context of Le Corbusier's general attitude toward "rational" structure, which, time and time again, allowed literal structural continuity to be sacrificed in favor of the appearance of structural integrity and the accommodation of planning necessities (or the pretense of these necessities). An examination of the column grid variations at the Villa Savoye, for example, might have been useful in this context. The Modulor is also discussed at length with regard to its regulatory presence in the building, but little interest is shown with respect to its capacity at Carpenter Center to generate a proliferation of three dimensional proportional relationships which seem to go well beyond the realm of conscious regulation.[2]

Such schematic references to major conceptual themes are, in their lack of development, annoying. Here possibly is an indication of reluctance on the part of the authors (perhaps justified) to venture into the area of critical analysis and speculative inquiry. This may represent the historian's taste for the maintenance of responsible and "factual" reporting; but insofar as the book still goes well beyond the level of pure documentation, it invites reactions of this kind. It is no doubt a similar desire to maintain scholarly credibility which has inspired the alleged multidisciplinary format of the book. The results of this are an embarrassment. For the addendum by Rudolph Arnheim, which puts forth assorted banalities as to the creative process, and a largely ludicrous "user oriented" offering by Barbara Norfleet do little to promote the intended sense of multidisciplinary competence. They are, rather, further interferences which detract from the book's basic strengths. To quote from Norfleet's essay, "'I can even take my naps there', [states one user she interviewed] They [the users] also thought the coffee and cake that was served there in the late afternoon was a wonderful kind of luxury." Surely the printed page and the reasonably intelligent reader should be spared exposure to material such as this.

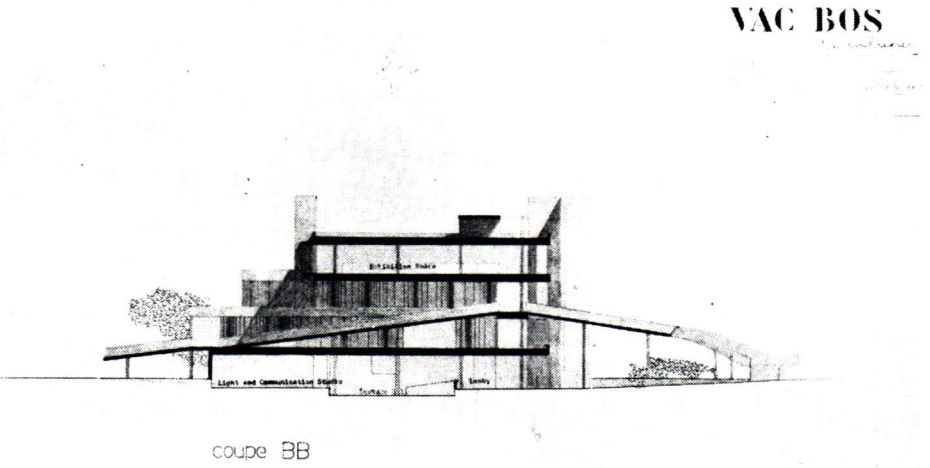
At any rate Carpenter Center is a physical fact on Quincy Street. It is a great and curious building. Those who facilitated its existence performed, I believe, a noble

3 Carpenter Center, Cambridge, Mass. Le Corbusier and Jullian, presentation drawing, 1960. Longitudinal section.
4 Carpenter Center. Le Corbusier and Jullian, presentation plan, 1960. Level 3.

and courageous act. And as the literal presence of Le Corbusier continues to fade from memory—as a whole generation or two of architects continue (happily or unhappily) to escape from his influence—it is possible, as the authors of this book suggest, to look at the building with increased detachment. There is no doubt that the building is (as it was intended to be) an articulate demonstration of Le Corbusier's personal "language" of architecture. And it is, as the authors imply, both a unique interpretation of this language and one which illustrates the profound continuity of Le Corbusier's work.

With respect to this last, the Carpenter Center may be investigated on many levels. For instance, the building is among other things a unique interpretation of Le Corbusier's ever-present interest in a juggling of the relationship between horizontal and vertical surfaces—between, in simple terms, the relationship of plan to facade or plan to section. And for Le Corbusier this was apparently never a simple set of relationships involving the unchallenged dominance of one part over another. If the Dom-ino frame, in its purest diagrammatic sense, was a complete celebration of the horizontal surface—the floor slab—this diagram was never literally interpreted by Le Corbusier. The presence of vertical surface/facade seemed always in some way to intervene and qualify the Dom-ino diagram. The villa at Garches is an obvious example of this phenomenal interaction of horizontal and vertical surface.

At Carpenter Center, we are, I believe, presented with a never before realized interpretation of this relationship. Here, the so-called first project, with its insistent preference for horizontal continuity (an almost literal illustration of a 'layer cake' building), could serve as a point of departure for examining the effects of this horizontal/vertical balancing act as they are presented in the final building. The 'layer cake' characteristics of the first



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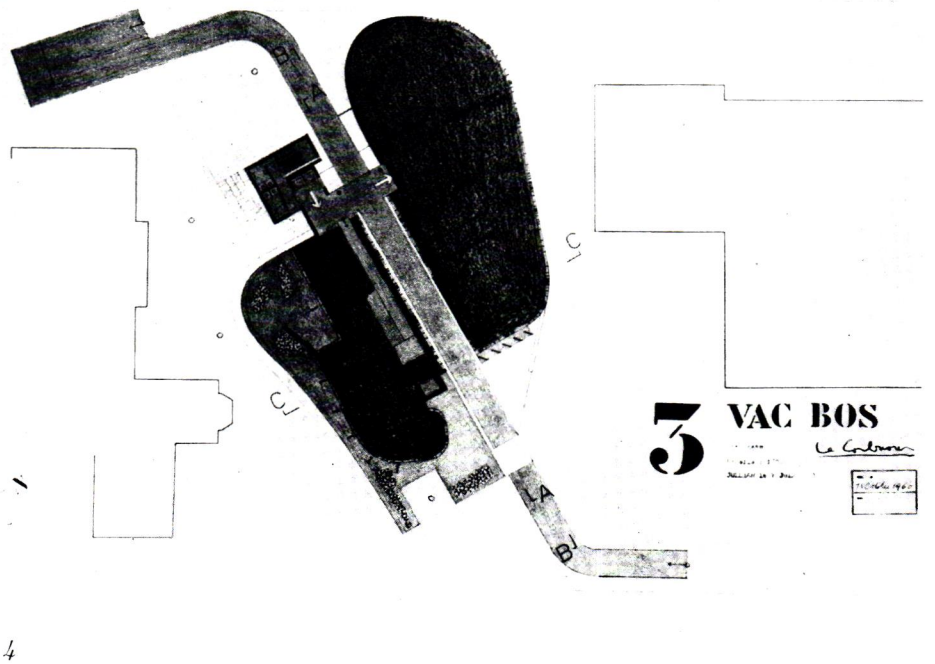

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project might be seen to represent a preoccupation with plan figure as a primary mode of both investigation and expression (fig. 3). While the notion of the 'plan as generator' was certainly central to Le Corbusier's procedures, it was seldom so literally employed as in the first Carpenter Center project. The plan is all-pervasive. The critical horizontal/vertical dialogue has not yet been conceived. Now it may well be that this initial imbalance—this plan dominance—was due in part to the as-found characteristics of the site. With respect to most of Le Corbusier's built works, the Carpenter Center site is unique. While in almost all previous cases, Le Corbusier operated either within the limitations of restricted party wall situations (Maison Plainex, Maison Cook, etc.) or implied party wall sites (the villa at Garches), or the freedom of an open and relatively unbounded terrain (Savoye, Chandigarh, the various Unités, etc.), at Carpenter Center he was provided with a new 'site type'—one which was open but bounded. Now these boundaries, made by the flanking walls of the Fogg Museum and the Faculty Club, allow the building site, in plan, to be seen as a somewhat irregular equivalent of a painter's bounded canvas field (fig. 4). The overlapping plan 'wafers' of the first project may thus be easily interpreted as not just the formal equivalents to figures found in Le Corbusier's paintings, but, in combination with the overall field supplied by the adjacent buildings, as the components of a kind of painting in its own right, a plan/painting whose primary characteristics—virtually all of its controlling visual characteristics—are revealed from above, from the air. The compositional dynamic of this plan/painting is provided by the strong central position of the building/figure and its two dimensional communication with the site/canvas's perimeter. As a function of the plan, this peripheral interaction or antagonism is extremely positive. That is, the would-be 'residual' zone between the building's plan figures and its bounded field is charged with a reciprocal figural quality which is almost as strong as that of the building itself. Taken in terms of Cubist or even Purist compositional characteristics, this may be seen as an almost classic example of center-edge tension.

Problems, of course, do arise when the two dimensional wafer painting is translated into a three dimensional building and, upon walking around the site of the finished building, anyone who is reasonably perceptive cannot but admit to the clumsiness of the perimeter zone between the building and its neighbors. For the 'positive antagonism' provided by the pure plan figure, gives way to a highly negative antagonism in three dimensional reality. As a residual no-man's land this zone enjoys little reciprocity with the buildings which define it—it is literally residual. From inside the building much of the sense that the adjacent walls of the Fogg and the Faculty Club form the visual limit of the building's spatial fields is strictly maintained. For here the spatial effects of the building still operate in terms of strict horizontal extension. On the exterior however, the awkward spatial condition is exacerbated by the presence of yet another network of residual space—that which exists between the building and its ground plane—the hidden parts of the wafer painting so to speak. That this specific relationship between building and ground was, as Curtis points out, never completely controlled by the architect, may well be a consequence of unqualified preoccupations with the plane form and with the 'layer cake' concept which still operates on the underbelly of the finished building. Quite simply, the shaping of the section (particularly the sectional spaces which address the ground) is not easily controlled with this approach. Horizontal continuity maintains its dominance and the space shaping potential of the vertical surface is virtually denied. This relationship of vertical to horizontal continuity (here investigated in terms of suppressing sectional possibilities) may also, as noted earlier, be examined in terms of plan and elevation. The predominant horizontal layering of the building (generating its "externally expressed free plan") produces extreme difficulties when it comes to defining and controlling the exterior walls—that is to say, the facades. It is within the context of this plan/facade relation that I believe the great interpretive powers and astounding inventiveness of Le Corbusier really come into play at Carpenter Center.

But to describe this relation with even marginal coherence, it is necessary to refer to a number of general observations made by Curtis. He states that among other things Le Corbusier wanted his building at Harvard to be an overt and 'correct' demonstration of his 'element types' at work—the *piloti*, the *brise-soleil*, the *aerateur*, the *ondulatoire*, and so forth. But while Le Corbusier expounded the individualized integrity of these elements—their separate functions and identity, etc.—he was able, as with the asserted 'rationality' of his structure, to subvert and compromise the alleged integrity of these components in the interests of larger conceptual concerns. The *brise-soleil* components, as they appear in both the Quincy Street and Prescott Street elevations, are neither functionally resolute nor discrete. In both cases, they are deployed in conjunction with large areas of unprotected glass—thus serving to control sunlight in some cases, not in others. And in both cases, again contrary to Le Corbusier's own rule concerning the 'separation of powers', the *brise-soleil* elements are digested into the general fabric of the building—permitting a hybrid form compounded of flanking walls and glass surfaces.

While these 'ambiguities' are duly noted by Curtis, little attempt is made to account for their specific presence. Despite Le Corbusier's well known taste for willful contradiction and ironic reversals,

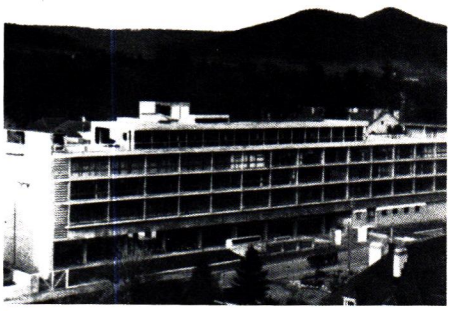
why, in these crucial areas of didactic demonstration, would he so overtly declare the necessity of these elements and then so blatantly destroy their integrity? It may be that an answer to this question is to be found in the facade—or in the problem of equipping a horizontal 'layer cake' building with perimeter walls that are vertically solvent. The *brise-soleil* facade and its history in the later development of Le Corbusier's work may help here to further our understanding of the problem. In the St. Dié factory (1946) the *brise-soleil* was literally an independent element (fig. 5). It was clearly separated from both the building's columnar structure and its system of glazing. It was, one might say, 'clipped' onto the building. While the shallowness of the *brise-soleil* members may have rendered its sun shading properties dubious, a comparable sparseness allowed the building's glass skin to assert its role as the primary vertical surface. As in many of Le Corbusier's earlier buildings, that is before the introduction of the *brise-soleil*, the continuity of the enclosing glass membrane served to establish the facade (see Moscow's Centrosoyus, Pavillon Suisse, etc.). The St. Dié *brise-soleil*, in this respect, acted visually as a kind of superimposed, proportional filter through which the independent glass membrane was seen.

Later, at the Ahmedabad Millowners' Building (1954), the *brise-soleil*, this time functionally 'real' and, as such, quite dense, acted to provide, in itself, the building's primary expression of facade (fig. 6). While it was partially integrated into the fabric of the building—the cornice was simultaneously an extension of the building and an element of the *brise-soleil*—the very presence of this emphatic cornice and the equivalent clarity of the meeting of the *brise-soleil* with the ground allowed the *brise-soleil* to perform as facade. That is, the field of the *brise-soleil* and hence the facade was clear and simple, allowing its thin, flat frontal edges to describe, in an almost magical way, the presence of a frontal plane. And it is through this lattice that the implied vertical plane—so minimal and yet doing so much—effectively counteracts the horizontal dominance of the frame behind.

But at Carpenter Center, no such stable rectangular facade field is present. The frontal potential of both the Quincy and Prescott Street facades is compromised not just by their skewed relationship to the street, but by the overwhelming thrust of the studio 'lobes', the less dramatically protruding vertical circulation/service elements, and the fact that the building's ground plane is discontinuous. At Carpenter Center, facade, or the illusion of facade, is produced by Le Corbusier in quite another wholly novel way—precisely through a contamination of his element types which, in other respects, would seem so contrary to his self-advertised intentions.

At the lower level of the Prescott Street facade and at the third level of the Quincy Street facade, the glass surface is projected to the *outer edge* of the *brise-soleil* running overhead. In other words, the primary vertical surface of these *brise-soleil*-'protected' facades is established by way of assigning to a glass membrane, in a brand new way, the role of dominant material substance (fig. 7). And in both facades, this role is then further enhanced and dramatized by a willful conveyance of the impression that these glass surfaces are supporting the immense weight of the *brise-soleil* elements above (fig. 8). The resultant effect is truly amazing. There is a precariousness and at the same time a power which defy simple explanation. A night view of the building essentially reverses this effect—dissolves, through interior illumination, the presence of glass—giving the unlikely impression of an 'orthodox' (in Corbusian terms) use of the *brise-soleil* and *piloti* elements.

It may nevertheless be argued that demonstrations such as these (and there are



5 Factory, St. Dié. Le Corbusier, 1946.

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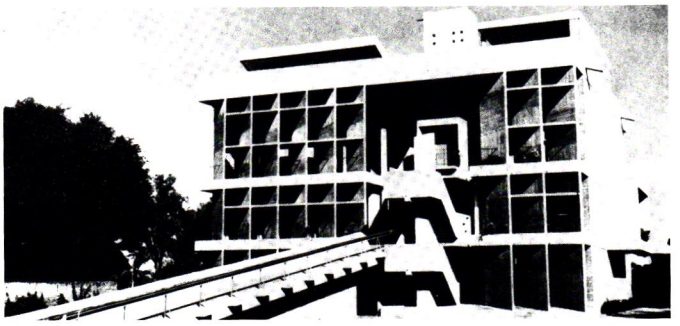

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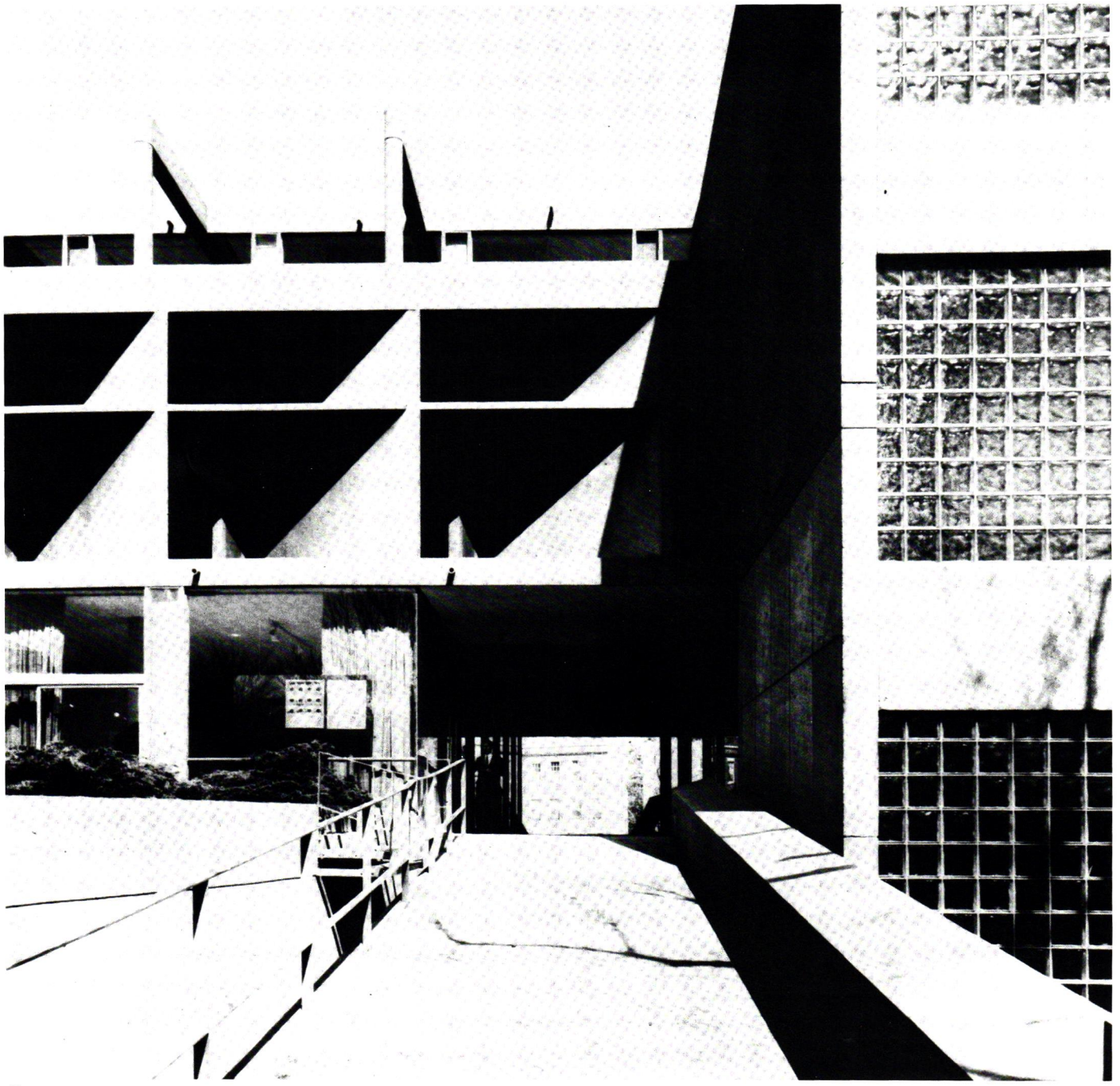

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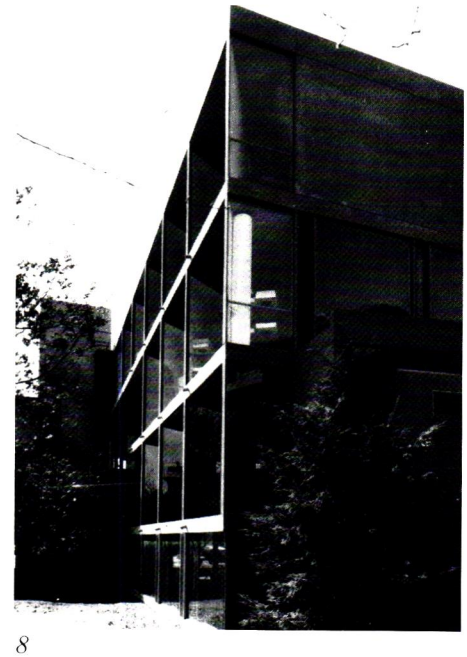
6 Millowners' Association Building, Ahmedabad. Le Corbusier, 1954.
7 Carpenter Center. View through the building along the ramp toward Prescott Street. The stair tower is to the right.
8 Carpenter Center, Cambridge, Mass. Le Corbusier, 1964. View from the north corner, along the Prescott Street facade.

without doubt many others operating in the building) are in the end but a masterful manipulation of a largely private architectural 'language'; that while there are those who are, to one degree or another, informed as to the workings of this language, and may appreciate its effects, the whole operation falls far short of anything like a 'universal architecture' to which Le Corbusier supposedly aspired. This may well be so.

Here the passage of time since the building's completion, Le Corbusier's death, and the present day may again allow a modicum of detachment in addressing this issue. During his lifetime, particularly during his later years, Le Corbusier's architecture—the objects themselves—became an almost all-consuming visual narcotic for a large part of the architectural world. Directly following Carpenter Center's completion and for several years thereafter when architects (and critics and historians) made their pilgrimages to the site, it was the building itself and the manipulation of the Corbusian repertoire which overwhelmingly commanded attention. But walking down Quincy Street today, one might perhaps more easily appreciate the overall condition and quality of this street; one might more easily assume a slight remove from the compelling and at times almost inescapable brilliance of its maker; and Carpenter Center might now more easily be seen as the contextual grotesque which it surely is. Which is not to suggest that buildings should not, at times, be the overt instruments of self-expression or pleasurable self-indulgence, but simply to note, whatever rationalizations may be brought to bear, that Carpenter Center, in its gyrations and frenzied proclamations, is a very odd, an almost comical, intrusion on Quincy Street. It is the only building on the Harvard campus which declares its presence in quite so violent a way. And it is interesting to speculate, in a general sense, as to what all of this commotion actually means or represents. There are, for instance, certain questions as to the relationship between the building's physical posture and the institution which it accommodates. Does a relatively calm low-profile program in the visual arts really need to be advertised in quite so emphatic a way? Are there here presented any reasonable correlations between a building's formal declarations of public importance and its actual public importance?

But perhaps . . . almost certainly . . . these questions are of no consequence. They are, in the end, but the timid vibrations of present day concerns.

Carpenter Center is one of the last of a magnificent and dying breed. It stands today on Quincy Street as a kind of mythical museum piece—continuously exuding its happy and belligerent promise of a better world which refused to be born.



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Notes

1. This theme in Corbusier's work was identified and discussed by Robert Slutzky in a lecture at the Yale School of Architecture, November, 1977.
2. An unpublished manuscript by Alan Chimacoff, Michael Dolinski, and Lionel Glendenning, "VAC BOS, The Carpenter Center for the Visual Arts at Harvard University, Le Corbusier," referred to in footnote by Curtis, discusses such effects of the Modulor at Carpenter Center.

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2 Reprinted from D. H. Kahnweiler, *Juan Gris, His Life and Work* (New York: Abrams, 1969).
5 Reprinted from Le Corbusier, *Oeuvre Complète 1946–1952*, edited by Willy Boesiger (Zurich: Girsberger, 1964).

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Stuart Cohen was born in Chicago in 1942. He received his degrees from Cornell University, and is presently Assistant Professor of Architecture at the University of Illinois at Chicago Circle. His published work includes: "Physical Context/Cultural Context: Including it All," Oppositions, 2, *January 1974; "Hardy, Holzman, Pfeiffer on America,"* Progressive Architecture, *February 1975;* Chicago Architects *(Swallow Press, 1976). He has recently co-curated the new Chicago Tribune Tower exhibit and written the introduction to the catalogue (Rizzoli, 1980). He is the Chicago correspondent for* Progressive Architecture *and is working on a guidebook to Chicago to be published next year by Random House. The recipient of two* Progressive Architecture *design citations (1970 and 1980), his buildings and drawings have been published and exhibited internationally. He was included in the 1976* A+U *issue "40 under 40" and was selected as one of fifteen young architects to represent the U.S. at the 1980 Venice Biennale.*

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Robert Slutzky was born in Brooklyn, New York on November 27, 1929. He studied at Yale University with Josef Albers and Burgoyne Diller and at Cooper Union with Nicholas Marsicano, receiving his B.F.A. and M.F.A. He has taught at Pratt Institute, Princeton University, Cornell University, the University of Kentucky, the University of Texas. He was Visiting Critic and lecturer at the Architectural Association of London and the E.T.H. in Zurich. He is presently Professor of Architecture, Cooper Union, and Visiting Critic, Yale University. He received a fellowship at Yaddo and has been a Fellow of the Institute for Architecture and Urban Studies; Executive Vice President (painting) of the Architectural League; and a graphic designer for I.M. Pei and Associates. He is a freelance designer and site planner. He has had one man, two man, group, and restrospective exhibitions at galleries and museums throughout the U.S., Europe, and Latin America. His publications include two articles—in collaboration with Colin Rowe—entitled "Transparency: Literal and Phenomenal" first published in Perspecta *#8, #13-14.*

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Stanislaus von Moos was born in 1940. He is a Swiss art historian and currently professor of art and architecture history at the Technische Hogeschool in Delft, Holland. He has taught at Harvard University (1971–5); the Architectural Association, London; the University of Berne, Switzerland; and the Ecole Polytechnique Fédérale, Lausanne. He has published primarily on renaissance architecture: Turm und Bollwerk. Beiträge zu einer politischen Ikonographie der Italienischen Renaissance-architekur *(Zurich, 1974); "The Palace as a Fortress," in Henry A. Millon, ed.,* Art and Architecture in the Service of Politics *(MIT Press, 1978); and on 20th century art and architecture. A revised and enlarged edition of his monograph* Le Corbusier. Elemente einer Synthese *(Frauenfield and Stuttgart, 1968) has recently appeared in English (MIT Press). His writings have also been published in* Werk, Bauwelt, Architecture d'Aujourd'hui *and* Architectural Design. *He is the founder and co-editor (together with Martin Steinmann) of* Archithese, *a Swiss quarterly. Currently he is working on a series of essays on European Avant Garde Art and Mass Culture 1920–1930. He organized the first comprehensive exhibition on the work of Venturi and Rauch at the Kunstgewerbemuseum in Zurich "Venturi and Rauch. Architektur im Alltag Amerikas," summer 1979 with a catalogue. He is a member of the Board of CICA (Comité International des Critiques d'Architecture).*

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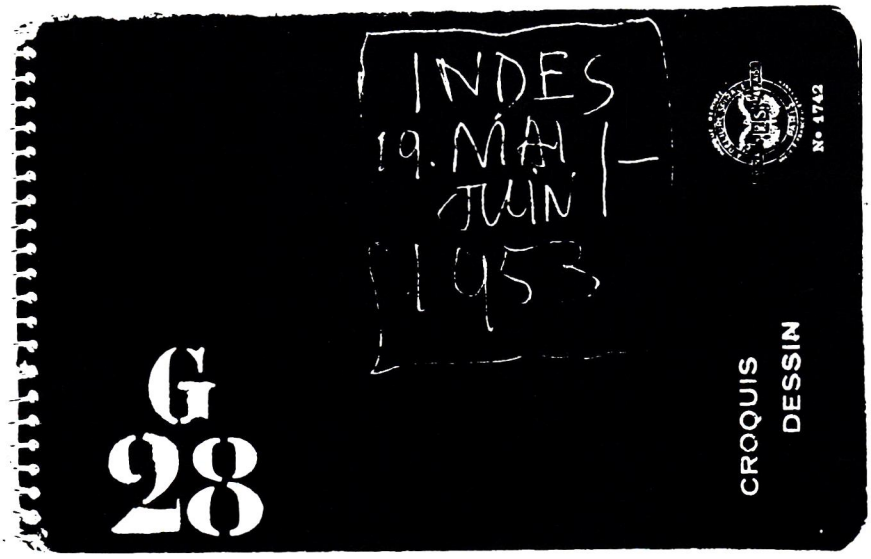

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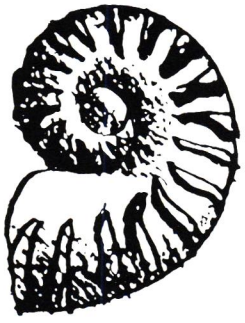

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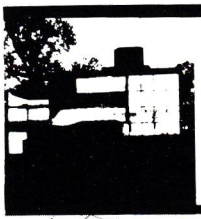

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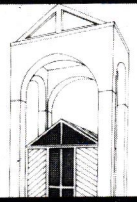

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