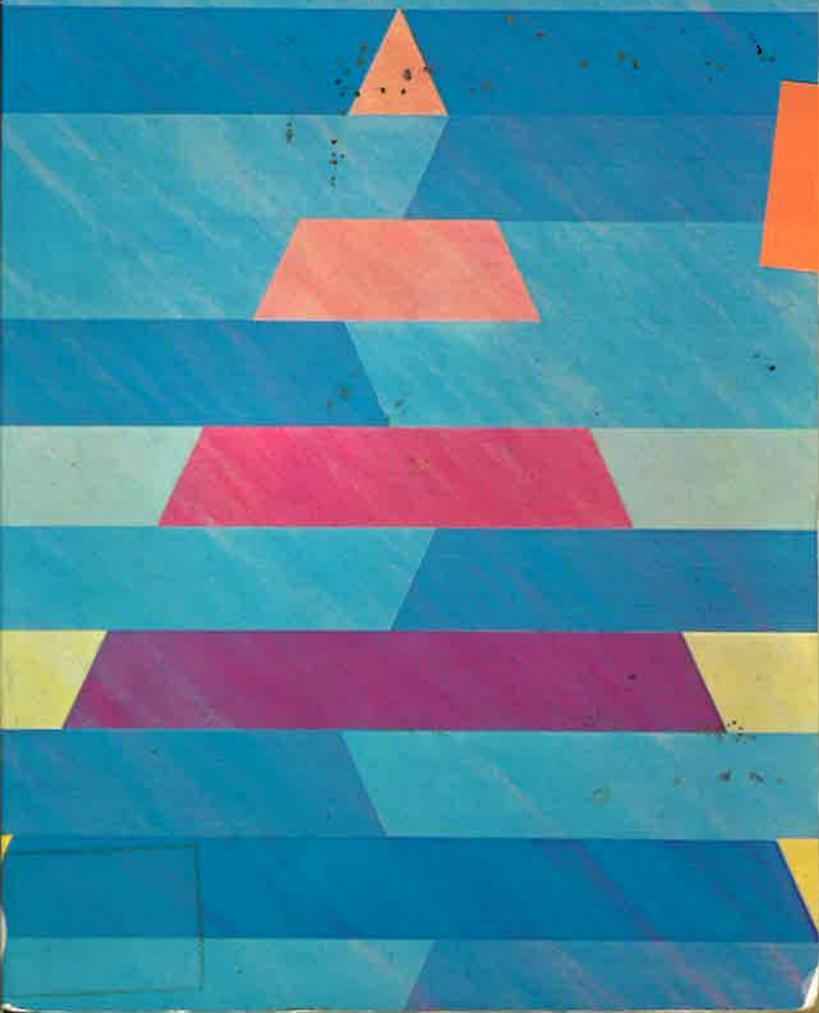




Fontana Modern Masters  
Editor Frank Kermode

# Le Corbusier

Stephen Gardiner



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# Le Corbusier

Stephen Gardiner

*to Heidi Weber  
from Stephen Gardiner*

*I hope you think  
this has some thing  
of Le Corbusier*

*10.2.75*

Fontana/Collins

Let us honour if we can  
The vertical man  
Though we value none  
But the horizontal one

*W. H. Auden*

## Preface

Architecture is a visual art, like painting and sculpture. An architect, like a painter or sculptor, thinks in visual images – these are his art. And it is through them that he describes people and places in his buildings.

An architect is an imaginative being who leaves behind, as do the painter and sculptor, a visual imprint of his time, and future generations are able to use this to identify the nature of that time. But the fact that an architect is an artist is not so generally appreciated today as it should be; and this is, perhaps, a reason why Le Corbusier remains, for many people, an enigma.

There are other reasons. Probably the chief one is the vastness of architecture, for this means that it is an art that is difficult to comprehend. We can appreciate a chair, and the way its structure is put together and supported, because we can turn the chair over or sit on it. It is not so easy to apply the same sort of tests to a building because of its very size. And, while buildings are large, cities are even larger: here, before us, is an immensely elaborate patchwork threaded with a multiplicity of strands that lead in from all directions. At first it seems quite impossible to see a clear picture where there is, in fact, order, shape and continuity: all we see is a jumble. Yet it is at this point that one may make the discovery that the pattern is not possible to follow because a crucial piece of the jigsaw is missing; and that when this is placed in its correct position the surrounding jumble is suddenly transformed into a clear and complete picture. In Renaissance architecture we may turn to Andrea Palladio for the missing piece; in the twentieth century Le Corbusier provides it.

Once this precious piece of the puzzle has been picked

out, the magical properties lying inside the irregular outline of its edges can be explored. Then it will be possible to observe why Le Corbusier's work illuminates everything around it. This man was huge, like a continent; and his art was conceived on such a bewildering number of levels, and funded from so many associations and images, and from such a mass of historical material that it is not at all easy to recognize which door to open in the search for the correct route to the source of his inspiration. We can begin by putting down, with rapid strokes, some of the edges of his world. When these have been established the details can be filled in: these will show us the door. We have to start, as he always started, with a frame.

## 1 Introduction: The Artist

*Le Corbusier said: 'It is human to err...'*

This was in the late 1950s – the finishing touches were being put to Sainte-Marie de la Tourette, his monastery outside Lyons. A very small window to a staircase – perhaps only fifteen centimetres square – had been built out of shape; the shuttering to the concrete had slipped. The foreman supervising the work was exceedingly worried. What would the Great Man say? He would be furious. But the foreman was wrong. Le Corbusier merely suggested that a plaque should be put under the window and inscribed with the words 'It is human to err'. He asked for no changes – the window could stay as it was. Perhaps it is a pity that he didn't go ahead with his plaque: the inscription would have been a good thought in a convent.

It is indeed human to err: mistakes are made, and about Le Corbusier, in particular, there have been an astonishing number. As great men go, and certainly great artists, he must be the most misunderstood of the century. Le Corbusier, an immensely human creature, made mistakes too; and those who fear change – and who oppose the true principles of modern architecture, striving to reject them in the erroneous belief that they are synonymous with all that is bad about the twentieth century (in the same way that nineteenth-century industrial buildings in their time were feared and rejected as architecture for much the same reason) – drag to the front, and out of context, the few mistakes that Le Corbusier may have made so that he can be condemned utterly, and blamed for what has gone wrong. This is a foolish mistake that grossly misjudges Le Corbusier. The attacks made – and criticism from English

journalists, architects and historians has been as bitter as it has been ill-informed – reveal much more about the attackers than the attacked. What good can be said of an opposition that hammers on at Le Corbusier's historic pronouncement that 'a house is a machine for living in' if it fails, at the same time, to add what he said about the word 'functionalist' – 'this frightful word was born under other skies than those I have always loved – those where the sun reigns supreme'? Who will listen to the man who tries to make a journalistic point by insinuating that Le Corbusier chose to build villas for the rich, when it is known that Le Corbusier cared nothing for material things, and started out as a poor man having to accept the best offers going? In any case, what does petty criticism matter when in the next moment, and the next book, a photograph shows a lovely staircase evaporating like breath through a roof into a cloudless sky? It is customary for great artists to be attacked after death: in this century already Rodin has been rejected as worthless, and Monet dropped completely out of fashion.

Swiss-born in 1887, Le Corbusier was the highly complex genius who led the architectural movement of the twentieth century and devised realistic and imaginative solutions to building problems in the face of hard materialism. His work – his architecture, town planning schemes, paintings, drawings, sculpture and writings – must be seen together, and in the context of both the past and his own times, if a true picture of him is to be gained. Once some idea of what he was really trying to do has been established, his buildings, paintings, writings – not least his writings – can be enjoyed. Like landmarks, his buildings peg out the development of a life's work. He began when he was fifteen or so, worked his way through cubism, reinforced concrete, whitewash, houses and public buildings, and finally turned towards nature. His work spread throughout the world, culminating in the Corbusier Centre at Zurich – and everything for which he struggled seems to be distilled there, in that single,

delicate little structure by the lake, completed after his death in 1965. For in this building his architecture, paintings, sculptures and writings are seen together, as they should be. The Centre is like a throwback to 1920 and *L'Esprit Nouveau*, a magazine for architecture, painting, music, science and poetry which Le Corbusier founded with his friend Ozenfant, the painter. The magazine made the same point as the Zurich Centre: the arts must be seen together, they cannot be separated without some loss of appreciation of each. The same is true for any understanding of Le Corbusier. The moment some part of his work is separated and examined in isolation – something he built, something he painted, something he wrote – and without reference to the multiplicity of other parts that were, however small, crucial fragments of the Le Corbusier mosaic, statements become loaded, mistakes are made and the unity of the total picture is disturbed. Some errors of judgement can be dismissed immediately, as they display plain ignorance or visual blindness. Others, however, are over-simplifications caused by an inability to get to grips with the immense depths of the artist; and limitations of experience are difficult obstacles to overcome in trying to make a true evaluation of this great man's art.

His work was like a flower. There were the roots embedded in the earth from which the plant grew, and through these feelers the nourishment was conveyed up the stem; and there was this beautiful thing which appeared like magic at the top to crown the energy that had gone into its making – a lovely shape, perfectly balanced, enclosing the most extraordinary details and collection of clear colours. Any part of this flower would make a fascinating study, all on its own – the petal, the pollen, the stigma, the stamen – but none would make real sense without an exact appreciation of the workings of the whole.

And so, to start with, there are Le Corbusier's roots. Three or four years ago, for instance, it suddenly seemed clear to me that Le Corbusier's real originality was to be

of conclusions reached in the preceding three designs – as 'very generous'. Like the artists' studios of 1910, the total composition of the Villa Savoye, built twenty years later, was contained within a square plan.

Then, in *Towards a New Architecture*, also published in the 1920s, Le Corbusier throws all the ingredients of the twentieth century together. The constructional modules used by early people: the geometry of the Golden Section shown in the façade of the Arsenal of Piraeus, the Capitol in Rome, the Petit Trianon in Versailles, the front of Notre Dame; the inspiration of ship, aeroplane and car design, of mass-production and mechanization. Lying in the background, giving order and continuity to this remarkable range of ideas, projects and happenings, is man and his manifestation in the classical frame: it is this frame which holds the theme of Le Corbusier's book together. The infinitely delicate ink drawings of the Atriums at Pompeii and Hadrian's Villa, the photographs of the Propylea and of the Parthenon (taken when Le Corbusier was only nineteen or twenty) in which the columns select the extent of the view, describe the background order provided by the frame. Le Corbusier is not giving us historical facts: he is giving us visual information, reminding us all the time that an underlying order that is present in nature is – as it always has been – required by people. 'There is no such thing as primitive man,' he writes in *Towards a New Architecture*, 'there are primitive resources. The idea is constant. . . .' Once the notion of mere historical fact is dismissed from the picture, the real processes of evolution come more clearly into view, and it becomes possible to see how ideas that have been developed in the past can, if applicable, be used in the present. Once it becomes possible to see why certain things were done in the past, it then becomes possible to see how such things relate to the present. It is possible, for instance, to observe the connections between the architectural conceptions of ancient Greece and Le Corbusier's Villa Savoye, his *Pavillon Suisse* and his Centre in Zurich. These connec-

tions are clear, as clear as the architectural statements the buildings set down before us. As in the past, a total unity is achieved and this gives the conceptions their order: and once there is order there is freedom to discover what is possible within that order.

Thus it follows that the past and the present, the traditional and truly contemporary architectural styles, the ancient Greek and Le Corbusier, cannot really be considered as separate beings at all. They are, in reality, part of each other, such that, over the distance of time, neither could have a living existence without the other. It follows, too, that art is not made in a vacuum but merely has its place in the continuum, and that it is this continuum which, in fact, frames the whole story from the ancient Greeks to Le Corbusier. In building, the frame shows itself in proportion and shape, in the application of the circle and the square, in a proper relationship of the parts, and in the ways in which the properties of these forms and parts are related to the scale of people. This is how ordered surroundings grow, but they are also surroundings that are, to an extent, unfinished, and it is for this reason that people feel comfortable in them, and sufficiently at ease to make their own contribution to them. This was Le Corbusier's point: he stresses it in *Towards a New Architecture*.

Yet for all this the connection between the books and the buildings may remain unclear. For one thing the media of writing and architecture are so different that it is difficult to make the intellectual or visual leap. Again, lack of experience and knowledge sets up what appear to be insuperable barriers. There is still an enormous amount of excavation to be done if the meaning of his buildings is to be exposed. Le Corbusier picked up – yes, you could say that – where the Greeks left off, and it was the classical background that influenced the form of, for example, the Villa Savoye. But this background included the work of Cézanne, the source of a movement in painting that ran parallel to modern architecture, and from which flowed the ideas of artists like Léger,

though no familiar architectural frame exists for this jumble, it is, nevertheless, an exceedingly beautiful jumble: the picture made is perfect and complete. It is easy to see why this island architecture so inspired Le Corbusier. 'Consider the surface of the waters,' he said. 'Consider also the entire world rounded by the azure sky....' For there is a frame for this architecture, a frame which resides in the strong and regular blues of the sea and the sky, and it is against these that the little collections of white buildings are constantly seen; and so large and dependable is this frame that any kind of irregularity and scattering of detail in white walls, random openings, church towers and roofs fall naturally into place; right and necessary, whatever the situation. When Le Corbusier said that what this architecture required was organization, he meant that he had seen in it possibilities that could be used in another way when transferred to another place with a different climate. The complexity of the detail and the simplicity of the natural frame had, in other words, an underlying meaning that could be exploited elsewhere. And so, possibly, it is with this association of ideas, making a simultaneous connection with innumerable other associations and images, that the imaginative secret of Ronchamp really lies: nature was the root from which the flower bloomed. Le Corbusier had already decided that an architectural frame did not have to be square or rectangular, in the same way that he discovered at his monastery of La Tourette that the vertical divisions of windows did not necessarily have to be placed at equal intervals. And when his chapel is seen in relation to the outside world, you find that it is the green loveliness of nature which is the frame, and that it is the countryside that seems to have insisted upon the chapel's irregularities and free forms, and upon the 'visual acoustics'. The plan alone has all the accidental casualness of the profile of a Greek island village. Le Corbusier says it best: 'A respectable personality was nevertheless present, which was the landscape, the four horizons. It was they who commanded.'

## 2 First Themes

Le Corbusier's real name was Charles-Edouard Jeanneret. He was an inventor and he invented a name. Like everything else he invented, the name (which means 'crow-like') somehow describes him. What pleased him most, apparently, was the sound of the name, and he adopted it as a pseudonym when he was writing for *L'Esprit Nouveau* after the First World War.

He was born at La Chaux-de-Fonds, a world centre for clock making, just on the Swiss side of the border with France, a small town three thousand feet up in the Jura mountains in a district that has, for a long time, wanted independence from Switzerland. Knowledge about his early background is sketchy but the facts that there are should be noted. His father had an enamelling business and was also a great mountaineer – for most of his life he was president of the Swiss mountaineers' association. His mother was a musician and lived to a hundred-and-one. His elder brother was a well-known violinist and composer, and his cousin, Pierre, became his partner. It is clear that the family had energy and stamina, and that its natural gifts were strongly inclined towards art and craftsmanship. Le Corbusier shared all the energies of his parents but used them differently. Indeed they were necessary for him to break through the philistinism and narrow-mindedness of his time, to withstand the vicious criticism of his ideas, to maintain his tremendous output of work, and to protect his art in the face of a rapidly growing crisis of materialism.

As a boy he roamed round the countryside, examining it. He was always drawing, and the early sketches and paintings reproduced in his books were remarkable, particularly those of his 'companions in nature' like the fir trees with

reason, as much as any other, that he became the leader of modern European architecture. In a sense, this theme recalls the watch he designed when he was fifteen, chased in silver, steel, copper and gold. In this there are many materials within a tiny area, and to get a bit of extra sparkle he added some jewels as well. But the design succeeded because he made a frame; or, to put it another way, exploited a frame that already existed. Within the circle of the watch two shapes of a quite different character clearly interlock, resembling the ancient eastern symbol of the mandala. These shapes, when combined, describe balance as the mandala describes balance; which is apposite, since the interlocking cogs that make a watch work operate on the principle of balance. However, the subject matter of the two halves of the design – man's order (represented by the formal jigsaw) and nature's freedom (represented by the bee fertilizing the flowers) – conjures up the picture of a scientist examining an interesting specimen under a microscope: in this case, the artist examining architecture – its complicated details crystallized as a pattern on the back of a watch. Here was a microcosm: in this tiny picture he saw how things could be free. But, like architecture, the pattern operates on a number of levels. On one, it is a pattern and nothing more; on another, it shows that order leads to freedom, and that the design reflects the workings of the object which it ornaments; on yet another, the frame accepts various different materials. As in life Le Corbusier's work was inspired by such forces: the aim was to close the gap between man and nature, and this aim has its embryonic beginnings in the design of the watch.

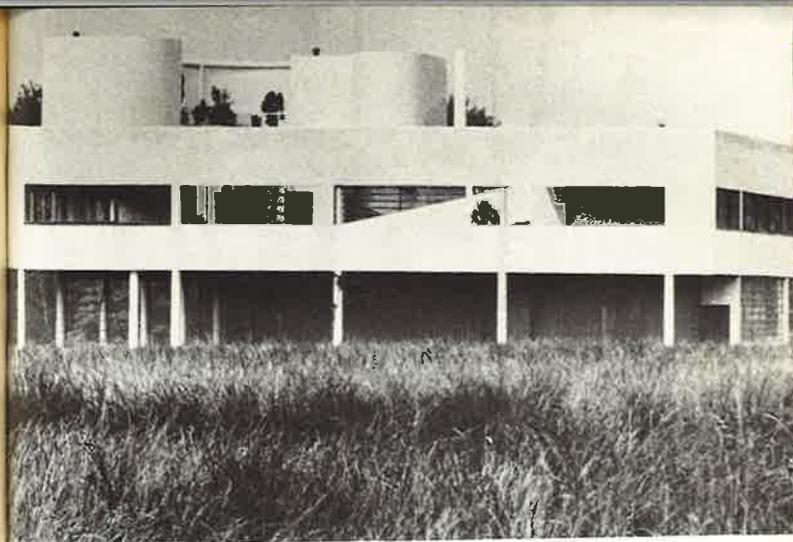
The whitewash of the Greek island architecture helps to clarify the idea. If the irregular foreground of a village, with the whiteness of its various forms, is set against the freedom of the countryside, it makes a picture which approximates to the composition on the back of the watch – the jigsaw of plain interlocking shapes, like the whitewash, frames its counterpart in the intricate web of nature. At the

same time, however, it has to be remembered that Jeanneret designed the watch before he went to the Greek islands and, of course, before he had seen the Parthenon. This seems to disclose his genius. It shows that when he went off on his enormous walk he knew what he was looking for, and he found it at the Parthenon and in the Greek islands. The mind of the artist becomes clearer. Jeanneret's genius was mature when he was fifteen, but what it needed, and needed quickly, was experience. Just as the earth, spinning in space, attracts an atmosphere by gravity, so the artist, acting like a magnet, draws the material he needs to himself, and this surrounds him like an atmosphere. Perhaps what Jeanneret needed then, back in 1910, was a clear lead, and the confirmation of his own ideas; hence the walk, and the tremendous labour of stock-piling information. The past supplied the experience he required; he found order and harmony at the Parthenon, and a colour in the islands. The next step seems to have been the experiment with cubes in his project for the *Ateliers d'Artistes* (see Plate 3). This experiment answered, as Le Corbusier would have said, 'to a single conception'. From all sides it was unique.

The influence of ancient Greek principles is plain in these drawings. Nevertheless, the fact remains that this design dates from 1910 and, like the watch, before the records say he actually visited the Parthenon. This suggests what the watch suggests: that he saw solutions, immediately, as artists do see solutions with mysteriously little help, grasping ideas that are in the air: the Parthenon was like the discovery of a god who enlarged his experience and confirmed he was on the right lines. Of course, when he designed the *Ateliers d'Artistes*, he must have had some knowledge of the architecture of ancient Greece, and the conception for the artists' studios shows how quickly he soaked up all available material around him. The disciplines that he followed in the design stretch back two thousand years, and it was from these that, three decades later, he invented the Modulor, a system of measurements for relating the pro-

portion of buildings to the proportion of people: the Modulor was really a highly complex development of the ancient Greek diagram (see Plate 17). What the Greeks had noticed was that when a man stood with his arms outstretched and his legs apart, his hands and feet described that most perfect and simple shape, the circle; the centre point for this was the navel. From the circle the Greeks arrived at the square drawn within the circle, and in Leonardo's and Dürer's diagrams the corners of this square are pegged out by the figure's hands and feet. This shape had a more common usage than the circle, but both forms became the basis of the Greeks' theory of architectural design: since a building cannot be related to a man by size it must be related by proportion. This diagram could then be divided up on the centre-line of the navel both vertically and horizontally, so making semi-circles, squares within the square and, with the addition of diagonals, triangles. As with the Modulor, a range of measures results, all of which, derived from the circle and the square, are directly related to the proportion of the human figure. And this range was then used as a means for calculating the size of façades, volumes, doors and other openings. It created an aesthetic system of parts that influenced the proportion of the western architectural tradition (as indeed the six foot by three foot mat – the 'Tatami' – ordered the architectural proportion of the Japanese tradition) from the Greek temple to the Corbusier Centre in Zurich.

In *Towards a New Architecture* Le Corbusier discusses the method of the Greeks, and describes their principles of design as the 'regulating lines'. But he knew all about their methods years before when he was at work on the *Ateliers d'Artistes*: here was the square (the plan), the cube (the artists' studios – the square projected in three dimensions), the triangle (the pyramidal meeting room at the centre). Diagrammatically, Le Corbusier crystallized the classical conception as a square derived from the cube, with a square piece taken out in the middle to form a peristyle. Now at



1 Villa Savoye at Poissy, designed and built between 1929 and 1931

2 *The Zebra and the Parachute* by Christopher Wood: the sun-terrace at Villa Savoye



ecture is in the telephone instrument and in the Parthenon'; but he cannot be separated from the last wave of the Impressionist movement – Cézanne, Matisse, Gris, Derain, Braque and Picasso – any more than he can be separated from mechanization and engineering. By the time the *Ateliers d'Artistes* was conceived, Picasso and Braque were already deeply involved in cubist experiments. Braque had just completed a series of pictures of L'Estaque, and one of these, called *Houses at L'Estaque*, painted in 1908, has a remarkable affinity with the *Ateliers d'Artistes* in its forms, and the separation of the forms: in the use of the cube, the pyramid (the points of roof pitches and gable ends), the foliage filling the gaps between walls (the planes); and in the discovery of a harmony of the ordered geometry of man with the soft roundness and freedom of nature. There is a likeness, too, between the relief on the back of the pocket watch and this picture. The relief appears to have evolved from drawings Jeanneret did of plants among rocks. In the painting Braque sees the houses as rocks among foliage. Both artists were, therefore, doing the same kind of thing – giving nature an order through the means of cubism. But, more important perhaps, the watch, the painting and the studios show how closely shared was the vision of Jeanneret and Braque. It was with painters like him – and like Cézanne, Picasso – that Le Corbusier's name will always be most closely linked, and not with contemporaries like Adolf Loos (who introduced him to reinforced concrete), or Peter Behrens (for whom he worked for a time), or Walter Gropius and Mies van der Rohe whom he met in Behrens' studio; or with Horta, Berlager and Mackintosh whose sculptural work of the 1900s certainly influenced him, and which he came across, again, when he was with Behrens. Le Corbusier came to architecture through painting, and he stepped off from the Parthenon (see *Plate 7*). He was part of a fantastically brilliant family of artists in which his immediate relatives were Braque, Picasso, Léger and Gris; at the head of it was undoubtedly Cézanne.

Unlike a brother, more like a cousin, Le Corbusier seldom met the painter bit of the family: he probably knew Léger best. Yet he talked the same language as the Cubists and his comments on space, light, colour and form are often scarcely distinguishable from remarks made by Cézanne. The word 'light', inherited from the Impressionists, was particularly high on the list; so were words like 'planes', 'perspective', 'structure', 'sculpture' and 'nature'. Cézanne, who wrote with the same accuracy and attention to detail and vigour as Le Corbusier, puts the aims of painting most clearly: 'It is in the modelling that one draws ... one detaches things from their environment – the daylight alone gives the body its appearance.' Talking of light, he says: 'There are no lines, no forms, only contrasts.' And he told a friend that if he wanted to understand the meaning of nature better he should try to see it in 'the cylinder, the sphere, the cone, putting everything in proper perspective so that each side of an object or plane is directed towards a central point. Lines parallel to the horizon give breadth, that is, a section of Nature. ... Lines perpendicular to the horizon give depth. ...' Ozenfant made this point, too, and so did Georg Schmidt.

Le Corbusier said much the same thing: 'The great problems of modern building will be worked out in geometry. ... Our eyes are made to see forms in light; shades and brightness reveal forms; cubes, cones, cylinders or pyramids are the great forms that light reveals well. ... It is because of this that they are beautiful forms, the most beautiful forms.' The geometric connection between the *Pigeon Tower at L'Estaque* and the light shafts at Ronchamp is immediately clear. Cézanne then says: 'Light is a thing that cannot be reproduced but must be represented by something else, colour. ...' Parallels, verticals, horizontals, the discovery of light through colour – these were Cézanne's 'regulating lines'. Sometimes it seems that Le Corbusier, through his medium, was nearer to the whole being of Cézanne's art than anybody else. 'The architectural elements,'

of whitewash from the Greek islands; and the vigorous imagery of modern technology. No wonder Christopher Wood was inspired, no wonder the Villa carried off the imaginations of architects all over Europe; no wonder the self-appointed ambassadors of Le Corbusier – architects like Chemayeff, Breuer, Neutra, Rietveld, Lubetkin and Wells Coates – transported his ideas to America, Switzerland, Holland, England and elsewhere. This strange object in a field became the romantic dream upon which the whole modern architectural movement centred.

The Villa Savoye says something else, quite bluntly.

It held out a dream for a better future. But it was a fragile one in the twentieth century world, for the Villa again demonstrates that everything Le Corbusier made was unique to, and inseparable from the situation in which it found itself, and so was dependent on its surroundings remaining unchanged – a bad gamble today. In the case of the Villa Savoye, the house was designed for a meadow that was joined to the village of Poissy by a track, around which there were trees and empty fields. The whiteness and openness of the house made a single statement of great force in this emptiness; it reproduced the space of the surroundings in the interior, of which the exterior was a candid expression.

This statement has disappeared, for good. In the years following the war a masterpiece of the imagination was allowed to decay. The house was used by the Nazis as a headquarters and, passing through their brutal hands, the whole point of the building was lost. After they left, the Savoyes gave up all idea of living there, and sold it to the Poissy authorities. It remained empty; it was used for storing hay, and birds nested in it; and it was eventually saved from demolition by the sudden intervention of André Malraux at the time of Le Corbusier's death. He saw that the house was restored. In the meantime, however, the suburbs of Paris had swarmed in like mad invaders. Poissy was swal-

lowed up by post-war industrial chaos – the Simca factories and the office blocks with their usual side-effects of shopping centres, supermarkets, housing estates, highway plans, suburban chalets, tree-felling and the rest: the track became a road and a tarmac car-park, and a vast and hideous school was built in the field next to the villa. The picture was in pieces: the romantic dream was gone.

Now the house is imprisoned by the town and the school peers in with gaoler's eyes. Every room is watched. You are surrounded, persecuted by all that a house should protect you from – great numbers of unknown people. The meadow which the sundeck and the relaxed and spacious plan were meant to reflect has been taken away; and so, with extraordinary clarity, you see that architecture exists not only within itself but also within the setting for which it has been specially made. The house and the meadow belonged to each other, and needed each other, like lovers. The soft grass, the quiet, the trees were as essential to the house as the smell of white hawthorn and the sound of a tinkling bell and the lilac are to recollections of Proust and M. Swann at Illiers. The Villa Savoye was meant to be in the country. It hates the school: they are old enemies – one of art, the other of all that is shoddy and ugly. The school is the familiar aesthetic outrage but here, in a way perhaps to be expected with Le Corbusier, there is a special twist. In normal circumstances it is some old building that is violated by a contemporary development, and to an extent, therefore, one is able to remain uninvolved. But in this case the whole cycle of events was accomplished within forty years, and the horror is so much nearer and much more violent because the target of attack is part of one's own background.

Thus it becomes clear that a building by Le Corbusier – as unique, as precious as any great work of art of any time – is vulnerable to destruction in a way that a painting, say, is not: a building cannot be moved unless it is, like the Corbusier Centre at Zurich, demountable. For a start, the week-

end house he built outside Paris has been demolished. But the Chapel at Ronchamp is not entirely safe because it is on a hill, the *L'Unité d'Habitation* at Marseilles has already vanished behind tower blocks, so losing its lifelines with the space of the sea and the mountains; La Tourette on its grass slope has, to one's horror, been converted into some kind of conference centre, and the step is short to swimming pools, bars, motels, hotels, restaurants, sticking to its edges like scum. And, at a stroke, the exquisite pleasure conveyed by such buildings disappears; and their meaning as architecture, as a description of a place and its atmosphere, is totally obscured.

A freedom had emerged in the Villa Savoye which showed itself in different ways in small houses later on in the 1930s when Le Corbusier began to shed the classical disciplines. This freedom also shows in his paintings and drawings. Having got to grips with Greece and modern mechanization simultaneously, he began to relinquish them, to loosen their hold on his ideas. The drawings of grasses and bottles, and of cylinders, cubes and cones of the early 1920s were, rather like Léger's, put together with such precision that the shapes of the various objects interlock like wheels in a machine. But the drawings he was doing a few years afterwards (the sketch of an important rock outside Marseilles in 1927, and the study 'With a Box of Matches') drop all associations with this kind of imagery. And in the paintings of the mid-1930s, the shapes flowed away into the lovely voluptuous lines of women's bodies. It is difficult to see any influences from contemporaries like Picasso and Braque. Le Corbusier's only source of inspiration was what he saw through his own eyes: natural phenomena: pebbles, bones, rocks; 'objects like these,' he said, 'are spread before us, look at them and ... you will then have a storehouse of inspiration to draw upon...'

In the 1930s Le Corbusier was simultaneously active in several different media. His drawings were like research

notes of ideas perceived in the world about him, records for the 'storehouse' of particular observations that would someday lead to something of importance: the ear of *Josephine*, drawn in 1929, is extremely interesting. At the same time he was painting – he called it 'a terrible, intense, pitiless battle, without witnesses, a duel between the artist and himself.'

He was designing furniture, in particular two armchairs, a tubular steel chair and a *chaise-longue*, all of which are being produced today as 'status' objects for the wealthy and sold for very high prices; as examples of modern furniture, they have never been surpassed. He was writing – in 1929 alone he completed a vast number of essays, packed with information. These dealt with the principles of modern house design and the fundamentals of town planning, and included illustrations and diagrams of anything from traffic communication to studies of cupboards and ways of arranging clothes on hangers. These were originally written for *L'Esprit Nouveau* and they were republished as *Précisions* in 1960, a book partly financed by Le Corbusier to keep the price down for students. At the same time he was also designing town plans for Anvers, Algiers (see *Plate 11*), Antwerp and Brazil, the vast and immensely complex Palace of the Soviets (1931 – for Moscow but not built), and the series of blocks of flats he conceived for Algiers in the form of steps; these may be regarded as the prototype for the fashion in 'stepped' housing that spread across in England in the 1960s, losing sight of Le Corbusier's initial idea on the way. But, in addition to all these projects, Le Corbusier was dazzling the world with buildings like the red stone and sheer glass of an office block in Moscow, a hostel for the Salvation Army and the *Pavillon Suisse* in the  *cité universitaire* (both in Paris), flats in Geneva and overlooking the Bois du Boulogne, and the Education building in Rio. Although the works in Moscow, Geneva and Paris were designed at roughly the same time as the Villa Savoye was completed (the flats were conceived a year or two later), he had dropped concrete as the predominant material and had

and must be finished by others, in this case by the architectural objects in the foreground. The glass back-drop is the frame, and this and its variations had become the theme of Le Corbusier's architecture: a frame and its subsequent variations are a theme of architecture – ancient Greece, Roman, eighteenth-century English, the eastern roof and courtyard. Architecture is like a stage with its proscenium and scenery, and within this proscenium and in front of this scenery, people act out their lives. By the mid-1930s Le Corbusier had mastered this theme, he understood its consequences and knew what it meant in terms of town planning. But while, on one level, these revelations were taking place, the research, on another, was continuing relentlessly: the 'storehouse of inspiration' was filling up.

He had built in concrete, changed to steel, used glass, discovered glass bricks and invented *brise soleil* (louvred shutters to diffuse glare) for the Rio building. Now stone started to appear, *piloti* (columns) disappeared, walls were rooted to the ground, grass grew on vaulted roofs. And there were some words he wrote in a letter to some students: 'I wish that sometimes architects would take up their pencils to draw a plant or a leaf, or to express the significance of the clouds, the ever-changing ebb and flow of waves at play upon the sands...'

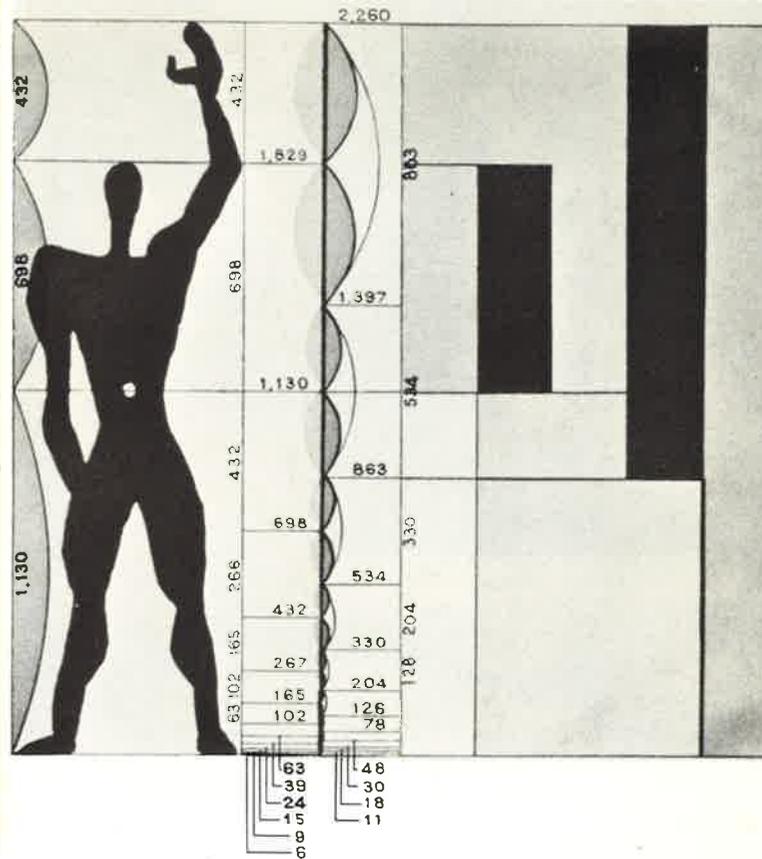
His paintings had changed, too, they were softer, rounder, the edges to the shapes were blurred, there were shadows among the light (see *Plate 15*). Something was about to happen. And then, in the middle 1940s, it happened. Le Corbusier invented the Modulor, a form of measure that introduced a new range of proportions that were, like the Greek diagram (but much more elaborate) derived from the proportions of the human figure (see *Plate 13*). This invention was momentous because it heralded the beginning of a new phase in his work. His increasing preoccupation with nature, which ran parallel to a decreasing interest in the industrialized aesthetic, required a focus, and this focus had to be man, the human figure, its shape and proportions – in

other words, the Modulor. This measure was again a frame, for it gave order, and offered him the greater freedom he had discovered in painting, perceived in nature and longed to bring to his architecture.

As much as any building, any painting or drawing, the Modulor seems to convey a vivid picture of its creator: the Modulor is like an imprint of the man. What was he like? As he appeared to the world, austere, with a big head and big features, in some way not dissimilar to Derain, a look of disdain partly hidden behind the thick glasses with their heavy, black frames. He was a great patriot, but the subject of his patriotism was art, not a country. At first glance, he seemed to be possibly a scientist, certainly a highbrow; without question dynamic, a man with relentless energy and drive; hypersensitive, perhaps, an innocent, and with a faith and sense of purpose not unlike Eliot's; but essentially a man of his times – the 1920s. Yet there was also the private person who was, somehow, despite a certain peasant roughness, intensely touching and warm and human – the man whom friends called Corbu, and who was described by them as exquisitely kind, generous and unselfish: and one thinks of the *chaise-longue* at the end of the bath at the Villa Savoye, and his excitement when he embraced a column at La Tourette, and the gentle way he held his pencils, and his coloured glass suns shining orange into his chapel at Ronchamp, and the photograph of him under his hat in the hot sun at Chandigarh, and Madame Corbusier shouting through the pivoted door of his studio overlooking the Bois, 'Mr Modulor, your lunch is getting cold.'

cal disciplines for guidance; now that he was seeking a greater freedom that he had perceived in nature, it was to the conception of man in space that he turned. For man was the measure that possessed the discipline that provided the freedom: thus man and nature merge – like the two halves of the circular symbol of the mandala, they balance each other, they are inseparable: nature's underlying order and man's simplified order are both distilled there, in the invention, as part of each other, as they are in life. 'Man must be rediscovered', Le Corbusier writes. And elsewhere: 'I admired the house of peasants, the house of men, the shack, the thing that is modest and on a human scale. That is where I invented a part of the Modulor, discovering human dimensions in things of total simplicity. . . .' Yet the invention of the Modulor, like the rediscovery of the frame, leapt across two thousand years to establish a physical link with ancient Greece.

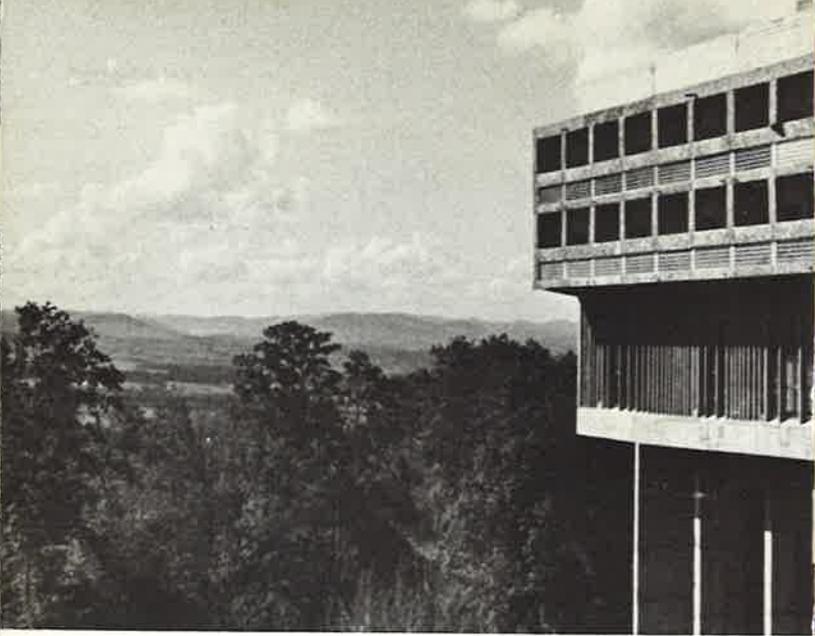
The Modulor was, of course, a different conception to the Greek diagram of proportion, and this was precisely because Le Corbusier came to it from his own personal research and experience. The circle had no part in the Modulor: its measures were determined by height which characterized the space occupied by a man six foot tall. Yet the navel is again the centre-line of the diagram, giving a measure of 113 centimetres from the ground; and the top of the upstretched arm gives the total vertical measurement of 226 centimetres – and thus, inevitably, the double cube. But a number of other variations gave Le Corbusier's system a far greater range than the Greek method, and thus far greater flexibility to meet the innumerable variations of modern situations. Other horizontals were introduced by the top of a man's head, by the seat of a chair in a relaxed position (and again for the upright and conventional position – eating, for instance), by the average height of the elbow when working, and so on. The diagram could then be divided vertically on the centre-line of the figure, creating further proportions, and these could then be sub-divided. Le



13 The Modulor: Le Corbusier's diagram of human proportion published in 1946

Corbusier's system was thus similar to the classical method insofar as it relied on the dimensions of the human figure; but it also represented the human being in movement within the space it occupies. This was the Modulor. The invention was announced in 1947 and described in a book published a year later. Le Corbusier called it an essential guide in an age of prefabrication and industrialized techniques of building. He recognized the dangers of the machine, and called in the Modulor – which tied buildings back to the scale of the human being – as a practical way of actively resisting its threat. In a sense, then, this invention echoed fears that are now becoming universal. From Le Corbusier's point of view, however, he had made another discovery. In the centre was man, represented by the Modulor, holding the huge, diverse and complex structure together: Le Corbusier's preoccupation with nature, with painting, with indigenous building techniques, and with a much greater freedom of form.

Briefly, this invention meant that Le Corbusier was able to continue his pursuit of more ambitious objectives; and now, too, more by suggestion than by persuasion, the search for an aesthetic order could go on, and be accomplished, the more insistent classical disciplines having been shed. This theme, first sensed in the fir tree, had by now been gathering momentum for some time. There is evidence of it in the 1920s when he designed the Vertical Garden City which, he said, creates 'a real landscape and provides the opportunity of admiring it, by means of eloquent avenues superimposed one upon the other'. He could see his garden city absolutely clearly; much changed, it eventually led to the *L'Unité d'habitation* at Marseilles. But the fir tree was also an important factor in the history of this building. In the first place, it helped to inspire the Modulor. It was, however, a significant addition to his collection of things that included shells, pebbles, bits of wood, fossils, stone chips and a meat-bone. And in one of his later books he makes a visual observation that may have been suggested



22 Monastery of Sainte-Marie de la Tourette at Eveux, Lyons; completed in 1960



23 Picasso standing figure

The Chapel recalls Sainte-Baume, designed two years before, because it crowns the top of a hill, over which it smiles like Le Thoronet, somehow suggesting an underground cavern below that might be the continuation of an idea inspired by the cathedral at St Emilion. Yet it recalls, too, the geometric exactness of Sénanque, and the loftiness of this abbey's cool, sheer, creamy walls. At Sénanque the architecture is boiled down to the stone bones and stripped of all decorative possessions — nothing is extraneous to form: the deep windows, like those at Ronchamp, are so precisely made that they might have been taken out of the solid by a very sharp chisel. But the image of Ronchamp in these windows is superceded by another — the deep windows of ordinary peasant architecture in villages and farmhouses, blurred and rough with painted outlines, which the windows of Sénanque and Ronchamp pull into precise architectural focus. And so you see that, between the abbey and the indigenous style of the region, Le Corbusier's images overlap in all directions. A single column that you find in a vaulted structure, around which there is a free arrangement of spaces, could be compared to the single column in the kitchen at La Tourette, the presence of which was so powerful that Le Corbusier embraced it at first sight; yet the cylindrical forms at Sénanque also recall the clover leaf plan of the Romanesque baptistry at Venasque, and the stone towers of châteaux, and of the country house. Thus the cylindrical light shafts at Ronchamp are, like some wine, a theme of the country — as, of course, Cézanne's *Pigeon Tower at Bellevue* turns out to be; and you discover that these light shafts do, after all, have the same origins as the main body of the building, belonging to the same jigsaw. Southern French architecture is curvaceous, and this characteristic is often reflected in the vertical plane of houses where plastered coatings spread outwards as they near the ground, following the batters at the base of fortresses and châteaux. There is a memory of this tradition at Ronchamp, too: the plan of the flowing south wall is shaped in the section, so

that this form, with its hints of the snow-laden boughs of the firs, also spreads at the base. Le Corbusier captures the locality in this single gesture. It is for this reason, among others, that the Chapel belongs so totally to the locality, in the same way that simultaneously (and, it seems, almost by chance) the light shafts pick up a nun's shape in whitewash.

But at this point Le Corbusier's paintings and sculptures should be studied: in these, he was investigating a theme which has, in the context of Ronchamp, a rather special significance. In 1948, or thereabouts, he began working on a series of sculptures in polychrome. The theme was ears, and this suggests the sounds and acoustics which so absorbed him. His interest in the ear shows from far back in 1929 when he drew *Josephine*. But the idea for the sculpture came from some paintings and drawings Le Corbusier had been doing in the early 1940s. This is interesting because it shows how close to sculpture both his paintings and buildings were — Ronchamp was partly suggested by the sculpture, and by his paintings. But so far as Le Corbusier was concerned there was no clear dividing line between painting, drawing, sculpture and buildings, and the model of Ronchamp made in 1950 was also a piece of sculpture. They were simply different parts of one activity.

In 1944 Le Corbusier did a drawing of a head with a huge ear that resembled the handle of a cup — and, more particularly, a cup (or glass) drawn by him in the early 1920s. A friend named Joseph Savina, who was just back from a prison camp in Germany, suggested that sculpture should be made from his drawings and paintings of the ears. Le Corbusier was amazed but, predictably, fell in with the plan. Savina was a good sculptor himself and a superb craftsman with wood. And so these very strange, tall, listening ears began to appear.

The ear, in the first pieces, was on the top of a long neck. There was a tension in the muscles of that neck which stressed the concentration exerted by the act of listening, as though for distant sounds of the sea in a shell, or for a bird

rustling in the undergrowth; and the ear, in the shape of a question mark, expressed a peculiarly apprehensive air, like the roving, sensitive listening apparatus of a radar receiver revolving on a hill somewhere. Sometimes the ears, made in polychrome (a form of clay), were unpainted; sometimes, however, they were brightly coloured, and this transformed them into curious creatures with interests other than listening – into something like birds, even crow-like perhaps. And sometimes the ears were put with other forms (see Plate 14), the combination of which suggested a complete head, a second ear also listening, but shaped differently, like a marrow-bone. The first of these sculptures were, nevertheless, generally concerned with the solitary object, the ear on a tall neck, although in some cases two ears listened in opposite directions on the same stand, or were contained inside a square frame. And these were the pieces he was working on, and Savina was making in Brittany, when the Chapel at Ronchamp was conceived in 1950.

Le Corbusier was also painting. By now, of course, all the machine symbolism had vanished from his pictures, his shapes were free and flowing, and, without exception, centred in some way on figures – on the human being. This was in complete contrast to the paintings he had done twenty years earlier, which were focussed on the machine: one called *With Many Objects*, done in 1925, with the merest suggestion of an architectural form in the background to act as a frame, might have been prompted by the kind of way he saw the Villa Savoye – as a tight relationship of parts interlocking like wheels in a watch and enclosed by the simple classical square. But there was no formal regularity in the paintings and drawings of the 1940s – then, shapes and colours were floating among long and perfect lines: all that is left of the early days is the perfection of the line. And the line, the absolute precision of it, was of total importance to Le Corbusier, both in painting and in the plans of buildings; the clearest element in either a painting or an architectural plan by Le Corbusier is the line – it

established a base from which he could develop ideas in colour, light and form. But as he became more preoccupied with sculpture, his paintings seem increasingly to resemble his plans for buildings; from the late 1940s until the end of the 1950s, when they were in the process of changing again, they were exclusively about shapes – shapes that didn't quite touch, but floated near each other, sometimes overlapping. The lines behave in a similar fashion, approaching each other, sometimes crossing, and describing ears, breasts, thighs, heads – beautiful continuous lines making continuous spaces. Le Corbusier's plans possessed precisely the same flow of line: the exquisite details from the 1920s and 1930s – the mandala forms enclosing a basin on one side, a stair on the other, triangular cupboards, a screen spiralling round a bed – were no longer trapped inside a square; they could escape like birds into the fresh air. And so they did – at the Ronchamp Chapel, at the Philips Pavilion at Brussels, at the Harvard Arts Centre; and in these plans, too, was much the same symbolism that could be discovered in the paintings and drawings, particularly in connection with the ear.

The paintings explain a great deal about his buildings of the 1950s as do his sculptures. Both had a hand in Ronchamp: the ear of *Josephine* and the ear symbolism of the painting can be seen in the plan and the listening ears of his sculpture in the light shafts. Tall and upright, they seem to be directed across the valley, alert like the ears of a rabbit awake to the world; but simplified so that, simultaneously they echo the shape of the nun, and, on yet another level, suggest the round towers of old stone houses. Again, when the associations have evaporated, the light shafts remain behind as unique – there is nothing like them anywhere. Nor is there anything else that resembles the plan where a single line connects the shafts together; these two volumes are held in position by one unique charcoal line – and, like the upright form, it is an abstraction of the shape of the ear. Thus, in this group, all arts seem to be in an embrace, all

assisting in the production of one piece of architectural imagery. Then another space, and a third upright form, is captured by a second line, and the third line makes the dominating wall that screens the Chapel from the south in which are set the deep windows, the scattering of coloured glass that fills the interior with spots of orange, yellow and blue.

Three lines in all, each of a different shape and curve; and three towers – could these towers be regarded partly as memorials to the three sister abbeys in the south that influenced him – in other words, to three nuns? And could they also be reminders of his passion for acoustics? Le Corbusier really did make his forms work hard – as he said, it was ‘a genuine phenomenon of visual acoustics’; or as Schelling said, ‘architecture was music in space, as it were frozen music...’ Of the three walls which shape the building, only two short pieces are straight, the rest are curved, and there is not a single right-angle. The plan flows with the ease of a freehand drawing; yet the design is, in fact, entirely regulated by the Modulor, the dimensions of which are set out by the paving slabs on the floor.

Suddenly the inspiration for this building seems to have a very simple explanation. His penetrating gaze observed the world about him, recording anything that was, even remotely, connected with his art: this was then processed in his painting and transferred to sculpture, from which it entered his buildings. He said himself: ‘It is by the channel of my painting that I came to architecture’, and, since he pursued painting throughout his life, it seems likely that an important part of the inspiration for his buildings remained true to this source. And while the Modulor focussed on the importance of the proportion of the human being, the human being focussed attention on shape and free-flowing forms. The first buildings in his second twenty years fall in with this order of things: the *L'Unité*, then the Chapel. And everything which Le Corbusier had seen up to this time, all the research that he had done – and was evident in his

notes, drawings and paintings – was processed at Ronchamp: autobiographical, its associations arose from far back because he was born quite nearby. So, in a way, it may have been his own memorial.

There is yet another fascinating aspect to this building. In a sense, the curves, the walls which coil like shells, the risks he took with forms were nothing new. These were all things which were present in the whitewashed houses he built in the 1920s, at the Villas La Roche, Stein and Savoye. On those occasions, however, the shapes were ordered by the outline of the cube, which was the frame. But at Ronchamp he jettisoned the architectural frame, took it away, leaving the shapes behind, uncovered – the acoustical forms that responded, as he suggests, only to nature, to echoes, so that the forms became a visual diagram of rebounding sounds and sensations.

For there was a frame, after all. It was the frame of the four horizons that he had drawn with such meticulous care, each one separately, on his first visit. ‘It is they who commanded’.

It was about the time he began designing Ronchamp that he finished his *cabinon* at Cap Martin near Monte Carlo – he was bathing there in 1965 when he died. This was a manifestation of the ‘shack’ that was so much on his mind then, and he built it himself on Modulor dimensions: the living space and bedroom were planned as two squares (four metres long and two wide), while the workroom was only two metres square – this was all he needed. But in the same year (1950) he had also drawn up another, quite different idea for a church in South America (not built and, up to now, unpublished); it was simply a spire, or pyramid, with unequal angles. And, while Ronchamp was being built, a further *L'Unité* had been completed at Nantes-Rezé and Chandigarh was on the way. If the *L'Unité* at Marseilles and Nantes were, as Le Corbusier called them, temples to the family, the Chapel was a temple to art: religion and art

#### 4 The Dream

Quite suddenly – as suddenly as Le Corbusier dropped the cube and the concrete frame in 1930, dropped machine imagery in his paintings and then, later, dropped steel-framed structures and plain glass façades – the roughness of the late period ended. In 1968, three years after his death, the Corbusier Centre in Zurich appeared beside the lake – one final, carefree, brilliant gesture, one last blaze of fireworks (see Plate 21). For the Centre was made of steel and glass, it was demountable, it had a precision-made plan and surface finish, it was enamelled in the clearest collection of colours he ever used; and all the corners were square. In the middle 1950s, perhaps significantly, Le Corbusier's paintings had also changed: the flowing lines, the symbolism of the ear, the figures rolling about with the abandonment of laughter, the coloured shapes floating in a limbo of dots, had vanished, to be replaced by a geometric and much more abstract series of tapestries of far brighter colours than before, and designed to decorate various government buildings at Chandigarh. Moreover, all these tapestries were square, and their subdivisions were based on combinations of the square in the Modulor measurements. And the first impression of the Corbusier Centre is of square geometry and exceedingly vivid colours; all that is left of the earlier period is a concrete ramp.

Le Corbusier had, apparently, waved a wand and had produced a fascinating little Greek temple from under his hat. It is possibly the finest thing he ever did; it has a freedom which seems greater than even Ronchamp's, and this is precisely because there is not a single curved wall or screen throughout the entire building. Here is the paradox: since the 1930s Le Corbusier had been through every free shape

imaginable, and at the end of this vast research he found that what he believed was true in the first place was still true – it is the resistance of the right-angle or straight line that offers the greatest freedom. And so Le Corbusier didn't really produce the Centre from under his hat; and, in any case, the idea for it had been with him for years. As far back as 1938, it appears in an infinitely delicate and tiny ink drawing; then in 1950, this drawing reappears as the idea for a pavilion for an exhibition project in Paris – two adjoining triangulated roofs hovering over some loosely arranged things going on beneath. In 1957 the construction turns up again as part of a scheme for a museum in Tokyo – the main building was carried out, but not the pavilion. The design for it, however, been taken a little further and it was displayed as a model – two papery roofs that have, in each case, a square plan which are supported at only six points round the edges: and, once more, something rather mysterious is going on underneath these roofs. Then, at last, came the first project model for Zurich in 1963 which coincided with another experiment with the same idea for an art museum in Stockholm that would display the work of the three modern artists, Picasso, Matisse and Le Corbusier. But again, the Stockholm museum got no further than a beautiful plan for a structure floating on water. The model for Zurich, however, shows the form of the building developing fast: unlike sponsors in Paris, Tokyo and Stockholm, someone in Switzerland was clearly determined to drag the idea, so long withheld, out into the sunlight of the park beside the lake. Here, this time, was an independent roof with a concrete and glass structure beneath it. And a bubble, which had first begun to form twenty-five years before, seemed ready to burst.

The idea for this structure began to progress at a time when the *L'Unité d'habitation* at Marseilles was near completion; and it exactly coincided with the conception of the chapel at Ronchamp. The pavilion was, however, an entirely different kind of thing – precise where the spirit of

someone in Switzerland!

? the name of someone  
was a lady

the *L'Unité* was rough and heavy, geometric where the Jaoul house was voluptuous and the Chapel was abandoned, and dreamlike. Yet these were all buildings that were being designed or built when the exhibition building was first conceived. From the start the Pavilion looked different from anything else he was doing at the time, including those strange ideas for churches in South America and at Firminy in France: there was a precise geometry about the Pavilion's structure that set this design apart from the sculptural themes that had preoccupied Le Corbusier for so long at Chandigarh. And it remained separate as other ideas slowly collected round the Pavilion over the years, rather as though the design chose to lie in wait, in Le Corbusier's 'storehouse', quietly preparing for the time when the gigantic offensive of the middle and late periods that had spread itself across different continents and had reached Japan and America, had begun to exhaust itself. Then a replacement would be needed, a new point of departure.

This makes one think of something else. In the 1930s, at a time when Le Corbusier was most deeply involved with mechanization, and with a craft that had an exactness which could be compared to the best in eighteenth-century architecture, another idea of genius had cropped up in the 'weekend' house; and there was nothing sketchy about this idea. It did not have to be taken further, developed, improved upon – the house was a perfectly fulfilled design and easily as good as anything else he had done up to that time. But then the glass of the *Pavillon Suisse* and of the hostel for the Salvation Army building, for the office block in Moscow and of the flats in Geneva and Paris can, in the same kind of way, be observed evolving in the drawings of the glass towers in the green cities that he was busy planning in the early 1920s. At the same time he was, with great speed and energy, working out the whitewashed architecture of the cube at Pessac and at the Villas La Roche, Cook, Stein and Savoye. This makes an extraordinary picture of restless imaginative activity. But then the inspiration for

this period was, of course, derived from the Parthenon and the project for the *Ateliers d'Artistes*, conceived when he was only twenty-three – another idea of genius which, partly because of the war, remained simmering for about ten years before it was fully enough formed to inspire his work of the 1920s. It was then that a flood of ideas – all vigorous, original and fresh – brought a new language to architecture and, in one decade, spread a white and sparkling style through Europe.

Thus a pattern emerges. As soon as a single idea of profound significance was launched, and the enormous task of developing this idea undertaken, another idea of equal significance was already forming from which he could continue when the development of the preceding idea was, at least for the time being, completed, and the energy expended on this development exhausted. Only then, only when all that could be extracted out of the idea had been taken, was he ready to begin again with the next. However, right at the source of this vast and infinitely complex story is the remarkable design for the back of the pocket watch. Within the circle of the form this design seems, in some way, to encompass the total theme of Le Corbusier's life's work. For in this microcosmic picture it is possible to perceive all the pieces – the cube, nature, harmony and balance – and to trace them through paintings, sculpture and buildings on a bewildering succession of levels. The words that Le Corbusier used to describe the magic of the abbey of Le Thoronet – the abbey which had such an impact on his work and about which he helped to make a book – could well be applied to both the watch and his own genius: 'Architecture is the unending sum of positive gestures. The whole and the details are *one*.'

And so here was this idea for a pavilion, quite sketchy at first – an idea for some kind of light roof structure protecting another indeterminate object beneath – taking root in his mind at a point when the *L'Unité d'habitation* at Marseilles was rising up towards its roof line and the draw-

ings for the Chapel at Ronchamp had just begun. And there it remained, like a cocoon from which some day a wonderfully bright butterfly would suddenly flutter off, while a great deal was happening to Le Corbusier elsewhere. The centre of Chandigarh was in full swing. The vaults of the 'weekend' house and of Jaoul were being worked out further at Mrs Sarabhai's house at Ahmedabad, where the materials of architecture were, Le Corbusier says, 'the brick, rough concrete, white coatings, intense colours' – or just the essentials for a hot climate where least is sufficient; light and shadow, the structure overflowing with foliage, the circulation of cool breezes and the triangular shape of the tremendous concrete chute into the pool. But one feels, too, that the Pavilion was, somehow, lying in wait just below the surface of the irregular plan and umbrella roof of the Shodhan house, also at Ahmedabad, as though he was testing one or two thoughts that he was having about the Pavilion; for at Shodhan he had returned to the cube of the 1920s, and in particular to the house at Carthage where the floors themselves broke up the sun's glare with alternate balconies. The huge vertical sunbreakers of a building for an association of millowners were another experiment with light and shadow, and can be linked with the façades at the Arts Centre for Harvard. All these schemes, carried out when the Pavilion was still at conception stage, were intense, carefully woven strands of the much larger patchwork of Chandigarh where the sun, and protection from the sun, created the architectural forms; the outline, so important to him once, had retired into the shade.

His architectural drawings followed suit – the clear ink lines of plans and sections and elevations of earlier methods were also gone; at Chandigarh, at the Arts Centre, at the Shodhan house, a pen was replaced by soft pencils, and the forms were displayed with the gentlest of shading and tones. And these tones, this preoccupation with the shading, show themselves at the monastery of Sainte-Marie de la Tourette at Eveux, back in France, another building which ran paral-

lel to the buildings of Chandigarh. This was conceived in 1953 and completed in 1959, and it was a highly complex problem: somehow the monks' cells, a chapel, dining rooms, a library, offices and innumerable other things had to be put together on a steep hillside with very little money – so little that Le Corbusier accepted no fee, only his expenses. Again, he was working out ideas that were governed by the movement of the sun – La Tourette is made by light, and the control of light: if the natural laws are correctly seen and understood, the interpretation of them in building will suit and embellish the life of man. The influence of Le Thoronet, the sister abbey of Sénanque, falls like a shadow over La Tourette: it is present in the quadrangle, in the sharp concrete spire, in the bare simplicity of the materials, in the stone chapel and in the circles of light burrowing through from the ground above it. At La Tourette, the quadrangle was the frame, enclosing a collection of sculptural objects – the spire, the triangular roofs, a cylindrical corkscrew stair, an arch, light shafts protruding through long grass like batteries of guns – and other quadrangles; and this frame was stressed by the double floor of monks' cells that defined the top of the building like a Renaissance frieze (see Plate 22). Thus the complicated features of the monastery were brought together within a single form that looked inwards for quiet and reflection, and outwards over the world, raised on *piloti* so that the grass of the hillside could flow beneath, untouched.

His most important discovery at La Tourette was, perhaps, the random vertical window division that he had also used, on occasions, at Chandigarh. He came upon this idea partly through working with Xenakis, the composer who was also an engineer and who, in Le Corbusier's office, composed the sounds and electronic poetry for the Philips Pavilion at the Brussels World Fair. Xenakis interested Le Corbusier in the modulations of music and its subtle inflections, and Le Corbusier transferred the conception to architecture. Modulations suggest rhythms and continuity,

certainly, without fear. Then the other elements enter the scene and complete the operation. The *piloti* frees the form from the ground so that it can be fully appreciated from every angle; concrete sets out the plan of the ears, and their shape. The vertical louvres, so large that they are like slanting walls which catch glancing views of the outside, and the random window divisions then describe and construct the line of the ears in three dimensions. 'The whole and its details are *one*'. Le Corbusier had completed yet another expedition 'into the inexhaustible domain of nature'.

It is, however, in this juxtaposition of the ears that one glimpses the lengthening shadow of the Corbusier Centre at Zurich, and in the visual divider of the ramp. One hears echoes; the same echoes, perhaps, which haunted the Shodhan house at Ahmedabad. Looking at Le Corbusier's work is rather like looking at the sea. Wave follows wave, wave after wave breaks on the shore. Sometimes one of the waves is taller than the rest, a white horse, pulling those that follow with greater vigour than others had before. You can see this wave from far away. It is always quite distinct and unmistakable. In 1963, when the last waves of the 1940s and 1950s brought ashore the monastery of La Tourette and the Arts building at Harvard, the Corbusier Centre – sparkling and fresh – suddenly appeared over the horizon.

Predictably, the model that was published in 1963 contained a number of Le Corbusier's favourite ideas and materials. Under the triangulated, independent roof was a building with its own roof; it had the irregular plan of the Arts Centre, but reduced down to a couple of cubes of a small size; and these cubes, separated by a ramp that shot outwards and backwards on one side, were made of concrete. One cube was largely solid, the other was an open work of random window divisions. Everything seemed poised for one final push: the grass – as spotless and smooth as a new green coat with a buttonhole of flowerbeds –

waited expectantly by the side of Zurich's calm enormous lake.

Then, in the next breath, the concrete vanished: the magician whipped away the handkerchief and there, with the exception of the ramp, was a structure of intensely bright colours made entirely of steel and glass, a construction as exquisite, sharp and accurate as the works of a watch. The idea of the design was as before. Its plan and shape was in the form of two squares, each subdivided into four spaces under the lightly supported cover, with the enclosures placed one step forward and one step back, separated by the concrete ramp. In this stunning building the influences, inventions and ideas of a lifetime – Le Corbusier's background in La Chaux-de-Fonds, his father's enamelling business, the Greek temple, derivations of the cube in the 1920s, the glass and steel of the 1930s, the roof garden, the sunshade, the Modulor and the last geometric paintings – seem to come together in a multi-coloured blaze.

The Corbusier Centre is a setting for the architecture, paintings, sculpture and writings of its maker; a place where people can meet and talk, cook a meal, have informal discussions and show the work of artists in general. An explanation for its form is given in Le Corbusier's last book, *My Work*. The whole structure is designed in terms of display: the triangulated roof is called the 'architecture', and the independent construction below is as an exhibition pavilion for the paintings and sculpture. This pavilion was, however, designed as a house, since only a house would give the right kind of domestic scale in which the paintings and sculpture should be seen; only in this way could contact be firmly established between the spectator and the object observed. And no one knows better than the general public the oppressive effects of remoteness and distant solemnity conveyed by the normal museum; it is enough to put the most hardened tourist off. 'Art,' you can hear Le Corbusier saying, 'belongs to people – to all people.'

In consequence, he designed a 'house' on two floors, and this 'house' has a kitchen, a circular stair, a ramp and a roof-terrace; ceilings, regulated by Modulor dimensions, are only 226 centimetres high – a mere seven feet six inches – and within the reach of a six foot man. There is something oddly right about a ceiling you can just about touch – it makes a special kind of relationship between the space and a person. But the low ceilings raise an exceedingly interesting point. Le Corbusier designed the 'house' to suit one set of circumstances, and irrespective of the huge size of the park. It should look absurd, impossibly small in such a situation. But here, in fact, was a perfect architectural exercise, the steps of which are set out with a mathematical exactness. Art must relate to people, and people must relate to their surroundings; but these surroundings must also relate to the outside world – the park. Hence the roof structure – the architectural frame.

This is why the roof structure is called the 'architecture': it links the exterior with the interior, the scale of the park with the scale of the 'house', which is very small – overall, it can hardly be more than fifteen feet high. But the interior has to be small to equate with a domestic scale. And inside the Centre, under a blue ceiling, you suddenly feel that you really are in a house. There is a kitchen; the addition of a bathroom and a few screens to make bedrooms – you can see where they would fit in – would complete the picture of a house. Up the blue ramp to the first floor; through some glass are the branches of trees and a glimpse of the shining lake. And then to the terrace above by the circular stair where the great structure dips down over you.

This is the climax of the building. The picture is in front of you; it is all there. You are walking about on the roof just below the red, white and green triangles, and these, pointing up and down, frame the park, making more green triangles. So you feel, from the shelter of your roof, part of the park. There seems to be no beginning and no end. Nature, and the platform under the roof, merge; from the

pressed-steel seats, flowing round in a freehand line (a single memory of the free 1950s), you can sit with your back to the edge and admire the trees and the sky, under your sunshade, in your private garden. You have made the discovery that the frame and the 'house' are also really part of each other, as they are of the park. Now you begin to understand the Corbusier Centre. All the pieces of it – the spaces outside, the people and paintings, and the objects which inhabit it – are part of the same picture. As you look back across the park you see this picture by Le Corbusier as yet another double image. In one, the building suggests a temple where the frame, not unlike the portico of a Greek Megaron, shades the detail of the geometric mosaic from the glare of the sun. In the next, you discover the proportions which relate to people, and so to the spaces inside, of which the shapes outside are an exact description.

Then you notice something else. The frame assists the scaling down of the size of the park to the size of the 'house', and this process is concluded by the delicate steel structure. But, at the same time, the frame (and the dual image of it in the pool beside the pavilion) enlarge the scale of the 'house', as the porticos do at Palladio's Villa Capra – and you feel grander and more important because of this.

Still a question remains: why did Le Corbusier suddenly give up concrete and revert to the steel he used in the 1930s? For one thing, steel meant that the building could be demountable and that, if overtaken by the kind of crisis that overtook the Villa Savoye, it could be moved away. But perhaps the answer lies merely in the result; the building was much more beautiful than it would otherwise have been – concrete might have suggested an incorrect scale, and the magnificence of the coloured enamelled steel panels would have been lacking. Perhaps, again, he felt that he had, for the time being, used up the possibilities of concrete, that, like Picasso's 'green', he had finally got it out of his system and needed a change. Or perhaps, with his unflinching sense of place, it was simply that he saw that steel and glass

described the sophisticated and industrialized character of Switzerland as no other materials could, just as rough concrete described the immensity of the Himalayas. Each answer must provide part of the truth, and, taken collectively, they seem adequate. But, then again, not quite; for really a much stronger force must have been at work behind the scenes than any of these conclusions suggest – the force of the continuum, the struggle to discover, and to progress. The geometry of the Corbusier Centre has to be placed beside the paintings on which Le Corbusier was then working, and the paintings have to be placed next to the plan and form (much eroded by others after Le Corbusier's death) of the hospital for Venice, to which the paintings bear such a remarkable resemblance.

All must be seen together, as though you were in the artist's studio and he was laying out his works against the wall as he did on the pages of his books. The bough of the fir and the veins of the heart have to be put with the vaults of Jaoul and Sarabhai, and close to the ear of the sculpture which should be near the light shafts of Ronchamp, but before the horns of the oxen which should be beside Chandigarh. A circular diagram of the mandala should be put next to his drawing of the movements of the sun (see Plate 20), and this has to be put beside the Open Hand to which it led, and also next to the triangulated roofs of the Corbusier Centre – one pointing up, one pointing down – which it must also have inspired. Was this building the beginning of a new phase? If so, where would it have led?

Le Corbusier's work seems to fall into two distinct parts: what he accomplished before the Second World War, and what he accomplished after it. In the first it was the imagination of the mind that was, perhaps, the controlling influence; in the second, his medium mastered, the imagination of the senses seems to emerge as the stronger force. Finally, it is the work he did in these last twenty years that is the real memorial to his patience, dedication, modesty and

faith. But in the Corbusier Centre, and in the outstretched form of the Venice hospital, sleeping its way across canals and inlets, the two great influences in his life appear to merge: perhaps this was the dream.

Yet the rhythm of ideas, and the development of these ideas, which occurred with great regularity from the moment the idea for the pocket watch was born to the building of the Corbusier Centre, indicate a possibility which may have been, in Le Corbusier's eyes at any rate, the frame for the whole of his work. The idea for a new phase took time to form – ten years or more. Far in the background, lingering on the horizon while innumerable other waves broke on the shore, was a much larger wave, and only the reverberations and side-effects generated by its force ever touched land. Le Corbusier's plans for cities never got further than the *Unités*, Chandigarh and projects. According to the natural evolution of things, architecture had to come first because it had to be understood first; to design cities without the understanding, knowledge and experience of architecture would be, as he said when he was in his early twenties, like 'wanting to sing when one does not yet have the lungs'. Nevertheless, in his book *Concerning Town Planning*, published in 1946, and quite as important as its predecessor, *Towards a New Architecture*, published twenty years before, he sets out the town planner's aims – what these were in the past, and how they should be understood, continued and developed in the twentieth century.

His argument is very simple. In his diagram of a meandering village street he shows the situation before the cart: it was possible to have these meandering streets in which people walked, and he loved them. But as populations increase, and knowledge advances and the scale becomes altogether bigger, it becomes necessary, in order to keep the human jumble intact, and to preserve the humanity and character of the jumble, to make a bigger, more positive gesture – the kind of gesture, vast and explicit, with which whitewash contains the jumble of Greek island architecture

## Le Corbusier

When Charles-Edouard Jeanneret was born in Switzerland in 1887 contemporary European architecture lacked both inspiration and direction; when Le Corbusier died in 1965 Modern architecture could stand beside the Classical, Renaissance and Baroque as an artistic form.

In this book Stephen Gardiner analyses the scale and the sources of that almost single-handed achievement. For, as he shows, Le Corbusier's art was conceived on such a bewildering number of levels, and funded from such a wealth of associations, images and historical material that it is all too easy to underestimate his sheer mastery of the modern imagination.

Le Corbusier's output equalled Picasso's, and was as varied. Urban planner, painter, sculptor, writer, designer, draughtsman, he was all of these as much as the architect of the Villa Savoye, Ronchamp, La Tourette, Pavillon Suisse, Chandigarh, the Zurich Centre. More than any previous critic, Stephen Gardiner stresses this essential unity of Le Corbusier's inspiration. 'First to look, and then observe and finally perhaps to discover' is the lesson of Le Corbusier and of this study. The photographs have been specially selected from the collection of Lucien Hervé, Le Corbusier's friend and collaborator.

Cover painting by Oliver Bevan

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