MODERN ARCHITECTURE: A CRITICAL HISTORY
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Chapter 1

News from Nowhere: England 1836–1924

The enthusiasm of the Gothic revivalists died out when they were confronted by the fact that they form part of a society which will not and cannot have a living style, because it is an economical necessity for its existence that the ordinary everyday work of its population shall be mechanical drudgery; and because it is the harmony of the ordinary everyday work of the population which produces Gothic, that is living architectural art, and mechanical drudgery cannot be harmonized into art. The hope of our ignorance has passed away, but it has given place to the hope of fresh knowledge. History taught us the evolution of architecture, it is now teaching us the evolution of society; and it is clear to us, and even to many who refuse to acknowledge it, that . . . the new society will not be hag-ridden as we are by the necessity for producing ever more and more market-wares for a profit, whether any one needs them or not; that it will produce to live and not live to produce, as we do.

William Morris
The Revival of Architecture, 1888

Prefigured in the Puritan and apocalyptic works of Milton and Blake, the Scottish *philosophe* Thomas Carlyle and the English architect A.W.N. Pugin separately called forth the spiritual and cultural discontents of the second half of the 19th century. The former was atheistic and consciously aligned to the radical Chartist movement of the late 1830s; the latter was a Catholic convert who advocated a direct return to the spiritual values and architectural forms of the Middle Ages. After the publication, in 1836, of his *Contrasts; or a parallel between the noble edifices of the 14th and 15th centuries and similar buildings of the present day,* Pugin's influence was immediate and extensive. To him we owe largely the homogeneity of the Gothic Revival, which profoundly affected English building in the 19th century. Carlyle, on the other hand, was in many respects in opposition to Pugin. His *Past and Present* of 1843 was an implicit critique of Catholicism in its decadence, presenting the case for a brand of paternalistic socialism on the model of Saint-Simon's New Christianity, of 1825. Whereas Carlyle's radicalism was politically and socially progressive, even if ultimately authoritarian, Pugin's reformism was essentially conservative and related to the right-wing, High Church Oxford Movement, whose foundation preceded by two years his conversion to Catholicism in 1835. What Carlyle and Pugin had in common was distaste for their materialistic age: through this shared antagonism they were to influence that mid-19th-century prophet of cultural doom and redemption, John Ruskin, who in his prime in 1868 became the first Slade Professor of Fine Art at the University of Oxford.

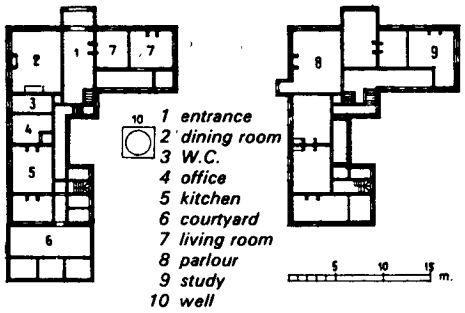
Ruskin, who acquired his intellectual following in 1846 with the appearance of the second volume of his *Modern Painters*, did not begin to declare himself unequivocally and extensively on socio-cultural and economic matters until 1853, when he published *The Stones of Venice*. There, in a whole chapter devoted to the place of the craftsman in relation to the work of art, Ruskin first spoke out against the industrialist 'division of labour' and the 'degradation of the operative into a machine' – a text that was to be reissued as a pamphlet by the first Working Men's College, at which Ruskin subsequently taught. In it, after Adam Smith, Ruskin compared traditional craftsmanship with the mechanical labour of mass production. He wrote, 'It is not, truly speaking, the labour that is divided; but the men . . . so that all the little piece of intelligence that is left in a man is not enough to make a pin or a nail, but exhausts itself in making the point of a pin or the head of a nail.' This was an extension of his attitude to ornament, already outlined in *The Seven Lamps of Architecture* (1849), where he wrote that 'the right question to ask, respecting all ornament, is simply this: was it done with enjoyment?' With this brand of radicalism, Ruskin began to move away from his earlier High Anglican sympathies to a position much closer to that of Carlyle. On the publication in 1860 of his essays in political economy, *Unto this Last*, he finally revealed himself as an uncompromising socialist.

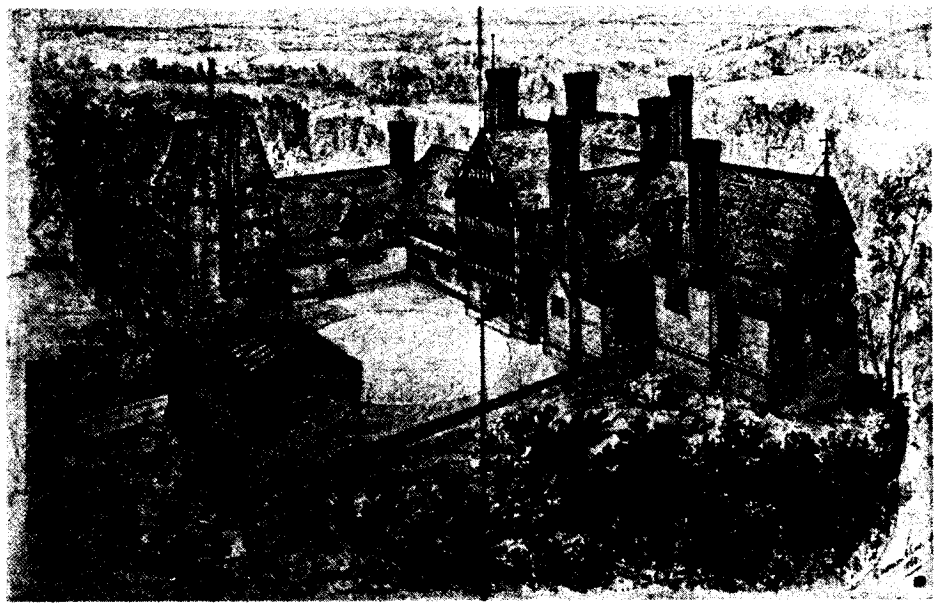
Through their influence on the English cultural climate via Pugin, Friedrich Overbeck – whom Pugin described as 'that prince of Christian painters' – and the German Nazarenes became the moral and artistic model for the short-lived, Chartist-inspired, Pre-Raphaelite brotherhood, formed at the instigation of the brothers Dante Gabriel and William Michael Rossetti, Holman Hunt and John Everett Millais in 1848.

In 1851 Ruskin became spiritually affiliated to this movement, which had as its aim the foundation of a school of painting which would be expressive of profound ideas and emotions. The ideal was to create an art form derived directly from nature and not from artistic conventions of Renaissance origin. This eminently anti-Classical, Romantic attitude was propagated in 1850 in the Pre-Raphaelite magazine, *The Germ*. Yet the brotherhood lacked the monastic strictness and conviction of the Nazarenes. Both it and its magazine were too individualistic to last for long, and by 1853 Pre-Raphaelitism as a collective movement was defunct.

The second, craft-oriented, phase of Pre-Raphaelite activity turns upon the meeting of William Morris and Edward Burne-Jones when undergraduates at Oxford, in 1853. Oxford exposed them to the lectures of Ruskin and to the all-pervasive influence of Pugin. After their graduation, in 1856, they became closely involved with the poet and painter Dante Gabriel Rossetti, eventually collaborating with him in 1857 on murals for the Union Society building at Oxford, an enterprise that deliberately echoed the Nazarene frescoes in Rome. Although Burne-Jones had already determined to become a painter, it was some months before Rossetti could lure Morris to London, away from his articled position in the Oxford office of the Gothic Revivalist architect G.E. Street. Somewhat paradoxically, Morris's career as a designer dates from his decision, late in 1856, to abandon architecture for painting: but that had to wait upon the furnishing of his rooms in London, for which he designed his first 'intensely medieval furniture . . . as firm and as heavy as a rock'. These unpretentious pieces, no doubt inspired by the craft ideals of Ruskin, were designed under the guidance of Philip Webb, with whom Morris had previously worked in Street's office. In 1858 Pre-Raphaelite domestic culture was crystallized, as it were, in Morris's only known easel work, a portrait of his wife, Jane Burden, as *Queen Guinevere* or *La Belle Iseult*, wearing ornate clothes in an ideal Pre-Raphaelite interior. Morris then gave up painting entirely and addressed himself to the task of furnishing his new home, the Red House, which Philip Webb built for him in 1859 at Bexley Heath, Kent, in a style which except for minor details was close to the work of Street and more particularly to William Butterfield's Gothic Revival vicarages dating from the 1840s and 1850s.

In the Red House (so called on account of its brickwork) Webb established the principles which were soon to inform the work of his brilliant contemporaries, William Eden Nesfield and Richard Norman Shaw, and for which he was to be known throughout his career – his concern for structural integrity and his desire to integrate buildings into their site and into the local culture. These aims he achieved through practical design, sensitive site layout and the use of local materials, coupled with a profound respect for traditional building methods. Like Morris, his first client and lifelong colleague, Webb had an almost mystical respect for the sacredness of craftsmanship and for the earth in which both life and architecture were ultimately founded. Even more than Morris,





he was against any excessive use of ornament. According to his biographer, W.R. Lethaby, Webb once complained that an over-elegant grate was 'hardly fit for the holy fire'. Such a sentiment could hardly be further removed from the mannered interpretation that his approach was to be given at the hands of Nesfield and Shaw, for instance in the latter's picturesque 'Old English' country house, Leyswood, Sussex, designed in 1866.

The whole exuberant unfolding of the English Free Architecture movement, from the eccentricities of A.H. Mackmurdo and C.R. Ashbee to the refined professionalism of Shaw, Lethaby and C.F.A. Voysey, may be said to have had its origin in the creation of the Red House. At all events, this work was catalytic in launching Morris on his destined career, and two years later he organized an association of Pre-Raphaelite artists, including Webb, Rossetti, Burne-Jones and Ford Madox Brown, into an atelier which would design and execute on commission anything from murals to stained glass and furniture, from embroidery to metalwork and carved wood. The aim, as in Pugin's extensive furnishings designed for the Houses

25, 26 Webb, Red House, Bexley Heath, Kent, 1859. View, and plans of ground and first floors.

27 Shaw, Leyswood, Sussex, 1866–69.

of Parliament in the 1830s and 1840s, was the creation of a total work of art. This much, with all modesty, the prospectus of the firm made clear: 'It is anticipated that by such co-operation . . . the work must necessarily be of a much more complete order than if any single artist were incidentally employed in the usual manner.' Apart from the precedent established by Pugin, the foundation of this atelier may well have been influenced by the Art Manufactures organization, started by Henry Cole under the pseudonym of Felix Summerly in 1845. In any event, the Pre-Raphaelite craftwork that had hitherto occurred spontaneously now took on a public character. It is fitting that the first work to be sold at the London premises of the firm was glass tableware designed by Webb.

With the prospering of the atelier, Morris was paradoxically compelled to leave the idyllic Red House in 1864 and to move permanently to London. A year later he gave over the management of the firm to Warrington Taylor, in order to devote himself exclusively to two-dimensional design and to literature, the two activities which were to consume the rest of his life. The first Morris wallpapers date from this period, as do the earliest works in stained glass by himself and Burne-Jones. Morris's models varied from Persian décor, illustrated in Owen Jones's *Grammar of Ornament* of 1856, to the medieval style which he naturally adopted for his stained-glass work – a product for which there was a steady, if limited, demand throughout his life. Morris, Marshall, Faulkner & Co. achieved public recognition in 1867 with the Green Dining Room or tea room that Webb designed for the South Kensington Museum (now Victoria and Albert) in London. The room was entirely furnished and decorated by Morris and the artist-craftsmen of his firm.

After this date, Webb started to design and execute large domestic commissions on his own, culminating in his last great house, Standen, built near East Grinstead, Sussex (1891–94), with furnishings provided – as was usually the case – by Morris's firm. Morris became increasingly involved with literature, from which he attempted fanatically to expunge all words of Latin origin, producing by the mid-1870s extensive translations of Icelandic sagas, in addition to numerous volumes of his own Romantic poetry. At that time it would seem as if medieval Iceland was the final 'Nowhere' that his idealistic spirit pined for, while it remained sequestered within the industrial reality of the 19th century.

The year 1875 was a watershed in Morris's life. The firm was dissolved and reorganized as Morris & Co. under his sole control, and he began to increase the number of crafts in which he and hence the firm could work. He taught himself dyeing and carpet weaving and, in 1877, established a London showroom as a prime commercial outlet. From then on, aside from the management of the firm and the design and production of a whole range of wallpapers, hangings and carpets, Morris's concerns gradually became increasingly public and less 'poetic' and craft-oriented. He seems to have felt it his duty to take up publicly the socialist and preservationist causes of Ruskin, who was by now mentally ill. Thus, in 1877 he wrote his first political pamphlet and founded the Society for the Protection of Ancient Buildings, in a successful attempt to foil Sir George Gilbert Scott's intentions to restore, or rather partly to rebuild, Tewkesbury Abbey.

In the decade following his reorganization of the firm, Morris divided his life equally between politics and design, producing during this period, according to his first biographer, Mackail, over six hundred designs for various fabrics. In 1883, however, Morris began to read the works of Karl Marx and joined the Social Democratic Federation, headed by Engels, in the company of such committed socialists as Eleanor Marx and Edward Aveling. Two years later he left the Federation and founded the Socialist League, shifting virtually all of his energies from design to politics. At frequent intervals, until his death in 1896, he wrote and published essays on the related themes of socialism, culture and society, beginning with his Fourierist essay of 1885 entitled *How We Live and How We Might Live*, and culminating in his famous utopian romance, *News from Nowhere*, of 1891.

To the coming generations, to Morris's associate Walter Crane, to Ruskin's protégé Mackmurdo and to the principal pupils of

storey office building Sullivan created a decorative structure in which, in his own words, 'The ornament is applied in the sense of being cut in or cut on . . . yet it should appear when completed, as though by the outworking of some beneficient agency, it had come forth from the very substance of the material.' Ornamental terracotta envelops the exterior in an opaque filigree, whose motifs penetrate even into the ornate metalwork of the lobby. Only the ground-floor plate-glass windows and marble walls were exempt from this intense, not to say delirious treatment.

Sullivan, like his pupil Frank Lloyd Wright, saw himself as the lone creator of the culture of the New World. Nurtured on Whitman, Darwin and Spencer and inspired by Nietzsche, he regarded his buildings as emanations of some eternal life force. For Sullivan nature manifested herself in art through structure and ornamentation. His famous slogan, 'form follows function', found its ultimate expression in the concave cornice of the Guaranty Building, where the ornamental 'life force' on the surface of the mullions expands in swirls around the circular attic windows, metaphorically reflecting the mechanical system of the building which, to quote Sullivan, 'completes itself and makes its grand turn, ascending and descending.' This organic metaphor was established in a more fundamental form in the significance which Sullivan attached to the winged seed of the sycamore, the 'germ' featured on the first page of his discourse on architectural ornament, *A System of Architectural Ornament According with a Philosophy of Man's Powers*, published in 1924, the year of his death. Under this image Sullivan placed a Nietzschean caption: 'The Germ is the real thing; the seat of identity. Within its delicate mechanism lies the will to power, the function of which is to seek and eventually to find its full expression in form.'

For Sullivan, as for Wright, this form could only evolve in a millennialistic, democratic America, where it would emerge as 'an art that will live because it will be of the people, for the people, and by the people'. As a self-appointed cultural prophet of democracy Sullivan was largely ignored. His over-idealized egalitarian culture was rejected by the people themselves. His morbid insistence on the creation of a new civilization comparable to that of the Assyrians, particularly as expressed in the coexistent delirium and restraint of his Orientalized architecture, left them both confused and alienated. Uprooted in their very essence and living through an economic depression on the edge of a frontier, they preferred the gratifying distractions of an imported Baroque, the 'White-City', East Coast emblems of imperialistic fulfilment that were so seductively presented to them in Daniel Burnham's Columbian Exhibition of 1893. This rejection destroyed Sullivan's morale, and despite a residual brilliance his powers began to decline. Separated from his urbane partner, Adler, he lost control over his professional destiny so that after the turn of the century he received few commissions. Among these must be acknowledged his inventive, eccentric and highly ornate Midwestern bank buildings of the period 1907–19, and last but not least the proportional magnificence and ornamental vitality of his prophetic Schlesinger and Mayer department store (now Carson, Pirie, Scott), built in Chicago between 1899 and 1904.

Chapter 3

Frank Lloyd Wright and the myth of the Prairie 1890–1916

When in early years I looked south from the massive stone tower of the Auditorium Building, a pencil in the hand of a master, the red glare of the Bessemer steel converters to the south of Chicago would thrill me as pages of the Arabian Nights used to with a sense of terror and romance.

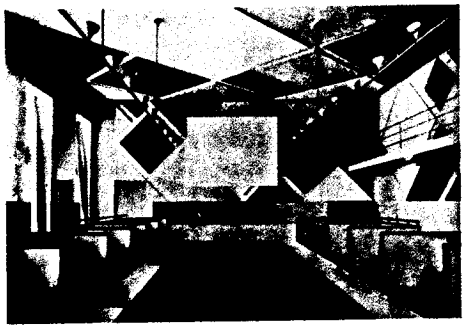
Frank Lloyd Wright
'The Nature of Materials',
Architectural Record, Oct. 1928

These words written by Wright of the formative period that he spent with Adler and Sullivan in the early 1890s hint at the exotic vision that inspired his early career: the transformation of industrial technique through art. Yet what form this transformation should take was for Wright, at the turn of the century, far from clear. Like his masters, Sullivan and Richardson, he oscillated between the authority of Classical order and the vitality of asymmetrical form. Richardson, after the manorial and urban manner of Norman Shaw, had adopted an asymmetrical style for domestic settings while reserving the symmetrical mode for most of his public institutions. Yet Richardson's houses always display a unifying density, and wherever possible he tried to adapt the Romanesque gravity of Vaudremer's Second Empire manner and turn it into an appropriate style for the New World. Even in his early timber houses a certain feeling of weight pervades the shingled façades, while in his later domestic work, such as the Glessner House in Chicago of 1885, where shingle gave way to stone, the asymmetrical composition was imbued with an irrefutable monumentality.

This issue of monumentality seems to have been equally problematic for both Sullivan and Wright. Sullivan had already used monumental forms in his Getty and Wainwright tombs of the 1890s, but were they equally suitable to house the living? The initial solution seems to have turned on the doubly articulated formula of Classical and stone if urban, and Gothic and shingle if rural. Wright, who was virtually in charge of Sullivan's domestic work after 1890, demonstrated this dual principle first in his own house, erected in 1889 in what was still the prairie of American mythology – the nascent Chicago suburb of Oak Park – and then in the Orientalizing, Italianate Charnley House that he designed with Sullivan for downtown Chicago in 1892. Wright's own house was derived in both profile and plan, as Vincent Scully has shown, from the cruciform and T-plan Richardsonian pyramid-shaped houses that Bruce Price was then building in Tuxedo Park, New York.

For Sullivan and Wright, the young, egalitarian culture of the New World could not be based on something so ponderous and conventionally Catholic as Richardson's Romanesque. In consequence they turned to the work of a fellow Celt, Owen Jones, whose *Grammar of Ornament* had first been published in 1856. Over sixty per cent of Jones's ornamental examples were exotic, that is of Indian, Chinese, Egyptian, Assyrian or Celtic origin, and it was to such sources, all removed from the West, that Sullivan and Wright resorted in their search for an appropriate style in which to embody the New World. This not only accounts for the Islamic motifs to be found in Sullivan's work but also for the 'science-fiction' semicircular décor over the playroom in Wright's Oak Park studio of 1895, a mural featuring a recumbent Arab, transfixed before the celestial muse of an emergent civilization.

In Wright's Winslow House, built at River Forest, Illinois, in 1893, the problem of evolving



131 Van Doesburg, Café L'Aubette, Strasbourg, 1928–29.

reworking of his 1923 project for a university hall, in which a diagonal Elementarist composition had been deliberately imposed on all the surfaces of a partially orthogonal space. Van Doesburg's interior in L'Aubette was similarly dominated and distorted by the lines of a huge diagonal relief or counter-composition, passing obliquely over all the internal surfaces. This fragmentation through relief – an extension of Lissitzky's Proun room approach of 1923 – was complemented by the fact that the furnishing was free of any Elementarist pieces. In their place Van Doesburg designed 'standard' bentwood chairs and elsewhere employed extremely objective detailing. The tubular railing throughout was simply welded, while the main lighting consisted of bare light bulbs bracketed off two metal tubes suspended from the ceiling. Of this design he wrote:

The track of man in space (from left to right, from front to back, from above to below) has become of fundamental importance for painting in architecture. . . . In this painting the idea is not to lead man along a painted surface of a wall, in order to let him observe the pictorial development of the space from one wall to the other; the problem is to evoke the simultaneous effect of painting and architecture.

L'Aubette, finished in 1929, is the last Neo-Plastic architectural work of any significance. Thereafter those artists who were still affiliated with De Stijl, including Van Doesburg and Rietveld, came increasingly under the influence of the Neue Sachlichkeit and thereby subject to the cultural values of international socialism. Van Doesburg's own house, built in Meudon around 1929, barely fulfils any of the sixteen points of his 1924 manifesto. It is simply a utilitarian studio, of rendered reinforced-concrete frame and block construction, superficially resembling the type of artisan dwelling that had already been projected by Le Corbusier in the early 1920s. For fenestration Van Doesburg chose to use the standard French industrial sash, and for furniture he designed his own version of a *sachlich* chair in tubular steel. By 1930 the Neo-Plastic ideal of uniting the arts and transcending the division of art and life had been relinquished and returned to its origins in abstract painting, to the *art concert* of Van Doesburg's counter-compositions hung on the walls of his studio in Meudon. Yet Van Doesburg's conscious concern for a universal order remained alive, for in his last polemic, *Manifeste sur l'art concret* (1930), he wrote: 'If the means of expression are liberated from all particularity, they are in harmony with the ultimate end of art, which is to realize a universal language.' How these means were to become liberated in the case of applied art, such as furniture and equipment, was not made clear. A year later, at the age of forty-eight, Van Doesburg died in a sanatorium in Davos, Switzerland, and with him died the moving force of Neo-Plasticism. Of the original De Stijl artists only Mondrian seems to have remained committed to the strict principles of the movement, to the orthogonal and the primary colours which were the constituent elements of his mature work. With these he continued to represent the harmony of an unrealizable utopia. As he wrote in his *Plastic and Pure Plastic Art* (1937): 'Art is only a substitute while the beauty of life is still deficient. It will disappear in proportion, as life gains in equilibrium.'

Chapter 17

Le Corbusier and the Esprit Nouveau 1907–31

You employ stone, wood and concrete, and with these materials you build houses and palaces; that is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good, I am happy and I say: 'This is beautiful.' That is Architecture. Art enters in. My house is practical. I thank you, as I might thank railway engineers or the telephone service. You have not touched my heart. But suppose that walls rise towards heaven in such a way that I am moved. I perceive your intentions. Your mood has been gentle, brutal, charming or noble. The stones you have erected tell me so. You fix me to the place and my eyes regard it. They behold something which expresses a thought. A thought which reveals itself without word or sound, but solely by means of shapes which stand in a certain relationship to one another. These shapes are such that they are clearly revealed in light. The relationships between them have not necessarily any reference to what is practical or descriptive. They are a mathematical creation of your mind. They are the language of Architecture. By the use of inert materials and starting from conditions more or less utilitarian, you have established certain relationships which have aroused my emotions. This is Architecture.

Le Corbusier
Vers une architecture, 1923

The absolutely central and seminal role played by Le Corbusier in the development of 20th-century architecture is sufficient cause for us to examine his early development in detail; and the fundamental significance of his achievement only becomes apparent when it is seen against the extremely varied and intense influences to which he was subject in the decade between his first house, built in La Chaux-de-Fonds in 1905, when he was eighteen, and his last works realized there in 1916, one year before moving to Paris. Above all it seems necessary to remark on the distant Albigensian background of his otherwise Calvinist family, on that half forgotten but latent Manichean view of the world which may well have been the origin of his 'dialectical' habit of mind. I am referring to that ever-present play with opposites – with the contrast between solid and void, between light and dark, between Apollo and Medusa – that permeates his architecture and is evident as a habit of mind in most of his theoretical texts.

Le Corbusier was born in 1887 in the Swiss watch-making town of La Chaux-de-Fonds, which is situated in the Jura, close to the French frontier. One of the prime images of his adolescence must have been this highly rational gridded industrial town that had been rebuilt after its destruction by fire some twenty years before his birth. During his training as a designer-engraver at the local school of arts and crafts, Charles Edouard Jeanneret (as he then was) became involved in his late teens in the last phases of the Arts and Crafts movement. The Jugendstil manner of his first house, the Villa Fallet of 1905, was a crystallization of all that he had been taught by his master, Charles L'Eplattenier, director of the *cours supérieur* at the applied art school in La Chaux-de-Fonds. L'Eplattenier's own point of departure had been Owen Jones, whose book *The Grammar of Ornament* (1856) was a definitive compendium of decorative art. L'Eplattenier aimed to create a native school of applied art and building for the Jura region and, after Jones, he taught his

students to derive all ornament from their immediate natural environment. The vernacular type and décor of the Villa Fallet were exemplary in this respect: its overall form was essentially a variation on the wood and stone farmhouses of the Jura, while its decorative elements were derived from the flora and fauna of the region.

Despite his admiration for Owen Jones, for the Budapest-trained L'Eplattenier the cultural centre of Europe remained Vienna, and his one ambition was that his prime pupil should be apprenticed there to Josef Hoffmann. Accordingly, in the autumn of 1907 Le Corbusier was dispatched to Vienna. He was cordially received, but he seems to have rejected Hoffmann's offer of work and with it the sophistries of the now classicized Jugendstil. Certainly the designs that he made in Vienna for further houses, to be completed in La Chaux-de-Fonds in 1909, show little trace of Hoffmann's influence. This apparent disaffection with the Jugendstil in its decline was encouraged by a meeting with Tony Garnier in Lyons, in the winter of 1907, just as Garnier was beginning to amplify his 1904 project for a Cité Industrielle. Le Corbusier's utopian socialist sympathies and his susceptibility to a typological – not to say Classical – approach to architecture certainly date from this meeting, about which he wrote: 'This man knew that the imminent birth of a new architecture depended on social phenomena. His plans displayed a great facility. They were the consequence of one hundred years of architectural evolution in France.'

The year 1907 may be regarded as the turning point of Le Corbusier's life, for in that year he not only met Garnier, but he also made a crucial visit to the Charterhouse of Ema, in Tuscany. There he experienced for the first time the living 'commune' which was to become the socio-physical model for his own reinterpretation of the utopian socialist ideas that he had inherited in part from L'Eplattenier and in part from Garnier. Later he was to describe the Charterhouse as an institution in which 'an authentic human aspiration was fulfilled: silence, solitude, but also daily contact with men.'

In 1908, Le Corbusier obtained part-time employment with Auguste Perret in Paris, whose reputation had already been made through his 'domestication' of the reinforced-concrete frame in his apartment block built in the Rue Franklin in 1904. The fourteen months that Le Corbusier spent in Paris afforded him a totally new outlook on both life and work. Aside from receiving a basic training in reinforced-concrete technique the capital gave him the chance to broaden his knowledge of French Classical culture, by visiting the museums, libraries and lecture halls of the city. At the same time, much to the disapproval of L'Eplattenier, he became convinced through his contact with Perret, that *béton armé* was the material of the future. Aside from its malleable monolithic nature, its durability and inherent economy, Perret valued the concrete frame as an agent for resolving the age-old conflict between the structural authenticity of the Gothic and the Humanist values of Classical form.

The impact of all these diverse experiences may be gauged from the project that he made for his alma mater, on his return to La Chaux-de-Fonds in 1909. This building, evidently conceived in reinforced concrete, consisted of three stepped tiers of artists' studios, each with its own enclosed garden, arranged around a central communal space covered by a pyramidal glass roof. This free adaptation of the Carthusian cell form, with its connotations of communality, was the first instance on which Le Corbusier reinterpreted a received type in order to accommodate the programme of an entirely new type. Such typological transformations, with their spatial and ideological references, were to become an intrinsic part of his working method. Since this synthetic procedure was impure by definition, it was inevitable that his works should become charged with references to a number of different antecedents at once. For all that this process may at times have been partly unconscious, the art school must be seen as being as much an heir to Godin's Familistère of 1856 as it was a reinterpretation of Ema. Nevertheless Ema was to remain embedded in Le Corbusier's imagination as an image of harmony to be reinterpreted innumerable times, first on a large scale in his 'Immeuble-Villa' project of 1922 and then, less directly, in the residential block types that he

designed, throughout the next decade, for his hypothetical city plans.

Le Corbusier went to Germany in 1910 ostensibly to further his knowledge of reinforced-concrete technique, but while he was there he was commissioned by the art school of La Chaux-de-Fonds to study the state of decorative art. This undertaking, which resulted in a book, brought him into contact with all the major figures of the Deutsche Werkbund, above all with Peter Behrens and Heinrich Tessenow, the two artists who were to exercise a strong influence on two of his later works in La Chaux-de-Fonds – the Villa Jeanneret Père of 1912 and the Scala Cinema of 1916. Aside from this, the Werkbund contact made him conscious of the achievements of modern production engineering, the ships, automobiles and aircraft that were to form the substance of his polemical essay 'Des Yeux qui ne voient pas.' At the end of the year, after five months in the office of Behrens, where he would certainly have met Mies van der Rohe, he left Germany to take up a teaching post at La Chaux-de-Fonds, offered him by L'Eplattenier. Before returning to Switzerland, however, he made an extensive tour of the Balkans and Asia Minor, and henceforth Ottoman architecture was to be a muted but decided influence on his work. This much is evident from his lyrical record of the trip, his *Voyage d'Orient* of 1913.

The five years prior to 1916 shaped the orientation of his future career in Paris. His final break with L'Eplattenier and his simultaneous rejection of Frank Lloyd Wright, whose work he would have known from the Wasmuth volumes of 1910-11, enabled him to remain open to the possibilities for rationalized production in reinforced concrete. In 1913 he established his own office in La Chaux-de-Fonds, ostensibly to specialize in *béton armé*.

In 1915, in conjunction with his boyhood friend, the Swiss engineer Max du Bois, he evolved two ideas that were to inform his development throughout the 1920s – his reinterpretation of the Hennebique frame as the Maison Dom-Ino, which was to be the structural basis of most of his houses up to 1935, and the 'Villes Pilotis', a city projected as being built on piles; the concept of the elevated street evidently deriving from Eugène Hénard's 'Rue Future' of 1910.

The year 1916 saw the culmination of his early career in La Chaux-de-Fonds with the building of the Villa Schwob, which was an extraordinary synthesis of all that he had experienced so far. It was, above all else, an elaborate assimilation of the spatial potential of the Hennebique system, permitting its author to impose on a skeleton structure stylistic elements drawn from Hoffmann, Perret and Tessenow. There was even an erotic evocation of a seraglio, from which the building took its nickname of 'Villa Turque'. At the same time, it was the first occasion on which Le Corbusier conceived a house in honorific terms, that is, as a palace. The alternately wide and narrow bay system and the symmetrical organization of the plan bestowed on the Villa Schwob a structure that was undeniably Palladian. Similar Classical connotations were indicated in the text that accompanied its publication in *L'Esprit Nouveau* in 1921, wherein Julien Caron wrote:

> Le Corbusier had to resolve a delicate problem which was contingent upon making a pure work of architecture, as postulated by a design in which the masses were of a primary geometry, the square and the circle. Such speculation in building a house has rarely been attempted except during the Renaissance.
>
> For the first time Le Corbusier employed 'regulating lines', that Classical device used to maintain proportional control over the façade, manifest for instance in the disposition of the fenestration in accordance with the golden section. In the years that followed, this 'house-palace' theme saw its fulfilment in Le Corbusier's work on two different scales, with related but separate socio-cultural connotations. The first was the free-standing individual bourgeois villa of Palladian precedent, as exemplified in the masterly houses of the late 1920s; the second was the collective dwelling, conceived as a Baroque palace that could evoke through its 'set-back' plan the ideological connotations of a phalanstery.

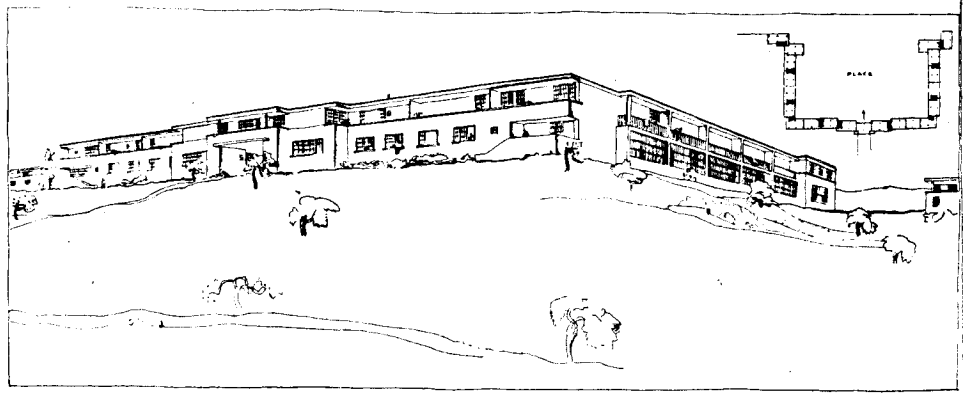
Soon after he moved to Paris in October 1916 to establish a practice, Le Corbusier had the good fortune to be introduced by Auguste Perret to the painter Amédée Ozenfant, with whom he was to evolve the all-embracing machine asthetic of Purism. Grounded in Neo-Platonic philosophy, Purism extended its discourse to cover all forms of plastic expression from salon painting to product design and architecture. It was nothing less than a comprehensive theory of civilization which strenuously advocated the conscious refinement of all existing types. Hence it was as much against what Le Corbusier and Ozenfant regarded as the unwarranted distortions of Cubism in painting (see their first joint polemic entitled *Après le Cubisme* of 1918) as it was in favour of the 'evolutionary' perfection of, say, Thonet bentwood furniture or standard café tableware. Their first full formulation of this aesthetic came with their essay entitled 'Le Purisme', which appeared in 1920, in the fourth number of the magazine *L'Esprit Nouveau*, a literary and artistic journal which they were to continue to edit with the poet Paul Dermée until 1925. Without doubt the most fertile period of their collaboration came with the gestation of *Vers une architecture* which, prior to its publication as a book in 1923, was published in part in *L'Esprit Nouveau* under the double pseudonym of Le Corbusier-Saugnier.

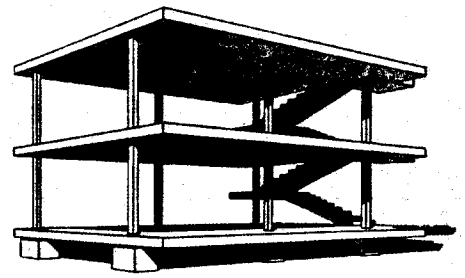
This text – the credit for which in book form was appropriated by Le Corbusier – articulated the conceptual duality around which the rest of his work was to revolve: on the one hand the imperative need to satisfy functional requirements through empirical form, and on the other the impulse to use abstract elements to affect the senses and nourish the intellect. This dialectical view of form, introduced under the heading 'Esthétique et architecture de l'ingenieur', was exemplified by the most advanced engineering structures of the epoch, by Eiffel's Garabit Viaduct of 1884 and by Giacomo Matté Trucco's Fiat Works of 1915 to 1921.

The other aspect of the Engineer's Aesthetic – product design – was represented by the ships, automobiles and aircraft which were featured as separate sub-sections under the general heading 'Des Yeux qui ne voient pas'. The third section returned the reader to the antithesis of Classical architecture, to the lucid poetry of the Athenian Acropolis, which was appraised in the penultimate chapter under the title 'Architecture, pure creation de l'esprit'. Such was Le Corbusier's admiration of engineering exactitude that the profiles of the Parthenon were presented as being analogous to those now wrought by machine tools. He wrote: 'All this plastic machinery is realized in marble with the rigour that we have learnt to apply in the machine. The impression is of naked, polished steel.'

Over the first five years of his intense activity in Paris, during which he painted and wrote in all his spare time, Le Corbusier earned his living during the day as the manager of a brickworks and building materials plant at Alfortville. In 1922 he relinquished this position to enter into practice with his cousin Pierre Jeanneret, a contract which lasted until the outbreak of the Second World War. One of the earliest undertakings of the office was to advance the 'constructional' idea first touched on with du Bois during the early years of the First World War, namely the Maison Dom-Ino and the Villes Pilotis.

The Dom-Ino prototype was evidently open to different levels of interpretation. While on the one hand it was simply a technical device for production, on the other it was a play on the word 'Dom-Ino' as a patent industrial name, denoting a house as standardized as a domino. This play acquired the force of a literal pun where the free-standing columns could be regarded in plan as domino dots and where the zigzag pattern of an aggregation of these houses resembled the formations of dominoes in play. With their symmetrical arrangement, however, such patterns could also acquire specific connotations by either resembling the typical Baroque palace plan of Fourier's phalanstery or alternatively by recalling Eugène Hénard's 'boulevard à redents' of 1903. With his own 'rue à redans' of 1920, Le Corbusier managed to combine the image of the phalanstery with his own 'anti-corridor street' polemic. At the same time he wished to





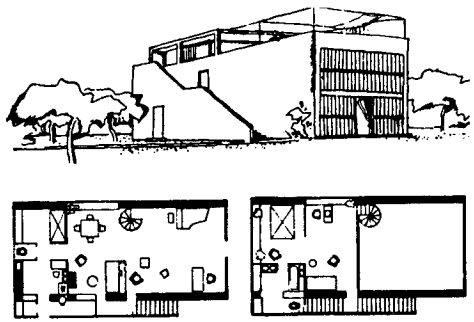
132, 133 Le Corbusier, Maison Dom-Ino, 1915. *Below*, structure of 'Dom-Ino' unit; *above*, perspective and plan showing possible grouping.

see the Dom-Ino as a piece of equipment, analogous in its form and mode of assembly to a typical piece of product design. Such elements were seen by Le Corbusier as *objets-types*, whose forms had already become refined in response to typical needs. In *Vers une architecture* he wrote:

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

The post-war attempt by the Voisin aeroplane company to break into the French housing market with an assembly-line production of timber houses was enthusiastically acclaimed by Le Corbusier in the second issue of *L'Esprit Nouveau*. Yet at the same time he realized that such production could only be obtained through the exercise of high-grade skills under factory conditions, a combination of circumstances rare in the building industry. He acknowledged these limitations in his Maison Dom-Ino proposal which aside from the formwork and the steel reinforcement was designed to be built by unskilled labour. As early as 1919 he had adopted a comparable 'collagist' approach to construction, when he proposed to use corrugated asbestos sheets as permanent shuttering for the concrete vaulted roof of his Maison Monol.

In 1922 both the Maison Dom-Ino and the Villes Pilotis were further developed as the 'Maison Citrohan' and the 'Ville Contemporaine', both projects being exhibited in the Salon d'Automne of that year. Where the latter was directly evolved, at least in section, out of Hénard's Rue Future of 1910, the former utilized the Hennebique frame to project a long rectilinear volume, open at one end, which approximated to the traditional megaron form of the Mediterranean. Within this basic type – designed in two successive versions – Le Corbusier projected for the first time his characteristic double-height living space, complete with a sleeping mezzanine and children's bedrooms on the roof. Aside from its roots in the Greek vernacular, this type, which he first produced in 1920, seems to have been derived from a workers' café in Paris, in the Rue de



134 Le Corbusier, Maison Citrohan, 1920. Perspective, ground and floor plans.

135 Le Corbusier, Pessac housing estate, near Bordeaux, 1926, on opening day.

136 Gropius (left), Frau Gropius and Le Corbusier in a Paris café.

Babylone where he lunched each day with his cousin. From this small restaurant they took the section and the basic arrangement of the Maison Citrohan: 'Simplification of the light source; one single bay at each end; two lateral bearing walls; a flat roof over; a veritable box which could be used as a house.'

While the Maison Citrohan, elevated on *pilotis*, came close to anticipating *Les 5 Points d'une architecture nouvelle*, which Le Corbusier finally formulated in 1926, it was hardly applicable to anything other than 'suburban' development. He was soon to use a version of it to this end in the garden city estates he built at Liège and Pessac in 1926. Among the 130 reinforced-concrete frame houses built at Pessac for the industrialist Henri Frugès, there was one prevalent type known as the 'skyscraper' unit which was in effect a combination of the Maison Citrohan and the back-to-back units that he had designed for the 'city' of Audincourt in the same year. A true version of the Citrohan type was not realized, however, until his work at the Stuttgart Weissenhofsiedlung of 1927. Pessac, as its mixture of unit types would indicate, was a culmination of his incessant attempts in the early 1920s to put his various designs for the standardized dwelling into production. The name 'Citrohan' was a play on the patent name of the famous automobile company, indicating that a house should be as standardized as a car. Pessac showed the first conscious integration of Purist colour displacements into architecture. The architect observed at the time:

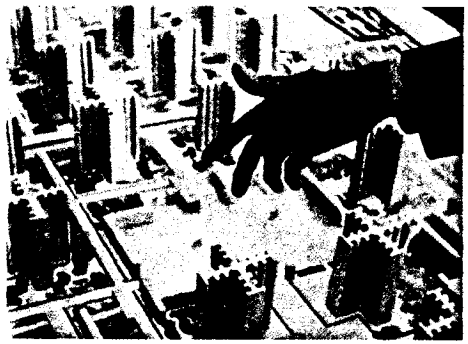
The site at Pessac is very dry. The grey concrete houses produce an insupportable compressed mass, lacking in air. Colour is able to bring us space. Here's how we have established certain invariable points. Some façades are painted in burnt sienna. We have made the lines of other houses recede, through clear ultramarine blue. Again we have confused certain sections with the foliage of gardens and trees, through pale green façades.

Unlike his European contemporaries, Gropius and Mies van der Rohe, Le Corbusier was anxious to develop the urban connotations of his architecture. The Ville Contemporaine for three million was the ultimate demonstration of this aspect in his work up to 1922. Influenced equally by the gridded skyscraper cities of the United States and the image of the 'city-crown' as put forward by Bruno Taut in his book *Die Stadtkrone* (1919), Le Corbusier projected the Ville Contemporaine as an élite capitalist city of administration and control, with garden cities for the workers being sited, along with industry, beyond the security zone' of the green belt encompassing the city.

The city itself, textured like an oriental carpet and some four times the surface area of Manhattan, consisted of residential blocks some ten to twelve storeys in height plus twenty-four 60-storey office towers in the centre, the whole surrounded by a Picturesque park which, like the traditional *glacis*, maintained the class separation of the urban élite from the suburban proletariat. The cruciform office towers themselves – the so-called Cartesian skyscrapers – were reminiscent in their serrated plan profile of stepped Khmer or Indian temple forms and as such they were evidently intended to replace as secular centres of power the religious structures of the traditional city. That such an authority was attributed to these forms is suggested by their proportional relation to the grid of the city, where they take up a golden section of the surface area in plan, within the double square occupied by the city as a whole.

None of this was lost on the Communist newspaper *L'Humanité*, which regarded the entire project as reactionary. Their sense of Le Corbusier's commitment to Saint-Simonian methods of management and control was entirely confirmed by the publication of his book *Urbanisme* (*The City of Tomorrow*) in 1925, its last plate depicting Louis XIV supervising the building of the Invalides. Even Le Corbusier was sufficiently embarrassed by this image to place underneath its caption the rider that it was not to be understood as support for the French Fascist party Action Française.

The Ville Contemporaine was no less ideological in the detailed organization of its residential districts, which were made up of two different block prototypes – the perimeter block and

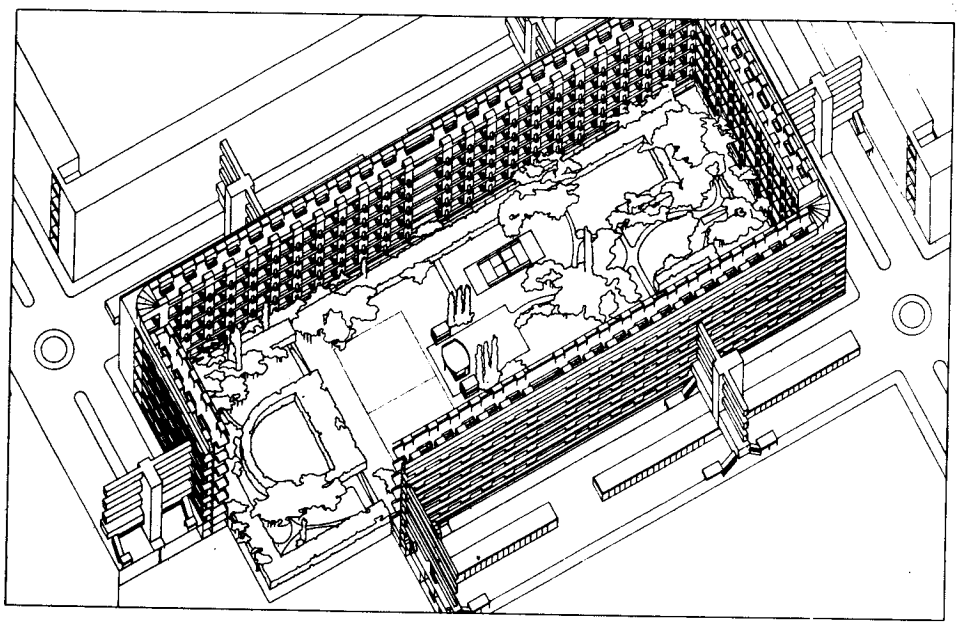


137 Le Corbusier and Jeanneret, Plan Voisin proposal for Paris, 1925. The hand points towards the new business centre of the city.

the 'set-back' or *redent* formation – each postulating a different conception of the city. The former was still committed to the idea of a 'walled' city made up of streets, while the latter presupposed a wall-less 'open city', that vision finally to be achieved in the Ville Radieuse, of a dense city elevated above the surface of a continuous park. The implicity anti-street polemic of this vision was finally made explicit in an essay on the street that Le Corbusier wrote in 1929 for the Syndicalist newspaper *L'Intransigeant*.

Apart from providing the 'essential joys' of sunlight and green, the open city was supposed to facilitate locomotion, in accordance with Le Corbusier's entrepreneurial aphorism that 'A city made for speed is a city made for success.' This was part of the rhetoric that accompanied his 'Plan Voisin' proposal for Paris of 1925 – the paradoxical notion that the automobile having effectively destroyed the great city could now be exploited as an instrument for its salvation. Notwithstanding their financial support, the car/aircraft cartel, Voisin was no doubt only too aware of the economic and political impossibility of raising vast cruciform towers next to the Ile de la Cité.

The most important and enduring contribution of the Ville Contemporaine was its Immeuble-Villa unit, an adaptation of the Maison Citrohan as a general type for high-rise high-density living. These units, stacked up on six double floors, included garden terraces, one for each duplex, an arrangement



138 Le Corbusier and Jeanneret, Ville Contemporaine, 1922. Cellular perimeter block composed of Immeuble-Villa units.

139 Le Corbusier, Pavillon de l'Esprit Nouveau, Exposition des Arts Décoratifs, Paris, 1925, furnished with *objets-types* and Purist canvases by Léger and Le Corbusier.

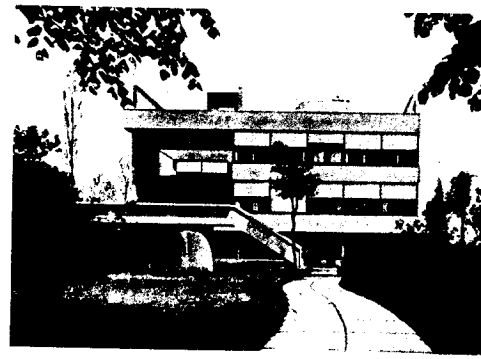
which today seems to be one of the few acceptable solutions for high-rise *family* living. In the so-called 'cellular' perimeter blocks of the Ville Contemporaine, these terraced duplexes opened at ground level to bounded rectangular green space, equipped with recreational facilities for communal use. The marginal provision of additional communal space within the block and around the periphery of this area and the intended provision of hotel service throughout situates this proposal somewhere between the bourgeois apartment block and the socialist collective dwelling (cf. the phalanstery and Borie's Aérodromes). The Immeuble-Villa living unit was finally worked out in detail and exhibited as a prototype in the form of the Pavillon de L'Esprit Nouveau, built for the Exposition des Arts Décoratifs held in Paris in 1925. Unfortunately, subsequent attempts to market this unit, both as a freehold maisonette in the city and as a free-standing villa in the suburbs, did not meet with success. The Pavillon de L'Esprit Nouveau was a condensation of the Purist sensibility: while machinist in promise and urban by implication, since it was designed ostensibly for mass production and aggregation at high density, it was furnished in accordance with the Purist canon of *objets-types*, that is with English club armchairs, Thonet bentwood furniture and

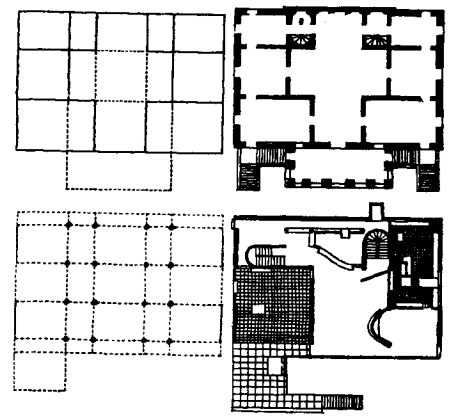
standard Parisian cast-iron park pieces, with *objets-tableaux* of Purist origin, with oriental rugs and South American pottery. This finely balanced assembly of folk, craft and machine-made objects, borrowed in spirit from Adolf Loos, was posited here under the patronage of the Minister for the Arts as a polemical gesture against the Art Deco movement.

In 1925 Le Corbusier also returned to the theme of the bourgeois villa, first in his Maison Cook, completed in the following year as a demonstration of *Les 5 points d'une architecture nouvelle*, which were published in 1926, and then in the project for the Villa Meyer, which anticipated the villa at Garches and the Villa Savoie at Poissy, completed in 1927 and 1929 respectively.

All these houses depended for their expression on the syntax of the 'five points': (1) the *pilotis* elevating the mass off the ground, (2) the free plan, achieved through the separation of the load-bearing columns from the walls subdividing the space, (3) the free façade, the corollary of the free plan in the vertical plane, (4) the long horizontal sliding window or *fenêtre en longueur*, and finally (5) the roof garden, restoring, supposedly, the area of ground covered by the house.

The latent potential of the Hennebique frame in the Maison Dom-Ino and the solid lateral walls of the Maison Citrohan determined to an equal degree the basic *parti* of all these houses, with the liberal use of free-standing columns, strip-windowed façades and cantilevered floor slabs. The structural subdivision of the Maison Dom-Ino (the rhythmic formula AAB comprising two wide bays plus a narrow one containing a stair) links the overt Palladianism of the Villa Schwob to the suppressed Palladianism of the villa at Garches, both houses seemingly organized about the classic Palladian ABABA rhythm remarked on by Colin Rowe. Palladio's Villa Malcontenta of 1560 and Le Corbusier's villa at Garches of some 350 years later are equally predicated in the longitudinal direction on alternating double and single bays producing a rhythm of 2:1:2:1:2. As Rowe has pointed out, a similar syncopation obtains in the other dimension:

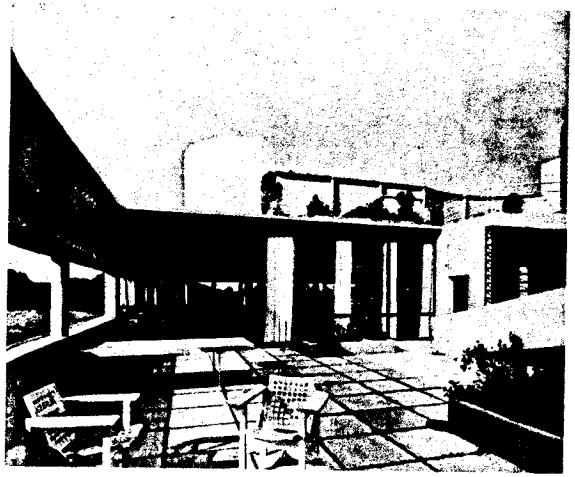




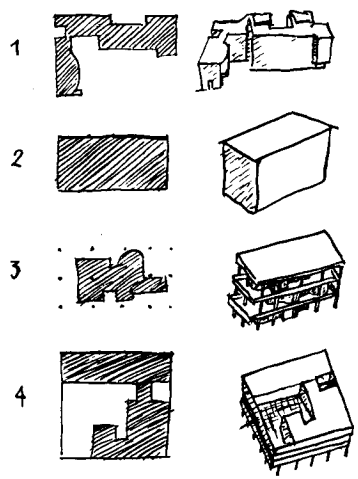
140 Le Corbusier and Jeanneret, Villa de Monzie, Garches, 1927.

141 Palladio's Villa Malcontenta, 1560 (top), and Le Corbusier's Villa de Monzie, Garches, 1927, with analyses of their proportional rhythm.

In both cases, six 'transverse' lines of support, rhythmically alternating single and double bays, are established; but the rhythm of the parallel lines of support, as a result of Le Corbusier's use of the cantilever, differs slightly. At the villa at Garches, it is $\frac{1}{2}$:1$\frac{1}{2}$:1$\frac{1}{2}$:1$\frac{1}{2}$:$\frac{1}{2}$ and at the Malcontenta 1$\frac{1}{2}$:2:2:1$\frac{1}{2}$. In plan, Corbusier thus obtains a sort of compression for his central bay and interest seems transferred to his outer bays, which are augmented by the extra half unit of the cantilever; while Palladio secures a dominance for his central division, and a progression towards his portico, which



142 Le Corbusier and Jeanneret, Villa Savoie, Poissy, 1929–31. The first-floor 'jardin suspendu'.



143 Le Corbusier, the Four Compositions of 1929: (1) Maison La Roche, (2) villa at Garches, (3) Weissenhofsiedlung in Stuttgart, (4) Villa Savoie.

focuses interest there. In both cases the projecting element, terrace or portico, occupies $1\frac{1}{2}$ units in depth.

Rowe goes on to contrast the centralization of the Villa Malcontenta with the centrifugality of the villa at Garches:

At Garches the central focus has been consistently broken up, concentration at one point is disintegrated, and replaced by a peripheral dispersion of incident. The dismembered fragments of the central focus become, in fact, a sort of serial installation of interest round the extremities of the plan.

Aside from its Purist layering of frontalized planes in space and its play with literal and phenomenal transparency, remarked on by Rowe and Robert Slutzky, Garches was significant for its resolution of a problem that had first been posed by Loos: how to combine the comfort and informality of the Arts and Crafts plan with the asperities of geometrical, if not Neo-Classical, form – how to reconcile the private realm of modern convenience with the public façade of architectural order. As Le Corbusier's Four Compositions of 1929 would indicate, Garches was able to achieve this, with an elegance denied to Loos, through the displacements afforded by the invention of the free plan. The disjunction, so to speak, of the complex interior was held away from the public front, by the elision of the free façade.

If Garches is to be associated with the Villa Malcontenta, the Villa Savoie, as Rowe again points out, may be compared to Palladio's Villa Rotonda. The almost square plan of the Villa Savoie, with its elliptical ground floor and centralized ramp, may be read as a complex metaphor for the centralized and biaxial plan of the Rotonda. There, however, all similarity ends, Palladio insisting on centrality and Le Corbusier asserting, within his self-imposed square, the spiralling qualities of asymmetry, rotation and peripheral dispersal. Nevertheless, in his book *Précisions sur un état présent de l'architecture et de l'urbanisme* (1930) Le Corbusier made the imminent Classicism of the Villa Savoie abundantly clear:

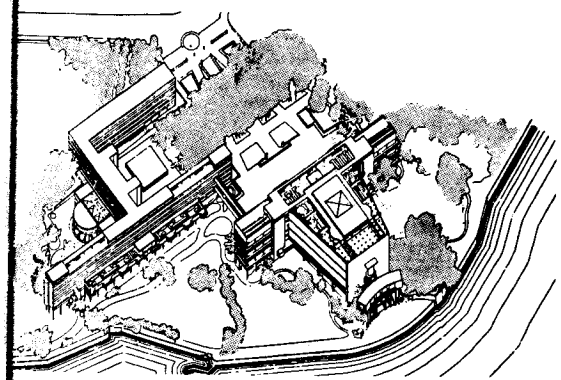
The inhabitants come here because this rustic landscape goes well with country life. They survey their whole domain from the height of their *jardin suspendu* or from the four aspects of their *fenêtres en longueur*. Their domestic life is inserted into a Virgilian dream.

With the Villa Savoie, one arrives at the last of Le Corbusier's Four Compositions of 1929. The first was his Maison La Roche of 1923, which he presented in 1929 as a Purist version of the Gothic Revival L-plan – a 'genre plutôt facile, pittoresque, mouvementé'; the second was shown as an ideal prism, and the third and fourth (the villa at Garches and the Villa Savoie) as alternative strategies for reconciling the first two, the former depending on a subtle integration of the first and second and the latter on the encompassing of the first by a prism.

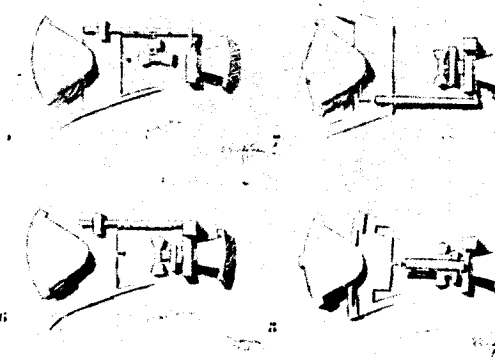
With their 1927 entry to the international competition for the League of Nations (Société des Nations or SdN) headquarters in Geneva, Le Corbusier and Pierre Jeanneret produced their first design for a large public structure. Their attention had hitherto been focused on the house and on the concomitant simplicity of a basic prism. Now they addressed themselves to the necessary complexity of the 'palace' as a type. The competition's conditions stipulated two buildings, one for the secretariat and one for the assembly, and this programmatic duality led the architects to take an Elementarist approach to the design: the constituent 'elements' being first established and then manipulated in order to generate a number of alternative arrangements. This extension of the Elementarism professed at the turn of the century by the Beaux-Arts master Julien Guadet, would have come to Le Corbusier via Guadet's pupils, Garnier and Perret. That he was to adopt this approach generally when dealing with large complexes is shown by his preliminary studies for the Palace of the Soviets project, 1931. There under eight alternative arrangements we read the caption: 'the various stages of the project, wherein one sees the organs, already independently established, the one from the other, take up little by little their reciprocal places to culminate in a synthetic solution.' We find a comparable remark appended to an alternative scheme for the SdN project published in Le Corbusier's *Une Maison, Un Palais* (1928). Under a symmetrical layout (evidently more rational, from an operational point of view), we read: 'alternative proposition employing the same elements of composition'. The asymmetrical organization finally adopted suggests a conflict between the circulatory logic of the symmetrical layout and a Classical preference for an axial approach to the representative façade of the principal building.

The SdN project is both the climax and the crisis point of Le Corbusier's early career: a moment of acclaim, denied (if we are to believe him) by his disqualification on the grounds that he had not submitted his entry in the appropriate graphic medium. It represents the culmination of his Purist period, since it virtually coincides with the introduction into his painting of figurative elements and of what he later called *objets à réaction poétique*, loosely translatable as 'objects evocative of poetic emotion'. From now on, while his painting became organic and figurative, his architecture, at a public level at least, became increasingly symmetrical. In retrospect the League of

144 Le Corbusier and Jeanneret, project for the League of Nations Building, Geneva, 1927. (Compare H. Meyer and Wittwer's entry, ill. 114.)



145 Le Corbusier and Jeanneret, project for the Palace of the Soviets, Moscow, 1931. Four alternative layouts using the same elements.



Nations entry must be considered as a watershed; as a point of division, not only within his own work, but also between himself and his following within the international Modern Movement, particularly where this concerned the support of those whose political convictions lay to the left. In 1927 the Constructivist affinities of the League of Nations entry, its commitment to free-floating asymmetry and technical innovation, its secretariat *à pilotis* (reminiscent, in plan, of Lissitzky's *Wolkenbügel*), its mechanized cleaning system, its air-conditioned assembly hall (acoustically profiled, tuned and flooded with light), could do nothing but command the enthusiastic support of the young, irrespective of their political allegiance. But the undeniable monumentality – expressed in its stone facing and in the hierarchical, seven-door, entry system proposed to conduct the various classes of user to their appointed place within the auditorium – seems to have had the effect of eventually arousing a certain ideological mistrust.

Le Corbusier's drive to resolve the dichotomy between the Engineer's Aesthetic and Architecture, to inform utility with the hierarchy of myth, was bound to bring him into conflict with the functionalist-socialist designers of the late 1920s. His 'Mundaneum' or 'Cité Mondiale', designed in 1929 for Geneva as a centre of world thought, provoked a sharp reaction from his Czech admirer, the left-wing artist and critic Karel Teige. It was not the content but the *form* of the Cité that provoked Teige's objections, particularly the helicoidal ziggurat of the 'Musée Mondial'. In 1927 Teige had publicly supported Le Corbusier in the international dispute over his League of Nations entry and had called on all other Czech artists to do the same. Now, barely two years later, he attacked him with such vehemence that Le Corbusier was prompted to reply, in the essay entitled 'The Defence of Architecture,' written for Telge's journal, *Stavba*. In his attack Teige had quoted from Hannes Meyer's essay of 1928, *Bauen* ('Building').

All things in the world are a product of the formula, function times economics, so none of these things are works of art; all art is composition and hence unsuited to a particular end. All life is function and therefore not artistic, the idea of the composition of a dock is enough to make a cat laugh. But how is a town plan designed or the plan of a dwelling? Competition or Function? Art or Life?

Le Corbusier placed this quotation at the head of his essay, making it clear that his riposte was directed as much to Meyer as to Teige. He then argued:

Today amongst the avant garde of the Neue Sachlichkeit, one has killed two words: *Baukunst* (Architecture) and *Kunst* (Art). One has replaced them by *Bauen* (To Build) and *Leben* (To Live). . . . Today where mechanization brings us a gigantic production, architecture is above all in the battleship, Monsieur Hannes Meyer; as in the conduct of war or in the shape of a pen, or in a telephone. Architecture is a phenomenon of creation, according to an arrangement. Whoever determines the arrangement, determines the composition.

In the same year as the Teige attack he acknowledged in his book *Précisions* that the Mundaneum had been badly received by the German architectural Left, but he saw no reason to modify his ultimate position and hence maintained that

The buildings projected are strictly utilitarian – particularly this helicoidal Musée Mondial so violently incriminated. . . . The plans of the Cité Mondiale bring to buildings which are true machines a certain magnificence wherein some wish to discover at any cost an archaeological inspiration. But from my point of view, this harmonious quality arises from another thing, from a simple response to a problem well stated.

Nonetheless he could not, and indeed did not, deny that the site layout of the Cité Moniale had been determined by a network of *tracés régulateurs*, comparable to those used to control the façade of the villa at Garches – a façade which, however much it subscribed to the canons of the Purist machine aesthetic, remained as Classical in its affinities as the Palladian plan type from which its structure had been derived.

Chapter 18

Mies van der Rohe and the significance of fact 1921–33

It then became clear to me that it was not the task of architecture to invent form. I tried to understand what that task was. I asked Peter Behrens, but he could not give me an answer. He did not ask that question. The others said, 'What we build is architecture', but we weren't satisfied with this answer . . . since we knew that it was a question of truth, we tried to find out what truth really was. We were very delighted to find a definition of truth by St Thomas Aquinas: 'Adequatio intellectus et rei', or as a modern philosopher expresses it in the language of today: 'Truth is the significance of fact'.

Berlage was a man of great seriousness who would not accept anything that was fake and it was he who had said that nothing should be built that is not clearly constructed. And Berlage did exactly that. And he did it to such an extent that his famous building in Amsterdam, The Beurs, has a medieval character without being medieval. He used brick in the way the medieval people did. The idea of a clear construction came to me there, as one of the fundamentals we should accept. We can talk about that easily but to do it is not easy. It is very difficult to stick to this fundamental construction, and then to elevate it to a structure. I must make it clear that in the English language you call everything structure. In Europe we don't. We call a shack a shack and not a structure. By structure we have a philosophical idea. The structure is the whole from top to bottom, to the last detail – with the same ideas. That is what we call structure.

Mies van der Rohe
(quoted by Peter Carter in *Architectural Design*, March 1961)

As the above quotation makes clear, Ludwig Mies – he later added his mother's name, Van der Rohe – was as much inspired by the work of the Dutch architect Berlage as by that Prussian school of Neo-Classicism to which he became the direct heir. Unlike his contemporary, Le Corbusier, he was not educated within the Arts and Crafts ethos of the Jugendstil. At the age of fourteen he entered his father's stone-mason's business and after two years at a trade school and a subsequent period as a stucco designer for a local builder, in 1905 he left his native town of Aachen for Berlin where he worked for a minor architect specializing in timber construction. There followed a further period of apprenticeship with the furniture designer Bruno Paul before he ventured briefly on his own in 1907, to build his first house in a restrained *englische* manner, reminiscent of the work of the Werkbund architect Hermann Muthesius. In the following year he joined Peter Behrens, whose newly established Berlin office was beginning to develop an overall house style for the electrical combine AEG.

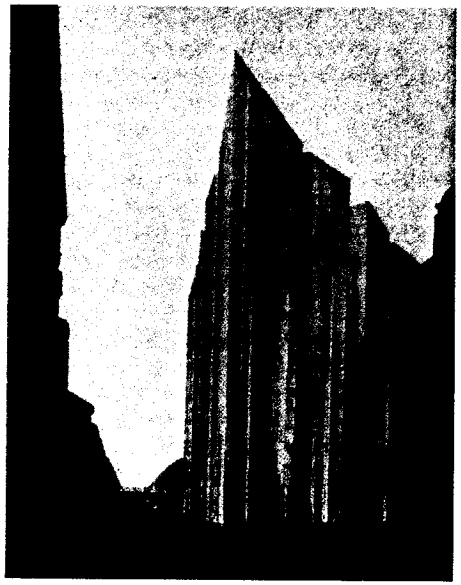
During his three years in Behrens's office, Mies became aware of the *Schinkelschüler* tradition, which, apart from its Neo-Classical affiliation, was committed to the idea of *Baukunst*, not only as an ideal of technical elegance but also as a philosophical concept. Schinkel's brick-faced Bauakademie in Berlin, with its warehouse-like detailing, was later compared by Mies to the articulate construction of Berlage's Amsterdam Beurs or Exchange, which he had first seen when he visited Holland in 1912. On leaving Behrens's employ in 1911, after a brief stint as site architect on Behrens's German Embassy in St Petersburg, Mies opened his own office with the Perls

House, completed in Berlin-Zehlendorf in that year. This was the first of a series of five neo-Schinkelesque houses to be designed by Mies before the outbreak of the First World War. In 1912 he succeeded Behrens as architect to Mrs H.E.L.J. Kröller, who wanted a gallery and residence in The Hague to house the famous Kröller-Müller collection: the project was mocked up in canvas and wood at full size before being inexplicably abandoned. This year also saw his Boullée-like monument to Bismarck, which was to be the last significant project of his pre-war career.

The defeat and collapse of the German military-industrial imperium at the end of the First World War reduced the country to a state of economic and political turmoil and Mies, like every other architect who had fought in the war, sought to create an architecture that was more organic than that permitted by the autocratic canons of the Schinkel tradition. In 1919 he began to direct the architectural section of the radical Novembergruppe, named after the month of the Republican revolution and dedicated to the revitalization of the arts throughout Germany. This association brought him into contact with the Arbeitsrat für Kunst and with the ideas of Taut's Glass Chain (see Chapter 13), and there can be little doubt that his first skyscraper project of 1920 was made in response to Paul Scheerbart's *Glasarchitektur* of 1914. The same faceted, crystal skyscraper theme occurred in his Friedrichstrasse competition entry of 1921, and the publication of both of these projects in the last issue of Taut's magazine *Frühlicht* confirmed his post-war Expressionist affiliation. Mies's intent at this time was to render glass as a complex reflective surface which would be constantly subject to transformation under the impact of light. This much is clear from the description that accompanied the first publication of his Friedrichstrasse proposal:

> In my project for a skyscraper at the Friedrichstrasse Station in Berlin I used a prismatic form which seemed to me to fit best the triangular site of the building. I placed the glass walls at slight angles to each other to avoid the monotony of over-large glass surfaces. I discovered by working with actual glass models that the important thing is the play of reflections and not the effect of light and shadow as in ordinary buildings.
>
> The results of these experiments can be seen in the second scheme published here. At first glance, the curved outline of the plan seems arbitrary. These curves, however, were determined by three factors: sufficient illumination of the interior, the massing of the building from the street, and lastly the play of reflections. I proved in the glass model that calculations of light and shadow do not help in designing an all glass building.

146 Mies van der Rohe, project for an office building in Friedrichstrasse, Berlin, 1921. First scheme.



It is instructive in this context to compare Mies's entry with that of Hugo Häring. Where one is triangular, undulating, and convex, the other is triangular, faceted, and concave. Otherwise the two solutions are similarly expressive, a coincidence that may be partly explained by the fact that Häring shared an atelier with Mies throughout the early 1920s.

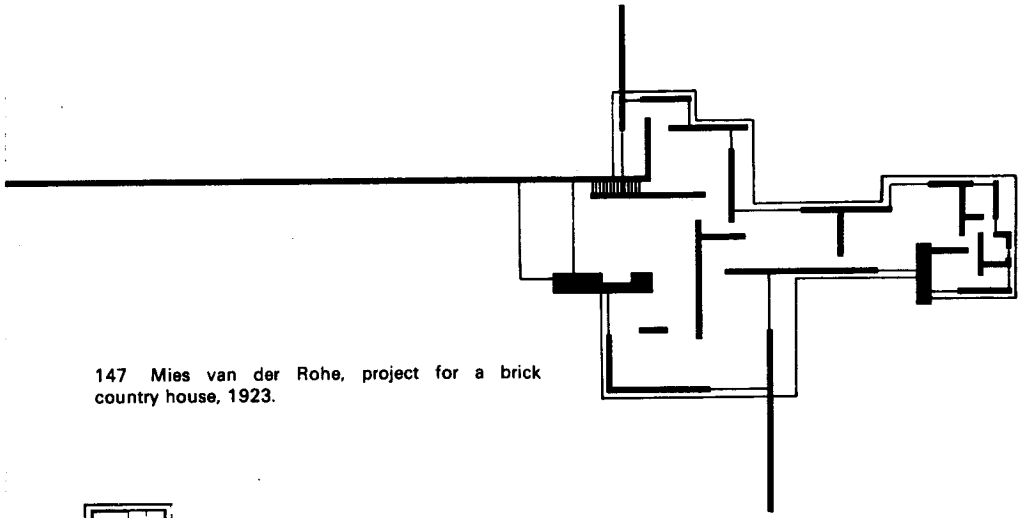
Mies van der Rohe's so-called 'G' period began in 1923 with his participation in the first issue of the magazine *G*, subtitled *Material zur elementaren Gestaltung* and edited by Hans Richter, Werner Gräff and Lissitzky. His glass skyscrapers of the previous year, with their kinetic reflections on the surfaces of translucent forms, had already anticipated something of the peculiar G sensibility which seems to have combined a Constructivist objectivity with a Dadaist feeling for chance. Yet the seven-storey office building that Mies presented in the first issue of *G* broke different ground, for now the primary expressive material was not glass but concrete, projected in the form of concrete 'trays' cantilevered off a reinforced-concrete frame. As in Frank Lloyd Wright's Larkin Building of 1904, the upstands of these 'trays' were high enough to accommodate standard built in filing cabinets, set below a band of recessed clerestory glazing. With this project Mies declared himself against formalism and aesthetic speculation and wrote with decidedly Hegelian overtones that 'Architecture is the will of the age conceived in spatial terms. Living, changing, new.' At the same time he went on to declare: 'The office building is a house of work . . . of organization, of clarity, of economy. Bright, wide, workrooms, easy to oversee, undivided except as the undertaking is divided. The maximum effect with the minimum expenditure of means. The materials are concrete, iron, glass.'

Despite this objective advocacy of a 'skin-and-bones' architecture reminiscent of Le Corbusier's Dom-Ino proposal, a vestige of academic tradition was visible in the project in the widening of the end bays in order to 'strengthen' the corners of the building. This, however, was Mies's last overt reference to the Neo-Classical principles of Schinkel until his first gesture at a 'new monumentality' a decade later, with his Reichsbank project of 1933.

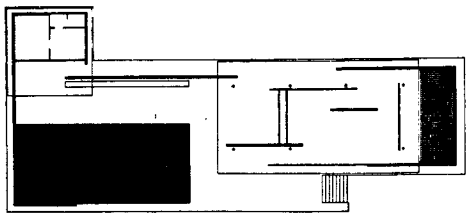
Apart from the ever-present undertones of Neo-Classicism, Mies's work after 1923 displays, to a varying degree, three main influences: (1) the Berlage brick tradition and the dictum that 'nothing should be built that is not clearly constructed'; (2) the pre-1910 work of Frank Lloyd Wright, as filtered through the De Stijl group – an influence acknowledged in the horizontal profiles extending into the landscape of Mies's brick country house of 1923; and (3) Kasimir Malevich's Suprematism, as interpreted through the work of Lissitzky. While the Wrightian aesthetic could be readily absorbed within the *Schinkelschüler* tradition of *Baukunst* – that is according to the highest standards of European masonry practice – Suprematism had the effect of encouraging Mies to develop the free plan. Where Mies's *Baukunst* ideal was fulfilled in the Karl Liebknecht and Rosa Luxemburg Monument and in the Wolf House, both built of brick and completed in 1926, the free plan was to emerge fully armed, so to speak, in the Barcelona Pavilion of 1929.

Despite these diverse and compelling influences, Mies still seems to have experienced difficulty in relinquishing the Expressionist aesthetic of his Novembergruppe period. A comparable sensibility, touched by a somewhat Russian sense of colour, is still evident in the 1927 Berlin Silk Industry Exhibition, designed in collaboration with Lily Reich, who had initially trained as a fashion designer. The black, orange and red velvets and the gold, silver, black and lemon-yellow silks no doubt reflected her taste, as did the acid-green, cowhide upholstery used for the sitting-room furniture of the Tugendhat House. A latent feeling for Expressionism may still be detected, too, in the Deutsche Werkbund Weissenhofsiedlung Exhibition which opened in Stuttgart in the same year. Despite a tendency to regard every commission as a free-standing object, Mies initially planned this exhibition as a continuous urban form, like a medieval town. It even had a vestigial *Stadtkrone*, a pseudo-Tautian gesture towards unity that had to be abandoned. In the final version of the layout Mies divided the site into rectilinear plots, on which free-standing 'display' houses were erected to the designs of various Werkbund architects, among them Walter Gropius and Hans Scharoun. A number of foreign architects also participated, including Le Corbusier, Victor Bourgeois, J.J.P. Oud and Mart Stam.

Initially conceived in the spirit of the original Darmstadt exhibition of 1901, 'Ein Dokument Deutscher Kunst', the Weissenhofsiedlung became the first international manifestation of that white, prismatic, flat-roofed mode of building which was to be identified in 1932 as the International Style. Mies's contribution to both the style and the content of the exhibition



147 Mies van der Rohe, project for a brick country house, 1923.



148 Mies van der Rohe, German Pavilion, World Exhibition, Barcelona, 1929.

was an apartment house that he designed as the central armature of the scheme. This five-storey structure was generally similar to the standard *Zeilenbau* block being developed at the time, but it differed from the typical row-house slab in the ease with which it could be brought to accommodate a variety of different apartment shapes and sizes. Of his solution Mies wrote in 1927:

Today the factor of economy makes rationalization and standardization imperative in rental housing. On the other hand, the increased complexity of our requirements demands flexibility. The future will have to reckon with both. For this purpose skeleton construction is the most suitable system. It makes possible rationalized building methods and allows the interior to be freely divided. If we regard kitchens and bathrooms, because of their plumbing, as a fixed core, then all other space may be partitioned by means of movable walls. This should, I believe, satisfy all normal requirements.

The climax of Mies's early career came with the three masterworks that he designed in sequence after finishing the Weissenhofsiedlung: the German State Pavilion at the Barcelona World Exhibition of 1929, the Tugendhat House at Brno, Czechoslovakia, of 1930, and the model house erected for the Berlin Building Exhibition of 1931. In all these works a horizontal centrifugal spatial arrangement was subdivided and articulated by free-standing planes and columns. While this aesthetic (already anticipated in Mies's country house projects of 1922 and 1923) was basically Wrightian, it was Wright as reinterpreted through the sensibility of the G group and the metaphysical space conceptions of De Stijl. As Alfred Barr observed, the load-bearing walls of Mies's brick country house were disposed in a pinwheel fashion like the clustering elements of Van Doesburg's painting of 1917, *Rhythms of a Russian Dance*.

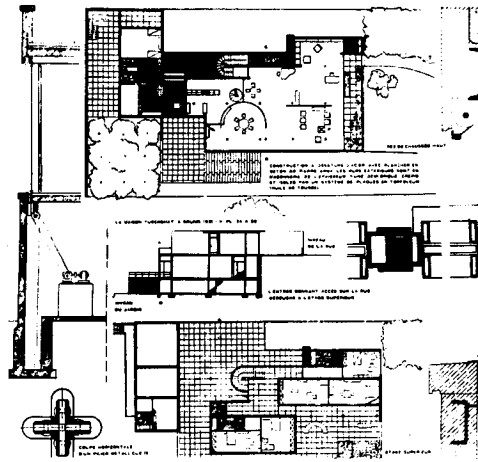
Despite the Classical associations of its regular eight-column grid and its liberal use of traditional materials, the Barcelona Pavilion was undeniably a Suprematist-Elementarist composition (cf. Malevich's *Future Planets for Earth Dwellers* of 1924 and the work of his indirect pupil Ivan Leonidov). Contemporary photographs reveal the ambivalent and ineffable quality of its spatial and material form. From these records we may see that certain displacements in its volume were brought about by illusory surface readings such as that

effected by the use of green tinted glass screens, to emerge as the mirror equivalents of the main bounding planes. These planes, faced in polished green Tinian marble, in their turn reflected the highlights of the chromium vertical glazing bars holding the glass in place. A comparable play in terms of texture and colour was effected by the contrast between the internal core plane of polished onyx (the equivalent of Wright's centrally placed chimney core) and the long travertine wall that flanked the main terrace with its large reflecting pool. Here, bounded by travertine and agitated by the wind, the broken surface of the water distorted the mirror image of the building. In contrast to this, the internal space of the pavilion, modulated by columns and mullions, terminated in an enclosed court, containing a reflecting pool lined with black glass. Above and in this implacable, perfect mirror, there stood the frozen form and image of Georg Kolbe's *Dancer*. Yet despite all these delicate aesthetic contrasts the building was simply structured about eight free-standing crucifrom columns that supported its flat roof. The regularity of the structure and the solidity of its matt travertine base evoked the *Schinkelschüler* tradition to which Mies was to return.

Like the De Stijl room of 1923, the Barcelona Pavilion was the occasion for a classic piece of furniture, namely the Barcelona chair, which was one of five neo-Schinkelesque pieces that the architect designed in the years 1929–30 – the other four being the Barcelona stool and table, the Tugendhat armchair and a buttoned-down leather couch. The Barcelona chair, framed in welded and chromium-plated bar steel and upholstered in buttoned-down calfskin, was as integrated into the design of the pavilion as Rietveld's Red/Blue chair in the room designed for the Berlin Exhibition.

The Tugendhat House, built in 1930 on a steeply sloping site overlooking the city of Brno in Czechoslovakia, adapted the spatial conception of the Barcelona Pavilion to a domestic programme. One may also see it as an attempt to combine the layered, compartmentalized planning of Wright's Robie House – where the service block slides behind the main living volume – with the typical loggia form

149 Mies van der Rohe, German Pavilion, World Exhibition, Barcelona, 1929.



150 Mies van der Rohe, Tugendhat House, Brno, 1930.

of the Schinkel Italianate Villa. In any event, the free plan was reserved here solely for the horizontal living volume, which, modulated once again by chromium cruciform columns, opened on its long side to a panorama of the city and on its short side to a conservatory faced in large sheets of plate glass. While the mechanical lowering of the long glass wall converted the whole of the living area into a belvedere, the conservatory acted as a natural foil in a

151 Mies van der Rohe, Tugendhat House, Brno, 1930. Dining alcove.

symbolic scheme – as a mediation between natural vegetation and the fossilized onyx of the interior. In a comparable manner, the plywood dining alcove, faced in ebony veneer, evoked the sustenance of life to which its space was dedicated. Similarly, the rectilinear onyx plane dividing the living volume of the house signified through its surface the 'worldliness' of the spaces to be found on either side of it – the sitting-room and the study. Such rhetoric obtained only on the lower ground floor, the bedrooms on the entrance level being treated simply as hermetic volumes.

With the Berlin Building Exhibition house of 1931, on the other hand, Mies demonstrated the possibility of extending the free plan to the bedrooms, and for the next four years he elaborated this approach in a series of extremely elegant courtyard-houses that regrettably were never built.

Mies van der Rohe's idealism and his natural affinity for German Romantic-Classicism clearly served to remove him from the mass-production approach of the Neue Sachlichkeit. The sense of objectivity in each case was patently different. As far as the Neue Sachlichkeit was concerned, Mies declared the apolitical, not to say reactionary, nature of his position when, in 1930, he accepted the directorship of the Bauhaus, as Hannes Meyer's successor. In his essay *The New Era*, written on the occasion of his appointment, he attempted to formulate his own somewhat ambivalent position. In response to Hannes Meyer's 'materialist' essay, *Bauen*, he wrote:

The new era is a fact: it exists, irrespective of our 'yes' or 'no'. Yet it is neither better nor worse than any other era. It is pure datum, in itself without value content. Therefore I will not try to define it or clarify its basic structure.

Let us not give undue importance to mechanization and standardization.

Let us accept changed economic and social conditions as a fact.

All these take their blind and fateful course.

One thing will be decisive: the way we assert ourselves in the face of circumstance.

Here the problems of the spirit begin. The important question to ask is not 'what' but 'how'. What goods we produce or what tools we use are not questions of spiritual value.

How the question of skyscrapers versus low buildings is settled, whether we build of glass or steel, are unimportant questions from the point of view of spirit.

Whether we tend to centralization or decentralization in city planning is a practical question, not a question of value.

Yet it is just the question of value that is decisive.

We must set up new values, fix our ultimate goals so that we may establish standards.

For what is right and significant for any era – including the new era – is this: to give the spirit the opportunity for existence.

This Neo-Classical concern for spiritual value seems to have led directly to the idealized monumentality of Mies's Reichsbank proposal of 1933, submitted as a competition entry in the year when the National Socialists came to power. The non-Classical impulse that had sustained him up to this time – the Suprematist-Elementarism that had inspired his version of the free plan – now gave way to an impassive monumentality which, aside from the neutrality of its skin, intended nothing save the idealization of bureaucratic authority. This Suprematist sensibility was to remain suppressed in Mies's work until 1939, when, on his migration to the United States, it momentarily re-emerged in the first sketches for the IIT campus in Chicago.

Chapter 19

The New Collectivity: art and architecture in the Soviet Union 1918–32

The simple, classical concept of internationalism underwent a considerable change towards the end of the 1920s, when hopes of immediate world revolution receded and the more autarchic stage of 'the building of Socialism in one country' was initiated. Simultaneously, the exuberant romantic conception of technique gave way to a sober realization that technique, in Russia, meant a hard uphill struggle to transform a peasant economy into a modern industrial organism, starting with the most primitive means.

Their failure to understand the significance of these changes, and to adjust themselves, led the profession, as happened earlier in the case of the formalists, to the brink of complete impotence.

Disarming itself by rejecting the whole of past architectural tradition, the profession gradually lost all confidence in itself and in its social purpose. Those architects who were most honest with themselves drew their own conclusion from the worship of the engineer and the denial of all architectural tradition, and actually abandoned their profession to become building technicians, administrators and planners.

The disparity between the vision of a supercharged technique and the reality of a primitive and backward building industry, in which, more and more, idealized technology had to give way to ordinary ingenuity on a low level, led others to a hollow and insincere aestheticism, indistinguishable from that of the formalists they had set out to replace, inasmuch as they were forced to reproduce the adulterated forms of an advanced technique in the absence of its real media.

All the aggressive self-assertion with which the Functionalists enunciated their creed could mask neither the barrenness of their doctrine nor the sterility of their practice. The few remaining buildings of the period bear witness to it.

Berthold Lubetkin
'Soviet Architecture: Notes on Development from 1917 to 1932',
AAJ, 1956

The Russian Pan-Slavic cultural movement that came into being after the liberation of the serfs in 1861 manifested itself in a widespread Slavophile arts and crafts revival. This movement first appeared in the early 1870s on the Abramtsevo Estate outside Moscow, where the railway tycoon Savva Mamontov had established a retreat for the Populist or Narodniki painters, who, calling themselves 'The Wanderers', had seceded from the Petersburg Academy in 1863 in order to become itinerant artists carrying their 'art' to the people.

This movement took on a more applied form in the cottage-industry colony founded at Smolensk in 1890 by the Princess Tenisheva, for the purpose of reviving traditional Slavic crafts. Where the achievements of the Mamontov intelligentsia ranged from the medieval revivalism (Old Russian style) exemplified in V.M. Vasnetsov's Abramtsevo Chapel (1882) to Leonid Pasternak's designs for the first production of Rimsky-Korsakov's opera *The Snow Maiden* (1883), the works of the Tenisheva colony were more modest in scale, consisting of simple, light, fretted houses, furniture and domestic utensils which took much of their basic form from traditional timber construction and most of their decorative elements from peasant crafts, such as the traditional woodcut narrative art form known as *lubok*. The Populist-cum-Expressionist paintings of the Abramtsevo

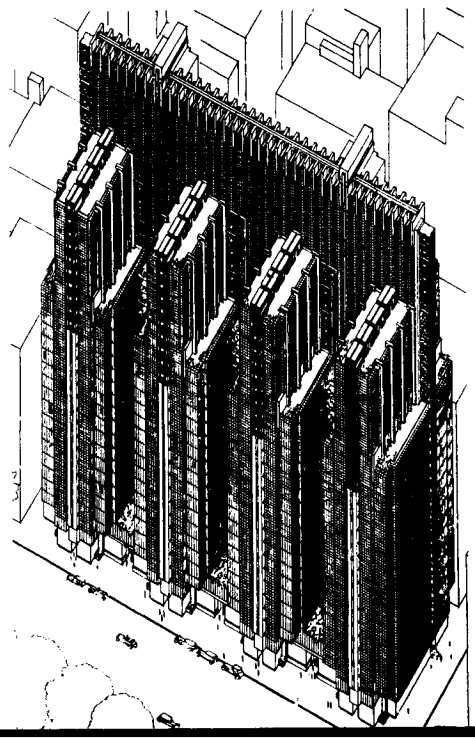
Chapter 21

Frank Lloyd Wright and the Disappearing City 1929–63

According to reports in the press Henry Ford has issued an order whereby all married workers and employees in their spare time are to cultivate vegetables in their own gardens to detailed instructions given by experts employed by him for this purpose, the idea being that by this means they will be able to supply the greater part of their own requirements. The necessary garden land is to be placed at their disposal. Henry Ford has said, 'Self help is the only means of combatting the economic depression. Anyone refusing to cultivate his garden will be dismissed.'

Die Heimstätte, No. 10, 1931

172 Wright, project for the National Life Insurance Building, Chicago, 1924.



The second significant phase of Wright's career was initiated by the completion of the last of his concrete-block houses, in Tulsa, Oklahoma, in 1929, and by the first of his projects to exploit to the limit the cantilevering capacity of reinforced concrete, his Elizabeth Noble Apartments projected for Los Angeles. The crystalline aesthetic of these apartments had already been anticipated in his National Life Insurance Building project for Chicago of 1924, whose scintillating copper and glass façade was a direct translation of his 'textured concrete block' aesthetic into glass.

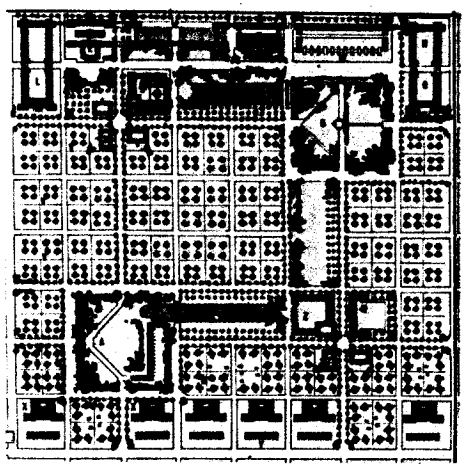
The economic mass production of the automobile by Henry Ford and the impact of the Depression seem to have had the effect of rousing Wright from his Eldorado dreams, from the 'instant' culture of his Mayan houses, built for rich, displaced aesthetes in the lush hills of southern California. Influenced by the role then being played by the Neue Sachlichkeit in Europe, Wright was induced to formulate a new role for architecture in restructuring the social order of the United States.

Ever since his address, 'The Art and Craft of the Machine' (1901), Wright had recognized that it was the destiny of the machine to bring about a profound change in the nature of civilization. His initial reaction, lasting until 1916, had been to adapt the machine to the creation of a high-level craft culture; that is, to apply it to the direct formation of his Prairie Style. Despite the fact that, for Wright, 'machine' expression always seemed to involve a certain rhetorical use of the cantilever (the Robie House of 1909 is a typical example), he still insisted on the ultimate authority of traditional materials and methods. Although anticipated in the Coonley House (1908) and in Midway Gardens (1914) it was the mid-1920s before Wright considered the assembly of entire structures from mass-produced synthetic elements, such as the concrete-block mosaic of his Californian houses or the modular curtain wall system that he devised for the enclosure of monolithic concrete structures.

In being forced by the economy to recognize the limits of traditional materials and construction, Wright was caused to abandon the earthbound syntax of his Prairie Style, and through a singular combination of reinforced concrete and glass he created a prismatic, faceted architecture whose glass exterior, borne on an armature of floating planes, conveyed an illusion of total weightlessness. It was as though, like Scheerbart before him, he had suddenly been possessed by the expressive qualities of glass, whose crystalline translucence could be best complemented by the liberating attributes of the column-free plan. The first occasion on which Wright, the master of masonry, acclaimed glass as the modern material par excellence was in his famous Kahn Lectures, given at Princeton University in 1930. In 'Style in Industry' he stated:

Glass has now a perfect visibility, thin sheets of air crystallized to keep air currents outside or inside. Glass surfaces, too, may be modified to let the vision sweep through to any extent up to perfection. Tradition left no orders concerning this material as a means of perfect visibility; hence the sense of glass as crystal has not, as poetry, entered yet into architecture. All the dignity of colour and material available in any other material may be discounted with permanence. Shadows were the 'brush work' of the ancient Architect. Let the Modern now work with light, light diffused, light reflected – light for its own sake, shadows gratuitous. It is the Machine that makes *modern* these rare new opportunities in Glass.

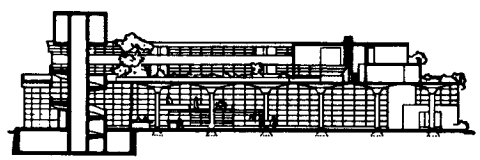
173 Wright, plan for the subdivision of a typical section of land, Chicago, 1913.

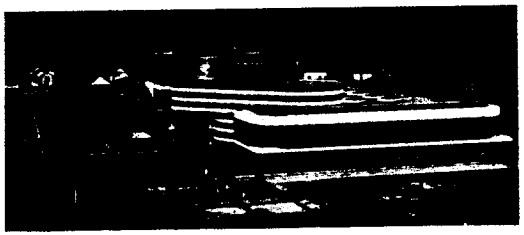


In 1928 Wright coined the term 'Usonia' to denote an egalitarian culture that would spontaneously emerge in the United States. By this he seems to have intended not only a grass-roots individualism but also the realization of a new, dispersed form of civilization such as had recently been made possible by mass ownership of the automobile. The car as *the* 'democratic' mode of locomotion was to be the *deus ex machina* of Wright's anti-urban model, his Broadacre City concept, in which the concentration of the 19th-century city was to be redistributed over the network of a regional agrarian grid (already anticipated in his entry for the City Club, Chicago, competition of 1913 for a subdivision on the outskirts of Chicago). He had first spoken out against the traditional city in the last of his Kahn Lectures, which began: 'Is the city a persistent form of social disease, eventuating in the fate all cities have met?' It is one of the ironies of our century that Broadacre City corresponded more closely than any other form of radical urbanism to the central precepts of the *Communist Manifesto* of 1848, advocating 'the gradual abolition of the distinction between town and country by a more equable distribution of the population over the land.'

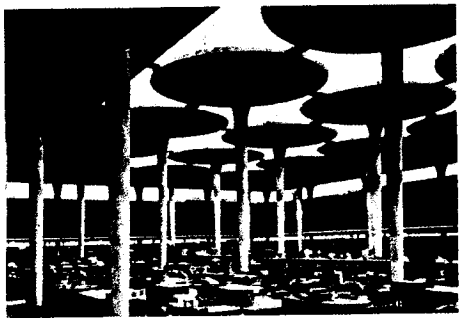
Nevertheless, Wright's first building projects for this new Usonian culture, the St Mark's apartment tower and the *Capital Journal* newspaper building, both of 1931, were urban rather than agrarian in tone. Eventually realized

174 Wright, project for the *Capital Journal* Building, Salem, Oregon, 1931. Section.





175, 176 Wright, S. C. Johnson & Son Administration Building, Racine, Wis., 1936–39. General view by night and interior.



as the Price Tower in Bartlesville, Oklahoma (1952–55), and as the Johnson Wax Administration Building in Racine, Wisconsin (1936–39), both of these projects consisted of reinforced-concrete cantilevered systems covered in a crystalline membrane. At a symbolic level they embodied the essential polarity that had been evident in Wright's work ever since his Martin House and Larkin Building of 1904 – the fundamentalist assimilation of the building of the home to the processes of nature and of the work place to the idea of sacrament. This polarization was to be brilliantly reformulated in Wright's Usonian period in two masterworks of unsurpassed richness and generosity, the Kaufmann weekend house at Bear Run, Pennsylvania, of 1936, better known as Falling Water, and the Johnson Wax Administration Building begun in the same year.

For Wright, the word 'organic' (which he first applied to architecture in 1908) came to mean the use of the concrete cantilever as though it were a natural, tree-like form. He seems to have conceived of such a form as a direct extension of Sullivan's vitalist metaphor of the 'seed germ', extended now to include the whole structure rather than the ornament alone. Just before his death, Wright wrote of the vulva-shaped pool in the foyer of the Guggenheim Museum: 'Typical of the details of this edifice, the symbolic figure is the oval seed pod containing globular units.'

In the Johnson Wax Administration Building this organic metaphor revealed itself in tall, slender mushroom columns tapering towards their bases, which form the prime support within a 9-metre (30-foot) high open-planned air-conditioned office space. These columns resolve themselves at roof level into broad circular lily pads of concrete, between which is 'interwoven' a membrane of pyrex glass tubing. These horizontal roof lights delicately supported by columns, and the columns themselves (whose hollow cores serve as storm water drains and whose hinged bases are pin-jointed into bronze shoes), jointly represent the apotheosis of Wright's technical imagination. This was the expressive destiny of Usonia, a poetry of miraculous technique arising out of a daring inversion of the traditional elements. Thus where one would have expected solid (the roof) one found light; and where one would have expected light (the walls) one found solid. Of this inversion Wright wrote:

> Glass tubing laid up like bricks in a wall composes all the lighting surfaces. Light enters the building where the cornice used to be. In the interior the box-like structure vanishes completely. The walls carrying the glass ribbing are of hard red brick and red Kasota sandstone. The entire fabric is reinforced concrete, cold-drawn mesh being used for the reinforcement.

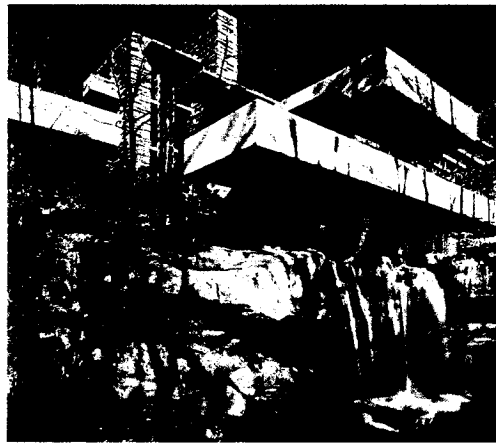
This concrete mushroom construction brought Wright to develop, for the first time, a curved corner profile and a predominantly circular vocabulary, which, executed in hard, precise materials and lit throughout by translucent glass tubing, imparted to the structure a Moderne streamlined aura which time has done little to dispel. At the same time this science-fiction atmosphere rendered the Johnson Wax Building as a self-contained, monastic place of work. As Henry-Russell Hitchcock wrote: 'There is a certain illusion of sky seen from the bottom of an aquarium'. Here again, as in his Larkin Building, Wright had created an hermetic environment whose physical exclusion of the outside world was reinforced by the form and colour of the special office equipment designed for its furnishing.

While Johnson Wax reinterpreted the sacramental place of work, Falling Water embodied Wright's ideal of the place of living fused into nature. Once again, reinforced concrete afforded the point of departure; only this time the cantilevering gesture was extravagant to the point of folly, in contrast to the implacable calm of the mushroom structure of Johnson Wax. Falling Water projected itself out from the natural rock in which it was anchored, as a free floating platform poised over a small waterfall. Designed in a single day, this dramatic structural gesture was Wright's ultimate romantic statement. No longer restricted by the extended earth line of his Prairie Style, the terraces of this house appeared as an agglomeration of planes miraculously suspended in space, poised at varying heights above the trees of a densely wooded valley. Tied back into the escarpment by the reinforced-concrete upstand beams of its terraces, Falling Water defies photographic record. Its fusion with the landscape is total, for, despite the extensive use of horizontal glazing, nature permeates the structure at every turn. Its interior evokes the atmosphere of a furnished cave rather than that of a house in the traditional sense. That the rough stone walls and flagged floors intend some primitive homage to the site is borne out by the living-room stairs which, descending through the floor to the waterfall below, have no function other than to bring man into more intimate communion with the surface of the stream. Wright's perennial ambivalence towards technique was never more singularly expressed than in this house, for although concrete had made the design feasible he still regarded it as an illegitimate material – as a 'conglomera' that had 'little quality in itself'. His initial intent had been to cover the concrete of Falling Water in gold leaf, a kitsch gesture from which he was dissuaded by the discretion of the client. He finally settled for finishing its surface in apricot paint!

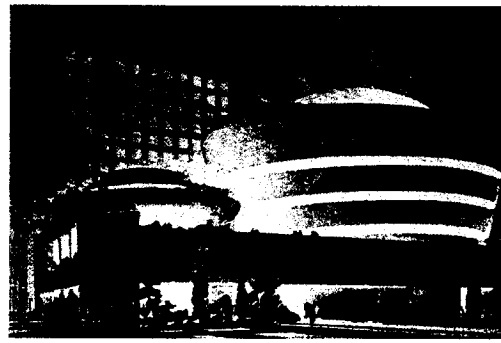
From now on, aside from his remarkably practical Usonian houses, Wright continued to develop a curious kind of science-fiction architecture which, judging from the exotic style of his late renderings, seemed intended for occupation by some extraterrestial species. This selfconscious exoticism fell to the level of ultra-kitsch in his Marin County Courthouse, California, commissioned in 1957 and finished in 1963, four years after his death. Wright had already acknowledged this compulsion towards the fantastic when he wrote in 1928: 'The fact remains Usonia wanted romance and sentiment. The failure to get it is less significant than the fact that it was sought.'

Wright's Usonian vision, first crystallized in his masterworks of the mid-1930s, attained its fulfilment in his Guggenheim Museum, New York, of 1943. The structural idea and *parti* for

177 Wright, Falling Water, Bear Run, Pa., 1936.



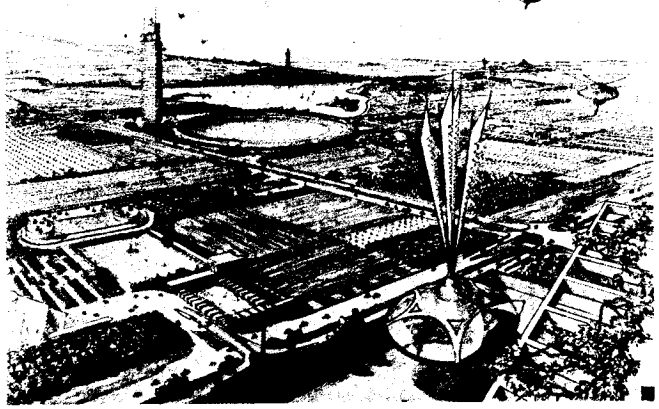
178 Wright, preliminary project for the Solomon R. Guggenheim Museum, New York, 1943.



the museum dates back to his sketch for the Gordon Strong Planetarium of 1925 – a science-fiction proposal par excellence, a 'ziggurat' destined for the semi-religious gratification of 'nature-worshipping' pilgrims. At the Guggenheim, he simply turned the diminishing helix of the planetarium inside out, inverting and thereby converting what had previously been a car ramp into an internal, spiralling gallery, an extended spatial helix which Wright later referred to as an 'unbroken wave'. The Guggenheim Museum must be regarded as the climax of Wright's later career, since it combines the structural and spatial principles of Falling Water with the top-lit containment of Johnson Wax. His declaration that the museum was more like a temple in a park than a mundane business building or residential structure may be seen as an ironic reference to its origin in these projects.

In his first book on city planning, *The Disappearing City* (entitled in the first draft *The Industrial Revolution Runs Away*), published in 1932 on the completion of his Broadacre City study, Wright declared that the future city will be everywhere and nowhere, and that 'it will be a city so greatly different from the ancient city or from any city of today that we will probably fail to recognize its coming as the city at all'. Elsewhere he stated: 'America needs no help to build Broadacre City. It will build itself, haphazard.' Wright neither sought nor found any satisfactory resolution to the inherent contradiction of this polemic. On the one hand, he argued that men should consciously establish a new system of dispersed land settlement, anti-urban by definition; on the other, he stated that there was little need to do so since this would happen spontaneously!

In his historical determinism, Wright looked to the machine as the one agent with which the architect has no choice but to come to terms. But the old dilemma remained: how to do this without being brutalized? For Wright, this was the constant cultural quest of his long career. Thus, in *The Living City* (1958), we find him writing: 'Miracles of technical invention with which our "hit and run" culture has nothing to do are – despite misuse – new forces with which any indigenous culture must reckon.' While he consigned steam power and the railway to instant oblivion, he welcomed (like the Soviet de-urbanists of his day) electricity as a source of silent power and the automobile as the provider of limitless movement. He identified the new forces which would transform the entire basis of Western civilization as follows: (1) Electrification, the communicational annihilation of distance and the constant illumination of human occupation; (2) Mechanical Mobilization, the immeasurable widening of human contact due to the invention of the airplane and the automobile, and finally (3) Organic Architecture which, although it always escaped any precise definition, seems to have eventually meant for Wright the economic creation of built form and space in accordance with the latent principles of nature as these may be revealed through the application of the reinforced-concrete construction. On another occasion, Wright characterized the resources that would implacably shape Broadacre City as the car, the radio, the telephone, the telegraph, and, above all, standardized machine shop production.



179 Wright, Broadacre City project, 1934–58.

For Wright, Usonian culture and Broadacre City were inseparable concepts, the former providing the prime intention behind a whole range of buildings which were the architectural substance of the latter. Falling Water and the Johnson Wax Building would no doubt have found their appointed places in Broadacre City. Yet, by Usonia Wright generally intended something altogether more modest: warm, open-planned, small houses designed for convenience, economy and comfort. The heart of the Usonian house was the 'time-and-motion' kitchen, an alcove work space freely planned off the living volume, which, as Henry-Russell Hitchcock observed, was an important contribution to American domestic planning. Of almost equal import to the modern interior was Wright's introduction at this time of continuous wall-seating to maximize space in small houses. While single-family Usonian homes were projected as the housing stock of Broadacre City, they were also actually realized in the numerous suburban houses that Wright designed and built between 1932 and 1960, including the famous four-family Suntop Homes, arranged in a pinwheel formation, that were erected on the outskirts of Philadelphia in 1939.

By far the most important building type designed for Wright's ideal city was not a house at all but the Walter Davidson Model Farm projected in 1932. This unit, designed to facilitate the economic management of both home and land, was critical to the overall economy of Broadacre City, where every man was to grow his own food on an acre of land which, reserved at his birth, would be placed at his disposal as soon as he was of age.

Apart from a number of contingent social ideas such as the single tax system or social credit – both popular remedial notions in the Depression – Broadacre City was above all an updating of that smallholding cottage-industry economy first advocated by Peter Kropotkin in his *Factories, Fields and Workshops* of 1898. In reviving such a propositon there was at least one awkward contradiction which Wright, like Henry Ford, stubbornly refused to recognize: namely, that an individualistic quasi-agrarian economy would not necessarily be able to guarantee to an industrialized society either its subsistence or the benefits of mass production, since the latter, despite automation, still demanded some concentration in both labour and resources. Even Kropotkin acknowledged the need to concentrate labour and resources for the processes of heavy industry. Wright's vision of a city in which part-time smallholders would drive to work, to rural factories, in secondhand Model T Fords, suggests that a migrant, 'sweat equity' labour force would have been essential for the success of the Broadacre economy.

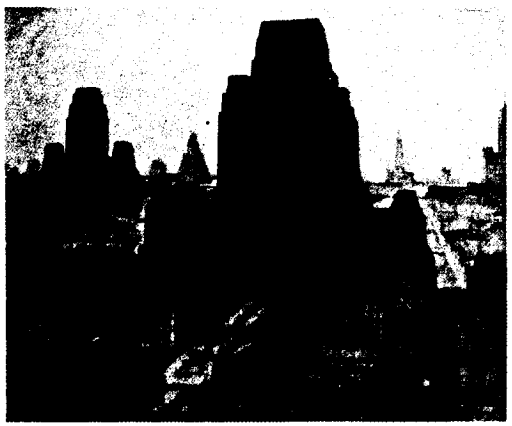
As Meyer Schapiro pointed out at the time, Wright, despite his unremitting attack on rent and profit and his prescience in foreseeing the dissolution of the city, failed to confront the urgent issue of power that was fundamental to the Broadacre concept. Like Buckminster Fuller, who was already active by this date, he could not bring himself to acknowledge that architecture and planning must, of necessity, address themselves to the class struggle. Schapiro summed up Wright's utopianism correctly in 1938, when he wrote:

> The economic conditions that determine freedom and a decent living are largely ignored by Wright. He foresees, in fact, the poverty of these new feudal settlements when he provides that the worker set up his own factory-made house, part by part, according to his means, beginning with a toilet and kitchen, and adding other rooms as he earns the means by his labor in the factory. His indifference to property relations and the state, his admission of private industry and second-hand Fords in this idyllic world of amphibian labor, betray its reactionary character. Already under the dictatorship of Napoleon III, the state farms, partly inspired by the old Utopias, were the official solution of unemployment. The democratic Wright may attack rent and profit interest, but apart from some passing reference to the single tax, he avoids the question of class and power.

RCA slab and plaza and the Radio City Music Hall – all completed in eighteen months, in time for the gala opening at the end of 1932.

Roxy's formula of the Rockettes floor show plus a movie was as extemporary and transitional in its cultural nature as the artistic programme of the entire Center, where one artistic work after another, be it sculpture or mural, took as its subject matter such themes as light, sound, radio, television, aviation and progress in general, culminating in two major set-pieces on the central axis of the entire composition. These were Paul Manship's gilded Prometheus, surrounded by the Zodiac and overlooking the sunken plaza, and Diego Rivera's ill-fated mural to the entrance hall of the RCA Building, *Man at the Crossroads*, which, with its unequivocal revolutionary iconography including even an image of Lenin, had the effect of placing his patrons in an impossible public position, in which politically they had no choice but to insist on its removal. This contradictory New Deal gesture of monopoly capital consciously commissioning an emblematic work from a communist artist seems now, almost half a century later, to be as remote and fictitious as Hugh Ferriss's vision of Manhattan transformed into an endless repetition of skyscraper ziggurats, in his book *The Metropolis of Tomorrow* of 1929. Recording Art Deco skyscrapers that were then either completed or already under way and anticipating the apotheosis of the Rockefeller Center, this was a science-fiction vision of a city of towers as scenographic and theatrical as the style itself – a New Babylon born of euphoria, land values and the set-back profiles imposed by the 1916 New York City zoning code.

213 Ferriss, 'The Business Centre', 1927, from *The Metropolis of Tomorrow*, 1929.



THE NEW MONUMENTALITY 1943

With the exception of the Soviet Union, Roosevelt's New Deal and the Second World War had the effect of bringing the New Tradition to an abrupt end, but not before architects like J.J.P. Oud had been touched by its influence (see for instance his Shell Building, built at The Hague in 1938). After the war the general ideological climate of the West was hostile to any kind of monumentality. The League of Nations had been discredited, the British had granted India her independence and the régimes that had made the New Tradition into an instrument of national policy were regarded as anathema. Moreover, the manipulatory advantages of less permanent but cheaper, more flexible and more penetrating modes of ideological representation were soon seen as far surpassing the effectiveness of architecture. As anticipated by the intense and brilliant use of radio and film in the propaganda of the Third Reich and in the popular mass productions of RCA and Hollywood during the Depression, governments after the Second World War came to give increasing attention to the content and impact of media rather than to built form. And where the former became increasingly rhetorical and intense, the latter became more and more abstract and devoid of iconographical content. The highly abstract quality of the post-1956 extension of Rockefeller Center west of 6th Avenue for Time Inc., Exxon and McGraw-Hill already testifies to this reductive process.

The reasons for the eclipse of the Modernistic New Tradition in 1939 were not, however, entirely ideological; for one thing the high quality craftsmanship readily available for the realization of such remarkable structures as William van Alen's Chrysler Building, New York (1930), was largely absorbed and dispersed by the war effort. In addition, the enthusiasm with which the American establishment embraced the Modern Movement increased each successive year, after the Hitchcock and Johnson exhibition 'Modern Architecture' of 1932, and by 1945, when the New Deal was at its height, the Functionalist line in architecture was virtually the ruling style (cf. the work of Lescaze, Neutra, the Bowman brothers, etc.)

It is ironic that the demise of the New Tradition and the triumph of the Modern Movement should coincide with a reaction in favour of monumentality coming from the heart of the movement itself. Only five years separate Giedion's Charles Eliot Norton Lectures, given at Harvard University in 1938–39 (published as *Space, Time and Architecture* in 1941), from his polemical *Nine Points on Monumentality* of 1943, written in collaboration with Fernand Léger and José Luis Sert. The most important articles of this document read:

(1) Monuments are human landmarks which men have created as symbols for their ideals, for their aims, and for their actions. They are intended to outlive the period which originated them, and constitute a heritage for future generations. As such, they form a link between the past and the future.

(2) Monuments are the expression of man's highest cultural needs. They have to satisfy the eternal demand of the people for translation of their collective force into symbols. The most vital monuments are those which express the feeling and thinking of this collective force – the people.

(4) The last hundred years have witnessed the devaluation of monumentality. This does not mean that there is any lack of formal monuments or architectural examples pretending to serve this purpose; but the so-called monuments of recent date have, with rare exceptions, become empty shells. They in no way represent the spirit and the collective feeling of modern times.

(6) A new step lies ahead. Post-war changes in the whole economic structure of nations may bring with them the organization of community life in the city which has been practically neglected up to date.

(7) The people want the buildings that represent their social and community life to give more than functional fulfilment.

This position paper – destined to become the brief for CIAM VIII of 1952 – formulated a sharply discriminative approach to the problem of representation, which seems to be as valid today as when it was first written. In the first instance, there is its recognition of the fact that neither the monumentality of the New Tradition nor the functionalism of the Modern Movement was capable of representing the collective aspirations of the people. In the second, there is the implication, never explicitly stated, that a genuine collectivity can only realize an appropriate expression of its values and historical continuity at a 'cantonal' or municipal level, and that large centralized or authoritarian states are incapable, by definition, of authentically representing the hopes and desires of the people. In the years since 1943 the issue of representation – the fundamental problem of meaning in architecture – has recurred again and again, only to be met by repression and denial, or by escapist withdrawal into the supposedly spontaneous and hence popular significance of advertising and media in the consumer economy. The practice of architecture now lapses into 'silence' – see Manfredo Tafuri's *Progetto e Utopia* (*Architecture and Utopia, Design and Capitalist Development*) of 1973 – and even into disrepute solely because one of the primary subjects of which it should speak, namely the destiny of the society, is constantly denied it. Unfortunately, the political institutions that would be capable of rearticulating this particular form of significance are today as fragile as the culture of architecture itself.

Chapter 25

Le Corbusier and the monumentalization of the vernacular 1930–60

This construction, built by local contractors, consists of reinforced-concrete floors carried on exposed masonry walls made of the local stone. Despite the use of ordinary masonry, the usual conceptions employed in our houses reappear here. That is to say, a complete distinction is maintained between the bearing walls which are considered as supports for the floors and the glazed partitions which fill the empty spaces.

The composition is structured by the landscape. The house occupies a small promontory dominating the plain behind Toulon, backed by a magnificent silhouette of mountains. The site offers the striking spectacle of a vast unfolding landscape, and the unexpected nature of this has been kept by walling in the principal rooms on the side to the view and by having only a door that opens onto a veranda from which the sudden vista is like an explosion. On descending the small staircase that leads down to the ground one sees a large stele by Lipschitz rising up, its terminal *palmette* outlined against the sky above the mountains.

Le Corbusier,
Oeuvre complète, 1929–34, 1935

Le Corbusier and Pierre Jeanneret had already thought of their domestic architecture of the late 1920s as having a strong link with the natural environment, but they had never previously conceived of this connection as taking place on such a monumental scale. Now, with this holiday house designed for Hélène de Mandrot and built outside Toulon in 1931, and their Errazuriz House projected for a remote site in Chile (1930), they began to envisage their works as reaching out across landscapes of titanic proportions. This subtle shift towards 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 *inevitably* beneficient workings 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.

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 the practice at this time. For, despite the 'inner doubt', not only had the machine aesthetic not been totally abandoned (as we may judge from 'curtain-walled' structures built by the practice between 1930 and 1933), but also works such as the de Beistegui Penthouse unexpectedly revealed a Surrealist side to Le Corbusier's imagination. This dream-like exercise – reminiscent of Adolf Loos's 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) is latent throughout 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-1950s.

In many of the 'vernacular' essays prior to Ronchamp the remoteness of the site itself became the rationale for the mode of building. The extreme example of this is the very cheap house at Mathes, near Bordeaux (1935), which was built from drawings without the architect visiting the site. Le Corbusier wrote:

The impossibility of supervising the construction and the necessity of employing a small contractor from the village led even to the conception of the plan itself. The house had three successive and absolutely separate stages of work:

(a) the masonry built at one time,
(b) the carpentry built at one time,
(c) the joinery, comprising windows, doors, shutters and cupboards, all to a standard and to a unitary principle of construction; assembled independently and variously panelled in glass, plywood and asbestos cement.

The same justification of limited resources could be put forward in the case of the Errazuriz 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 material articulation, for its capacity to enrich the abstract and reductive nature of the Purist style. Le Corbusier wrote:

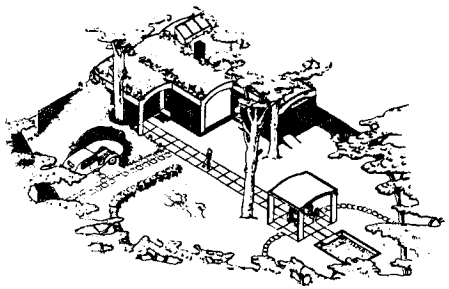
The designing of such a house demanded extreme care since the elements of construction were the only architectonic means. The architectural theme was established about a typical bay whose influence extended as far as the little pavilion in the garden. Here one was confronted by exposed stonework, natural 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.

In short, one experienced, as at Toulon and Mathes, an expressive *bricolage*. From now on the juxtaposition of contrasting materials became an essential aspect of Le Corbusier's style, not only as an expressive 'palette' but also as a means of building.

This 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 1920s in favour of an architecture predicated on the expressive force of a single architectonic element, be this a monopitched roof supported by cross-walls or a barrel-vaulted megaron. While the former mode (anticipated at Mathes) appeared in the rammed-earth walls and lean-to thatched roofs of the 'Maisons Murondins' proposed in 1940 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 1942. That Le Corbusier's preoccupation with the Mediterranean after the Second World War took a vernacular rather than a Classical form is demonstrated by a sequence of works stemming from the Cherchell project, and leading via the Roq et Rob stepped-terrace housing designed for Cap Martin in 1949 to the Sarabhai House in Ahmedabad and the Maisons Jaoul in Paris, these last two works being completed in 1955.

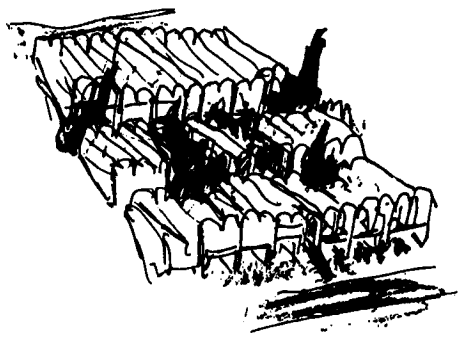
As James Stirling was to make clear, the Maisons Jaoul design was an affront to those

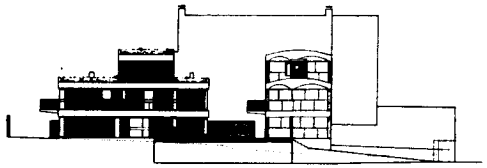
214 Le Corbusier and Jeanneret, weekend house, Paris, 1935.



sensibilities which had been nurtured on the myth that modern architecture should manifest itself as smooth, machine-wrought, planar surfaces set within an articulated structural frame. It was disturbing to find that this complex was 'being built by Algerian labourers equipped with ladders, hammers and nails', and that with the exception of glass no synthetic materials were being used. For Stirling, the almost medieval level of the technology was enough to relegate the work to the realm of art for art's sake, and he saw it, justifiably, as being in direct opposition to the Rationalist tradition of the Modern Movement. However, Le Corbusier's 'arationality' went beyond the anachronistic, if expedient, application of Catalan vaulting or exposed brickwork and concrete struck directly from timber shuttering. The concrete waterheads, the narrow openings in the cross-walls, and the transverse bays (these last being largely filled with plywood panelling), combined to create the impression of a consciously hostile attitude to the outside world. The archetypal window was now no longer the *fenêtre en longueur* to be looked through, but rather a framed and panelled insert to be looked at. 'The eye finding interest in every part of a surface impasto', wrote Stirling, 'does not, as at Garches, seek relief from the hard textureless finish by examining the contours and the form of the plane.' Instead of Purist form, the Maisons Jaoul offered a tactile reality far removed from the utopian visions of the late 1920s; a pragmatism which was ready to embrace, as Reyner Banham has observed, the contradictions and confusions of suburbia.

215 Le Corbusier, Roq et Rob project, Cap Martin, 1949. A reinterpretation of the weekend house as a housing prototype.





216 Le Corbusier, Maisons Jaoul, Paris, 1955. North-east elevation.

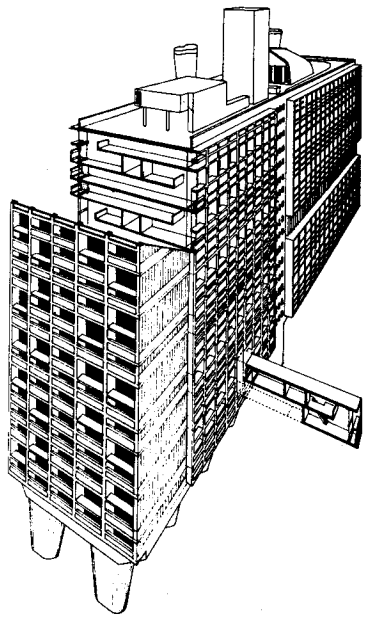
The Maisons Jaoul design was a monumental reinterpretation of a Mediterranean vernacular, whose effect stemmed as much from its introspective solemnity as from its scale. This Surrealistic syntax could hardly be used for the eighteen-storey Unité d'Habitation, built at Marseilles in 1947–52. And yet in abandoning the light-weight machine technology of the pre-war era the Unité showed itself equally committed to 'brutalist' methods of construction. This is especially evident in the casting of its basic concrete superstructure from rough timber formwork, a deliberate revelation of built process 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 pre-war Ville Radieuse block. Where the VR 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. These *brise-soleil* with their side walls stressed the volume of the two-storey units extending through the width of the block – megaron forms constructed as independent elements and suspended within the concrete frame in much the same manner as bottles are set into a rack. Interior 'streets' on every other floor provided the horizontal access to these interlocking cross-over units.

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 337 dwellings with a shopping arcade, a hotel and a roofdeck, a running track, a paddling pool, a kindergarten and a gymnasium, the Unité was just as much of a 'social condenser' as the Soviet commune blocks of the 1920s. This total integration of community services recalled the 19th-century model of Fourier's phalanstery, not only through its size but also in its isolation from the immediate environment. And just as the phalanstery was intended to house the ordinary man in a princely domain (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.

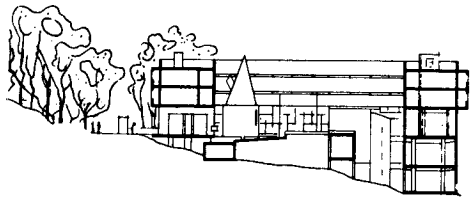
The pilgrimage chapel at Ronchamp, first projected in 1950, and the Dominican monastery of La Tourette, built at Eveux outside Lyons in 1960, represent the two principal building types – the sacred building and the retreat – that preoccupied Le Corbusier throughout the 1950s. The monastery, effectively combining both types, served to remind

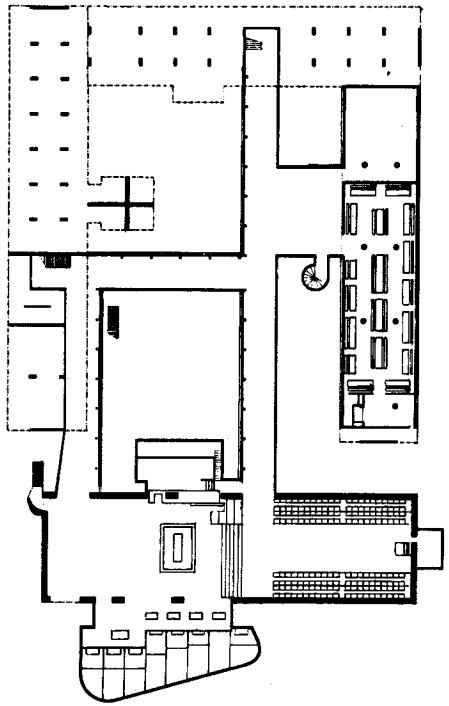
217 Le Corbusier, Unité d'Habitation, Marseilles, 1947–52.



218 Le Corbusier, Unité d'Habitation, Marseilles, 1947–52. Children's pool on the roof.

219 Le Corbusier, monastery of La Tourette, near Lyons, 1957–60. Section and second-floor plan.

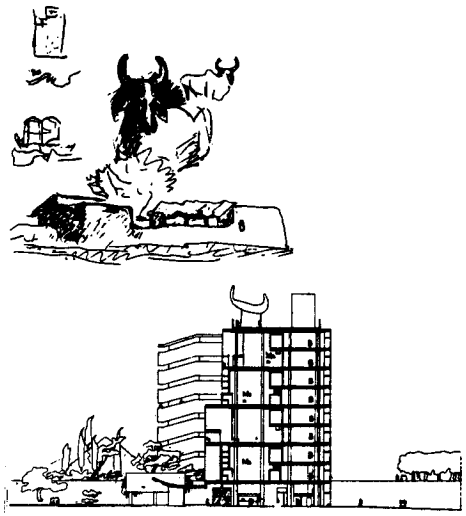




profiles of these shell forms were derived in part from the livestock and landscape of the region. The evident intent was to represent a modern Indian identity that would be free from any association with its colonial past.

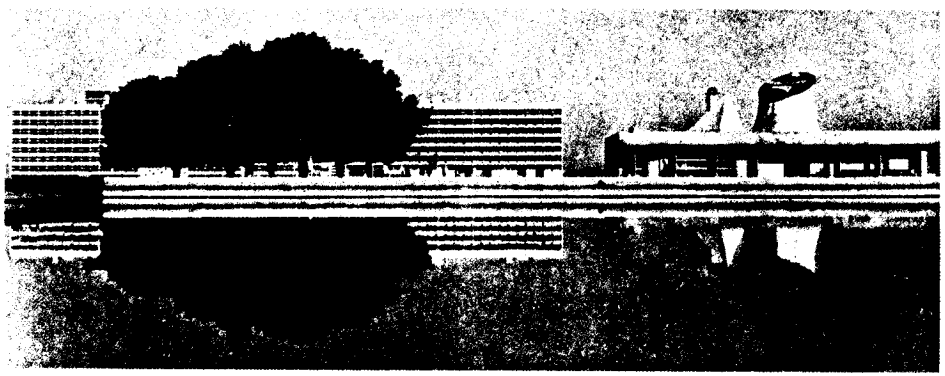
At the same time, the enormous scale of the Capitol deprived it of those public attributes of the 'heart of the city' which, at CIAM VIII, held at Hoddesdon in 1952, Sert had seen as being dependent on 'walking distances and man's angle of vision'. Within the temenos of the Capitol, where it takes over twenty minutes to walk from the Secretariat to the High Court, the presence of man is more metaphysical than real (once again recalling De Chirico). Le Corbusier's Neo-Classical heritage had emerged to evoke the landscape of the *genre terrible*: the representative buildings of the 'three powers' – the High Court, the Assembly and the Secretariat – were related not, as on the Acropolis, by the configuration of the site, but rather by abstract sight lines, receding across vast distances, a progressive foreshortening whose only limits seemed to lie with the mountains on the horizon.

The realization of Chandigarh proper, as an abstract and ill-advised plan, can (as Stanislaus 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 had already been laid out as a picturesque 'motopian' suburbia by the American planner Albert Mayer before its hasty rationalization into a more or less orthogonal road network 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 forms, 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.



224 Le Corbusier, Chandigarh, *c.* 1951. Sketches of cattle and vernacular building forms, and section through the Secretariat.

225 Le Corbusier with Jeanneret, Drew and Fry, Chandigarh Capitol, 1957–65. Secretariat (left) and Assembly Buildings.



Chapter 26

Mies van der Rohe and the monumentalization of technique 1933–67

In architecture there is only one man whom even the young men can defend and that is Mies van der Rohe. Mies has always kept out of politics and has always taken his stand against functionalism. No one can accuse Mies's houses of looking like factories. Two factors especially make Mies's acceptance as the new architect possible. First, Mies is respected by the conservatives. Even the *Kampfbund für Deutsche Kultur* has nothing against him. Secondly, Mies has just won . . . a competition for the new building of the Reichsbank. The jury were older architects and representatives of the bank.

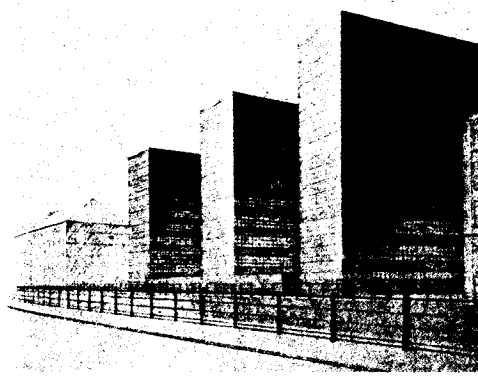
If (and it may be a long if) Mies should build this building it would clinch his position. A good modern Reichsbank would satisfy the new craving for monumentality, but above it all it would prove to the German intellectuals and to foreign countries that the new Germany is not bent on destroying all the splendid modern arts which have been built up in recent years.

Philip Johnson
'Architecture in the Third Reich',
Horn and Hound, 1933

Mies van der Rohe's entry for the Reichsbank competition of 1933 was the beginning of a transformation in his work, from informal asymmetry to symmetrical monumentality. This move towards the monumental eventually culminated in the development of a highly rationalized building method that was widely adopted in the 1950s by the American building industry and its corporate clientele. The Reichsbank design hinted at this future development in more ways than one, for it established a preference not only for symmetry but also for a certain tectonic which tended to move away from the dynamic spatial effects of his earlier career. At the same time the client was the institutional establishment, a patron that Mies was to serve throughout his practice in the United States.

The Reichsbank design was not simply a return to Schinkel, who, except in Mies's work of the early 1920s, had always been a latent influence. It was more a return to the tectonics of Mies's concrete office building, first published in the magazine *G* in 1923, the emphasis in both projects being on the expressive qualities of an objective building technique, logically conceived and rigorously executed. In 1926 Mies had spoken of architecture as being 'the will of the epoch translated into space'. In Hegelian terms, he saw this will as historically determined technique, as a self-evident fact, only to be refined by the spirit. The intrinsic monumentality of his later work was predicated on such a refinement. For Mies, technology was the cultural manifestation of modern man, and in this respect

226 Mies van der Rohe, project for the Reichsbank, Berlin, 1933.



the Reichsbank must be regarded as his first essay in the monumentalization of technique. This accounts for its warehouse-like appearance, for the neutral, scarcely modulated treatment of its curtain wall.

Between 1933 and the early 1950s, Mies's work was to oscillate between asymmetry and symmetry, between technique as found and the monumentalization of technique as form. This variation in expression occurred not only from one building to the next but also within a single structure. He summed up the overriding cultural import that he attached to technique in his address to the Illinois Institute of Technology in 1950:

Technology is rooted in the past. It dominates the present and tends into the future. It is a real historical movement – one of the great movements which shape and represent their epoch.

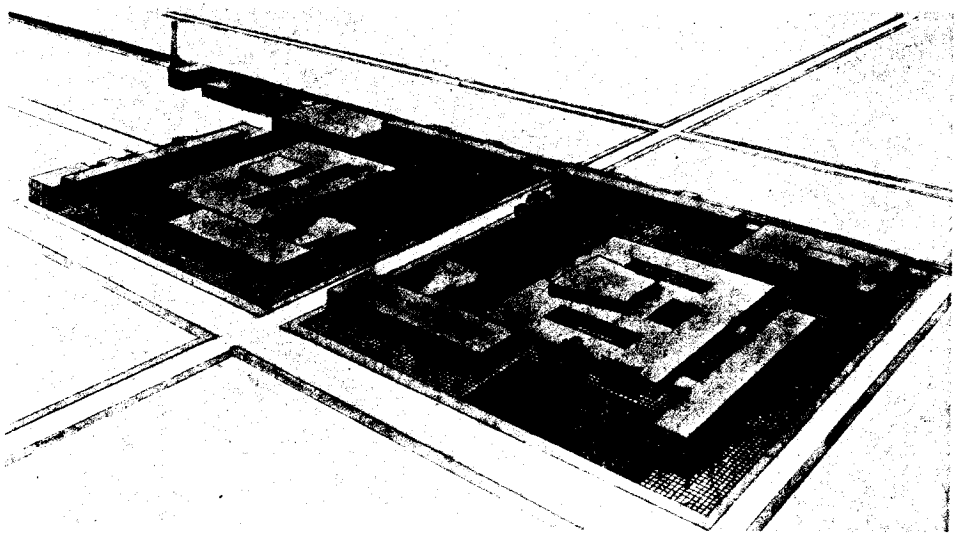
It can be compared only with the classic discovery of man as a person, the Roman will to power, and the religious movement of the Middle Ages.

Technology is far more than a method, it is a world in itself. As a method it is superior in almost every respect. But only where it is left to itself, as in gigantic structures of engineering, there technology reveals its true nature. . . . Whenever technology reaches its real fulfilment, it transcends into architecture. It is true that architecture depends on facts, but its real field of activity is in the realm of significance.

Mies van der Rohe's development after the mid-1930s concerned itself with the conciliation of two opposed systems. One was the heritage of Romantic Classicism which, when translated into the skeleton steel frame, pointed towards the dematerialization of architecture, to the mutation of built form into shifting planes suspended in diaphanous space – the image of Suprematism. The other was the authority of trabeated architecture as it had been inherited from the ancient world, the implacable elements of roof, beam, column and wall. Caught, as it were, between 'space' and 'structure', Mies constantly sought to express simultaneously both transparency and corporeality. The dichotomy revealed itself most sublimely in his attitude to glass, which he used in such a way as to allow it to change under light from the appearance of a reflective surface to the disappearance of the surface into pure transparency: on the one hand, the apparition of nothing, on the other, an evident need for support.

In this respect, the preliminary scheme for the Illinois Institute of Technology (IIT) campus in Chicago, prepared in 1939, two years after his arrival in the United States, is clearly as Suprematist in feeling as parts of the Barcelona Pavilion. As in the Reichsbank project, the plan is disposed about a single axis of symmetry. All the structures are four storeys high and rendered as pure prisms, faced in graph-paper curtain walls, their surfaces animated by skyscape reflections. These walls are shown sliding behind occasional clumps of trees, eliding into projecting ivy-clad brick planes, poised on the edge of their stereometric masses. Apart from a Neo-Classical insistence on the visual reinforcement of corners with panels of brickwork, the effect is close to the Suprematist aesthetic of Ivan Leonidov, in particular to his Culture Park project of 1930.

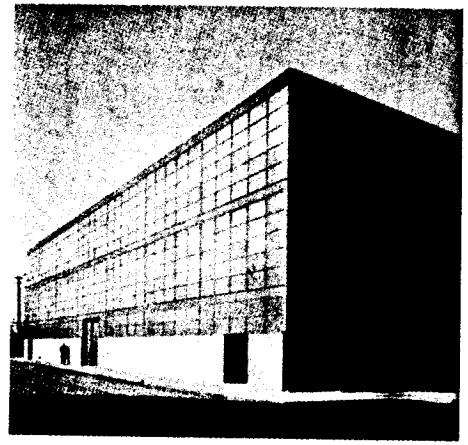
227 Mies van der Rohe, preliminary scheme for the Illinois Institute of Technology, Chicago, 1939.



At this point, Mies appears to be struggling with the generic relation of column to wall, particularly where the wall in question is largely of glass. The implicit solution in the first IIT proposal (as in the Reichsbank project) is to set the columns back from the glass face, but in the final 1940 version the columns are integrated into the wall. This development becomes explicit in the first building for the campus. The articulation of the column system in conjunction with the glazed plane becomes increasingly idealized and monumental with each successive structure.

This progressive idealization depended on the replacement of Mies's generic cruciform column section of the early 1930s by the standard American I-beam. The asymmetrical pinwheeling plans of the Barcelona Pavilion and the Tugendhat House at Brno demanded a non-directional column form, similar to the point supports that Mies used in his Berlin Building Exhibition house of 1931. By contrast, his preference from the Reichsbank onwards for a single axis of symmetry favoured the articulation of façades in terms of the directional axis of the I-beam. The development of his work at IIT, from the Minerals and Metals Research Building and the Library of 1942 to the Alumni Memorial Hall of 1945, is towards the idealization of the I-beam column, culminating in the square, concrete-clad steel columns of the Alumni Memorial Hall.

With the Library and the Alumni Memorial Hall, Mies was on the threshold of the building typology and structural syntax of his late career. At the same time, in the IIT Library he first projected a work whose monumentality depended on its great size – a gargantuanism that has obsessed Chicago architectural practice ever since (see the recent work by the leading designers of Skidmore, Owings and Merrill, and C.F. Murphy). Here Mies audaciously proposed a clear structural span of 20 metres (66 feet) wide, with glass panels measuring 5.5 x 3.7 metres (18 x 12 feet) and a single triple-height volume 91 x 61 metres (300 x 200 feet) in plan, broken only by a floor-to-floor book stack, an enclosed court and a suspended mezzanine. Where the Library anticipated Mies's later single-storey clear-span type (first clearly formulated in his drive-in restaurant project of 1946), the Alumni Memorial Hall anticipated his typical multi-storey slab, in which the glazing, the mullions and the structure of the external wall combine to form an articulated façade. Where the IIT Library led, by way of the drive-in restaurant, to Mies's project for the Mannheim Theatre of 1953 – a technological monument par excellence consisting of a large flat roof measuring 162 x 81 metres (530 x 266 feet) suspended from seven steel trusses – the detailing of the Alumni Hall was the formulation of the language that Mies would soon use for the realization of 860 Lake Shore Drive.



228 Mies van der Rohe, Minerals and Metals Research Building, IIT, Chicago, 1942.

The Lake Shore Drive apartments, under construction between 1948 and 1951, took the kitchen, bathrooms and access cores of Mies's

Chapter 27

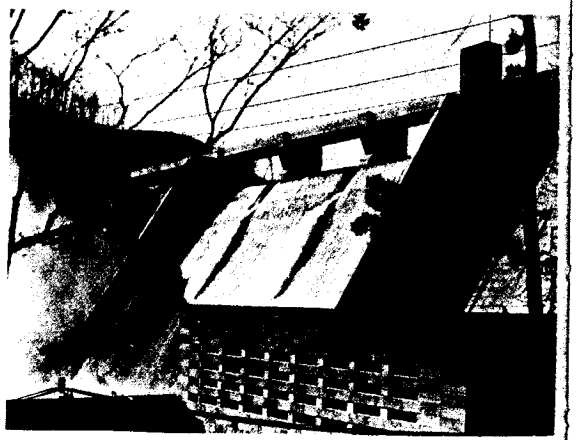
The Eclipse of the New Deal: Buckminster Fuller, Philip Johnson and Louis Kahn 1934–64

Those, like Kahn, who show a marked individualism in a world in which team work is becoming widely accepted, who aim to build for eternity in a world of economy of consumption, find themselves in a certain sense beyond the contingencies of time; and it is from this position that their personalities are consolidated. Kahn's personality evokes a picture of the masterly welding together of coexistent elements in antithesis. While Kahn is classical in fact, in the stability and symmetry of his forms, he is romantic in his nostalgia for the Middle Ages. He earnestly applies the most advanced technological means, but this does not prevent him from using stone supporting pillars for the Adler House. He has gone beyond the schemes of functionalism in his distribution, but in many instances he utilizes functionalist aesthetics. He has a rationalist's cult of stereometry, which the thin casings and total transparency of his blocks tends to refute. He has mastered the vital concepts of the organic, but he does not share in its disturbing morphology.

Enzo Fratelli
Zodiac 8, 1960

The European economic and political crises of the 1930s and the social provisions of Roosevelt's New Deal brought to the United States both a refugee intelligentsia and extensive programmes for social welfare and reform. While the Museum of Modern Art and Harvard University were to play major roles in the cultural assimilation of this migration, the Federal Government provided the infrastructural basis for the numerous welfare works that were to be executed between Roosevelt's Housing Act of 1934 and the end of the Second World War. The most famous planning and settlement projects of the New Deal were the Tennessee Valley Authority and Clarence Stein's Greenbelt New Towns, the latter realized after 1936 under the auspices of the Federal Resettlement Administration. Unlike the remarkable dams, gantries and slipways built in the Tennessee Valley, Stein's Greenbelt settlements were not graced by works of architectural distinction. From this point of view finer results were obtained in the workers' villages financed over the same period by the Farm Security Administration, a typical example being the adobe farm community at Chandler, Arizona, built in 1937 to the designs of Vernon de Mars. An equally efficient and elegant housing standard was reached in other settlements financed by similar government agencies, including New Kensington village, Pennsylvania, built in 1940 to the designs of Walter Gropius and Marcel Breuer, and Channel Heights, San Pedro, Los Angeles, designed in 1943 by Richard Neutra. An inexplicably ungainly work built under similar auspices was

235 Tennessee Valley Authority architects and engineers, Norris Dam, 1933–37.



Carver Court Housing at Coatesville, Pennsylvania, designed in 1944 by George Howe, Oscar Stonorov and Louis Kahn. This work seems all the more surprising when one realizes that Kahn had already proven his ability while working for Alfred Kastner on the Jersey Homesteads at Hightstown, New Jersey, between 1935 and 1937.

Irrespective of their architectural merit, all of these works evinced the presence of a 'New Objectivity' in the United States. That this movement was hardly as self-conscious or as polemical as its European counterpart was due to the fact that a comparable ideological basis did not exist. The 'movement' had, in any event, to be more sensitive to the issue of popular acceptance and to this end its anti-monumentality stemmed directly from its use of native materials and from its response to the vagaries of topography and climate.

A unique and contentious figure within the American architectural avant garde during the New Deal, Richard Buckminster Fuller had adopted a recognizably 'objective' – not to say Constructivist – attitude as early as 1927, when he designed the first version of his free-standing Dymaxion House; the name being a neologism, signifying *dynamism plus efficiency*. Fuller, like the more extreme members of the Swiss ABC group, had no concern whatsoever for the idiosyncrasies of any given context and projected his house as though it were a prototype for serial production. Hexagonal in plan and sandwiched between two hollow decks, it was suspended and triangulated (on the wire wheel principle) from a central mast. In this form, it was advanced, like Fuller's even more eccentric Dymaxion automobile of 1933, as the one and only inevitable solution. Fuller, never at a loss for rhetoric, described this light-weight metal house in his *Shelter* magazine of May 1932 as a synthesis between the American skyscraper and the oriental pagoda. Ingeniously equipped with a hollow hexagonal mast containing all the necessary services, it was the first in a series of centralized structures which culminated in Fuller's much simpler geodesic dome, first adapted for domestic use on his own account at Carbondale, Illinois, in 1959. The rugged reductive ethic of the pioneering individualist is evident from the doggerel chorus to be sung to the tune of 'Home on the Range' that Fuller composed while teaching as a visitor at Yale University in the mid-1950s:

Roam home to a dome
Where Georgian and Gothic once stood
Now chemical bonds alone guard our blondes
And even the plumbing looks good.

Such a utilitarian and yet complacent attitude seems a far cry from the proposals that Fuller seriously made in 1932 for the conversion of empty skyscraper office structures (vacant as a result of the Depression) into emergency residential accommodation. Fuller claimed that by the end of the year ninety per cent of the people then still living in the city would be unable to pay taxes or to buy food. This, more than anything else, tends to confirm the affinity that then coincidentally existed between the concerns of the European Neue Sachlichkeit and the Structural Study Associates group – Simon Breines, Henry Churchill, Theodore Larsen and Knud Lönberg-Holm – Fuller's associates during his brief editorship of *Shelter* in 1932.

236 Fuller, prefabricated bathroom, patented 1938–40.

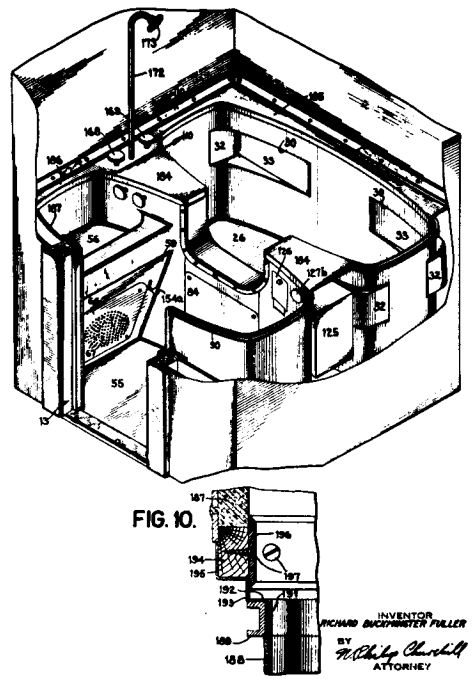


FIG. 10.

The year 1945 appears as the watershed between the socially committed ethos of the New Deal and an incipient impulse towards monumentality. This last seems to have emerged partly out of the demands of America's status as a world power and partly out of the cultural anxiety that attended the end of the Second World War. Two texts published in 1945 establish the climate of the period with some precision: they are *Built in U.S.A. 1932–1944*, edited by Elizabeth Mock, which accompanied an exhibition at the Museum of Modern Art, New York – in which over half the illustrations were devoted to the works of the New Deal – and *New Architecture and City Planning*, edited by Paul Zucker, which recorded the proceedings of a symposium conducted in the same year. This symposium was devoted to the growing need for monumental expression, a theme most elaborately formulated by Sigfried Giedion in his paper of 1944, *The Need for a New Monumentality*. Kahn himself had argued on the same occasion that

Monumentality is enigmatic. It cannot be intentionally created. Neither the finest material nor the most advanced technology need enter a work of monumental character for the same reason that the finest ink was not required to draw up the Magna Carta.

The issue emerged again in 1950 in the first number of *Perspecta – The Yale Architectural Journal*, founded by George Howe, wherein Henry Hope Reed argued that the New Deal had dealt a severe blow to the culture of affluence, and that the provisions arising out of the Depression had effectively inhibited any capacity for the monumental:

To be sure, the New Deal proved to be the greatest patron of the arts in that decade, but never on the basis of pomp and ceremony, or for reasons of national prestige or democratic grandeur. The government instead reached a charitable and philanthropic hand to the starving artist, not that of a magnificent and 'wasteful' patron. It is hardly surprising that architects and city planners were ripe for a message from across the waters about a new style which banished 'waste', tolerated only the functional, and declared the house to be a machine for living, a fitting phrase for a technocratic era.

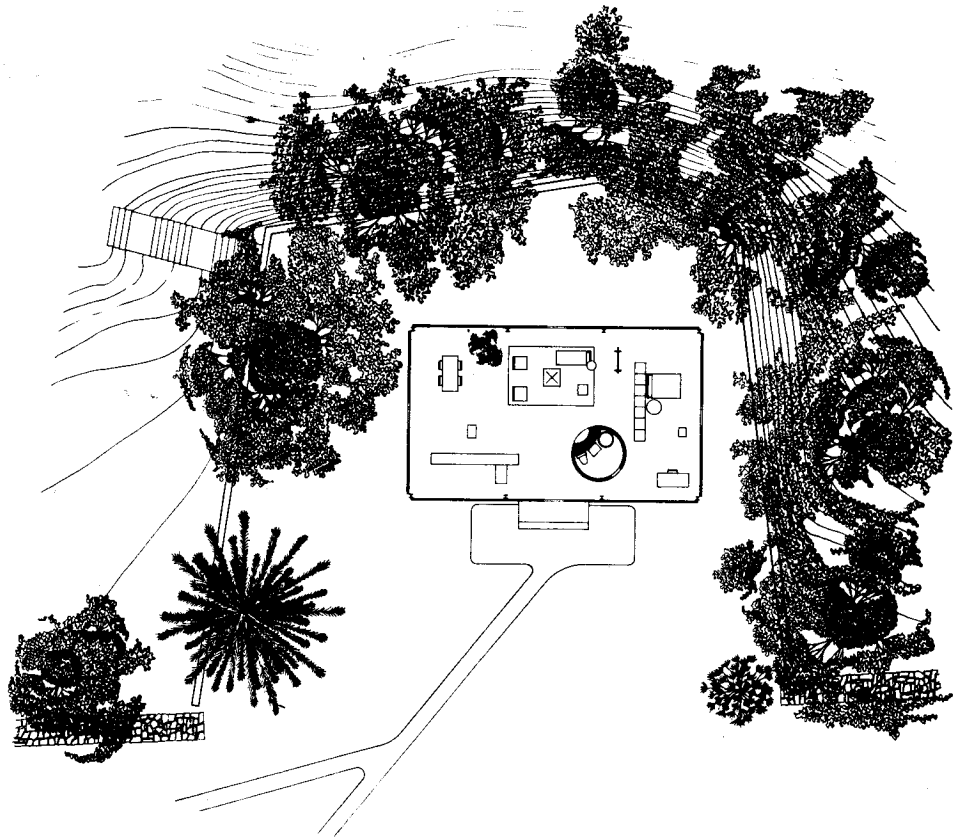
Although Reed concluded that the tools to create the monument had been lost, he was soon to be proven wrong, for America was about to enter on a spate of all but unprecedented monument-building. Intimations of this in the 1944 Zucker symposium were vindicated a few years later, in 1949, when Philip Johnson built his small but monumental Glass House at New Canaan, Connecticut. Although inspired by Mies van der Rohe's 1945 sketches for the Farnsworth House, this work wilfully departed from Mies's preoccupation with the expression of structural logic. That the Glass House already anticipated Johnson's later adaptation of the Miesian syntax to decorative ends is hinted at in his description of it written in 1950:

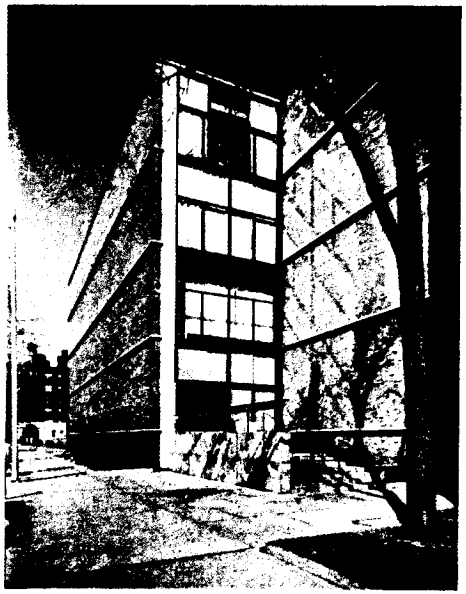
Many details of the house are adapted from Mies's work, especially the corner treatment and the relation of the column to the window frames. The use of standard steel sections to make a strong and at the same time decorative finish to the façade is typical of Mies's Chicago work. Perhaps if there is ever to be 'decoration' in our architecture it may come from the manipulation of stock structural elements such as these (may not Mannerism be next?).

Johnson's determination to obscure structure through surface manipulation was to characterize his work throughout the next decade. This approach, first fully broached in monumental terms in his Port Chester Synagogue, New York, of 1954, attained its fullest development in his New York State Theater in Lincoln Center, New York, and in his Klein Laboratory Tower built for Yale University at New Haven, both of which were complete for occupation by 1963.

While the Graduate School of Design at Harvard (under the direction of Gropius after 1963) helped to consolidate the anti-historicist and 'objective', Functionalist approach of the New Deal, the School of Architecture at Yale,

237, 238 Johnson, Glass House, New Canaan, Conn., 1949.





239 Kahn, Yale University Art Gallery, New Haven, Conn., 1950–54.

under George Howe's leadership after 1950, played a formative role in the development of American post-war monumentality. Howe's own professional career had certainly been as varied as Gropius's, ranging from the arch conservatism of his country house practice in Philadelphia to the avant-garde Functionalism of his brief partnership in 1929 with William Lescaze. Howe championed the cause of monumentality not only through his founding of *Perspecta*, but also through his influence on the selection of architects for Yale's expansion programme which began in the early 1950s. Indeed, when Reed's article appeared in *Perspecta* in 1950, Louis Kahn had already been selected to design the Yale Art Gallery.

With the completion of the art gallery in 1954, Kahn established American post-war monumentality as a cultural force in its own right. He did so with a building that was hardly to be compared to the vulgar rhetoric generally attained by American official architecture throughout the 1950s. A typical 'imperialistic' monument of the period was surely Edward Durrell Stone's U.S. Embassy built at New Delhi in 1957, a work whose level of decorative, not to say laboured, monumentality was only to be surpassed in respect of its authoritarian overtones by Eero Saarinen's far superior U.S. Embassy in London, completed in 1960.

The Yale Art Gallery, like Johnson's Glass House, was based on a subtle transposition of the late Miesian aesthetic. Yet where Mies had always given priority to the direct expression of structural frame, both Kahn and Johnson concealed the frame, at least externally, placing their particular emphasis on the monumentalization of what might be considered 'secondary' components, such as walls, floors and ceilings. By a similar token, where Mies always chose to emphasize the axiality of his composition, Kahn and Johnson masked the inherent symmetrical order of their work by suppressing the frame. Where Kahn used the palpable opacity of brick for this purpose, Johnson relied on the reflectivity of glass. He exploited its innate capacity, when set flush with the surface, to appear as a continuous membrane: to seem to be of the same metalled substance and formal order as the supporting metal frame. However, these two seminal works had more in common than their 'hermetic' attitude to surface. In both instances the main orthogonal volume was animated by a cylindrical form housing primary service elements: the major access stair in the case of the gallery, and the fireplace and bathroom in the case of the house. And while the schema of the Glass House – namely a circle in a rectangle – also served as the essential *parti* of Kahn's gallery, it was Kahn and not Johnson who was to go on to elaborate the notion of the cylinder as the *servant* and the rectangle as the *served* into the dialectic of a general architectural theory.

These early works of Johnson and Kahn created a kind of post-Miesian space: an asymmetrical architecture of 'almost nothing', which depended no longer on the manifestation of structure as frame, but rather on the manipulation of surface as the ultimate agent for the revelation of light, space and support.

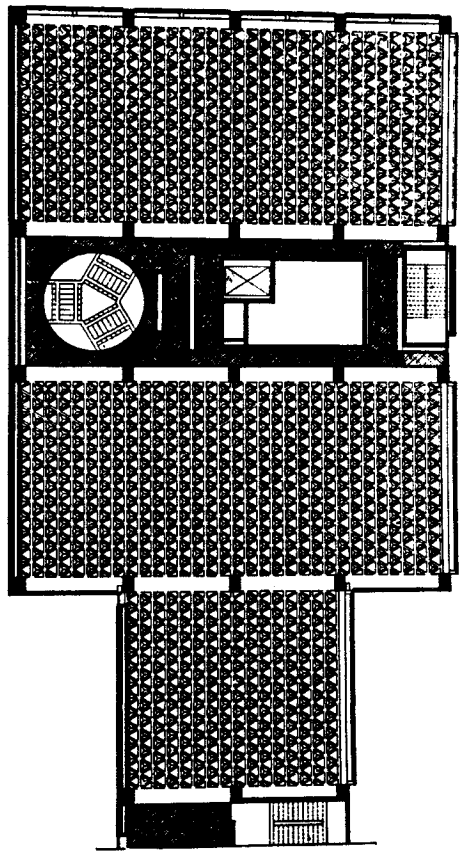
Thus the space of Kahn's art gallery was as much determined by the concrete tetrahedral space-frame that constituted its floors as it was by the regular grid of rectangular columns that divided its internal volume into four basic sections. As Reyner Banham remarked:

> The exact equipartition of the plan contributes little to its functional organization or the visual experience of the visitor. In other words, no significant architectural promenade arose out of the rhythm of the structural grid or at least not one that in any way transcended the sporadic and ever-changing disposition of the gallery partitions.

From the early 1950s on, first Johnson and then Kahn came to be increasingly concerned with reactivating the formal systems of the past. Johnson's own 'historicism' – evident in the Neo-Classical qualities of the Glass House – came directly from his understanding of late Mies and, again after Mies, something of Schinkel's Romantic Classicism. The beginning of Kahn's concern with the past is more difficult to establish. Beaux-Arts trained in Philadelphia under Paul Cret but close in the late 1930s and 1940s to the radicalism of men like Buckminster Fuller and Frederick Kiesler, Kahn was to return after the New Deal to a remote historical tradition, through his preoccupation with the creation of hierarchic order out of heavy structural form. Certainly Kahn's whole approach changed with his project for the Trenton Jewish Community Centre of 1954, made some two years after he had returned from his sabbatical at the American Academy in Rome.

By the mid-1950s the points of reference were becoming more complex, for while Johnson had shifted his attention from Schinkel to Soane, simultaneously keeping his eye fixed on the totally independent Baroque forays then being made in Brasilia by Oscar Niemeyer, Kahn had begun to be preoccupied with the concept of an architectural totality, whose ultimate historical reference would prove Islamic rather than Western.

At this juncture in Kahn's career one encounters one of the central paradoxes in the work and influence of Buckminster Fuller. For



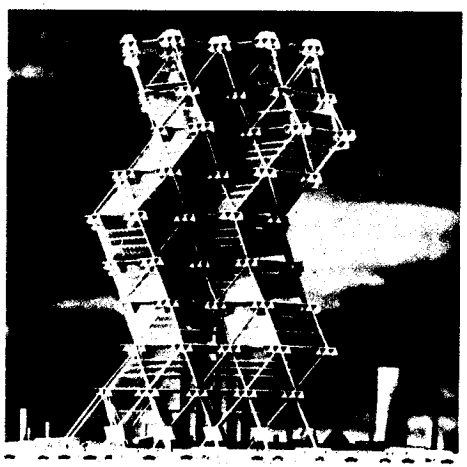
240 Kahn, Yale University Art Gallery, New Haven, Conn., 1950–54. Floor plan with diagrid ceiling reflected.

whereas Fuller's contribution was posited by both himself and his followers as the only truly functionalist approach of the age, it has since become evident that his geodesic structural systems should be regarded as evoking through their universal geometry an attitude to both form and life that is fundamentally mystical. It is clear from Kahn's subsequent career that this side of Fuller's thought exercised a strong hold over his development, and never more so than during the period of his association with Ann Tyng, who was an ardent follower of the Fuller line. The various versions of Kahn's multi-storey triangulated city hall for

Philadelphia, designed in association with Tyng between 1952 and 1957, bracket the period during which he was most directly under Fuller's influence. The basic concept of a geodesic skyscraper, stabilized by tetrahedronal concrete floors – ' a vertical truss against the wind' – enabled Kahn to return to an architectural intention that would have been appreciated by Viollet-le-Duc. This much is evident from one of the clearest statements of intent that he ever produced:

In Gothic times, architects built in solid stones. Now we can build with hollow stones. The spaces defined by the members of a structure are as important as the members. These spaces range in scale from the voids of an insulating panel, voids for air, lighting and heat to circulate, to spaces big enough to walk through and live in. The desire to express voids positively in the design of a structure is evidenced by the growing interest and work in the development of space-frames. The forms being experimented with come from a closer knowledge of nature and the outgrowth of the constant search for order. Design habits leading to the concealment of structure have no place in this implied order. Such habits retard the development of an art. I believe that in architecture, as in all art, the artist instinctively keeps the marks which reveal how a thing was done. The feeling that our present-day architecture needs embellishment stems in part from our tendency to fair joints out of sight, to conceal how parts are put together. Structures should be devised which can harbour the mechanical needs of rooms and spaces. . . . If we were to train ourselves to draw as we build, from the bottom up, when we do, stopping our pencil to make a mark at the joints of pouring or erecting, ornament would grow out of our love for the expression of method. It would follow that pasting over the construction of light and acoustical material, the burying of tortured unwanted ducts, conduits and pipe lines would become intolerable. The desire to express how it is done would filter through the entire society of building, to architect, engineer, builder and draftsman.

241 Kahn and Tyng, project for Philadelphia City Hall, 1952–57. Model.



The fundamental themes of Kahn's subsequent career are all basically outlined in this remarkable passage, from the notion of conceptually transposing solid and void – see the reference to hollow stones – to the idea of explicitly integrating mechanical systems with the structure and the important corollary that the universal ordering principle (namely 'what the building wants to be') could only make itself manifest through the revelation of the constructional process.

The integrated development of these principles, from the Yale Art Gallery to the Richards Laboratories built for the University of Pennsylvania between 1957 and 1964, led to the first phase of Kahn's postponed maturity. In both works Kahn used a method and mode of expression where the empirical details of the programme have little or no impact on the overall form. It was in fact a case of discrete function having to accommodate itself – as in the past – to the form, but only insofar as the form itself had been invented from a profound understanding of the overall task in the first place. In the case of the Richards Laboratories, the problematic aspect of Kahn's method lay exactly in this issue, as to whether or not the overall form was typologically justified. The subsequent difficulties encountered in using the building would suggest that it was not. We seem to be confronted here with the traditional American impulse to idealize the work place – to monumentalize the space of process – an intention which is as evident in the Richards Laboratories as it is in Johnson's Klein Tower. The precedent for all this would seem, not surprisingly, to be Wright, first in his Larkin Building at Buffalo of 1904 and then in his complex for Johnson Wax, built at Racine in Wisconsin, 1936–39. It is an appropriate irony, to say the least, that both Kahn and Johnson should come to debate in *Perspecta 2* (1953) the validity of Wright's later addition to his Racine complex, namely the laboratory tower built there in 1946. With marked indifference to the status of the tower as it might be determined by the programme in relation to the society, Kahn remarked:

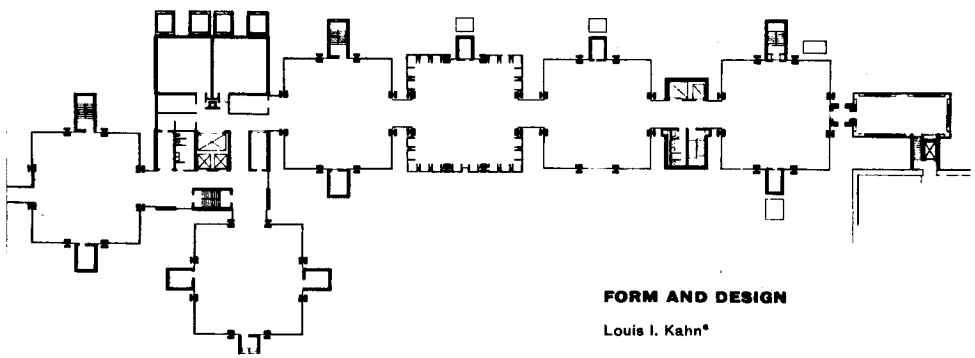
It has to do with the full complexity of making architecture work in the psychological sense. It works because it is so motivated. It fills the desires and the needs. And so the tower should work, as psychological satisfaction.

Along more aesthetic lines and with greater flamboyance, Johnson declared his own indifference to the issue of function:

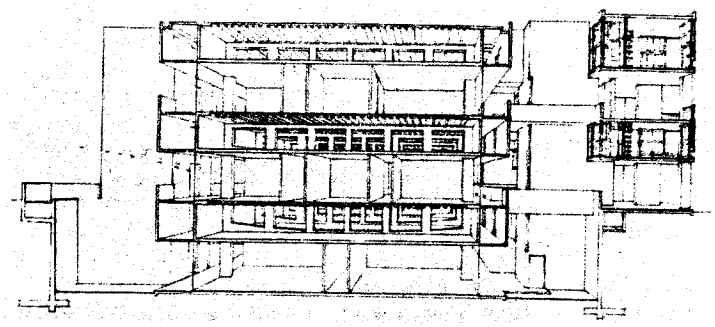
It was the terrific problem of a man who wants a beautiful building but the only thing he has to build is a laboratory. Wright puts it into a tower. It doesn't work; it doesn't have to work. Wright had that shape conceived long before he knew what was going into it. I claim that is where architecture starts, with the concept.

It is a measure of Kahn's achievement and of his continuing influence today that the 'concept' was exactly where architecture always started for him, even if he was sufficiently flexible to allow the initial 'Form' (Kahn's term for 'type') to be modified by the exigencies of the programme. For him, building remained a spiritual act, and it is hardly an accident that his best work was reserved for religious or extremely honorific structures. In many subsequent commissions he ascribed a highly spiritual connotation to the programme and never more so that in the case of the research centre that he designed for Dr Jonas Salk, at La Jolla, California, between 1959 and 1965. In this instance, the separation of the whole complex into *working*, *meeting* and *living* sectors seems to have released Kahn from the compulsive need to reduce the laboratory space to an ideal form. The final version of the Salk Laboratories brought him to accept a solution in which the services were as 'repressed' or concealed as in any office building by Mies van der Rohe. Kahn's provision of a whole full-height service floor under each laboratory – a provision which today is fully utilized – yielded a much more flexible space than that generally achieved at Philadelphia. The unbuilt Salk meeting complex was also the first occasion on which Kahn had a chance to develop his anti-glare concept of setting a 'building within a building', a notion which he had first broached at a conceptual level in his 1959 sketches for the American Consulate at Luanda, Angola. This idea, destined to remain

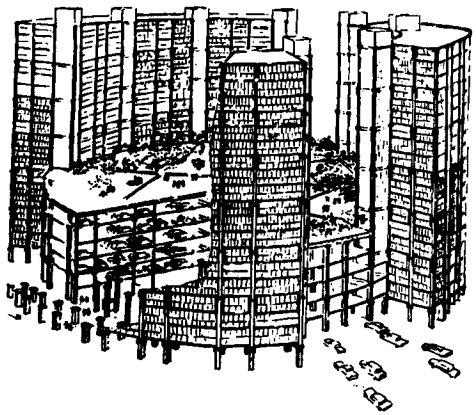
242 Kahn, A.N. Richards Laboratories, University of Pennsylvania, Philadelphia, 1957–61. Third-floor plan.



243 Kahn, Salk Institute of Biological Studies, La Jolla, Calif., 1959–65. Section through laboratory wing.



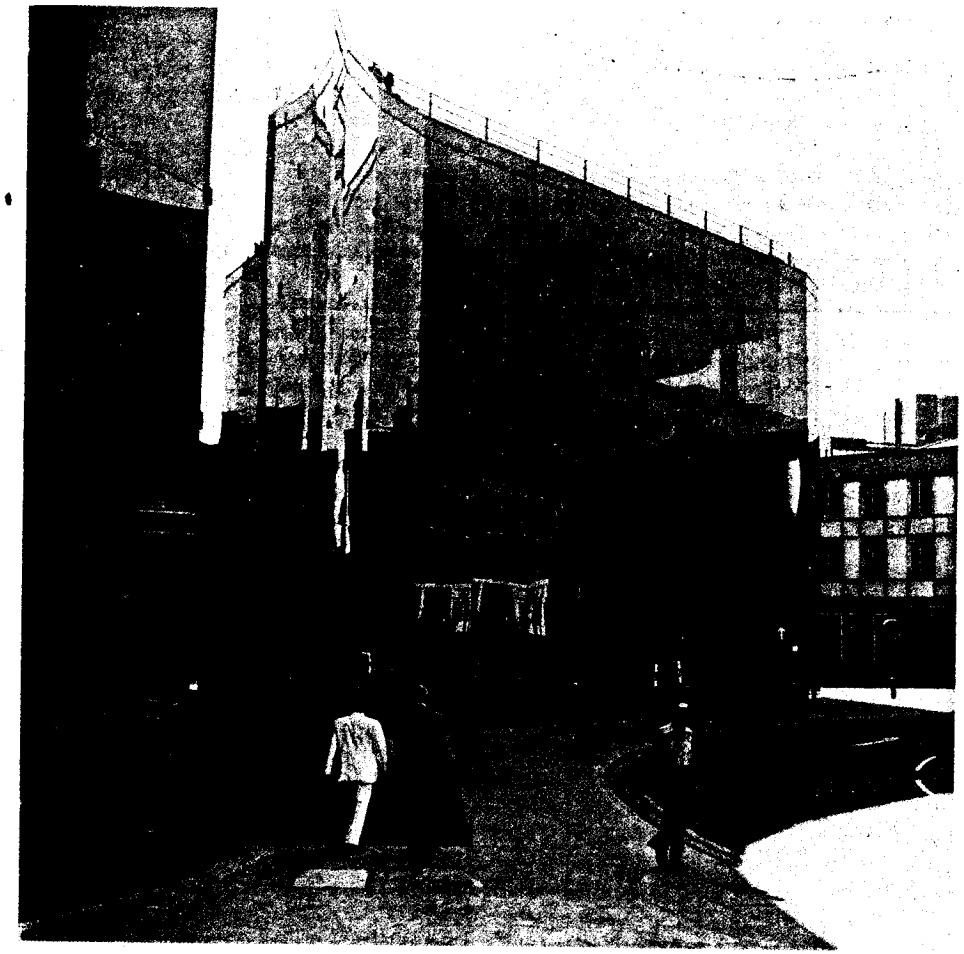
244 Kahn, 'dock, complex projected for Philadelphia, 1956, comprising a multi-storey car park surrounded by apartment and office buildings.



unbuilt even at La Jolla, was to become the main theme of his magnificent National Assembly Building, under construction at Dacca in East Pakistan (now Bangladesh) from 1965 to 1974.

Kahn's rejection of a simple-minded if socially committed functionalism in favour of an architecture capable of transcending utility led him to postulate a parallel approach to urban form. Once again this shift reflected his own development, in which he progressed from projecting the Ville Radieuse onto the centre of Philadelphia – in his so-called Rational City studies of 1939–48 – to postulating, in his maturity, the need to make an explicit distinction between the architecture of the 'viaduct' and building at a human scale. This was perhaps never more dramatically expressed than in his plan for midtown Philadelphia of 1956, where he attempted to press the forms of Piranesi's Rome of 1762 into the service of the modern city. Yet for all the rational poetry of this proposition, and the ingenuity of his subtly rearranged traffic patterns (his distinction for instance between the expressways as 'rivers' and the 'stop-go' traffic-light-controlled streets as 'canals'), Kahn's midtown planning proposals remained paradoxically unspecific when it came to imagining the precise relations that should obtain between the pedestrian and the automobile. Kahn, conscious of the profound antipathy between the automobile and the city and of the fatal link between consumerism, the suburban shopping centre and the decline of the urban core (a link that stemmed incidentally from the combined effects of the post-war federal highway subsidy and the mortgage provisions of the G.I. Bill), was no more capable than any other architect of conceiving a satisfactory interchange between the human scale and the scale of the car. His Piranesian 'dock' proposal of 1956, comprising a six-storey cylindrical silo housing 1,500 cars and surrounded on its perimeter by eighteen-storey blocks, was as deprived as any other megastructure of the period of the necessary elements with which to establish a human scale at its base. The limits of Kahn's profound historicism were never more poignant than in his likening of his Philadelphia midtown plan to Carcassonne. It was surely a vain utopian hope to argue, as he did, that the ordering of movement within a city would of necessity assure its defence against destruction by the automobile.

Part 3
Critical assessment and extension into the present 1925–84



245 Foster Associates, Willis-Faber & Dumas Building, Ipswich, 1974 (see pp. 301–3).

tractability of the problem and of the fact that probably it can only be effectively tackled on a piecemeal basis, by responding appropriately to specific situations. Nevertheless, advocacy planning remains with us as a radical legacy of the 1960s, although the results of its application have varied widely, from the political manipulation of the underprivileged to the recent achievement of a section of low-rise housing in Terni north of Rome, designed by Giancarlo de Carlo, in accordance with a brief developed as a result of extensive discussions with the local trade union. There is no doubt that this whole undertaking has resulted in housing of remarkable quality and variety, although the manner in which the users' desires were finally interpreted remains a controversial issue.

As far as transforming the practice of the Neue Sachlichkeit was concerned, Habraken and his Foundation for Architectural Research (SAR) in Eindhoven did their technocratic best to take the promise of Yona Friedman's open infra-structural approach, his 'mobile architecture', to its logical conclusion. To this end they proposed a low-rise, multi-storey, *support* structure, whose plan arrangement was undetermined, save for fixed access, kitchen and bathroom zones. Outside these zones the occupant would be free to arrange the plan of his allocated volume in any way he wished. Regrettably, Habraken intended to furnish this spatial matrix with industrialized, modular components fabricated along the lines of the car industry and brought to a level of technical sophistication and structural tolerance which has yet to be attained, even in the wholesale prefabricated building programmes of the Soviet Union. Moreover, like Friedman, he tended to overlook the fact that much of the inherent 'freedom' of the system would automatically disappear once it came under the auspices of monopoly capital. Housing after all has yet to become a truly consumable item. Fortunately, the SAR concept does not stand or fall by its technology alone, and Habraken has opened up a line of research which has yet to be fully explored. A quite remarkable work apparently influenced by Habraken's thought is the distinguished 'expandable' terrace housing built in Genterstrasse in Munich in 1971 by Otto Steidle and Doris and Ralph Thut.

Populism

The Loosian recognition of the loss of cultural identity that urbanization had brought in its wake returned with a vengeance in the mid 1960s as architects began to realize that the reductive codes of contemporary architecture had led to an impoverishment of the urban environment. The exact manner in which this impoverishment has come about however – the extent to which it is due to abstract tendencies present in Cartesian rationality itself or alternatively to ruthless economic exploitation – is a complex and critical issue which has yet to be judiciously decided. It cannot be denied that the tabula rasa reductivism of the Modern Movement has played a salient role in the wholesale destruction of urban culture; thus the emphasis that the 'Post-Modernist critique has placed on respecting the existing urban context can hardly be discredited. This anti-utopian 'contexturalist' critique was already available more than a decade ago, first in Colin Rowe's neo-Sittesque approach to urban form (as taught in Cornell University and presented in his book of 1979, *Collage City*), and then in Robert Venturi's *Complexity and Contradiction in Architecture* of 1966 in which he wrote:

The main justification for honky-tonk elements in architectural order is their very existence. They are what we have. Architects can bemoan or try to ignore them or even try to abolish them, but they will not go away. Or they will not go away for a long time, because architects do not have the power to replace them (nor do they know what to replace them with), and because these commonplace elements accommodate existing needs for variety and communication. The old clichés involving both banality and mess will still be the context of our new architecture, and our new architecture significantly will be the context for them. I am taking the limited view, I admit, but the limited view, which arch tects have tended to belittle, is as important as the visionary view, which they have tended to glorify but have not brought about. The short-term plan, which expediently

combines the old and the new, must accompany the long-term plan. Architecture is evolutionary as well as revolutionary. As an art it will acknowledge what is and what ought to be, the immediate and the speculative

With the publication in 1972 of *Learning from Las Vegas*, written by Venturi, Denise Scott-Brown and Steve Izenour, Venturi's sensitive and sane assessment of the cultural realities confronting everyday practice – the need to set order against disorder and vice versa – shifted from an acceptance of honky-tonk to its glorification; from a modest appraisal of Main Street as being 'almost all right' to a reading of the billboard strip as the transmogrified utopia of the Enlightenment, lying there like a science-fiction transposition in the midst of the desert!

This rhetoric, which would have us see A & P parking lots as the *tapis verts* of Versailles, or Caesar's Palace in Las Vegas as the modern equivalent of Hadrian's Villa, is ideology in its purest form. The ambivalent manner in which Venturi and Scott-Brown exploit this ideology as a way of bringing us to condone the ruthless kitsch of Las Vegas, as an exemplary mask for the concealment of the brutality of our own environment, testifies to the aestheticizing intent of their thesis. And while their critical distance permits them the luxury of describing the typical casino as a ruthless landscape of seduction and control – they emphasize the two-way mirrors and the boundless, dark, disorientating timelessness of its interior – they take care to disassociate themselves from its values. This does not prevent them, however, from positing it as a model for the restructuring of urban form:

Beyond the town the only transition between the Strip and the Mojave desert is a zone of rusting beer cans. Within the town the transition is as ruthlessly sudden. Casinos whose fronts relate so sensitively to the highway turn their ill-kempt backsides towards the local environment, exposing residual forms and spaces of mechanical equipment and service areas.

The irony with which architects from Lutyens to Venturi have sought to transcend through wit th hich th iner- ate into total acquiescence; and the cult of 'the ugly and the ordinary' becomes indistinguishable from the environmental consequences of the market economy. Between the lines, the authors are brought to concede the superfluity of architectural design in a society that is exclusively motivated by ruthless economic drives; a society which has nothing of greater significance to represent than the giant neon-lit sky sign of the average strip. At the end of their analysis they are almost brought to concede that the loss of the monument is an absence that can hardly be compensated for by the sophistries of the 'decorated shed':

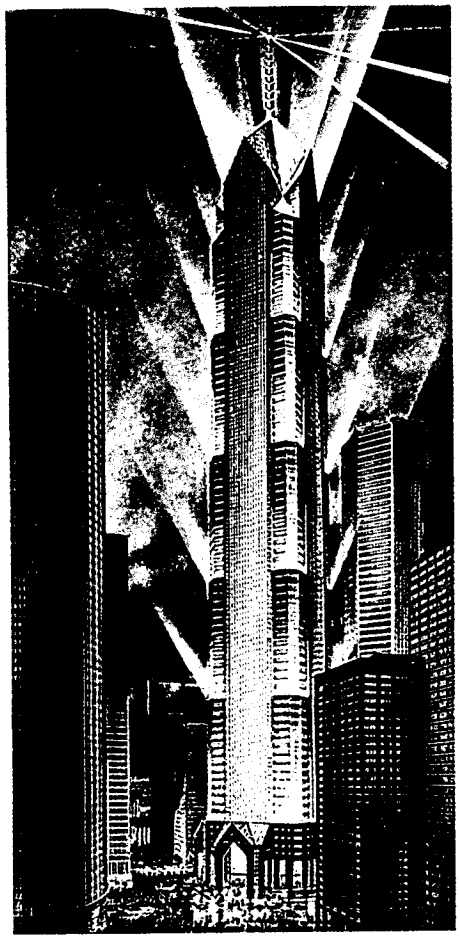
The casino in Las Vegas is a big low space. It is the archetype of all public interior spaces whose heights are diminished for reasons of budget or air conditioning. Today, span is easy to achieve and volume is governed by mechanical and economical limitations in height. But railroad stations, restaurants and shopping arcades only ten feet high reflect as well our changing attitude to monumentality . . . we have replaced the monumental space of Pennsylvania Station by a subway above ground and that of Grand Central Terminal remains mainly through its magnificent conversion to an advertising vehicle.

Venturi is determined to present Las Vegas as an authentic outburst of popular fantasy. But, as Maldonado has argued in his book *La Speranza Progettuale* (*Design, Nature and Revolution*) of 1970, the reality would indicate the contrary, that Las Vegas is the pseudo-communicative culmination of 'more than half a century of masked manipulatory violence directed towards the formation of an apparently free and playful urban environment in which men are completely devoid of innovative will'.

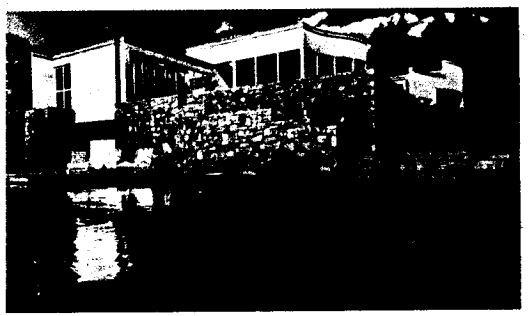
Be this as it may, the Venturi faction did not take their Populist stand in isolation. On the contrary, they soon acquired a sympathetic following in both academic and professional circles – from the historian/critic Vincent Scully, who initially rallied to their cause with his laudatory introduction to Venturi's *Complexity and Contradiction*, and who went on to confirm his continuing support with

his polemic *The Shingle Style Revisited* (1974), and from architects such as Charles Moore and Robert Stern, who, while adopting more varied *ad hoc* attitudes towards the manipulation of form, were nonetheless equally open to exploiting the essentially atectonic nature of the American balloon-frame.

The net effect, at least in Anglo-Saxon circles, has been to stimulate a rather indiscriminate reaction against all forms of modernist expression in architecture, a situation which the critic Charles Jencks was prompt to identify as 'Post-Modern'. In his book *The Language of Post-Modern Architecture* (1977), Jencks effectively characterized Post-Modernism as being a Populist-Pluralist art of immediate communicability. At the end of the first edition of this text, he hailed Gaudí's 'pre-modern' Casa Battló (1906) as an exemplary work, which was readily accessible, inasmuch as the populace could decipher and identify with the iconography of Catalan separatism which it embodied (Jencks is referring here to the lance-like tower and the dragon's back roof representing the ultimate triumph of the Catalan hero St George over the 'dragon' of Madrid). Nationalist mythologies cannot be invented overnight, however, and the sobering fact remains that many so-called Populist works have nothing more to convey than a gratifying cosiness or an ironic comment on the absurdity of suburban kitsch. More often than not Post-Modernist architects use the private house as an occasion for indulging in idiosyncratic obsessions, as is all too evident from the triviality of Stanley Tigerman's Hot Dog and Daisy houses of the mid-1970s.



291 Jahn, Bank of the South West, Houston, 1982 ff.



290 Stern, Ehrman House, Armonk, N.Y., 1975.

Each year American Populism seems to grow increasingly diffuse in its eclectic parodies from the Art Deco conceits of say Venturi's Brant House at Greenwich, Connecticut (1971) and Stern's closely related Ehrman House at Armonk, New York (1975) to the self-styled 'Popular Machinism' (in effect, neo-Art Deco) of Helmut Jahn's typical crystal skyscraper, the high-rise, curtain-walled structure rendered as a giant Wurlitzer organ. These and other Populist divagations indicate that the purging simplicity of 'the dumb

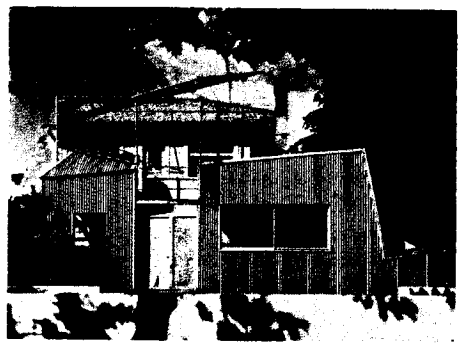
292 Moore, Piazza d'Italia, New Orleans, 1975–79.

and the ordinary' (in Venturi's phrase) has now been left behind, along with the sparsely elegant Trubeck and Wislocki houses which Venturi realized on Cape Cod in 1970.

By scenographically simulating the profiles of classical and vernacular and thereby reducing the architectonics of construction to pure parody, Populism tends to undermine the society's capacity for continuing with a significant culture of built form. The consequence of this for the field as a whole has been a seductive but decisive drift towards a kind of 'tawdry pathos', to use Jencks's felicitous yet ambivalent assessment of the theatrical effects created by Moore and Turnbull in their designs for Kresge College on the University of California's Santa Cruz campus (1974). The cynicism which ultimately motivates such scenographic operations has since been openly conceded by Moore, above all in his account of the design process which led to the Piazza d'Italia in New Orleans (1979). In 1981 he wrote:

I remembered that the architectural orders were Italian, with a little help from the Greeks, and so we thought we could put Tuscan, Doric, Ionic and Corinthian columns over the fountain, but they overshadowed it, obliterating the shape of Italy. So instead we added a 'Delicatessen Order' that we thought could resemble sausages hanging in a shop window, thus illustrating its transalpine location. But now I think there is going to be an Italian restaurant and no sausages. . . . there was a little bit of money left over so we thought we would bang up a temple out front to show that our piazza was behind it. There was enough money too to make a campanile beside the temple to show off our existence and to make more patterns with the verticals of the skyscraper behind. Someday there will be shops around it, like Ghirardelli Square, but for the moment it is just sitting by itself and a little lonesome.

In contrast to the flaccid eclecticism of Moore (who abandoned the constructional purity of his Sea Ranch complex in Sonoma County, California (1964–66) as soon as it was completed), Frank Gehry's domestic work, above all his own deconstructed 'anti-house' (cf. Marcel Duchamp's 'anti-painting') built in Santa Monica in 1979, introduced a genuinely subversive element into the complacent decadence of American Populist architecture. However, this creative resistance has been more than balanced by the uncritical absorption of American Populism into the European mainstream, a cultural transfer effected by Paolo Portoghesi's architectural section of the 1980 Venice Biennale which bore the seductive double title 'The Presence of the Past' and 'The End of Prohibition'. It is significant that the full-size façades of Portoghesi's 'Strada Novissima' in the Arsenal (fig. 309) were realized by scene-builders from the Italian film industry. The only exception was the design by Leon Krier, who, no doubt out of 'moral' deference to his beloved Heinrich Tessenow (see the latter's *Handwerk*



293 Gehry, Gehry House, Santa Monica, Calif., 1979.

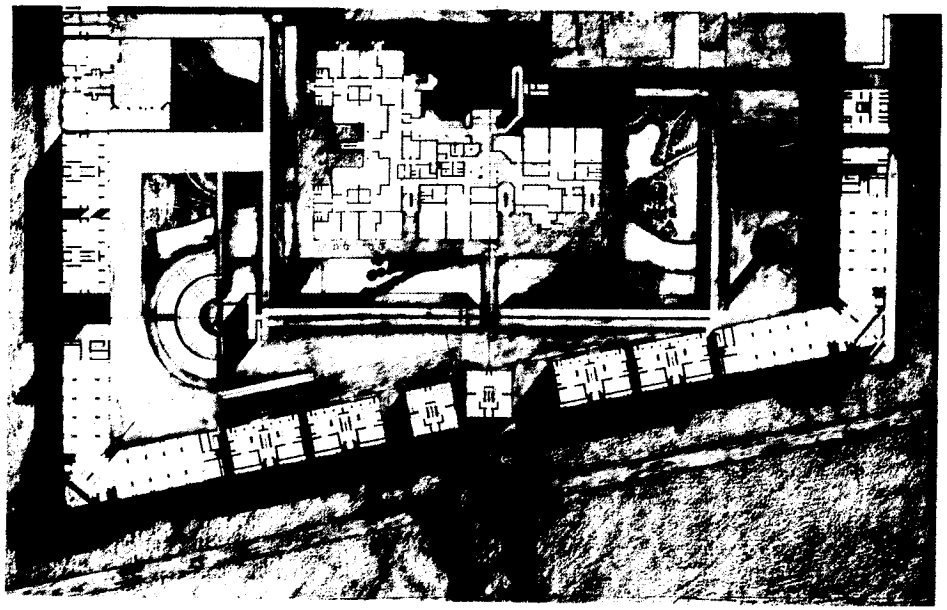
bank built at Oliveira de Azemeis in 1974, are topographically structured.

The projected work of the New York-based Austrian architect Raimund Abraham seems to be informed by similar concerns, inasmuch as this architect has always stressed place creation and the topographic aspects of built form. The House with Three Walls (1972) and the House with Flower Walls (1973) are typical of his pieces of the early 1970s, wherein the project evokes an oneiric image while insisting on the inescapable materiality of building. This concern for tectonic form and for its capacity to transform the surface of the earth has been carried over into Abraham's recent designs made for the International Building Exhibition in Berlin, above all into his recent project for South Friedrichstadt designed in 1981.

An equally tactile attitude obtains in the work of the veteran Mexican architect Luis Barragán, whose finest houses (many of which have been erected in Mexico City, in the suburb of Pedregal) assume a topographic form. As much a landscape designer as an architect, Barragán has always sought a sensual and earthbound architecture; an architecture compounded of enclosures, stelae, fountains and water courses; an architecture laid into volcanic rock and lush vegetation; an architecture that refers indirectly to the Mexican *estancia*. Of Barragán's feeling for mythic and rooted beginnings it is sufficient to cite his memories of the apocryphal *pueblo* of his youth:

My earliest childhood memories are related to a ranch my family owned near the village of Mazamitla. It was a *pueblo* with hills, formed by houses with tile roofs and immense eaves to shield passersby from the heavy rains which fall in that area. Even the earth's color was interesting because it was red earth. In this village, the water distribution system consisted of great gutted logs, in the form of troughs, which ran on a support structure of tree forks, 5 meters high, above the roofs. This aqueduct crossed over the town, reaching the patios, where there were great stone fountains to receive the water. The patios housed the stables, with cows and chickens, all together. Outside, in the street, there were iron rings to tie the horses. The channeled logs, covered with moss, dripped water all over town, of course. It gave this village the ambience of a fairy tale. No, there are no photographs. I have only its memory.

323 Abraham, project for South Friedrichstadt, Berlin, 1981: detail showing half the site.



This remembrance was surely influenced by Barragán's life-long involvement with Islamic architecture. Similar feelings and concerns are evident in his opposition to the invasion of privacy in the modern world and in his criticism of the subtle erosion of nature which has accompanied post-war civilization:

Everyday life is becoming much too public. Radio, TV, telephone all invade privacy. Gardens should therefore be enclosed, not open to public gaze. . . . Architects are forgetting the need of human beings for half-light, the sort of light that imposes a tranquility, in their living rooms as well as in their bedrooms. About half the glass that is used in so many buildings – homes as well as offices – would have to be removed in order to obtain the quality of light that enables one to live and work in a more concentrated manner . . .

Before the machine age, even in the middle of cities, Nature was everybody's trusted companion. . . . Nowadays, the situation is reversed. Man does not meet with Nature, even when he leaves the city to commune with her. Enclosed in his shiny automobile, his spirit stamped with the mark of the world whence the automobile emerged, he is, within Nature, a foreign body. A billboard is sufficient to stifle the voice of Nature. Nature becomes a scrap of Nature and man a scrap of man.

By the time of his first house and studio built around an enclosed court in Tacubaya, Mexico D.F., in 1947, Barragán had already moved away from the syntax of the International Style. And yet his work has always remained committed to that abstract form which has characterized the art of our era. Barragán's penchant for large, almost inscrutable abstract planes set into the landscape is perhaps at its most intense in his gardens for the residential districts of Las Arboleadas (1958–61) and Los Clubes (1961–64) and in his freeway monument, Satellite City Towers, designed with Mathias Goeritz in 1957.

Regionalism has, of course, manifested itself in other parts of the Americas; in Brazil in the 1940s in the early work of Oscar Niemeyer and Affonso Reidy; in Argentina in the work of Amancio Williams, above all in Williams's bridge house in Mar del Plata of 1943–45 and more recently perhaps in Clorindo Testa's Bank of London and South America, Buenos Aires (1959); in Venezuela, in the Ciudad Universitaria built to the designs of Carlos Raúl Villanueva between 1945 and 1960; on the West Coast of the United States, first in Los Angeles from the late 1920s in the work of Neutra, Schindler, Weber and Gill, and then in the Bay Area school founded by William Wurster

324 Barragán and Goeritz, Satellite City Towers, Mexico City, 1957.

329 Schnebli, Castioli House, Campione d'Italia, 1960.

always displayed strong regionalist tendencies. The cantonal principle of admission and exclusion has always favoured extremely dense forms of expression, with the canton favouring local culture and the Federation facilitating the penetration and assimilation of foreign ideas. Dolf Schnebli's Neo-Corbusian vaulted villa at Campione d'Italia on the Italo-Swiss frontier (1960) may be seen as initiating the resistance of Ticinese architecture to the influence of commercialized modernism. This resistance found an echo immediately in other parts of Switzerland, in Aurelio Galfetti's equally Corbusian Rotalinti House in Bellinzona (1961) and in Atelier 5's assumption of the Corbusian *béton brut* manner, as this appeared in Siedlung Halen, built outside Berne in 1960 (fig. 314).

Today's Ticinese Regionalism has its ultimate origins in the pre-war protagonists of the Italian Rationalist movement in Switzerland, above all the work of the Italian Alberto Sartoris and the Ticinese Rino Tami. Sartoris's main realizations were in the Valais, most notably a church at Lourtier (1932) and two small concrete-framed houses, built in association with viticulture and under construction between 1934 and 1939, of which the most renowned is the Morand-Pasteur residence at Saillon (1935). Of the compatibility between Rationalism and rural architecture Sartoris wrote: 'Rural architecture, with its essentially regional features, is perfectly at home with today's rationalism. In fact it embodies in practice all those functional criteria on which modern building methods are essentially based.' Where Sartoris was primarily a polemicist keeping the Rationalist precepts alive throughout the Second World War and its aftermath, Tami was mainly a builder, and the Ticinese architects of the 1960s were able to take his Cantonal Library at Lugano (1936–40) as an exemplary Rationalist work.

Ticinese practice in the mid-1950s, with the exception of Galfetti, was oriented towards the work of Frank Lloyd Wright rather than the pre-war Italian Rationalists. Of this period Tita Carloni wrote: 'We naively set ourselves the objective of an "organic" Ticino, in which the values of modern culture were to be interwoven in a natural way with local tradition.' Of Ticinese Neo-Rationalism in the early 1970s we find him writing:

> The old Wrightian schemata were superseded, the chapter of 'big commissions' for the State, with good reformist intentions, was closed. It all had to be begun all over again, from the ground upwards: housing, schools, minor didactic restorations, competition entries as an opportunity to investigate and critically assess the contents and forms of architecture. In the meantime cultural confrontation in Italy, political commitment, and the exacting confrontation with our own native intellectuals, especially Virgilio Gilardoni, meant that history books started to appear on our desks, and above all faced us with the challenge of critically reappraising the whole evolution of modernism, most especially that of the 1920s and 1930s.

As Carloni suggests, the strength of provincial culture resides in its capacity to condense the artistic and critical potential of the region while assimilating and reinterpreting outside influences. The work of Carloni's prime pupil, Mario Botta, is typical in this respect, with its concentration on issues which relate directly to the specific place while adapting methods and approaches drawn from outside. Formally educated under Scarpa, Botta was fortunate enough to work, however briefly, for both Kahn and Le Corbusier during the short period when they projected civic works for Venice. Evidently influenced by these men, Botta went on to appropriate the Italian Neo-Rationalist methodology as his own, while simultaneously

330 Botta, house at Riva San Vitale, 1972–73.

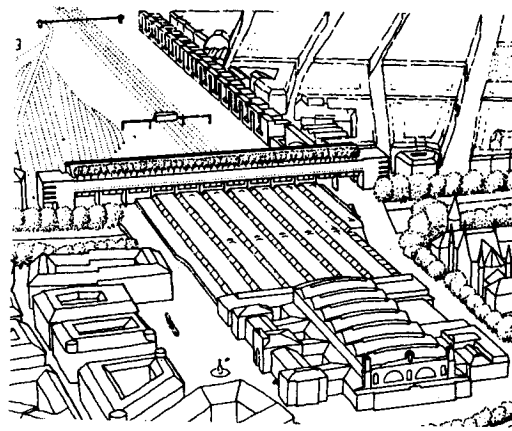
retaining, through Scarpa, an unusual capacity for the craft enrichment of his form. One of the most exotic examples of this occurs in his application of *intonaco lucido* (polished plaster) to the fireplace surrounds of a converted farmhouse at Ligrignano in 1979.

Two other traits in Botta's work may be seen as critical: on the one hand, his constant preoccupation with what he terms 'building the site', and on the other, his conviction that the loss of the historical city can only be compensated for by 'cities in miniature'. Thus Botta's school at Morbio Inferiore is interpreted as a micro-urban realm – as a cultural compensation for the evident loss of civic life in Chiasso, the nearest large city. Primary references to the culture of the Ticino landscape are also evoked by Botta at a typological level, such as the house at Riva San Vitale, which refers obliquely to the traditional tower-like country summer houses or 'rocoli' which were once plentiful in the region.

Aside from these references, Botta's houses serve as markers in the landscape – as indicators of limits or boundaries. The house in Ligornetto, for example, establishes the frontier where the village ends and the agrarian system begins: its main aperture (a large 'cut-out' opening) turns away from the fields and towards the village. Botta's houses are often treated as bunker/belvederes, where the fenestration opens onto choice views in the landscape, concealing the rapacious suburban development that has taken place in the Ticino since 1960. Instead of being terraced into the site, they 'build the site', after the thesis advanced by Vittorio Gregotti in *Il territorio dell'architettura* (1966). They declare themselves as primary forms, set against the topography and the sky. Their capacity to harmonize with the partially agricultural nature of the region stems directly from their *analogical* form and finish; that is to say, from the fair-faced concrete block of their structure and from the silo or barn-like shells in which they are housed, these last alluding to the traditional agricultural structures from which they are derived.

Despite this feeling for a domestic sensibility which is at once modern and traditional, the most critical aspect of Botta's achievement resides in his public projects; in particular in the two large-scale proposals which he designed in collaboration with Luigi Snozzi. Both of these are 'viaduct' buildings and as such owe something to Kahn's Venice Congress Hall project of 1968 and to Rossi's first sketches for Gallaratese. The 1971 Botta/Snozzi project for the Centro Direzionale, Perugia, is projected as a 'city within a city', and the wider implications of this design clearly stem from its potential applicability to many megalopolitan situations throughout the world. Had it been realized, this centre, conceived as a 'viaduct-megastructure', could have established its presence in the urban region without compromising the historic city or fusing with the chaos of the surrounding suburban development. A comparable clarity and appropriateness obtained in their Zürich Station proposal of 1978, where a multi-level bridge concourse would not only have

331 Botta and Snozzi, project for the alteration of Zürich Station, 1978: the original station building (bottom) and bridge across the tracks.



accommodated shops, offices, restaurants and parking but would also have constituted a new, head building while some of the original functions were retained in the existing terminus.

It is no accident that Tadao Ando, who is one of the most regionally conscious architects in Japan, should be based at Osaka rather than Tokyo and that his theoretical writings should formulate more clearly than any other architect of his generation a set of precepts which come close to the idea of Critical Regionalism. This is most evident in the tension that he perceives as obtaining between universal modernization and the idiosyncrasy of rooted culture. Thus we find him writing in an essay entitled 'From Self-Enclosed Modern Architecture toward Universality':

Born and bred in Japan, I do my architectural work here. And I suppose it would be possible to say that the method I have selected is to apply the vocabulary and techniques developed by an open, universalist Modernism in an enclosed realm of individual lifestyles and regional differentiation. But it seems difficult to me to attempt to express the sensibilities, customs, aesthetic awareness, distinctive culture, and social traditions of a given race by means of an open, internationalist vocabulary of Modernism . . .

By 'enclosed modern architecture' Ando intends the literal creation of walled enclaves by virtue of which man is able to recover and sustain some vestige of his former intimacy with both nature and culture. Thus he writes:

After World War II, when Japan launched on a course of rapid economic growth, the people's value criteria changed. The old fundamentally feudal family system collapsed. Such social alterations as concentration of information and places of work in cities led to overpopulation of agricultural and fishing villages and towns (as was probably true in other parts of the world as well). Overly dense urban and suburban populations made it impossible to preserve a feature that was formerly most characteristic of Japanese residential architecture; intimate connection with nature and openness to the natural world. What I refer to as an enclosed Modern Architecture is a restoration of the unity between house and nature that Japanese houses have lost in the process of modernization.

In his small courtyard houses, often set within dense urban fabric, Ando employs concrete in such a way as to stress the taut homogeneity of its surface rather than its weight, since for him it is the most suitable material 'for realizing surfaces created by rays of sunlight . . . [where] walls become abstract, are negated, and approach the ultimate limit of space. Their actuality is lost, and only the space they enclose gives a sense of really existing.'

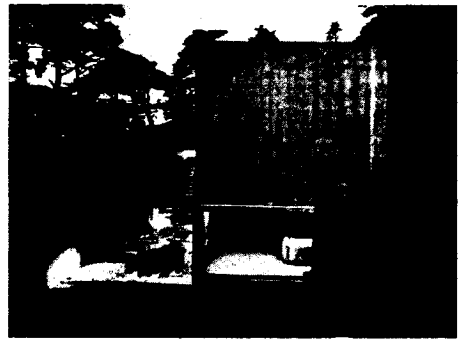
While the cardinal importance of light is stressed in theoretical writings of both Kahn and Le Corbusier, Ando sees the paradox of spatial limpidity emerging out of light as being peculiarly pertinent to the Japanese character and with this he makes explicit the broader meaning which he attributes to the concept of a self-enclosed modernity:

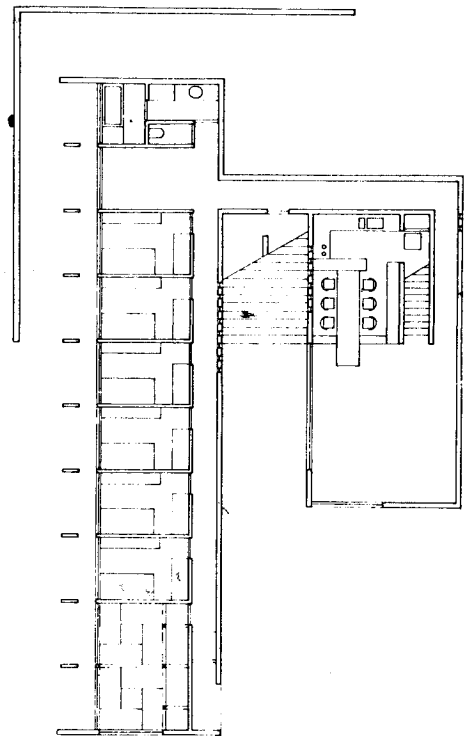
Spaces of this kind are overlooked in utilitarian affairs of everyday and rarely make themselves known. Still they are capable of stimulating recollection of their own innermost forms and stimulating new discoveries. This is the aim of what I call closed modern architecture. Architecture of this kind is likely to alter with the region in which it sends out roots and to grow in various distinctive individual ways. Still, though closed, I feel convinced that as a methodology it is open in the direction of universality.

What Ando has in mind is the development of an architecture where the tactility of the work transcends the initial perception of its geometric order. Precision and density of detail are both crucial to the revelatory quality of his forms under light. Thus he wrote of his Koshino House of 1981:

Light changes expressions with time. I believe that the architectural materials do not end with wood and concrete that have tangible forms but go beyond to include light and wind which appeal to our senses. . . . Detail exists as the most important element in expressing identity. . . . Thus to me, the detail is an element which achieves the physical composition of architecture, but at the same time, it is a generator of an image of architecture.

In their article on the Critical Regionalism of the Greek architects Dimitris and Susana Antonakakis, entitled 'The Grid and the Pathway'





332, 333 Ando, Koshino House, Osaka, 1981: view and ground plan.

(*Architecture in Greece*, 1981), Alex Tzonis and Liane Lefaivre demonstrate the ambiguous role played by the *Schinkelschüler* in the building of Athens and the founding of the Greek state:

In Greece historicist regionalism in its neoclassical version had already met with opposition before the arrival of the Welfare State and of modern architecture. It is due to a very peculiar crisis which explodes around the end of the nineteenth century. Historicist regionalism here had grown not only out of a war of liberation; it had emerged out of interests to develop an urban élite set apart from the peasant world and its rural 'backwardness' and to create a dominance of town over country: hence the special appeal of historicist regionalism, based on the book rather than experience, with its monumentality recalling another distant and forlorn élite. Historical regionalism had united people but it had also divided them.

The various reactions which followed the proliferation of the 19th-century Greek Nationalist Neo-Classical style varied from the vernacular historicism of the 1920s to the committed modernism of the 1930s as this became manifest in the work of such architects as Stamo Papadaki and J.G. Despotopoulos. As Tzonis points out, a consciously regionalist modernism emerged in Greece with the earliest works of Aris Konstantinidis (his Eleusis house of 1938 and his Kifissia garden exhibition of 1940), and this line was developed further by Konstantinidis in the 1950s, in various low-cost housing schemes and in the hotels he designed for the Xenia national tourist organization between 1956 and 1966. In all of Konstantinidis's public work a tension appears between the universal rationality of the trabeated reinforced concrete frame and the autochthonous tactility of the native stone and blockwork which is used as infill. A much less equivocal regionalist spirit permeates the park and promenade that Dimitris Pikionis designed for the Philopappus Hill in 1957, on a site adjacent to the Acropolis in Athens. In this archaic landscape, as Tzonis and Lefaivre point out,

Pikionis proceeds to make a work of architecture free from technological exhibitionism and compositional conceit (so typical of the mainstream of architecture of the 1950s), a stark naked object almost dematerialized, an ordering of 'places made for the occasion', unfolding around the hill for solitary contemplation, for intimate discussion, for a small gathering, for a vast assembly. . . . To weave