82 Charles and Henry Greene, Gamble House, Pasadena, 1907–8, detail of stair

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arts and crafts ideals in britain and the u.s.a.

The arts and crafts are called upon to restore our awareness of honesty, integrity and simplicity in contemporary society. If this can be achieved, the whole of our cultural life will be profoundly affected... The success of our movement will not only alter the appearance of houses and flats but will have direct repercussions on the character of an entire generation... If the new trends are genuine, then an original, lasting style will emerge ...
Hermann Muthesius, 1907

The search for values of simplicity and directness which motivated so many artistic developments in the first decade of the twentieth century had its roots in a variety of earlier intellectual positions. The last chapter traced one of these – Rationalism – and suggested how this aided the discovery of forms based on reinforced-concrete construction. There was another strand of ideas, however, which stemmed from Pugin, Ruskin, and William Morris, according to which the 'corruption of nineteenth-century styles' would be counteracted by inspired craftsmanship, and which maintained that an authentic architecture would be achieved through the direct expression of pristine moral virtues. Each of these English thinkers was disgusted in his own way with the impact of the Industrial Revolution on the social organization, the methods of building, and the very moral basis of culture. Morris, in particular, had hoped to usher in a new period of integrated wholeness in which the highest aesthetic qualities would be ripped from the museum pedestal and linked again with the tools and artefacts of everyday use. The architect must therefore become a master of craft; and, to judge by Philip Webb's and Morris's Red House of 1859, this attitude tended to be translated formally into a medievalizing vocabulary in which the direct qualities of vernacular design were emulated to create a suitable emblem of the simple, good life.

Nikolaus Pevsner has traced the evolution of Arts and Crafts ideals through the last three decades of the nineteenth century and has demonstrated the impact of Morris's thinking on Walter Gropius and the Deutscher Werkbund in Germany in the first decade of this century. It was only when Morris's ideals concerning the reintegration of art and life, craft and utility, were transformed to allow for mechanization that they became directly useful to the creation of the modern movement. But history does not work in straight lines, and the Arts and Crafts inheritance permeated a number of developments around the turn of the century which did not, it so happens, bear fruit in specifically 'modern' architecture.

It is natural to begin the story in Britain with the legacy of domestic architectural ideals handed down from Webb, Richard Norman Shaw, Edward Godwin, and Arthur Heygate Mackmurdo to a later generation including Voysey, Edwin Lutyens,

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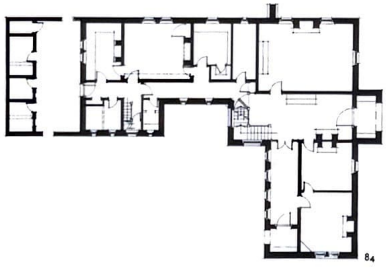
Mackay Hugh Baillie Scott, Edward Prior, Mackintosh, Charles Robert Ashbee, and William Richard Lethaby. Charles Francis Annesley Voysey was born in 1857 and produced his own unique style just before the turn of the century in designs like that for a house in Bedford Park of 1890–1 or for a studio in St Dunstan's Road, West Kensington, of the same year. In these, the aesthetic effect arose from the disposition of simple pebble-dashed and whitewashed volumes punctured by rows of windows and enhanced by the geometrical play of chimneys and low-angled roofs. It is not hard to understand how formalist historians seeking a pedigree for the stripped white forms of later modern architecture should have turned to Voysey; however, the architect expressed embarrassment at having this role of 'pioneer of modern design' thrust upon him. His immersion in the simple joys of English vernacular design, his lack of fuss, his almost childlike obsession with the composition of rain barrels and gutters in façades, have very little in common with the ideas of a later generation for whom simplicity had a very different universal and mechanistic significance.

Voysey's vision seems to have come to full maturity in his large houses in rural settings, such as Perrycroft, designed for a site in the Malvern hills in 1893, or Greyfriars of 1896, built on a ridge in



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Surrey known as the Hog's Back. The first of these made much use of sloping buttresses and deeply overhanging eaves, not only as structural, climatic and compositional devices, but also as ways of linking the building to the ground and suggesting continuity with local vernacular design. This was a central idea of Arts and Crafts architectural doctrine: indigenous materials and usages were to be translated to good use by the modern practitioner.

Although Voysey was not a craftsman himself, he turned his mind to the design of wallpapers, furniture, fixtures and fittings, for he felt that the same impulses should permeate all the interiors of

83 Philip Webb, Red House, Bexley Heath, Kent, 1859

84 Red House, plan

85 Charles Francis Annesley Voysey, The Orchard, Chorleywood, Hertfordshire, 1899–1900, hall

86 Charles Francis Annesley Voysey, Perrycroft, near Malvern, 1893, early scheme

a house as conditioned the overall form. Here again he pursued a rhetorical simplicity, which made a pointed contrast with the clutter and complexity of earlier Victorian design. In The Orchard, Chorleywood (1899–1900), walls and stair-rails were stripped down, and door latches and hinges were modelled on rural examples; the interiors were bathed in light. Pevsner tended to associate this straightforwardness and youthfulness with a wider reaction in values. 'It is well known that everywhere in English cultural life a longing for fresh air and gaiety expressed itself at the end of Queen Victoria's reign.' Another novel feature of Voysey's designs was the way they liberated interior volumes so that they tended to flow into one another. In Broadleys (1898), a house overlooking Lake Windermere, the hall was carved out as a double space. In plan the main elements were subtly disposed with an order combining some degree of symmetry and formality

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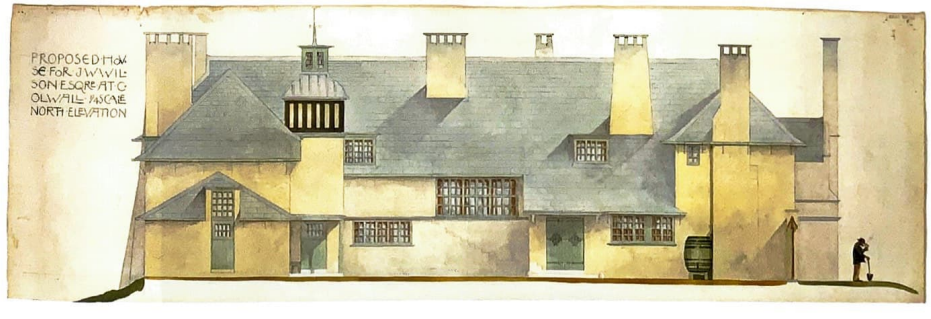
with informal and asymmetrical qualities. In these ways Voysey succeeded in giving form to the patterns of social life of the English well-to-do at the turn of the century. It was a sort of procured rusticity, an emulation of the 'common speech' of the vernacular which was, of course, very self-conscious.

M. H. Baillie Scott was nine years Voysey's junior and, unlike him, did much work on the continent. In his Blackwell House of 1900, also on Lake Windermere, he attempted to open up the interior space. Of course, this was not simply an aesthetic matter, but an attempt at expressing a way of life. Baillie Scott has left evocative descriptions conjuring up the life of the middle-class home with the fire crackling in a central hall, the living rooms opening out into one another, the inglenooks, the music gallery, the broad, winding stairs. Such arrangements were heavily loaded with deliberate manorial associations, referring to a romanticized national past. Both Voysey and Baillie Scott managed to conjure up a powerful image of the Englishman's home which would eventually be disseminated through the building catalogues to provide many of the standard clichés of inter-war domestic suburban building.

Another feature of creative domestic design in the Edwardian period was the fusion of the house with its garden setting through the use of pergolas, pathways, sunken gardens and the like. To be sure, the 'rusticity' of the Arts and Crafts dwelling was not allowed to be too rude or too removed from the gentility and urbanity of the middle-class users. In



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Hill House at Helensburgh of 1903, built for Walter Blackie the publisher, Charles Rennie Mackintosh designed not only the house and all its fixtures and fittings, but the outbuildings, the garden gates, the walls, the terraces, and the pergolas as well – all as part of a unified aesthetic conception. The result was a total work of art, an aesthetic enhancement of all the rituals of family life, from the 'public face' presented to arriving guests in the hall, to the relative formality of dining room and living room, to the more informal and private worlds of inglenooks, bedrooms, library and garden seats. The echoes were local and traditional, the reverberations international, even universal, for Hill House was one of several Mackintosh designs to inspire new tendencies abroad. It was the sharp interplay of wall planes and openings, silhouettes and surfaces, as well as the direct celebration of functional elements like chimneys, which recommended this building to the Viennese avant-garde. In effect 'Mackintosh developed the somewhat thin and frosty air of the Scottish vernacular and transformed it into a living style of the early twentieth century ...'

Some of the richest creations of this type in England were designed by Edwin Lutyens, who frequently worked closely with his cousin, the garden designer Gertrude Jekyll, for whom he built one of his earliest houses, at Munstead Wood near Godalming, Surrey (1896). This was soon followed by a number of other outstanding houses in the area, including the Orchards at Godalming, and Tigbourne Court, also in Surrey and also of 1898. Lutyens received direct inspiration from Shaw and Webb but exceeded both in the breadth of his sources, the range of his imagination, and his capacity for wittily turning a vernacular usage to his own advantage. He believed strongly in the use of local crafts and materials, both because this was practical and because it was liable to lead to a harmony between the house and its architectural or

87 Charles Rennie Mackintosh, Hill House, Helensburgh, 1902–3

88 Edwin Lutyens, The Pleasaunce, Overstrand, Norfolk, 1899–1901, view of garden steps

89 Edwin Lutyens, Tigbourne Court, Surrey, 1898

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tural setting. Thus in his early designs one finds him employing Surrey tile fascias and wooden frames based on yeomen's houses, and varying the depth of his eaves according to local character and precedent. In Overstrand Hall, Norfolk (1901), typical indigenous combinations of flint and red-brick courses were employed, but adeptly transformed into a vocabulary suave in its accents and enhanced by clever collisions of classical and medieval fragments.

It would be entirely inadequate, however, to reject Lutyens as a mere eclectic who raided the rag-bag of history in order to satisfy the taste for exotic weekend scenarios of his extremely wealthy patrons. Underlying the play was a controlling sense of proportion and organizational principle; beneath the sparkle was a sober and probing mind, which was eventually to seek the certainties of classical design. Moreover, the unity of Lutyens's designs was achieved by a judicious combination of axes and repeating geometrical motifs. Thus one finds 'themes' played out in plan, elevation, and volume, as when an arch turns into a semicircular step, to be rediscovered as a wall niche, a dome, or a luxurious hemispherical Edwardian bath lined with mosaic. Geometrical play could extend to the elements of garden design as well. At The Pleasaunce (also in Norfolk, 1899–1901) the convex spherical form of the baking oven was restated in the concave hemisphere of the brick garden-seat canopy; the sunken gardens were in turn linked to the house by amphitheatre-like steps, circular ground patterns and curved levels.

Lutyens was also fascinated by the special character of each client and site, and always attempted to produce a unique response to these. At Lindisfarne he was requested to remodel a Scottish castle on the promontory overlooking the North Sea. He transformed it into a bijou fortress, whose parapets harmonized with the surrounding rocks and whose imagery was entirely at one with the spirit of the place. At Heathcote, Ilkley (1906), the client required a more magnificent and prestigious imagery than was usual for Lutyens, and the site, being almost suburban and hemmed in by buildings on both sides, suggested the qualities of a formal villa. Thus the architect varied his manner to include something of the character of the English Baroque, with quotations from Vanbrugh and Hawskmoor. The body of the house was ingeniously linked to the setting by parterres, an apsidal 'great lawn' and subtle cross axes. The materials, meanwhile, were local ones: Guiseley stone with grey dressings from the Morley quarries. The result was a massive heap

of a certain dour quality, perfectly suited to its region and placement. In The Salutation (1912) at Sandwich, Kent, the gate lodge was made to harmonize with the character of a Kentish riverside town through the use of local tiles and white woodwork, which were handled with a sort of procured irregularity blending superbly with the ageing character of the surroundings. Nowhere in Lutyens's work is there the disturbance of new social forces or of the industry whose very owners were frequently his clients. His designs evoked a safe and stable world of national continuity. They implied the conceit that the crafts had remained perpetually the same from region to region over the ages.

Voysey, Lutyens, Baillie Scott, Prior and the other English architects who might be loosely grouped as 'Arts and Crafts' in the first decade of the twentieth century were bold innovators in domestic design, but in most respects were traditionalists. The 'freedom' of their planning and the directness and 'honesty' of their use of materials were perhaps emblematic of a reaction against the clutter and pomposity of earlier English domestic architecture, but these architects were certainly far from attempting the creation of a brave new world. In a sense, their designs were microcosms of deeply felt values concerning the meaning of the home: worlds in miniature in which details like door latches or dovecots, as well as the overall mood, were infused with a sense of reverence for the ideal of a happy family life in a natural setting.

It was customary before the First World War to refer to the new style as 'the English Free Architecture', but by 1910 a strong reaction had set in, in favour of a direct neo-classical revival and a dependence on foreign and 'cosmopolitan' models rather than native, vernacular ones. At about the same time that the French Beaux-Arts was beginning to exert its influence in England, Arts and Crafts values were being, as it were, exported to Germany. A key personality here was Hermann Muthesius, who was posted to the German embassy in London precisely to study English domestic design. His book *Das englische Haus* of 1904 was a masterly survey of the national tradition of houses. Undoubtedly he was catering to a taste in Germany, stretching well back into the nineteenth century, for the English cottage and garden. But there were weightier ideals at work as well. Muthesius was working for a German élite who felt strongly the inferiority of their culture, and its disruption by industrialization. They sensed in the English movement an unruffled, sober character, as well as an intelligent application of formal quality to everyday design. Muthesius mythologized the Englishman and his home in this way:

> ... let me repeat once more that the Modern English artistic movement has no trace of those fanciful, superfluous, and often affected ideas with which a part of the new continental movement is still engaged. Far from this, it tends more towards the primitive and the rustic; and here it fits perfectly well with the type of traditional rural house. Moreover, this outcome is perfectly to the taste of the Englishman for whom there is nothing better than plain simplicity ... A minimum of 'forms', and a maximum of peaceful, comfortable and yet lively atmosphere, that is what he aims for ... Such accord seems to him to be a link with beloved Mother Nature, to whom, despite all higher cultures, the English nation has remained more faithful than any other people. And today's house is proof of this ... The way in which it fits so admirably into surrounding Nature in the happiness of its colouring and the solidity of its form: in all these ways it stands there today as cultural proof of the healthy tendencies of a nation which amid all its wealth and advances in civilization has retained, to a remarkable degree, its appreciation of what is natural. Urban civilization, with its destructive influences, with its senseless haste and press, with its hothouse stimulation of those impulses towards vanity which are latent in man, with its elevation of the refined, the nervous, the abnormal to unnatural proportions, all this has had practically no harmful effect on the English nation.

German admiration for the English Arts and Crafts went further than this. It included an attempt at emulating the values of honesty of materials, simplicity etc. in the design of everyday objects and in the teaching programmes of schools of design, and it eventually extended to a wholesale national obsession with the ideal of good formal quality in *industrial* design. Looking back in 1915, William Lethaby, who had been deeply involved with the English movement, could express his sadness at the 'timid reaction and the re-emergence of the catalogued styles' in England and his admiration for 'advances in German industrial design founded on the English arts and crafts'. The manner in which a movement which had been conceived, in part, as a reaction against the crudities of mechanization became the basis of a national industrial design philosophy, must be explained in a later chapter; suffice it to say that Arts and Crafts values, once exported and transformed, were another major element in the jigsaw puzzle of the modern movement.

This was true not only in Europe, but also in

90 Henry Hobson Richardson, Ames Gate Lodge, North Easton, Massachusetts, 1880–2

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America, where the catalyst of transformation was Frank Lloyd Wright. He was undoubtedly the most original architect to be influenced by Arts and Crafts ideals and, to that extent, can scarcely be considered typical. None the less, his formulation occurred in a milieu of ideas derived from the earlier nineteenth century. There was no direct equivalent to William Morris in the American tradition, but his ideas were certainly well known. In the figure of Andrew Jackson Downing one has a mid-century thinker and designer who put great store by the image of the individual wooden-battened house – the rustic retreat – as somehow quintessentially American and democratic. Vincent Scully has traced the ensuing development in the last three decades of the nineteenth century of the so-called 'Stick' and 'Shingle' styles, in which the direct expression of wooden construction, informal open-planning, verandas, and a romantic display of hipped roofs, chimneys, and gazebo elements all played a part. Arguably Norman Shaw's influence on these developments was considerable; certainly local traditions of wooden construction had a role; but there was also something less definable – an ethos of freedom, and a concern for the relationship of the individual dwelling to its natural setting. As always, American architectural development was both helped and hindered by the lack of a long, coherent national tradition: helped because this situation encouraged a degree of experimentation; hindered because there was relatively little guidance from earlier norms. It is in the figure of Henry Hobson Richardson – Beaux-Arts trained, with a deep appreciation of medieval sources and a rare instinct for what was most relevant to the emergent social order of the United States – that one finds a forceful synthesis of the indigenous and the imported. The Ames Gate Lodge of 1880–2 at North Easton, Massachusetts, is linked to its site and its region by a strong sense of place and by an exaggerated use of indigenous stonework; yet the rusticity of the imagery is ennobled, formalized and enhanced by the architect's knowledge of far-distant traditions including such exoticisms as Early Christian arches from Syria and French medieval farm buildings. This was the 'rural' end of the scale for Richardson, and the Ames Gate Lodge even courted the idea of architectural origins in geological formulations or primitive shelters made from huge boulders.

Thus the search for a model domestic architecture in America was never very far from the larger question of defining an American architecture in general. There followed a series of formulations and emotions unfolding around such ideas as: the search for a pastoral or middle-landscape ideal; the notion of an honest expression unfettered by European decadence; a conception of native functionalism; an aspiration towards a fitness and commodity mirroring nature's, which would lead by a short route to beauty and deeper meanings. Tinged with nostalgia for an earlier search for paradise in the 'New World', this sophisticated quest for a simplicity in touch with natural values crystallized in that most cultivated and artificial of 'natural' settings, the suburbia which began to proliferate around the mechanized American cities from the 1880s onwards.

As we shall see in Chapter 7, Wright grasped the full meaning of this situation and managed to take the suburban family house and weave a mythology around it. His earliest designs were drawn from the Shingle Style, from Japanese sources, from the Midwestern vernacular, and from the Queen Anne and Colonial revivals which briefly touched the Midwest of his youth in the 1880s and early 1890s. Arts and Crafts ideals imported from Britain, concerning the direct response to the nature of materials and the total design of furnishings and building, including the setting, early permeated his outlook. However, unlike Morris and his British

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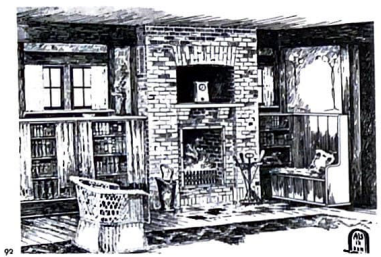

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contemporaries, he grasped the positive importance of mechanization as well. In his essay 'The Art and Craft of the Machine', of 1901, he acknowledged that 'the machine is here to stay' and that this would influence not only the artist's techniques in building (e.g. straight lines of simple cut wood) but the entire fabric of the society for which he would build. A traditionalist in many senses, Wright remained; but his powerful feeling for abstract form and his vision of a new social order made him a link between the nineteenth-century craft ideal and the propelling ideas of the later modern movement in Europe.

In addition to Wright's own architecture and the 'Prairie School' which developed some of his ideas (see p. 138), there were other developments in the United States which extended the Arts and Crafts movement, especially on the West Coast. The West was still regarded as a last frontier and thus collected the detritus of over a century of pioneer mythology. From 1901 to 1916, Gustav Stickley spread the message of the 'Craftsman's Movement' in a magazine called *The Craftsman*. This recorded developments in bungalow and furniture design and illustrated ideal projects for individual homes. Among these suggestions were ones for single- and double-storey homes with deep overhanging eaves, verandas, climbing plants, and rusticated chimneys. The interiors were simple evocations of 'home', to which bare beams and wooden uprights, inglenooks and built-in benches, 'humble' materials and fireplaces in the hallway all contributed. The sources for this imagery were diverse, and seemed to include Swiss chalets, Japanese wooden houses, and a variety of American regional cabin and shack prototypes.

In California there was not only the sense of a new society, unbounded by conventions and as yet untainted by industry; there were also plentiful lots of land. Moreover, the climate encouraged an architecture opening to the outside. The masters of the genre of the luxurious, but still 'simple', California bungalow were the brothers Charles and Henry Greene (born in 1868 and 1870) who were educated in Calvin Woodward's Manual Training School in St Louis in the late 1870s, where they were encouraged to handle natural materials (especially wood) and to give their conceptions visual form. In the late 1880s the brothers went East and studied at the Massachusetts Institute of Technology, where they learned some of the axial devices and intellectual strategies of Beaux-Arts design. After graduating they spent some time working in the Boston area, where they no doubt examined the works of H. H. Richardson and a variety of local Stick and Shingle Style examples. Finally they moved to the West. It was to take them a decade to work out a style based on their earlier influences, on the hybrid indigenous styles of California (especially those using simple wooden construction and deep overhanging balconies), and even on Japanese prototypes in which elegant proportions, finely handled joints and a superb combination of the formal and the informal were achieved.

The masterpiece of their new regional style was the Gamble House in Pasadena of 1907–8, built for one of the millionaire partners of the soap firm Procter and Gamble. The house represented the full aggrandizement and ennoblement of the California bungalow image, yet the building was still striking for its intimacy and human scale. An effect of

91 Frank Lloyd Wright's own house, Oak Park, near Chicago, Illinois, 1893

92 Gustav Stickley, bungalow design from *The Craftsman*, c. 1905, interior

93 Charles and Henry Greene, Gamble House, Pasadena, California, 1907–8

94 Gamble House, Pasadena, ground-floor plan with planting

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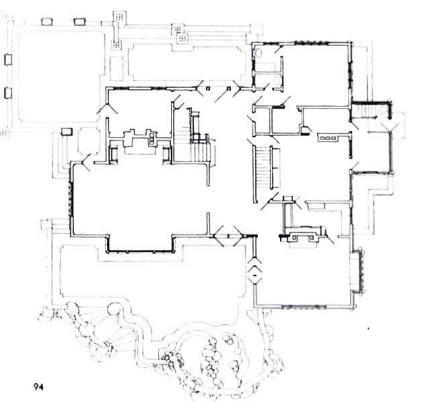

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nobility was conferred on the whole by its placement on a sort of terrace plinth, lifted slightly above the level of the surrounding lawns and banks of ferns. The relative solidity of the main gabled portions was heightened by the delicate transparency of the sprawling Stick Style balconies containing sleeping porches, with their overlapping struts and deep reveals of shadow. The main materials on the exterior were the redwood of the beams and frame, and the redwood 'shakes' (giant shingles) which blended well with the surrounding natural colours. In the interior these material qualities and textures were supplemented by glistening stained-glass panels, hand-polished maple, and the glow of Tiffany lamps. The elegance of the overall proportions was continued into the smallest parts and details – the articulation of earthquake-proof sliding joints with pegs and thongs, and the visual subtlety of tapering beam ends in the balconies. One is not surprised to discover that the house was modified (as were most of the Greene brothers' designs) in the course of

construction, with the architects themselves frequently fashioning the wooden details on site to ensure a precise effect.

The Gamble House plan gives further clues to the architects' intentions. One arrives by way of an open terrace; the front door gives straight on to a wide open hall passing right through the house to another terrace at the rear. The stairs, dining room, and living room (the latter two looking out over the pool and fernery) are all linked by this major space. The living room, as in so many of Wright's contemporary designs, is symmetrical and on an axis with the main fireplace, which is conceived as a major incident. The plan, and the spaces generated from it, admittedly lack the tension and control of Wright's Prairie Houses, but the combination of formal and informal qualities so appropriate to the social role and meaning of such a dwelling is a widely shared feature of much Arts and Crafts design of the period. So is the attempt at unifying the building with its setting, achieved in this case by the prevalent horizontality, the ambiguous situation of porches half inside, half outside, the sympathy for the nature of the materials, the provision made for planting, and the irregularly edged plan blending with the garden. It is the theme of the 'natural house' taken to an extreme which the California climate and flora encouraged.

While 'craftsmen's' ideals were usually carried through in domestic contexts, this was not their only outlet, and both Mackintosh's School of Art and Wright's Unity Temple were notable examples of similar ideas being worked through in institutional settings. In Northern California, Bernard Maybeck produced an exemplary craftsman's building in his First Church of Christ, Scientist, in Berkeley of 1910. Actually, the building defies simple categorization; it is unique and eccentric. Maybeck had been trained as a furniture-maker and had then revelled in his Beaux-Arts education in Paris. The church is steeped in tradition and relies strongly on the ceremonial axial compositional ideas basic to the Beaux-Arts outlook. But the architectural elements assembled above this hieratic plan have little to do with the grand classical manner (although the same architect's designs at the Pacific Exhibition of 1915 reveal a personal and effective reinterpretation of classical prototypes). Rather we are confronted by a jumble of styles and allusions – Gothic, suburban

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California, Stick Style, Japanese, and an almost fantastic range of materials and effects, including carved wood, industrial sash glazing, asbestos panels and trellises carrying festoons of wisteria. This profusion of associations was held together by a consistent development of geometrical themes. The design rested upon an armature of types – pergola and aedicule, roof and pediment, house and temple – making analogies between vernacular and honorific forms. Despite the complexity of its sources, the First Church of Christ, Scientist, Berkeley, maintained a convincing unity.

If Maybeck represents a rugged and obsessive extreme of the Craftsman's Movement in the western United States, then Irving Gill must be taken as the complement because of the sobriety and broad simplicity of his approach. Born in 1870, he was largely self-taught and much influenced by the fact that his father was a building contractor with a knack for finding short cuts in construction. Gill himself was an early advocate of reinforced concrete in domestic design, especially using 'tilt-slab' techniques, and like Perret thought that the material required a simple rectangular vocabulary. He was confirmed in this view by his personal reactions to the regional traditions of the south-western United States, especially the mud adobe constructions of the area and the white-walled Mission Style dwellings with their planar, white surfaces gashed by shadows, their low roofs, their extending pergolas, and their sequences of patios. But Gill's was no mere grass-roots

95 Bernard Maybeck, First Church of Christ, Scientist, Berkeley, California, 1910

96 Irving Gill, Dodge House, Los Angeles, California, 1915–16

romanticism; his work was motivated by a social vision of considerable breadth. He understood the suburban condition, and how best to respond to the topography, vegetation, climate and society of rapidly expanding cities like San Diego. He thought of California as the last frontier, and therefore as a suitable place for the expression of a new way of life based on the best of old American democratic ideals. The significance of stripped simplicity in his work was therefore partly moral, but very far in its meanings from the machine idolization of the avant-garde in Europe who were to create the modern movement of the 1920s. On the contrary, Gill (who had absorbed something of Sullivan's pantheism and feeling for symbolic geometries) sought to make the broad masses of his own designs an equivalent to the structures of nature:

> We should build our house simple, plain and substantial as a boulder, then leave the ornamentation of it to Nature, who will tone it with lichens, chisel it with storms, make it gracious and friendly with vines and flower shadows as she does the stone in the meadow. I believe also that houses should be built more substantially and should be made absolutely sanitary. If the cost of unimportant ornamentation were put into construction, then we would have a more lasting and a more dignified house.

Gill's interpretation of 'Nature' went deeper than an interest in sensitive siting and the effects of weathering on surfaces. Like Wright and Sullivan, he believed that the best geometries were those abstracted from nature's structures and processes; and that the forms of art should emulate the fitness to purpose of natural forms. In Gill's mind, the basic shapes of architectural grammar were analogous to natural features and capable of impressing the emotions of a spectator in precise ways.

> Every artist must sooner or later reckon directly, personally with these four principles – the mightiest of lines. The straight line borrowed from the horizon is a symbol of greatness, grandeur and nobility; the arch patterned from the dome of the sky represents exultation, reverence, aspiration; the circle is the sign of completeness, motion and progression, as may be seen when a stone touches water; the square is the symbol of power, justice, honesty, and firmness. These are the bases, the units of architectural language, and without them there can be no direct or inspired architectural speech.

In the broad picture of the transition from the 'styles' of the nineteenth century to the creation of modern architecture, the continuation of the Arts and Crafts movement into the twentieth century played a partial role, and inspired individual work of outstanding quality. Rather than a unified style, there were broadly shared concerns. It so happened that Gill anticipated some superficial aspects of the white, geometrical architecture of the 1920s, but his work was virtually unknown in Europe and his outlook quite different. Indeed much of the effort of the generation which was to create the modern movement in Europe was directed *against* handicraft aspirations. None the less, Arts and Crafts ideals had an important purgative function by stressing the values of simplicity, honesty, and necessity. Ideals such as these were to be fundamental to the Deutscher Werkbund in Germany, an organization which sought a more direct confrontation with mechanization.

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97 Bruno Taut, Glass Pavilion, Cologne, 1914

6

responses to mechanization: the deutscher werkbund and futurism

The problem of modern architecture is not a problem of rearranging orders; not a question of finding new mouldings, new architraves for doors and windows; nor of replacing columns, pilasters, and corbels with caryatids, hornets, and frogs ... But to raise the new-built structure on a sane plan, gleaning every benefit of science and technology, settling nobly every demand of our habits and our spirits, rejecting all that is heavy, grotesque, and unsympathetic to us (tradition, style, aesthetics, proportions), establishing new forms, new lines, new reasons for existence, solely out of the special conditions of modern living, and its projection as aesthetic value in our sensibilities.
Antonio Sant'Elia, 1914

From the beginning, the Arts and Crafts movement had been permeated with preservationist sentiments and a nostalgia for a supposedly integrated society preceding the chaotic effects of industrialization. By contrast, in the decade before the First World War, especially in Germany and Italy, philosophical, poetic, and eventually formal attitudes emerged in which an adulatory view of mechanization was to be found. It has already been suggested that the very notion of 'modern' architecture presupposed a progressivist sense of history; it is only by examining the theories of the Deutscher Werkbund in Germany and of the Futurists in Italy (which contrasted considerably) and the parallel architectural ideas of men like Peter Behrens, Walter Gropius, and Antonio Sant'Elia that one may grasp how mechanization came to be regarded as a sort of essential motor to the forward march of history, requiring an appropriate expression in architecture and design.

This is not to suggest for one minute that a consensus was reached on just how this should be done. In Germany, which industrialized later than Britain and France, and experienced some of the opportunities and traumas of the process deeply, there was much debate concerning the ideal relationship between the artist and industry. Broadly speaking there were four main strands of opinion. One of these was a direct continuation of Arts and Crafts values in the Kunstgewerbeschulen (Schools of Applied Art), where the belief was maintained that quality goods would be achieved only through a concentration on handicrafts. Closely related to this view was a highly individualistic idea of the role of artistic invention which held that authentic forms in architecture could arise only from the imprint of the expressive temperament; this position tended to extend the most subjective aspects of Art Nouveau and led to the 'Expressionist' outlook. A third position was materialist and down-to-earth by contrast, and tended to hold that the best forms would be those emerging from the logical and direct use of new materials to solve building problems; it was, in other words, a functionalist outlook. The fourth position (the one which will principally concern us) tended to regard the functionalist as an uncultivated brute, the Expressionist as an irrelevant remnant of the cult of genius, and the craftsman as an extinct entity unless directed to the

problems of designing objects for mass production. Thus it became the business of the artist/architect to design the 'type forms' – be they objects of industrial design, building elements, or pieces of urban structure – of a new, mechanized and, let it be said, German civilization. It was an ideology in which the artist had to function as a sort of mediator between formal invention and standardization, between personal style and the appropriate form for the *Zeitgeist* (or 'spirit of the times'), between a sense of the contemporary world and reliance on age-old artistic principles.

One of the most vocal proponents of such an outlook was Hermann Muthesius (author of *Das englische Haus*), who founded the Deutscher Werkbund in 1907. This organization was set up precisely to forge closer links between German industry and artists, and thereby upgrade the quality of national product design in emulation of what Muthesius had seen in England. From the start this was seen as being far more than a commercial matter; rather it was one involving deep probings into the nature of 'the German spirit', the role of form in history and the psychic life of the nation. Muthesius wrote:

> Far higher than the material is the spiritual; far higher than function, material and technique, stands Form. These three aspects might be impeccably handled but – if Form were not – we would still be living in a merely brutish world. So there remains before us an aim, a much greater and more important task – to awaken once more an understanding of Form, and the renewal of architectonic sensibilities.

Muthesius put his faith in the cultivated industrial élite who, he hoped, could be educated to lead the German nation on its innate mission: the elevation of a general taste to a position of supremacy in world markets and affairs, and the efflorescence of an influential and genuine *Kultur*. The moral tenor of life was to be raised through the impact of well-designed objects in the marketplace, in the home, and in the workplace – indeed, in the environment as a whole. Evidently he envisaged a sort of unified style to replace the confectionery of nineteenth-century eclecticism, which should be expressed with equal clarity in a lamp-post, a teacup, a monument, or even a factory building. Central to his outlook was a belief in the return to fundamental formal qualities which would express architectonically the dignity and the calm endeavour of a new, confident national German spirit. There are echoes in this outlook of the writings of Semper, who had forecast the necessity of a style appropriate to machine methods after his visit to the Crystal Palace and the Great Exhibition of 1851. And it comes as no surprise to find that Muthesius had a considerable sympathy for the grandeur of the classical tradition (especially as manifested in the work of Schinkel), for this seemed to sum up so well the combination of martial values and impersonal power, scholarship and formal abstraction, that Muthesius perhaps envisaged as essential to the necessary style for his own times: '... the re-establishment of an architectonic culture is a basic condition of all the arts ... It is a question of bringing back into our way of life that order and discipline of which good Form is the outward manifestation.'

From the English Arts and Crafts tradition Muthesius inherited a concern for the moral power of design to influence people's lives, a sense of integrity in the expression of the nature of materials, a feeling for the dignified embodiment of function, and an obsession with the 'dishonesty' of false revivalism. However, these notions were cross-bred, as it were, with the ideal of designing for the machine and with philosophical concepts derived from the German Idealist tradition (notably the writings of Hegel). Central to these was the notion that it was the destiny of Germany to realize some higher idea in the historical scheme of things, and a related notion that a sort of 'will-to-form' with a strong national taint would realize the forms of a genuine style. Such a style would not then be seen

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98 Peter Behrens, lamp design for AEG, 1907

99 Peter Behrens, AEG Turbine Factory, Berlin, 1908–9

as a merely personal, conventional or wilful matter, but as an inevitable force of destiny: a universal necessity.

> It is evident that the ephemeral is incompatible with the true essence of architecture. The peculiar qualities of architecture, constancy, tranquillity and permanence and its thousand-year-old traditions of expression, have almost come to represent what is eternal in human history ... Of all the arts architecture is the one which tends most readily towards the typical and only thus can it really fulfil its aims. It is only by steadily striving for a single target that we shall be able to recover the quality and the unerring surety of touch that we admire in the achievements of the past, where singleness of purpose was inherent in the age.

It would be too simple, and too convenient, to see the architecture of Peter Behrens as a direct illustration of Muthesius's aspirations; but after about 1907 there was a considerable consonance in their positions, especially in the designs that Behrens executed for the giant electrical concern, AEG; these included objects for mass production, like lamps, posters, and furniture, as well as buildings. His artistic career to that date had been symptomatic of more general developments, starting with an immersion in Arts and Crafts ideals during his time at the Darmstadt Artists' Colony, founded by the Grand Duke Ernst Ludwig von Hessen in 1899. Behrens, while one of the seven founding inmates of the colony (J. M. Olbrich was another), wrote of the 'physical pleasure existing in the useful and the suitable' and stressed the need for a new integration of the two. His own house of 1901 shows him to have passed through a dreamy Art Nouveau phase, with a rich fusion of curvilinear forms and melancholic emotions of the sort which appealed to an inward-looking frame of mind. Behrens's search for a genuine German art then seems to have taken him through a 'recall to order' which manifested itself in the stereometric and planar geometries of his Romanesque-inspired buildings at the Oldenburg Exhibition of 1905. By the time he worked for the AEG, his outlook had matured considerably and his vocabulary began to exhibit overtly neo-classical characteristics. Like Muthesius, Behrens sensed in Schinkel a combination of nationalist and idealistic associations suitable to his own task of formulating an imagery for the industrial élite. He was fortunate in the attention and interest of Emil Rathenau as his chief AEG patron, for here was a man who combined cultural

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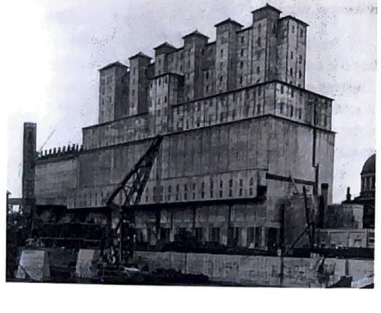
and technical interests in a single outlook.

Both Rathenau and Behrens felt that industrial tasks must be seen as the essential cultural ones of the time. The factory thus took on a far greater significance than it had usually possessed. Behrens realized that his client required impressive and cultivated-looking buildings in the grand manner. Many of the factories and warehouses he designed for the AEG between 1908 and 1914 were ingenious fusions of abstracted classical vocabulary and straightforward structural skeletons. The Berlin Turbine Factory of 1908–9, for example, had the character of a temple dedicated to some industrial cult. The colossal turbines had to be lifted and moved from one end of the hall to the other while work was done on them, a process requiring an uninterrupted central aisle and an overhead moving gantry. Behrens's solution was to make the whole building a series of elegant, parallel two-sided cranes meeting at the peak of the roof. There was a grand, even ennobling character to the whole, and effects of visual lightness and massiveness were cleverly orchestrated to emphasize the overall lines. Had Behrens been a mere functionalist he might simply have optimized the functions and clothed the resulting structure in cheap materials without concern for proportion, let alone the impact of forms on the spirit; had he been an 'Expressionist' (like his contemporary Hans Poelzig in Breslau) he might have sought to dramatize the process of movement with a highly sculptural formal arrangement. But Behrens steered a way between these approaches in a search for a sober and, indeed, 'typical' form in the 'classical/German spirit'. The supports and profile were adjusted to give a dignified rhythm and impression of repose; the gantry shape was blended ingeniously with the image of a classical pediment; and the repeated exposed steel supports along the side elevations were given the character of a *travée* of classical supports. But the usual expectations of load and support were reversed, since these steel stanchions were tapered, being thinner at the bottom than at the top. Where they met the base on which the building sat there were bolted knuckle joints. Meanwhile the vast areas of glass in the main façade were laid flush with the pediment plane, so as to give the sense of a thin screen hovering in front of the massive corner quoins in concrete, which provided a suitable sense of structural stability to the eye.

Behrens's intuition for primary geometrical volumes in the classical tradition (perhaps enhanced by his reading of formalist art historians such as Heinrich Wölfflin) allowed him to bring a sense of proportion to numerous other categories of industrial structure. His design for a gasworks at Frankfurt of 1911–12, for example, was composed of simple cylinders in dramatic juxtaposition. Indeed engineering aesthetics were a topic of



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100 Peter Behrens, Gasworks, Frankfurt, 1911–12

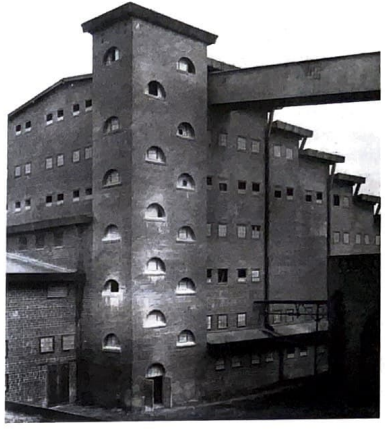
101 American grain silos, from the *Deutscher Werkbund Jahrbuch*, 1913

102 Hans Poelzig, Chemical Factory, Luban, Germany (now Poland), 1911

recurrent interest to the Deutscher Werkbund, and it was not unusual for debates to be held comparing the relative aesthetic value of one signal gantry over another. The Deutscher Werkbund *Jahrbücher* of 1913–14 illustrated battleships and grain silos as examples of designs combining functional logic with impressive qualities of abstract form.

In the 1913 *Jahrbuch* there was an article entitled 'The Development of Modern Industrial Architecture' by a young architect called Walter Gropius, who praised the AEG factories as 'monuments of sovereign strength, commanding their surroundings with truly classical grandeur', and spoke too of 'the compelling monumentality of the Canadian and American grain silos … and the totally modern workshops of the North American firms which bear comparison with the buildings of Ancient Egypt …' He further praised the 'natural feeling for large compact forms, fresh and intact', and suggested that modern European architects might 'take this as a valuable hint and refuse to pay any more heed to fits of historical nostalgia or other intellectual considerations … which stand in the way of true artistic naïveté'. Gropius went further still and claimed that the spirit of modern times required its own expression in a new style characterized by 'exactly stamped form … clear contrasts, the ordering of members … unity of form and colour', a style that would be 'appropriate to the energy and economics of public life'. Among those 'to take this valuable hint' was the young Charles Édouard Jeanneret (later Le Corbusier), who worked in Behrens's office in 1910 and remained in touch with German developments after that date.

It is instructive to contrast Behrens's gasworks design with Hans Poelzig's for a water-tower in Breslau of 1908, or with the same architect's design for a chemical works at Luban of 1911, as this gives some sense of what is meant by the 'Expressionist' wing of the Werkbund. 'Expressionism' is a blurred term at best, and has little validity as a stylistic label. In this context of industrial design it refers to an attitude in which sobriety and stability were eschewed in favour of restless, dynamic and highly emotive forms. In fact the functional rationale behind Poelzig's designs was every bit as tight as that governing Behrens's, but the emphasis of formal expression was different. The roots of Expressionist vocabulary lie in this case in Art



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Nouveau, and it was Art Nouveau with its emphasis on individualism which most disturbed Muthesius. Indeed, at the Werkbund Congress of 1914 there was a celebrated debate between Henry van de Velde and Muthesius which tended to be framed in terms of the individualist outlook versus the philosophy of 'the typical'. Ultimately, such a discussion was one over appropriateness: what should the 'true' modern style be like?

Behrens's office, with its stress on all aspects of industrial design, was the training ground of a number of artists who were to inherit the tensions and successes of the pre-1914 period and to contribute to the extremely creative phase of the 1920s. Chief among these were the future Le Corbusier, Ludwig Mies van der Rohe, and Walter Gropius himself; indeed, these three may have 'overlapped' briefly in 1910. Gropius was born in 1883 and trained at the Charlottenburg Hochschule, Berlin, and in Munich; his earliest designs for housing show a marked concentration on simple volumes and shapes. In 1911, after a thorough training in Behrens's office, he received his own commission to redesign the Fagus shoe-last factory at Alfeld. This belonged to Karl Benscheidt, who had already overseen a design by one Eduard

Werner, an industrial architect from Hanover. The plan and elevations had been fixed and had even passed the local building authorities when Gropius was brought in to provide improvements to the external treatment. He modified the interior suggestions of his predecessor only slightly. It is the visual treatment of the workshop block which is significant in the creation of an industrial style, indeed in the formation of a 'factory aesthetic' that would eventually influence the universal 'machine style' of a decade later. The devices of the external wrapping of the building are intelligent adaptations of Behrens, but the effect is absolutely different, as here everything conspires to give a sense of weightlessness and transparency rather than of mass. The wall piers have been recessed so that the glazing appears to float as a transparent skin. Window bars, brick mouldings and joints reinforce the main proportions, and the image successfully incorporates a symbolic reaction to mechanization as an idea. To be sure, Gropius seems to have grasped the essential mood of the programme of his client, which included the provision of the latest that modern American industrial planning could offer: good ventilation, a logical, open plan for machine serial-production, and well-lit spaces for draughtsmen and managers to go about their business of helping improve the condition of those with foot problems.

However, it is interesting to contrast the Faguswerk with Albert Kahn's contemporaneous Ford factory designs in Detroit (mentioned in Chapter 4 in connection with reinforced-concrete construction). These factories were built around naked commercial and functional considerations. Admittedly, due attention was given to the relationship of solids and voids, but it does not seem to have occurred to either Kahn or Ford that their buildings might be the 'index to the spirit of the new times'! In Germany the attitude to factory design was quite different, and clothed in philosophical speculation. As Gropius was to put the matter after the war: his architecture was an attempt not only at accommodating the functions of the modern world, but at symbolizing that world as well.

In 1914 Gropius and Adolf Meyer were given the important task of designing the Werkbund Pavilion for the Cologne Exhibition. This was to house objects of German industrial design in a framework which would itself be an exemplary demonstration of Werkbund ideals. The largest building was the Machine Hall, placed on the main axis and expressed as a simple, neo-classical railway shed. This was approached through a courtyard enclosed by a symmetrical entrance pavilion flanked by open glazed staircases. The symmetry of the scheme was broken by the Deutzer Gasmotoren Pavilion, attached to the rear end of the machine hall on the cross axis. The discipline and axes of the plan recalled Beaux-Arts procedures, and the arrangement had a marked processional character.

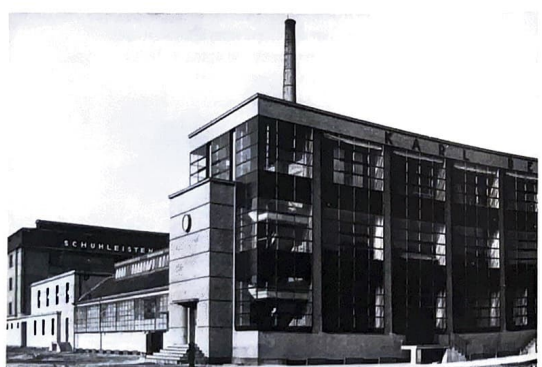
The forms rising into space above this plan, however, had no obvious historical precedent. The stripped brick volumes of the entrance block with overhanging roofs and sharp horizontal parapets were perhaps an echo of Wright in a formal mood. But the glazed wrapping to the rear and the transparent, streamlined stair-towers (with the spiral stairs visible inside them) were stunning inventions which created not only a sense of weightlessness and space, but also an aura of crisp and disciplined machinery, of elegant and dignified industrial

103 Walter Gropius and Adolf Meyer, Fagus Shoe-last Factory (Faguswerk), Alfeld, 1911–12

104 Walter Gropius and Adolf Meyer, Werkbund Pavilion, Cologne, 1914, front view showing glass stairs, Machine Hall and the Deutzer Gasmotoren Pavilion

105 Werkbund Pavilion, plan

106 Werkbund Pavilion, rear view showing Machine Hall and Deutzer Gasmotoren Pavilion



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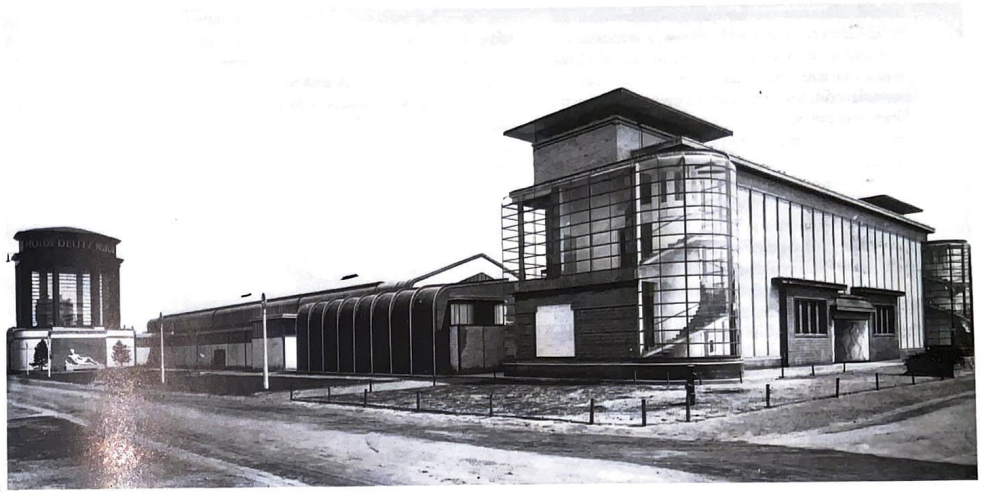

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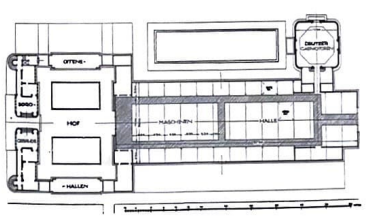

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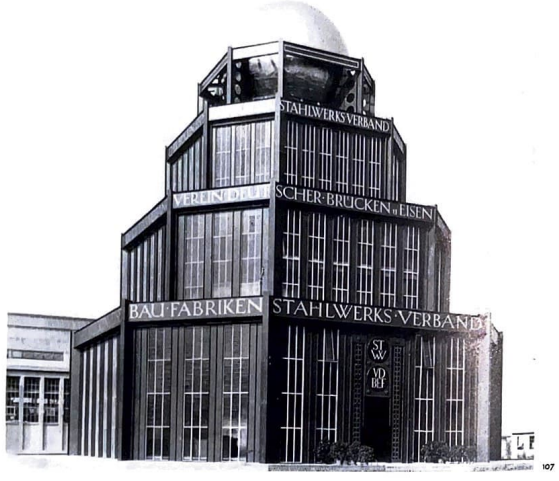
control. Here was another quasi-sacral building dedicated to the values of Germany's industrial élite, and it was typical of the mood and taste of the whole, that a reclining classical statue should have been placed at the end of a pool leading up to the Deutz Pavilion while, on the opposite side of the same structure, there stood a 'sacral object': a gas turbine engine.

This transparent pavilion may well have been inspired by an even more fantastic evocation of industrialization, Bruno Taut's Steel Industry Pavilion at the Leipzig Fair of 1913. This had been built in the form of a ziggurat surmounted by a sphere, the whole being constructed out of an elegant frame in the material the pavilion had been built to celebrate and advertise. Taut's work had more affinities with the 'Expressionist' wing of the Werkbund than with Gropius, and was pervaded by a mystical, if not Utopian, spirit somewhat at odds with the restraint and sobriety, the belief in standardization and normative solutions, of men like Behrens and Muthesius. Taut's design for the Glass Pavilion (1914) at Cologne made the contrast even more clear. This was in the form of a sort of industrial mausoleum – a dome of different-coloured glass standing on a high plinth and reached by a grand flight of stairs. The interior was dappled with different-coloured patches of light which reflected off glass-brick stair-risers set into slender steel supports, and which were accentuated by moving lenses. There was all the craft there, and something of the atmosphere, of an elaborately chased, carefully made piece of Art Nouveau tableware. But the *fin-de-siècle* qualities were transcended by a Utopian, forward-looking aspiration: indeed the poet and fantastic novelist Paul Scheerbart, who saw glass as the material of the future, surely influenced Taut's imagery.

> We live for the most part in closed rooms. These form the environment from which our culture grows. Our culture is to a certain extent the product of our architecture. If we want our culture to rise to a higher level, we are obliged, for better or for worse, to change our architecture. And this only becomes possible if we take away the closed character from the rooms in which we live. We can only do that by introducing glass architecture, which lets in the light of the sun, the moon, and the stars, not merely through a few windows, but through every possible wall, which will be made entirely of glass – of coloured glass. The new environment which we thus create must bring us a new culture.

It scarcely needs emphasizing that Gropius and



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Taut, each in his own way, were attempting to celebrate industrialization, to reveal its capacity for poetry, and to suggest its genuine, progressive cultural potential. It was to be the Gropius outlook and vocabulary, however, with the inherent suggestion that rectangularity and transparency were appropriate visual features of a new industrial architectonic order, which would be more influential. However, before these fragmentary suggestions of Gropius's pre-war buildings could congeal as the mature style of the 1920s, other catalysts would be necessary, particularly the spatial and formal devices of abstract art, and the poetic attitudes of Futurism, which would themselves be fused in the philosophy and form of De Stijl at the end of the 1910s.

107 Bruno Taut, Steel Industry Pavilion, Leipzig, 1913

108 Bruno Taut, Glass Pavilion, Cologne, 1914,

109 Glass Pavilion, interior

Futurism was a poetic movement before it became a movement in painting and sculpture, and an architectural movement in the limited sense that there was a Futurist Manifesto of Architecture of 1914, and an architect, Antonio Sant'Elia, whose drawings attempted to translate Futurist ideals into a new urban imagery – 'La Città Nuova' ('The New City'). The Foundation Manifesto of Futurism was published in *Le Figaro* of 20 February 1909, and was the creation of the poet Filippo Tommaso Marinetti. The manifesto was a lively attack on traditionalism in culture, and championed an expression nourished by contemporary forces and the poetic sensations released by a new industrial environment. Anarchist in inspiration, the Futurist outlook had no particular political affiliation, but was in favour of


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revolutionary change, speed, dynamism of all sorts, and an aggressive adulation of the machine. Typically, the Foundation Manifesto suggested the destruction of museums and academies; the vitality of contemporary life was opposed to the tiredness of inherited art forms:

> We declare that the splendour of the world has been enriched by a new beauty – the beauty of speed. A racing car with its bonnet draped with exhaust pipes, like fire-breathing serpents – a roaring racing car, rattling along like a machine gun, is more beautiful than the winged Victory of Samothrace.

Of course Marinetti's writing did belong to an aesthetic tradition, one stretching back through French Symbolism to Baudelaire, the 'poet of modern life'. In a sense, then, the aim was to make the frontiers of art broader and more inclusive, rather than to do away with them altogether. The typical subject-matter of Futurism was the modern metropolis, seen as a sort of collective expression of the forces of society.

> We will sing of the stirring of great crowds – workers, pleasure-seekers, rioters – and the confused sea of colour and sound as revolution sweeps through a modern metropolis. We will sing the midnight fervour of arsenals and shipyards blazing with electric moons; insatiable stations swallowing the smoking serpents of their trains; factories hung from the clouds by the twisted threads of their smoke; bridges flashing like knives in the sun, giant gymnasts that leap over rivers; adventurous steamers that scent the horizon; deep-chested locomotives that paw the ground with their wheels, like stallions harnessed with steel tubing; the easy flight of aeroplanes, their propellers beating the wind like banners, with a sound like the applause of a mighty crowd.

The Futurist Manifestos of Painting (1910) and Sculpture (1912) attempted to extend Futurist sensibility still further. Dynamism was the shared central conception, and the early painters in the movement, among them Umberto Boccioni and Gino Severini, attempted to translate the Futurist ethos not only by choosing such subjects as trains leaving stations, building sites on the edge of industrial cities, and strikes, but also by treating these themes in a vital play of complementary colours, divisionist lighting effects and unstable diagonal compositions. In 1911 the devices of Analytical Cubism began to be absorbed by the Futurist painters, with the result that fragmentation, interpenetrations of space and form, abstraction and elements of reality were incorporated. The Cubist device of showing different viewpoints of an object was co-opted to express duration and the different

states of objects unfolding in their environment. This was a key element of Futurist doctrine, related no doubt to the artists' adulation of Henri Bergson's philosophical ideas on time and flux. Bergson emphasized the primacy of change in all reality and the role of intuition in perceiving it. Futurist painters far transcended any banal 'realism of contemporary appearances' by attempting to create *symbolic equivalents* to their excited state of mind when faced by entirely new stimuli like speed, artificial light, steel and fast car rides.

Futurist sculpture likewise opened up new expressive territory in an attempt at expressing 'the universal dynamism' – the flux of modern life. The Sculpture Manifesto announced that the basis of this new form would be 'architectonic': '... not only as a construction of masses, but also because the sculptural block will contain within itself architectonic elements from the sculptural environment in which the object exists.' Boccioni's drawing *Bottle + Table + Block of Houses* of 1912 seems to demonstrate this 'field' conception of space, and suggests how important transparency and the intersection of planes were as principles of Futurist composition. When he came to translate these ideas into sculpture, the artist had to adopt different techniques, obviously, and his *Bottle Unfolding in Space* (1912) attempted to evoke the shifting energies of an object, its palpitation and movement in its surroundings. *Unique Forms of Continuity in Space* (1913) – a dynamic human figure striding forward with flailing planes of bronze rushing from its edges – used the evanescent lighting effects of polished surfaces to evoke dynamism. However, the Sculpture Manifesto was in theory opposed to traditional hierarchies of material value (bronze, marble, etc.) and suggested (again, no doubt, following the juxtaposition of humble and heroic values in Cubism) the incorporation of new synthetics:

Destroy the purely literary and traditional nobility of bronze and marble. Deny that only one material should be used exclusively for the whole of a sculptural construction. Affirm that even twenty different materials can join in one work to increase the scope of its plastic emotion. We enumerate some: glass, wood, iron, cement, hair, leather, cloth, electric light, etc.

Although there was not, properly speaking, a 'Futurist Architecture', there was a Futurist Manifesto on the subject. This was perhaps composed by the young architect Antonio Sant'Elia,

110 Umberto Boccioni, *States of Mind: The Farewells*, 1911. Oil on canvas, 27 1/4 × 38 in (70.5 × 96.2 cm). Museum of Modern Art, New York, Gift of Nelson A Rockefeller, 1979

111 Umberto Boccioni, drawing for *Bottle Unfolding in Space*, 1912. Chalk, 13 1/4 × 9 1/4 in (33.4 × 23.9 cm). Raccolta Bertarelli, Milan

112 Antonio Sant'Elia, *La Città Nuova*, power station, 1913. Drawing, 15 1/4 × 11 1/4 in (39.5 × 29.8 cm). Musei Civici, Como

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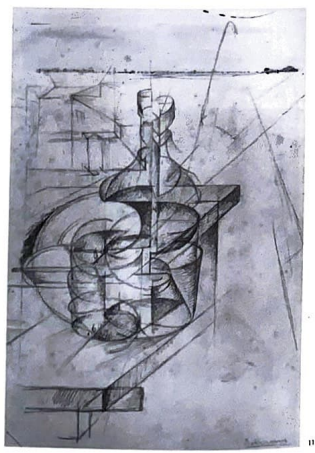

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with the help of Marinetti. In its first version – known as the 'Messaggio' – it functioned as the introduction to a show of Sant'Elia's drawings of the Città Nuova in 1914. Not surprisingly, this theoretical architecture was conceived as a direct expression of contemporary forces, and a dynamic celebration of the uprooted, anti-natural tendencies of the modern city.

Such an architecture cannot be subject to any law of historical continuity. It must be new as our state of mind is new ... In modern life the process of consequential stylistic development comes to a halt. Architecture, exhausted by tradition, begins again, forcibly from the beginning.

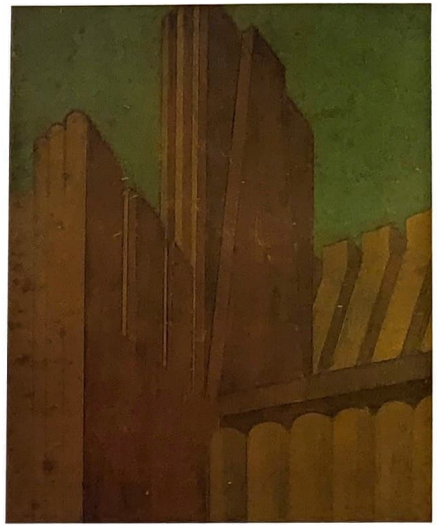
Thus the new architecture was to express 'new spiritual attitudes'; but it was also to find new forms appropriate to new materials and means of construction:

Calculations of the resistance of materials, the use of reinforced concrete and iron, exclude 'Architecture' as understood in the Classical and traditional sense. Modern structural materials and our scientific concepts absolutely do not lend themselves to the disciplines of historical styles, and are the chief cause of the grotesque aspect of modish constructions where we see the lightness and proud slenderness of girders, the slightness of reinforced concrete, bent to the heavy curve of the arch, aping the solidity of marble.

So far this was a negative definition which did not imply a precise form beyond saying that new buildings should be lighter and more open in expression, and no longer fettered by inappropriate inherited ideas. Later in the Messaggio, a clearer idea was given of the *style* of this new expression of the times:

We must invent and rebuild ex novo our modern city like an immense and tumultuous shipyard, active, mobile, and everywhere dynamic, and the modern building like a gigantic machine. Lifts must no longer hide away like solitary worms in the stairwells, but the stairs – now useless – must be abolished; and the lifts must swarm up the façades like serpents of glass and iron. The house of cement, iron, and glass, without curved or painted ornament, rich only in the inherent beauty of its lines and modelling, extraordinarily brutish in its mechanical simplicity ... must rise from the brink of a tumultuous abyss; the street itself will no longer lie like a doormat at the level of the thresholds, but plunge storeys deep into the earth, gathering up the traffic of the metropolis, connected for necessary transfers to metal catwalks and high-speed conveyor belts.

For these reasons I insist that we abolish the monumental and the decorative; that we must resolve the problem of modern architecture without cribbing photographs of China, Persia or Japan, not stultifying ourselves with Vitruvian rules, but with strokes of genius, equipped only with a scientific and technological culture; that everything must be revolutionized; that we must exploit our roofs and put our basements to work; depreciate the importance of façades; transfer questions of taste out of the field of petty mouldings, fiddling capitals and insignificant porticoes, into the vaster field of the grouping of masses on the grandest scale ... That the new architecture is the architecture of cold calculation ... boldness and simplicity; the architecture of reinforced concrete, iron, glass, textile fibres and all those replacements for wood, stone and brick that make for the attainment of maximum elasticity and lightness.



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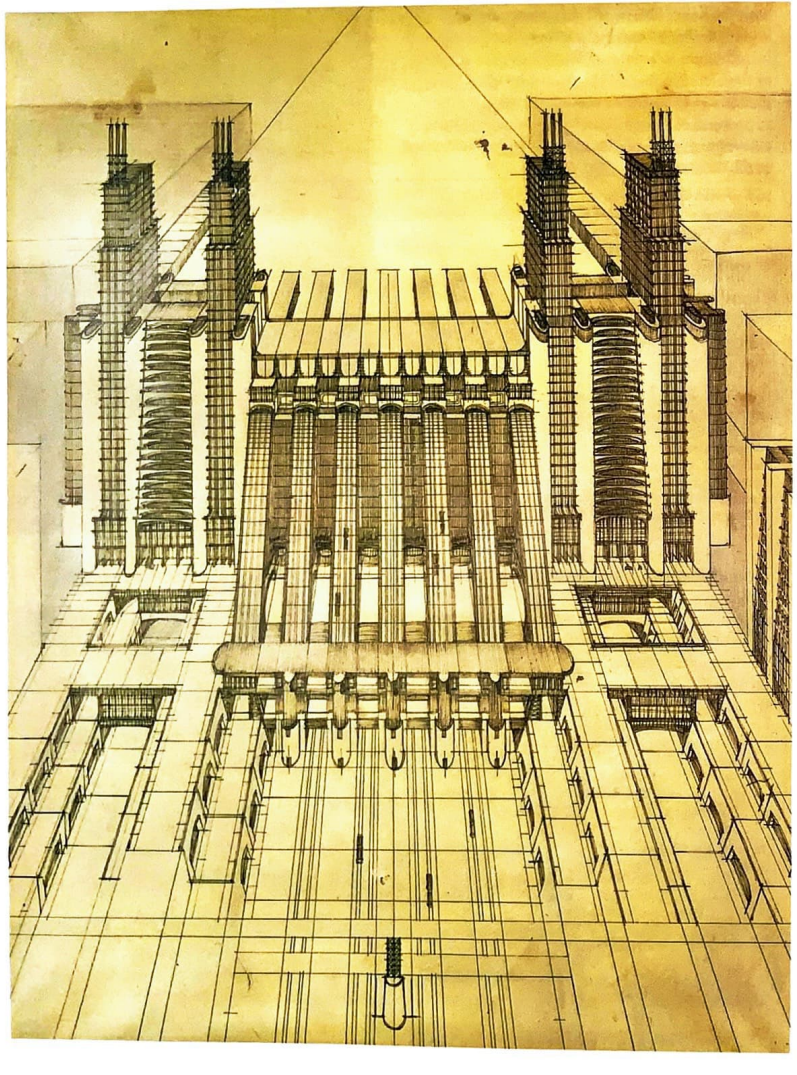
The Messaggio then draws to a close with a plea for 'raw, naked and violently coloured materials'; with an affirmation that 'real architecture' transcends functionalism by being 'synthesis and expression'; with the suggestion that inspiration be found in 'the new mechanical world we have created, of which architecture must be the fairest expression, the fullest synthesis, the most effective artistic integration.'

It is probable that the Messaggio was inspired by Sant'Elia's sketches rather than the other way round, but these were themselves intuitive responses to earlier Futurist attitudes. Although the theme of the exhibition was La Città Nuova, there was no overall plan, rather a collection of new



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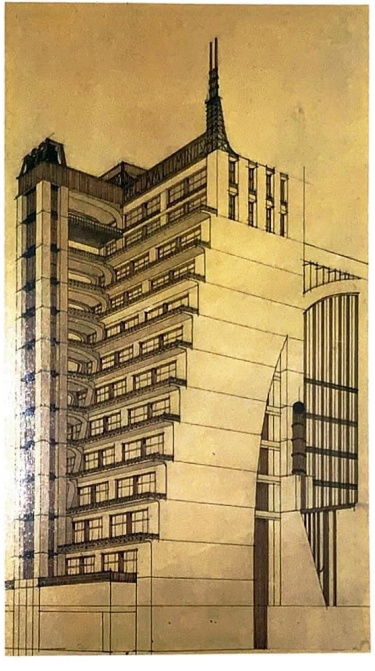
113 Antonio Sant'Elia, *La Città Nuova*, central railway station and airport, 1913–14. Ink and pencil on paper, 19 $^{3}/_{4}$ × 15 $^{1}/_{4}$ in (50 × 39 cm). Musei Civici, Como

114 Antonio Sant'Elia, *La Città Nuova, Casa a Gradinate*, 1914. Ink and pencil on paper, 11 $^{1}/_{4}$ × 7 in (28.8 × 17.9 cm). Musei Civici, Como



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building types and suggestions for such things as power stations, airports, airship hangars, multi-level stations, and stepped apartment buildings of a type called *Casa a Gradinate*. Although it was claimed that these buildings had no roots in tradition, the style of some of the sketches suggested a purification of Art Nouveau, and Sant'Elia had clearly been inspired – as had Gropius, Behrens, and Muthesius – by the bold and dramatic forms of nineteenth-century warehouses and bridges. It is possible, too, that the theme of the multi-level city, like a colossal dynamic mechanism, may have been suggested by photographs or sections of New York City, showing multi-level elevated railways and skyscrapers. Among Sant'Elia's jottings were some drawings which stripped buildings down to their most essential volumes of rectangles, cylinders and cones. These were never as static in quality as Behrens's industrial designs of the same period (Sant'Elia employed dramatic foreshortening in his drawings to emphasize a feeling of dynamism), but they were a reminder that the Futurists, like the German architects, felt that pure forms and crisp straight lines were in some sense appropriate to mechanization. The Futurist Manifesto of Sculpture asserted that:

> The straight line will be alive and palpitating; will lend itself to all the expressive necessities of our material, and its basic severity will be a symbol of the metallic severity of the lines of modern machinery.

Sant'Elia died in the war, but his ideas, and some of his images, lived on in avant-garde circles in Holland, Russia, Germany, and France. The importance of Futurism in the context of the history of modern architecture is clear: it pulled together a collection of progressivist attitudes, anti-traditional positions and tendencies towards abstract form, with the celebration of modern materials, and an indulgence in mechanical analogies. The contrast between the dynamic and anarchical values of Futurism and the more stolid, organized thought of the Deutscher Werkbund is obvious; but both movements rested on the central assumption that the spirit of the times was inevitably tied to the evolution of mechanization, and that an authentic modern architecture must take this into account in its functions, its methods of construction, its aesthetics, and its symbolic forms.

115 Frank Lloyd Wright, Robie House, South Woodlawn, Chicago, Illinois, 1908–10

7

the architectural system of frank lloyd wright

Radical though it may be, the work here illustrated is dedicated to a cause conservative in the best sense of the word. At no point does it involve denial of the elemental law and order inherent in all great architecture, rather it is a declaration of love for the spirit of that law and order, and a reverential recognition of the elements that made its ancient letter in its time vital and beautiful.
Frank Lloyd Wright, 1908

Occasionally a single artist emerges who so profoundly reorganizes the basic assumptions of a period that he deserves to be considered in isolation. The creations of such individuals are marked by an extraordinary consistency and integrity traceable to both a mastery of means and a capacity to give an idealistic world-view a deep expression. The solutions embodied in their work seem to solve problems that are relevant far beyond their particular circumstances. They crystallize the preoccupations of a period, and influence others distant in space and time. Whether they intend it or not, artists with such charisma become the founders of new traditions. In the formation of modern architecture two figures of this imaginative and intellectual calibre stand out: Le Corbusier and Frank Lloyd Wright.

Frank Lloyd Wright's architecture has occupied a curious position in the histories of modern design. He has been portrayed as one of the first architects to break with eclecticism and to found a new style based on a spatial conception of interpenetrating planes and abstract masses, which (the story runs) then evolved, especially through its influence on Dutch developments, into the International Style. In this view, Wright's scattered remarks on the relevance of machine production to architecture are to be taken as evidence of his 'forward-looking' stance. But there is another version of Wright which emphasizes his roots in American social ideals and plays up his regional sensitivities and Arts and Crafts allegiances. In this scenario he emerges as a traditionalist intent on preserving the values of an individualist yet democratic frontier America against the onslaughts of mechanization. Both views contain some truth – and the very fact that so much can be seen in the work and thought of a single artist should alert us to possible polarities in a single outlook.

Wright's long-range importance far outstrips these limited scenarios which earlier historiography has imposed upon him. His starting point may have been the material and cultural conditions of the Midwest around the turn of the century, and the inheritance of the Chicago School, but his activity and his vision eventually extended far beyond this towards a wider reading of the American landscape and city, to include a universalizing interpretation of several traditions East and West. Within the body of

Wright's intuitions and world-view, there was a Utopian dream concerning the portrayal of human relationships and institutions, and the harmonization of modern space with nature. Wright managed to evolve an architectural language of symbolic geometries that gave shape to a mythical view of society, that absorbed images and ideas from diverse sources, and that had its own internal 'rules' as a formal system.

Wright was born in 1867. His father was a preacher and his mother held the fervent belief that her son would be a great architect. His parents eventually separated, and it is arguable that Wright's later obsession with the expression of idealized family relationships may have owed something, in a compensatory way, to the effect on a sensitive nature of an unhappy and uprooted home life. A strong early influence was the experience of working on his uncle's farm in Wisconsin; Wright later recalled how he would fix his attention on a tree, a hill or a flower and wander off into reveries of abstract forms and shapes. Another crucial formative influence was some 'Froebel' blocks which his mother acquired for him at the Philadelphia Exhibition of 1879. Wright derived great delight from arranging these simple geometrical shapes into formal patterns that matched his intuitive compositional sense. It was part of the Froebel method that a configuration should be linked to a cosmic theme. The architect's later formal strategies in design, and his belief in the universality of fundamental geometrical forms may be traced in part to these early experiences.

Wright's architectural training was far from orthodox. He began by studying engineering in 1885 at the University of Wisconsin, but did not stay the course. Instead he moved to Chicago where he worked in the office of Joseph Lyman Silsbee, a designer of suburban houses. Here he learned much about the basic business of domestic design and immersed himself in the prevalent modes of suburban architecture. In 1888 Wright moved on to work for Louis Sullivan, who at the time was occupied with evolving the principles and forms of an organic architecture, especially for the design of skyscrapers. As was suggested in an earlier chapter (pp. 47–50), Sullivan was an idealist who believed that the architect in the Midwest had a unique opportunity to generate the images of a culture, uncluttered by imported and foreign models, yet founded upon the ancient principles of architecture. His frequent use of organic analogies in his writings, his building forms and ornamental designs was the outward expression of a belief that architecture and society had their roots in a natural order. By a feat of visionary abstraction the artist was to dig below the surface of his society and see the 'inner meaning' of human institutions, then give them an appropriate shape. He was obsessed with the idea that the architect was specially endowed with the gift of prophesying the 'true' form of democracy.

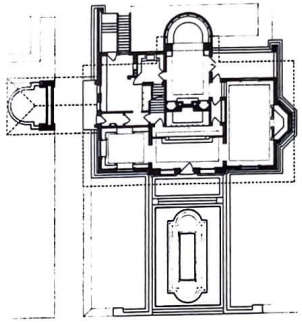
Much of this Wright absorbed and eventually elaborated in his own way, but in the realm of the individual family dwelling. He was quickly given much responsibility in the office but broke away after a period of about five years to set up his own practice in his studio alongside his home in Oak Park, a suburb of Chicago. His own house, designed when he was 22, gives some idea of his formative period (Fig. 91). Shingle Style influences stemming from Silsbee were controlled by a strong formal discipline; elements like the porch and the overhanging roof were intrinsic to the Chicago suburban vernacular, being sensible ways of dealing with the extremes of climate and linking house to garden; the focal position of the hearth was another traditional feature of the American home, which Wright was gradually to infuse with his own meanings. But the spaces of the lower floor flowed into one another more than was usual in a design of this kind, and the whole form was ingeniously controlled by axes in such a way that there was the feeling of rotation about the central core. With hindsight, one may begin to grasp here certain underlying tendencies which were to become clearer later on.

Wright's breakthrough building was the Winslow House of 1893–4, built in River Forest, a suburb of Chicago near Oak Park. Mr Winslow was a businessman who had recently moved to Chicago and who wanted a house devoid of frills, but with a solid elegance. The formality of the building is evident in the first view. The main façade is entirely symmetrical about the front door, which is set into a stone panel brought forward slightly from the wall plane. The second level is set back and textured in dark terracotta, and by contrast with the light-coloured bricks of the lower storey this zone appears to recede. The composition is capped by a

116 Frank Lloyd Wright, Winslow House, River Forest, near Chicago, Illinois, 1893–4

117 Winslow House, ground-floor plan

118 Winslow House, rear view



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third element, also strongly horizontal in emphasis, an overhanging roof with deep eaves. The detail is crisp, the lines are sharp, the joints are clearly expressed; the form is sober and dignified, but not lacking in vitality.

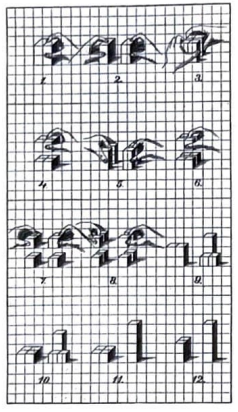
At the front the chimney is visible above the centre of the house, and when one passes to the interior one comes face to face with a fireplace set back behind a sort of rood screen; an image suggesting that the hearth be seen in quasi-sacral terms as the emblem of the morally upright home. Formally the hearth stands at the core of the dwelling and forces the visitor into a rotational sequence through the reception spaces, culminating in the dining room on the main axis to the rear, expressed externally as an apsidal volume. The rear elevation lacks the coherence of the front as it presents an asymmetrical, rather sprawling arrangement of forms. It was typical of Wright's planning approach that he should have placed the master bedroom over the most formal room below – the dining-room – and on the same axis. To the rear of the site, beyond the *porte-cochère*, is a little stable restating the vocabulary of the main house in miniature. It was here that Mr Winslow and Wright together produced a limited edition of exquisitely

printed and illustrated volumes of William Channing Gannett's *House Beautiful* (1896–7). The themes of this book have some bearing on Wright's own attitudes to the home, which he seems to have regarded as an almost sacred institution, requiring a noble and formal architectural treatment. The sense of the dwelling as a moral and religious influence was embedded in the culture in which Wright worked, but probably had a special personal relevance to him. Norris Kelly Smith has even gone so far as to claim that the combination of formality and informality in Wright's house designs should be read as an institutional metaphor expressing the artist's vision of the nature of freedom and dependence intrinsic to family life.

But themes on their own do not make an architecture without forms. What made the Winslow House so remarkable was the way it combined influences, yet transcended them, so implying the ingredients of Wright's own style. Silsbee was left far behind; the classical tradition was raided for its axial control, the Shingle Style for its rotating plans; Sullivan's nature abstraction was reinterpreted, as was the master's intuition that buildings should have a base, a middle, and a head (also an idea with classical overtones – the column with base, shaft, and capital). The formal entrance of the Winslow House was close in spirit, and even in some of its stone details, to Sullivan's Wainwright Tomb in St Louis of the same period. However, Wright's forms probed beyond the inherited schemata to an instinctive sense of the order in nature, as one commentator well understood:

> … it is the broadest, most satisfying thing that he has done … Upon the chosen site, nature has been at work for years, building the wonderful elm – and the character of the house was somewhat determined by the character of this tree. The sympathy that has been cultivated between them is felt by the cultivated and the uncultivated … the impression conveyed by the exterior is the impression conveyed by the elm … a certain simple power of an organic nature that seems to have as much right to its place and is as much part of the site as the tree. The analogy begins there and continues, for the details of the house are as much in their place and as constant in themselves and in relation to each other as the whole house is to its surroundings … The architect shows his sympathy with nature.

This critic might have gone further in his suggestions of analogies with nature. The metaphor of the tree was to become a central one in Wright's thought (just as it had been in Ruskin's), with implications of order and rootedness yet a capacity



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for growth and change. The tripartite scheme of roots, trunk, and branches was in turn to infiltrate his formal arrangements. At the Winslow House the triple division of base, middle and overhanging roof was spelled out with great clarity.

Without clients there would be no architecture, and it is intriguing to speculate just what it was about Wright's buildings which brought him over a hundred commissions in the ensuing fifteen years. At the time Chicago was developing rapidly and so were its suburbs. These formed prosperous middle-class communities of new money, but, on the whole, conservative values. Many of Wright's clients were self-made men whom the architect himself described as having 'unspoiled instincts and untainted ideals'. Leonard K. Eaton more recently attempted to characterize them as 'outwardly conventional [but tending] to possess a streak of artistic or technological interest which predisposed them to accept new and radical solutions to the architectural problem of the dwelling house'. Moreover, Wright's clients wanted value for money and his was an architecture devoid of the elaborate trappings typical of much domestic design in the area. His plans were logical and well worked out to match each client's requirements, and were fitted to their sites so as to make the most of the small rectangular lots typically available. He responded to the new phenomenon of the automobile by

119 The Froebel educational blocks

120 Japanese print of the kind which influenced Wright by their abstraction: Hukuju, *Monkey Bridge in Koshu Province*, c.1825

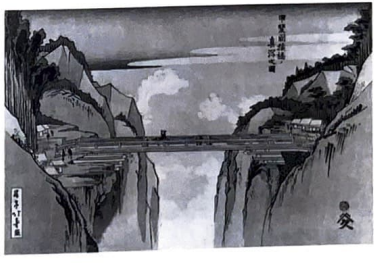
121 The Ho-o-den Temple, reconstructed at the Chicago World's Columbian Exposition, 1893

transforming the previous type of the carriage house into a garage. Considerable attention was devoted to the design of hot and cold water systems, and a crude form of air conditioning was sometimes incorporated. Wright was an architect who liked to oversee building work closely and to supervise the very details of his designs.

However, one suspects that the appeal went deeper than just these practical considerations. With their ample horizontal lines, their elegantly proportioned details, their built-in furniture and overhanging eaves, their ever-changing moods and qualities of space, Wright's designs possessed sobriety, fantasy, and a noble quality of scale. In contrast to the harshness of downtown Chicago, where many of the owners worked, the house supplied a soothing domestic world, a space of calm and retreat. At the heart, a broad fireplace finished with thin Roman bricks could be set with logs on the very floor of the prairie, while in summer the stained-glass windows with their abstracted vegetal motifs let the changing light dapple the interiors. Kitchens were designed to make the lot of servants or of housewives (depending upon the wealth of the clients) easier. Living rooms were wide and relaxed for informal afternoon gatherings. Sometimes separate playrooms were planned, in which case there was independent access to the adult regions of the house. For the more extravagant and cultured, music wings or conservatories were included. Wright's houses responded to the rituals and aspirations of a new suburban bourgeoisie (dinner parties and the like) but also evoked a traditional image of the American home; in a sense, they helped an emergent class to find its own identity.

The path from the Winslow House to the fully developed type of the 'Prairie House', nearly a decade later, was not straightforward. It was a process of endless experiment in which each new task allowed the extension and refinement of principles. Wright's domestic ideas were obviously stamped with Arts and Crafts values of the sort which encouraged restrained simplicity, the honest and direct use of materials, the integration of the building with nature, the unification of fixtures and fittings, and the expression of an elevated moral ideal. But he set out to reinterpret these premisses radically. He was more concerned with mechanization than most of his predecessors and contemporaries within the Arts and Crafts tradition. In 1901, in a paper entitled 'The Art and Craft of the Machine', Wright explained that simple geometrical forms could most easily be turned out by machine saws, and suggested that the architect must remain open to the tremors of a new mechanized age. By this he intended to imply not that the machine should be celebrated directly in mechanical analogies or images, but that industrialization be understood as a means to the larger end of providing a decent and uplifting environment for new patterns of life.

It was Japanese architecture which helped Wright achieve his synthesis. He did not visit the country until 1905, but long before that he had studied oriental examples in books and in representations in Japanese prints. Wright probably saw the reconstruction of the Ho-o-den Temple at the Chicago World's Columbian Exposition of 1893, which can only have confirmed an interest in overhanging roofs and a grammar based upon timber frames, transomes and screens. Grant



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Manson has suggested that the *tokonoma*, 'the permanent element of a Japanese interior and the focus of domestic contemplation and ceremony', may have influenced Wright's concentration upon the hearth as the fixed element in otherwise fluid spaces. Evidently the architect admired the refined proportions, the exquisite carpentry, the use of humble materials, and the subtle placement in nature which he found in certain Japanese examples. This was an architecture which modulated space and charged it with a spiritual character: the opposite, in his mind, of the Renaissance tendency to put up walls around box-like rooms and to decorate them with ornament. Wright was seeking an integral, three-dimensional expression in which the exterior would convey interior volumes, and in which human scale would permeate all the parts. Moreover, Japanese prints – aside from their representation of architecture – suggested a language of shape and colour directly attuned to the feelings (rather as the Froebel blocks had done in earlier life). In other words, the prints provided further lessons in *abstraction*: they gave Wright deeper insight into the intuitive apprehension of 'higher' spiritual values.

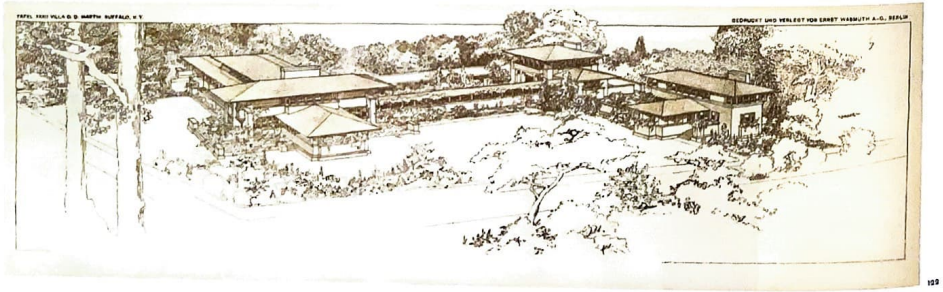
More than that, the prints encouraged Wright to try to formulate a sort of ideal type for the dwelling above the particulars of any one case; Sullivan had attempted something similar for the skyscraper, a formulation 'so broad as to admit no exception'. For Wright the key phase of crystallization seems to have been around 1901 when he published his idea for 'A Home in a Prairie Town' in the *Ladies' Home Journal*. In retrospect, one may see this as a sort of 'theorem' summing up his discoveries to date, and laying the basis of a great period of creativity running from 1901 to 1910, and including such masterpieces as the Martin House, the Coonley House, the Robie House, the Larkin Building, and the Unity Temple. The 'Home in a Prairie Town' was formed from long low horizontals stretching parallel to the flat land of the site. The sprawling roofs extended to the surroundings and drew the porches, the *porte-cochère* and the main volumes into a vital, asymmetrical unity. Windows were reduced to simple screens – there were few solid walls – and the spaces inside were linked together. Much of the furniture was built-in and the character of the interiors was commodious yet elegant. At the heart was the hearth, and all the diverse spaces of the house were placed relative to this centripetal element. There was still axial control and hierarchy, but the rotational and asymmetrical were combined with these in an architecture of sliding and overlapping planes enlivened by an intense rhythm.

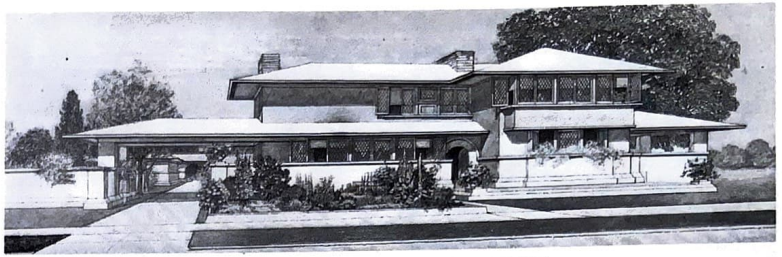
The Ward Willits House of 1902, built in the north Chicago suburb of Highland Park, was one of the first in the mature phase of Wright's work. It stands back from the road, and the first impression is of low roofs extending behind the nearby trees and of hooded windows with dark chinks of glass set under eaves. The building is divided into four main wings, so that the size is never overwhelming. One enters from a *porte-cochère* to the right of the building up some steps. Wright's houses usually had a 'path' running through them; in this case there is the instant choice of either turning back up the square spiral stairs to the bedroom level, or taking the more prominent route out of the vestibule by following the diagonal view into the living room.

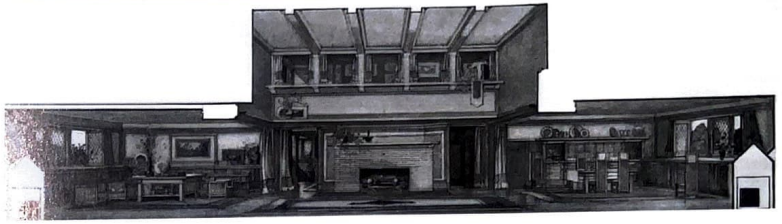
122 Frank Lloyd Wright, Martin House, Buffalo, New York, 1904, aerial view, from the *Wasmuth Volumes*, 1910–11

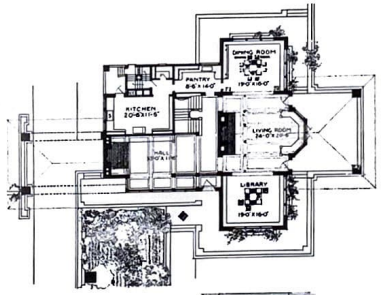
123 Frank Lloyd Wright, project for 'A Home in a Prairie Town', *Ladies' Home Journal*, February, 1901

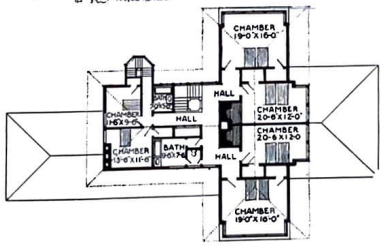
124 'A Home in a Prairie Town', ground- and first-floor plans











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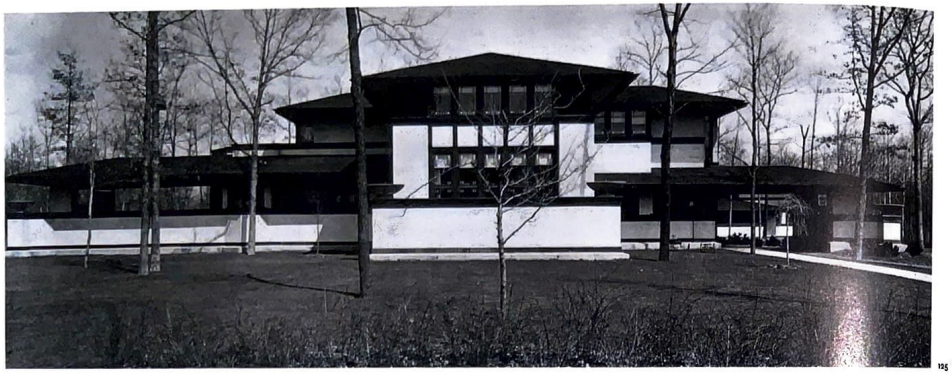
This is on the main axis and is one and a half storeys high. It has the chimney on its axis and vertical screen windows. The walls are plastered and smooth and there are slats of wood which bring down the scale and relate structure, furnishings and details to the main proportions. From this space one can see in turn along another diagonal into the dining-room, situated on a cross axis, with views on three sides into the garden; in the rear wing of the house is the kitchen.

Details such as grilles, brick textures in the fireplace, window mullions, even the leaded lines of the glass, bear the imprint of the same formal intelligence which conceived the whole, as if the smallest parts all had the generating idea implicit within them. Thus the abstract shapes of the plan, and the ornamentation of the windows are sensed as variants on the same geometrical patterns. Indeed, the plan is almost a work of art in its own right and serves to illustrate Wright's compositional principles. There are primary and secondary axes which are reinforced by the centre lines of the roofs and the placement of the chimney, but many of the rooms are shifted on to subsidiary axes parallel to the main ones. The result is a sort of 'pinwheel'



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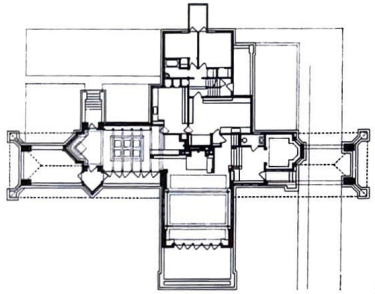
rotation, experienced in three dimensions as a spatial tension which varies as one moves through the interior spaces. The section is stratified, and elements slide past each other. Parts and whole are held in a vital equilibrium. To Wright this dynamism was perhaps equivalent to the life force he sensed in nature; it gave his dwellings something of the quality of a spatial music in which rhythm, movement, repetition, and variation of similar elements achieved moods and emotions of different pitch and intensity.

The Ward Willits House was an early experiment with Wright's recently conceived theories. In it he tried out the various pieces of his 'Prairie House' type. Over twenty years later he looked back on this period and attempted to put in writing the guiding principles of his domestic designs.

First.
To reduce the number of necessary parts of the house and the separate rooms to a minimum, and make all come together as enclosed space so divided that light, air and vista permeated the whole with a sense of unity.
Second.
To associate the building as a whole with its site by extension and emphasis of all the planes parallel to the ground, but keeping the floors off the best part of the site, thus leaving that better part for use in connection with the life of the house. Extended level planes were found useful in this connection.
Third.
To eliminate the room as a box and the house as another by making all walls enclosing screens – the ceilings and floors and enclosing screens to flow into each other as one large enclosure of space, with inner subdivisions only. Make all house proportions more liberally



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human, with less wasted space in structure, and structure more appropriate to material, so the whole more liveable. Liberal is the best word. Extended straight lines or streamlines were useful in this.
Fourth.
To get the unwholesome basement up out of the ground, entirely above it, as a low pedestal for the living-position of the home, making the foundation itself visible as a low masonry platform on which the building should stand.
Fifth.
To harmonize all necessary openings to 'outside' or to 'inside' with good human proportions and make them occur naturally – singly or as a series in the scheme of the whole building. Usually they appeared as 'light-screens' instead of walls, because all the 'Architecture' of the house was chiefly the way these openings came in such walls as were grouped about the rooms as enclosing screens. The room as such was now the essential architectural expression, and there were to be no holes cut in walls as holes are cut in a box, because this was not in keeping with the ideal of 'plastic'. Cutting holes was violent.
Sixth.
To eliminate combinations of different materials in favour of mono materials so far as possible; to use no ornament that did not come out

125 Frank Lloyd Wright, Ward Willits House, Highland Park, near Chicago, Illinois, 1902

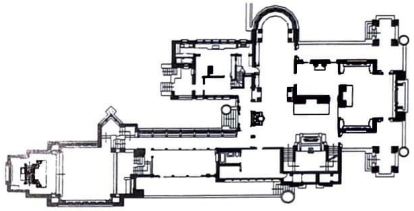
126 Ward Willits House, ground-floor plan

127 Frank Lloyd Wright, Dana House, Springfield, Illinois, 1902–4, ground-floor plan

128 Dana House, exterior view, from the *Wasmuth Volumes*, 1910–11

of the nature of the materials, to make the whole building clearer and more expressive as a place to live in, and give the conception of the building appropriate revealing emphasis. Geometrical or straight lines were natural to the machinery at work in the building trades then, so the interiors took on this character naturally.
Seventh.
To incorporate all heating, lighting, plumbing so that these systems became constituent parts of the building itself. These service features became architectural and in this attempt the ideal of an organic architecture was at work.
Eighth.
To incorporate as organic architecture – as far as possible – furnishings, making them all one with the building and designing them in simple terms for machine work. Again all straight lines and rectangular forms.
Ninth.
Eliminate the decorator. He was all curves and all efflorescence, if not all 'period'.

This is not to suggest that Wright's 'system' was rigid and prescribed. On the contrary, it allowed



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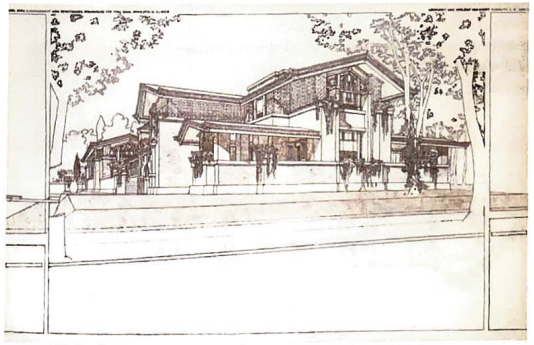

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him a firm base from which to experiment. Its flexibility was well demonstrated in his responses to different sizes of dwelling. Many of his early houses were modest, but as his reputation grew, so did the size of his commissions, to the point where he was soon building for the extremely wealthy.

The Dana House in Springfield, Illinois (1902–4), covered an entire suburban lot and included not only the main house, a music wing, and a covered conservatory walkway, but also remnants of the previous family residence which it replaced. This was incorporated as a sort of family shrine. The main entrance was given a formal treatment by means of a pedimented roof and a low archway (lending the whole the air of a tomb), preceding a formal sequence through expanding and converging spaces culminating in the barrel-vaulted dining room on the main axis. The music room was a more perforated version of the vaulted theme, and was placed on a cross axis at the end of a half-glazed pergola. The family had gained its wealth from the prairies and had retired to Springfield (the Illinois state capital) for a more urbane existence, and the ensemble was given an almost institutional stance, for it could be expected to function virtually as a cultural centre in this small but rapidly expanding Midwestern town. Flat, buff-coloured Roman bricks were used on the exterior with copper trim (now verdigris) for the rims of the roofs. The interiors orchestrated a visual equivalent to Whitman's hymns to the prairies, with gold, brown and russet finishes, and with light fixtures and leaded glazing based upon a triangular stylization of the sumac plant. For this type of project, Wright separated out the individual pieces, then submitted them to a consistent formal discipline based upon dominant metaphorical themes.

For the Martin House in Buffalo, New York (1904), Wright had to accommodate all the functions of a luxurious estate: stables, a guest-house, a large main dwelling, pergolas, gardens, a conservatory, etc. He monumentalized his usual vocabulary of piers, roofs, and garden urns to lend an appropriate air of importance, and worked downwards in scale in several linked hierarchies. This is where Wright's method of organizing a plan with the help of a geometrical grid helped him to maintain uniform dimensions and to orchestrate axes and directions. The plan of the

Martin House is a most sophisticated abstract pattern, not unlike a Mondrian painting, in which interior and exterior spaces, figure and ground have equal value (see Fig. 166). In other words, the lawns, pergolas, and spaces between were organized by the same formal principles as those in the main buildings.

The Coonley House of 1908 in Riverside was another case where an entire wealthy precinct was unified but with full respect for different functional demands. These larger Prairie Houses combined an aura of magnificence and dignity suitable to their patrons, with subtle and refined control of detail and scale. In them Wright demonstrated that he could 'stretch' his vocabulary without loss of coherence. They have been referred to as 'palaces', but it would be more precise to place them in the long tradition of the *villa*, and particularly the '*villa suburbana*', a type combining the virtues of urban and country life within a modulated pattern of living spaces responding to both. Wright's handling of formality and informality, block and garden, pergola and roof, picturesque and classical, urbane and primitive, suggests more than a slight acquaintance with such seminal examples of the type as Schinkel's Court Gardener's House at Charlottenhof of 1836. Wright's archetypal image of the suburban home, whether large or small, with its sense of enclave, its sprawling roofs, its fluid transitions, and its romantic aura, was, in effect, a 'counterform' to the rigidity of the urban grid, and to the duress and harshness of the industrial city. It was as much the distillation of a social type as was Sullivan's theorem of the tall office building.

Wright had to cope with variations of site as well as of size. Many of his early houses were situated on flat, rectangular lots of small to medium area. But in 1904 he encountered an entirely new character of terrain when he was asked to design the small Glasner House in Glencoe on the North Shore of Chicago. The site was perched on the edge of a ravine which was heavily wooded. The habitual arrangement of a plinth-based, basementless house simply would not fit. Wright therefore planned the house so that the horizontal datum was supplied by the roofline; the forms of the building cascaded downwards from this line to meet the ravine at various levels. One entered on the upper level from the rear past the kitchen, to find the combined living/dining room and the master bedroom; the other rooms were placed downstairs. The volumes were anchored in place by three vertical elements, polygonal in plan: a library at one end, a teahouse (not built) over a bridge at the other, and a sewing room alongside the master bedroom.

As the living room was at tree-top height and surrounded by bushes, flies and insects could be expected in the summer months. If all the windows had been made openable, they would have needed insect screens, which would have blocked the view. Wright solved the problem by cross-breeding his usual 'Prairie House' fenestration with the well-tried 'Chicago window' (a central, fixed pane exclusively for light, and two small, side, vertical panes with screens exclusively for ventilation), which he stole from its usual commercial context; in this way it was possible to keep large areas free of insect meshes. The view through the long *travée* of windows with abstracted stained-glass tree motifs in them was quite magical. The interior was rendered sensitive to every change of light and colour in the ravine. The resulting character was rustic rather than suburban, and was reinforced by the horizontal batten-boarding of the lower portion, as well as the gazebo

129 Frank Lloyd Wright, Glasner House, Glencoe, near Chicago, Illinois, 1905

130 Glasner House, ground-floor plan; the bridge and teahouse on the right were not built

131 Frank Lloyd Wright, Coonley House, Riverside, Illinois, 1908

132 Coonley House, living room, from the *Wasmuth Volumes*, 1910–11

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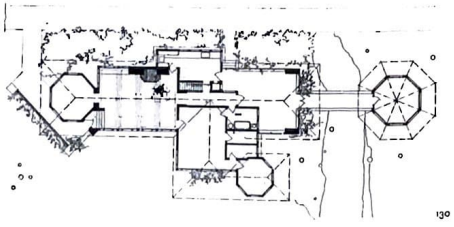

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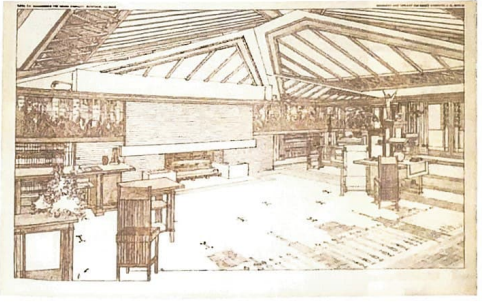

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imagery of the polygonal volumes. The rich effect of a cantilevered roofline hovering above uneven terrain was one which Wright would employ again.

The artist's style may be thought of as a set of typical elements organized into wholes which themselves take on characteristic, generic patterns. A style based on principle will embody a sort of 'system' of building forms which combine and recombine according to grammatical and intuitive rules. Such a 'formula' is the opposite of a dry, repetitive 'cliché'; it is an abstraction which allows many creative possibilities around a few central themes. For such an artist – and Wright was such an artist – each new building task is a further opportunity to explore the ideal type while also unearthing new meanings. On occasion, an opportunity may arise which prompts the clarification of the artist's guiding vision.

The Robie House of 1908–10 was among the

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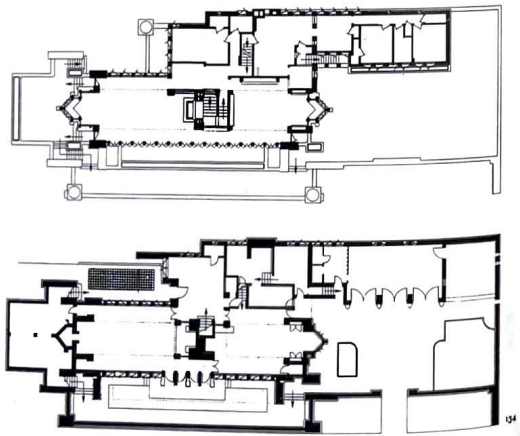
clearest of Wright's expressions of the Prairie House ideal; rather as the Villa Malcontenta was one of the most complete realizations of Palladio's dream of the villa. The client, Mr Robie, was a bicycle manufacturer and only 27 years old when he employed Wright to design a home for him on an extremely tight corner site in south Chicago. He required a servants' wing and a billiard room, as well as the usual dining and living rooms, bedrooms, kitchen and bathrooms, and indicated that he wanted to 'see his neighbours on the sidewalk without being seen' and that he would also like, if possible, views of a park situated diagonally opposite, but a block away. Wright interpreted these givens by translating them into form via his evolving vocabulary. In plan he arranged the building as two bands, sliding alongside one another, with some degree of overlap between. The smaller of these was to the rear of the site and contained the garage, boiler room, laundry and entrance on the ground floor, servants' rooms,



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133 Frank Lloyd Wright, Robie House, South Woodlawn, Chicago, Illinois, 1908–10

134 Robie House, first-floor and semi-basement plans

135 Robie House, first-floor living/dining room

136 Robie House, detail of leaded-glass window

the kitchen and a guest room on the first level. The other 'strip' was more prominent and arranged with chimney and stairs as a unit passing up through the centre. The billiard room and children's room were in the semi-basement, while the living and dining rooms were on the first level, which became a sort of *piano nobile*. Indeed, it was not so much two rooms as one – a single space partially divided by the chimneypiece, detailed so as to give the effect that the ceiling hovered above it as a single, continuous element running from one end to the other. At the ends were window seats in prow-like protrusions, reinforcing the sense of the longitudinal axis, and echoing the triangular forms of the pitched roofs above. From here, Mr Robie could look down but not be seen, for the parapets and overhangs ensured visual protection.

The main interior space of the Robie House illustrates how ingeniously Wright could attune his customary solutions to a new individual case on formal, functional, structural and symbolic levels simultaneously. Along each side was a rim set even lower than the rest of the ceiling. This reinforced the character of enclosure and accentuated the horizontality of the room. But it also served a number of functions because small 'Japanese' globe lights were attached to the rim, and electrical wires were concealed within it, as were ducts and vents for moving air. The roof as a whole was an ingenious environmental device capable of being a heating cushion in winter or an extract flue in summer. The overhangs extended dramatically into the setting, the longest span supported with the help of a steel beam ordered from a shipyard. But these wide cantilevers were not just for visual effect. The extending planes enhanced the feeling of shelter, protected the windows from rain, snow, and glare, released the edges of the building from any great structural load (permitting the extensive screen-windows), and mediated between inside and outside. The result of all these devices together was the antithesis of the closed box, it was as if the Winslow House of fifteen years before had been exploded outwards.

An architectural system requires a consistent attitude in detailing, as well as in the disposition of the main forms, and just as the overall 'formula' must adjust as each new unity is found, so typical details must be attuned to the unique work. In the Robie House, Wright used elongated 'Roman' bricks laid with deep reveals of shadow in the joints so as to rhyme with the predominant horizontals.

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Another characteristic detail was the urn with a coping-stone top; in the Robie House these were made integral to the composition and adjusted to echo rooflines and parapets. Yet another customary Wrightian element was the leaded, stained-glass window with motifs abstracted from natural forms; in the Robie House the patterns were harmonized with the dominant horizontality, and with the triangular themes of the plan. Thus all the parts were drawn into a symphony: an orchestration of ideas and forms, moods and materials, which transcended merely period concerns. Alongside it, the designs of the so-called 'Prairie School' – the followers of Wright – were mere shadows.

The Robie House captured a moment in the history of American culture in the years leading up to the First World War, and was seminal in the development of a modern concept of space, but it also engaged with a wide field of meanings and resonances in the history of architecture. The combination of axial control and romantic, expanding silhouette perhaps linked the building to works of an earlier generation, such as H. H. Richardson's Ames Gate Lodge of 1880–2 (Fig. 90). Lessons of Japanese religious and domestic design were absorbed, as were features of the Midwestern vernacular. In the expansive horizontal lines floating above striations of shadow and a base of stone lintels and brick, there were perhaps long-distant recollections of the geological strata which had so intrigued Wright in childhood, though analogies can also be made with steam yachts and other objects of the modern age. The Robie House engaged with the very idea of a dwelling, its practical needs, its rituals, its psychological nuances. It was a work which, while modern, pitched towards the idea of origins. It even called to mind Semper's archetypal elements (which Wright certainly knew): the plinth, the hearth, the roof and the enclosure. The Robie House was rich in hidden implications. The propositions which it contained, and the formal devices which articulated them, were capable of almost endless elaboration in Wright's later work.

While most of Wright's works up to 1910 were houses, he also received other types of commission. His 'system' had then to stretch to accommodate new functional and expressive demands. In 1902, for example, the Larkin mail order company in Buffalo, New York, asked him to design an office

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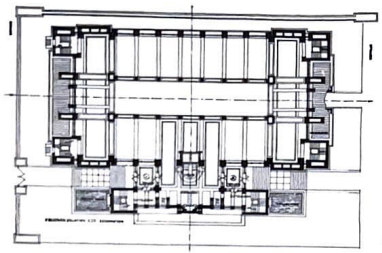

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building around their requirements. The site was almost completely surrounded by railroads with factories in the background and a gasworks nearby. An inward-looking, hermetically sealed solution seemed advisable. From the Prairie House vocabulary Wright adopted the theme of trays slung from vertical piers, which he arranged around a high, top-lit atrium space. The stairs and ventilating equipment were set in tall towers to the corners from which the inner system was slung. These gave a massive and monumental character to the exterior and provided vertical emphases sufficient to unify the smaller parts and to make the overall form coherent. With its severe, dominating silhouette, its

137 Frank Lloyd Wright, Larkin Building, Buffalo, New York, 1902–6 (demolished)

138 Larkin Building, plan

strong axial character and its airy, nave-like interior space (Fig. 170), it was perhaps understandable that the Larkin Building should have been dubbed 'a cathedral of work' (it was inscribed with moralistic mottoes suggesting the religious value of labour), but the building also suggested Wright's designs for sideboards or other domestic furniture. Large or small, every design was handled according to consistent formal principles.

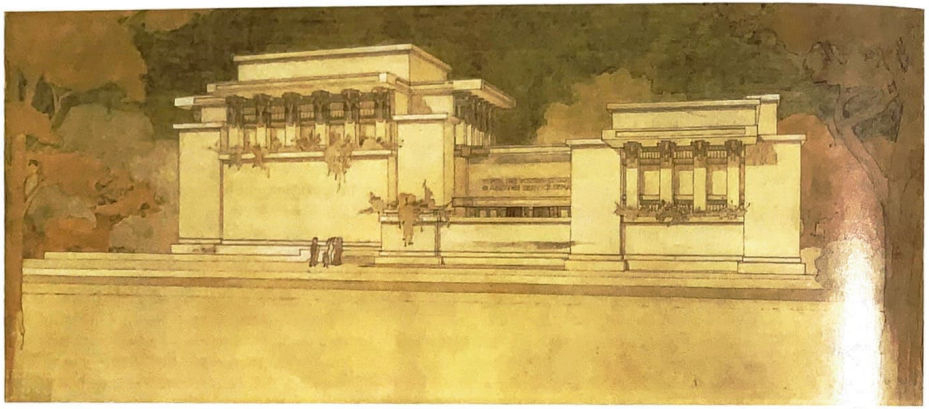
Equally, the Larkin Building revealed Wright's stance in relation to contemporaries and predecessors. In effect it was a more vertical version of a pre-existing urban type: the office building with a top-lit, glazed atrium in the middle. Grammatically it was a descendant of Sullivan's Wainwright Building (Fig. 32), but turned, so to speak, outside in. The massing suggested an abstracted version of an Egyptian pylon gateway, while the overall lines perhaps revealed the influence of Olbrich's Viennese Secession Building of 1897–8 (Fig. 56). The darkness and boldness were in character with industrial types such as grain silos, and yet the whole thing had a daring monumentality. The Larkin Building received lavish praise from European designers in search of a modern architecture, but was censured by several notable American critics (e.g. Russell Sturgis) for being too naked. Wright defended his approach in these terms:

> There is a certain aesthetic joy in letting the thing alone which has for centuries been tortured, distorted, and dickered with in the name of Art, letting its native dignity show forth once more. I confess to a love for the clean arris; the cube I find comforting; the sphere, inspiring. In the opposition of the circle and the square I find motives for architectural themes ... combining these with the octagon I find sufficient materials for symphonic development. I can marry these forms in various ways without adulterating them, but I love them pure, strong and undefiled ... There is quite room enough within these limitations for one artist to work, I am sure, and to accord well with the instinct for first principles.

In 1905 Wright was commissioned to design a building with a truly sacral function. The Unitarians in Oak Park needed a new meeting place. Evidently they thought of it in traditional terms involving a spire. But Wright insisted on redefining the programme and on reinterpreting the fundamental idea of a place of assembly. He decided to 'abolish in the art and craft of architecture, literature in any symbolic form whatsoever', and to provide a dignified space 'in which to study man himself for his God's sake'. He started with a *room* not unlike the most formal spaces for public reception or dining in his houses – symmetrical, hieratic, focused by means of balconies on the pulpit: '... a noble room for worship in mind, and let that great room shape the whole edifice. Let the room inside be the architecture outside.' During the course of the design, Wright may have been partly inspired by Kakuzo Okakura's *Book of Tea* (1906) in which the author described the rituals of the traditional Japanese tea ceremony, and referred to the space of the teahouse as 'the abode of vacancy'. For the main room of the Unity Temple Wright chose a square as a generator, perhaps because this was a centralized, focal and stable shape with an inherent suggestion of wholeness and unity. This he endowed with a numinous character through the subtle control of proportion and the filtering of light. The presence of this main volume was sensed directly on the exterior through the straightforward expression of the building's geometry and hierarchy of supports.

As well as a 'temple', the Unitarians needed a children's Sunday School and a meeting hall for get-togethers. These Wright placed in a lateral oblong, which he set with its short axis aligned to the square. The entrance hall to both spaces was placed as a 'neck' between them and was reached from the street up some steps on to a terrace. Over thirty-four studies were made before Wright was satisfied with the relationship between these main volumes. The power of the result lies in tense and elemental relationships and in the way the main themes are restated in all the smaller parts. Wright chose concrete as his building material because it was cheap and easy to use: an extremely bold step for someone to take in 1905, especially for a religious building, the more so because he decided to leave the material bare on the exterior.

The main elements recalled the Prairie House formula and handled transitions in size between the overall volumes and smaller parts. They included corner piers (with stairs and ducts), walls, screen-windows, and thinner versions of the main piers to support the structure of the roof. This was flat and lifted free of the box beneath it, giving the impression of a sort of classical overhang at the top of the composition outside, and of a parasol pierced by rectangles of light inside. The building had a clearly defined base as well, so that the tripartite



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'grammar' of the elevation was once again employed. The significance of this abstraction of tradition was not lost on Wright's contemporaries; one of his draughtsmen commented in 1904 on 'his tendency in the last two years ... to simplify and reduce to the "lowest elements" (as he says) his designs. His grammar, which he may be said to have invented, is such as he used in the Winslow House, consisting of a base, a straight piece of wall up to the second-storey window sills, and frieze from this point to the roof, and a cornice with a wide overhang ...' The Unity Temple was a complete distillation of just such elements as these, and in 1906 the same writer could be found comparing the building with a classical temple (an analogy which is strongest in section). It seems that Wright was entirely conscious of classical resonances in his design, which would not be so unusual for an architect who had worked with Sullivan, and had probably studied Schinkel's work in publications. In Wright's mind, no doubt, the Unity Temple was an exercise in 'first principles'.

Part of the richness of the Unity Temple arose from the contrast between the solid exteriors and the luminous interiors in which masses dissolved away. Although the layout of the main rooms was symmetrical, the volumes were in fact perceived on diagonals from the circuitous route passing through them: another theme from the houses. The path to the interior passed through the entrance hall, then down some steps into a half-level access cloister under the side balconies. These were hung from four burly piers into which service ducts were run. The vitality of the interior space was created, in part, by the secondary rhythm of the half levels, and the light filtering in through leaded screen-windows at clerestory level; these were detailed to give the impression that the roof slab was floating. Once the visitor was seated, the geometry focused attention on the pulpit, and on the main axis of the scheme.

Thus the solution to the Unity Temple was found by the application of the principles Wright had already been pursuing, and their reconsideration in the light of a sacred institution. He did not rely on a spurious symbolism, but on the direct impact of spaces and volumes in light, suffused with a spiritual character. Whether Wright really regarded a 'church' as more sacred than a 'home' is, perhaps, open to question, but his response was to lend his domestic system an unusually hieratic, formal, and symmetrical grandeur. As in the Winslow House, classical values were abstracted and transformed to the point where the architect's forms seemed to possess an almost natural character. This magnificent synthesis was a further reminder that Wright, for all his power of innovation, was also

139 Frank Lloyd Wright, Unity Temple, Oak Park, Illinois, 1905–8, perspective drawing. Sepia ink and watercolour. Frank Lloyd Wright Archives, Taliesin West, Arizona

140 Unity Temple, ground-floor plan showing entrance zone between main space (left) and Sunday School (right)

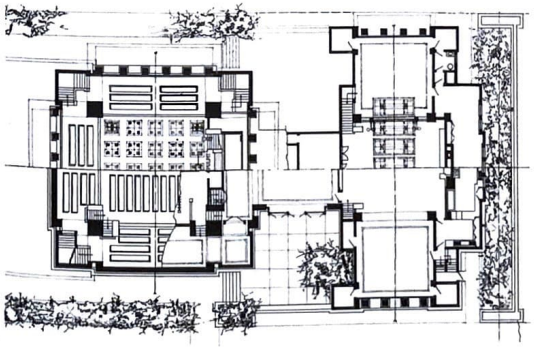
141 Unity Temple, interior

drawn to what he called 'the elemental law and order inherent in all great architecture'.

In 1909 Wright left his wife to live with Mamah Borthwick Cheney, the wife of one of his clients. The following year he went with her to Europe for some months, during which he assembled drawings of his past years of activity. These he published in the so-called *Wasmuth Volumes* of 1910–11. On his return to the United States, he withdrew from the framework of suburban life and family responsibilities to the Wisconsin countryside, where he built 'Taliesin', a 'house on the hill', in which the Prairie House system was further extended to meet the irregular levels of the land. Indeed, echoes of the rural vernacular and even of rock strata emerged ever more clearly; one might be justified in calling this Wright's 'rustic' manner. Taliesin became his retreat, and his celebration of the ideal life lived in a 'natural' setting.

Divorced from the milieu in which he had first formed his architecture, Wright was ever more disposed to explore new directions. The Midway Gardens of 1913, a place for entertainment on the South Side of Chicago (combining stages, open air restaurants and bars), expanded the theme of interpenetrating horizontals to make a species of social theatre of courts, terraces, pergolas and levels. The ornaments and interlacing pergolas of this scheme took on a fantastic character like abstract sculptures referring to hidden figures. Wright's mural decorations for the Coonley Playhouse (1911–12) worked with overlapping discs of colour, and explored themes similar to those emerging in avant-garde painting in Europe. But Wright's new way of life was cut short by a tragedy in 1914 when his adopted family was massacred by a mad servant at Taliesin and the house was burned to the ground. The ensuing psychological disorientation had a considerable impact on Wright's later direction as an architect (Chapter 13).

By the outbreak of the First World War, Wright had established an architectural language based on principle and created a number of individual works that could be fairly called masterpieces. He had inherited the confusions of the 'historical styles' and drawn lessons from diverse cultures as well as uniquely American influences, to formulate a grammar of design which far transcended his local situation in its universal implications. His influence in America was already considerable, especially among those Midwestern followers of the 'Prairie School' (below, p. 138), but the *Wasmuth Volumes*, and the occasional foreign visitor, ensured that his work also became known in Europe. This happened mainly through photographs and drawings. Thus a sort of 'mythological' version of Wright was created in various architects' minds, particularly in Holland, and was used to encourage a range of emergent theories and ideals in the general quest for a modern architecture.



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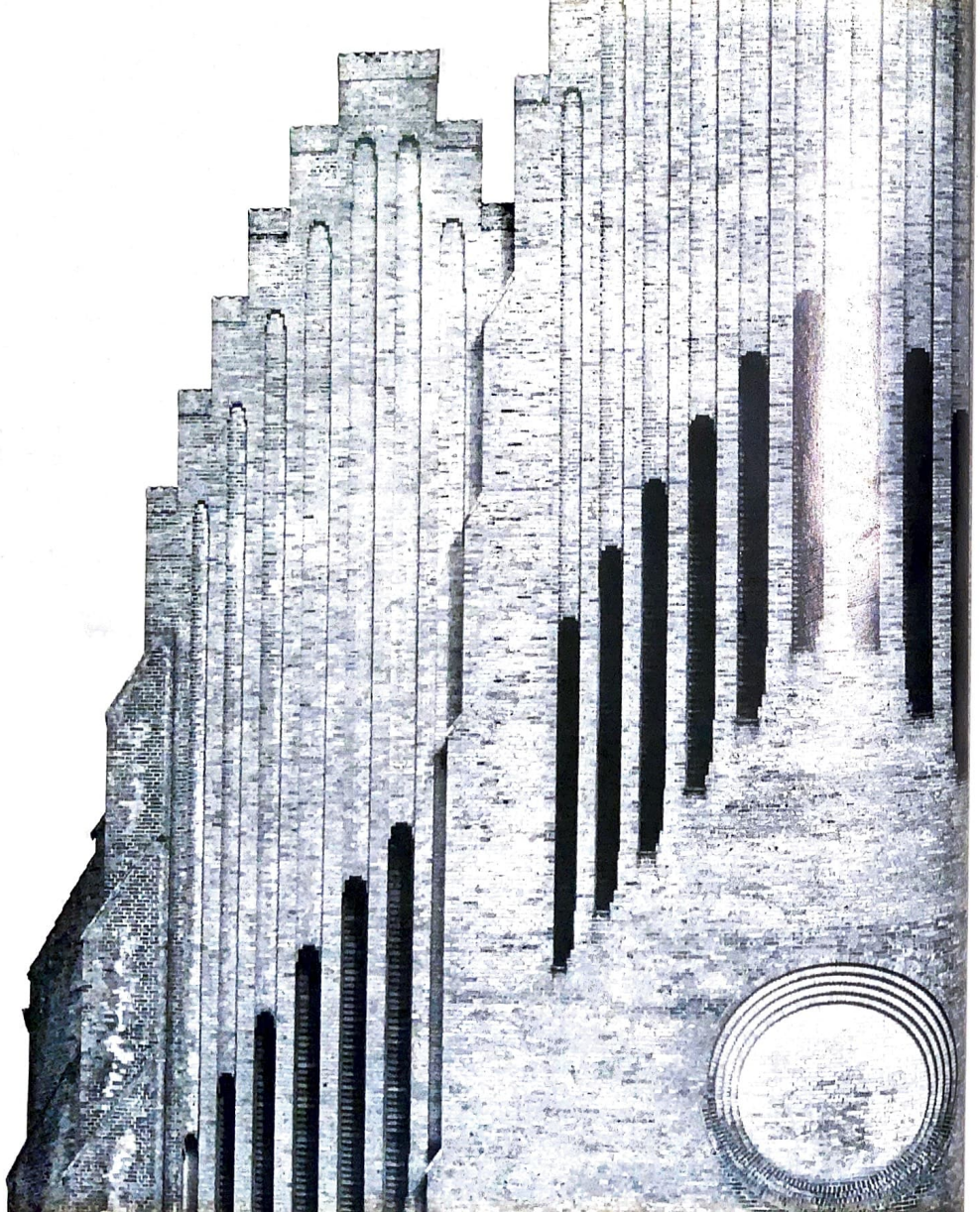


142 Peder Vilhelm Jensen-Klint, Grundtvig Church, Copenhagen, 1913–40, detail of façade

8

national myths and classical transformations

The nobility of each building depends on its special fitness for its own purposes; and these purposes vary with every climate, every soil, and every national custom …
John Ruskin, 1853

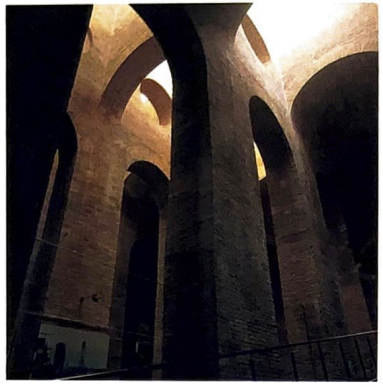
One of the risks of treating individual architects as players putting in brief appearances in the saga of 'movements' is that one may oversimplify their work and so underrate their uniqueness in order to make them fit a historical role. While Frank Lloyd Wright supplied some of the essential bridges between the architectural culture of the nineteenth century and that of the twentieth, he also invented a language, revealed a new conception of space, and opened vistas on traditions near and far. Each of the major 'modern masters' established his own world within a broadly shared endeavour. One way of establishing the identity of figures such as Le Corbusier, Mies van der Rohe, Alvar Aalto, Giuseppe Terragni, Erik Gunnar Asplund and Louis Kahn, is to investigate their formative years, when each of them passed through traditionalist phases corresponding to the state of architecture in their respective places and times. This reveals the foundations on which they built, and suggests how they absorbed impressions and principles for later use. It also focuses attention on two major, though often contradictory, streams within the architecture of the early twentieth century – the one regionalist in tendency, the other classicizing.

The former was concerned with the character, climate, and culture of particular places, with national myths and territorial continuities. It responded to currents of nationalism in the political culture around the turn of the century, and represented a reaction against both the uprootedness and homogeneity of industrialism and the imposition of cosmopolitan formulas derived from the classical Beaux-Arts. The writings of Ruskin and Viollet-le-Duc were sometimes cited to sustain an ideal of indigenous authenticity rooted (supposedly) in local vernaculars or in pre-Renaissance examples, which were believed to have grown from the cultural subsoil. But while medieval and rural worlds were both idealized, it was never the intention to imitate the forms directly. Rather, native sources were to be transformed to respond to a new cultural atmosphere in which urbanized societies looked back at national history and the rural base through a haze of politicized romanticism. Mechanization was notably absent from the agenda, and Arts and Crafts ideals were often exaggerated to procure effects of rusticity. Inspiration was even sought in the landscape itself,

for example in typical plant or rock formations. In these cases, 'nature' was implicated in myths about the roots of culture in particular geographies. It is scarcely an accident that this obsesssion with the land and its meaning should have emerged at precisely the same time that industrialization was rapidly destroying rural traditions.

The term 'National Romanticism' has sometimes been used to refer to a disparate set of buildings created around 1890–1910 in which allusions to national traditions played a major part. But the term is never very precise and can scarcely be used to designate a style, since by definition this was a tendency which addressed local and regional differences. Moreover, sensitivity to locale was implicit in the work of several architects whom it would be pointless to group together under an 'ism': Wright, Gill, Lutyens, Gaudí among others. But if there was no unified style, there were nevertheless some shared concerns, possibly even some recurrent visual emphases. Forms which drew their life initially from medieval towers, log cabins or the iconography of national sagas were gradually attenuated and schematized to become highly charged abstract shapes. One finds a preoccupation with handicraft, textured surfaces, evocative silhouettes, emblematic details, and masses stimulating mood. A cultivated 'naturalism' accentuated by coarse brickwork, rough masonry or tendrils of ironwork might be used to root the building to its site and to its place. Ornament might illustrate well-known national themes, or refer in a more abstract way to local vegetation and geology. The reading of regional traditions was necessarily selective and subjective, but the aim was to reveal typical patterns of adaptation in the vernacular and the monumental alike. Despite the rhetorical insistance on local roots, contemporary filters through which the past was seen were drawn from a range of late nineteenth-century international examples: works by H. H. Richardson and Louis Sullivan; the English Arts and Crafts; the American Shingle Style; even Art Nouveau.

National Romantic ideals emerged in several parts of Europe just before the turn of the century and remained active in some cases until the 1920s. They also exerted an influence in the United States, particularly in the Midwest (the 'Prairie School') and in the southwest. They resurfaced later in the



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twentieth century under different guises, usually when it was a question of affirming a distinct cultural identity. In the European context of the late nineteenth and early twentieth centuries, the insistence on local continuities touched upon deep-rooted conflicts between the languages of different regions and the centralized 'universalism' of classical order; as if an old argument about the relative value of vernacular languages and of Latin had found a new outlet after the lapse of centuries. The idea of a local dialect found an approximate visual equivalent in the common usage of peasant forms and in regional traditions of building. Response to particular climates was also important; it was one thing to construct for the snow, ice and forest of Finland, another to build in the strong sunlight and lush vegetation of Mediterranean Spain.

Identity did not always coincide with nationality, and cultural territory did not always fit neatly within the boundaries of the nation state. In Spain, for example, the idea of a distinctly Catalan expression in architecture was already formulated in theory in the 1870s, and corresponded to a renewed assertion of independence of the Catalan language and of Catalonia as a political and cultural entity. Gaudí responded in his own way to these conditions in an architecture which combined a metaphorical transformation of medieval types, an inventive exploitation of indigenous construction techniques,

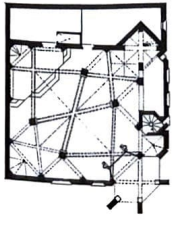
143 Josep Fontserè i Mestres, Dipòsit de les Aigües, Barcelona, 1874–80

144 Josep Maria Jujol, Church at Vistabella, Tarragona, 1918–23, plan

145 Church at Vistabella

and a poetic interpretation of the myths and memories of the local landscape (see above, pp. 59–63). Gaudí understood that Barcelona and its surroundings belonged to a wider Mediterranean world, not just the landmass of Spain, and his images were not without Arab and African echoes. While his own architecture was utterly unique, the cultural predicaments that it reflected were shared with other Catalan architects, for example, Francesco Berenguer and Lluís Domènech i Montaner. The former's Celler dal Garraf of 1888–90 explored parabolic structure, rough masonry, folk motifs (especially in its bizarre, conical chimneys) and surreal, vegetal forms. The latter's Café-Restaurant in the Ciutadella Park (1888) combined an imaginative reinterpretation of local medieval precedents with an accentuated brick articulation, steel trusses and an ornament of crenellations and turrets. In both cases an armature of structural Rationalism was cloaked in romantic allusions; classicism was nowhere to be seen.

Brick and ceramic tile were the prevalent construction materials in the Barcelona region, and over the centuries a normative set of structural types – thick buttresses, screen walls, arches, cross vaults – had gradually emerged. The Dipòsit de Les Aigües in Barcelona of 1874–80 by Josep Fontserè, a monumental reservoir, relied upon this well-tried



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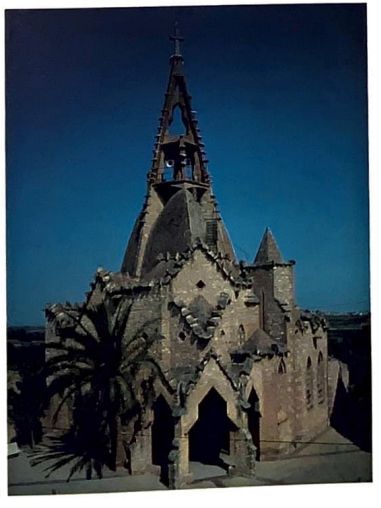

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system. The vast water tank was placed on the roof, supported by a hypostyle hall of sober brick piers and arches. The Dipòsit de Les Aigües evoked a timeless engineering tradition quite beyond matters of style, in which modular units and bays were repeated over and over again on a grid plan. The medieval shipyards in Barcelona were one variation on this pattern, but Fontserè's structure also seemed to hark back to Arab columnar halls such as the eighth-century Mosque at Cordoba (the 'Mezquita'), itself a fusion of Islamic, multicellular conceptions of space, and of the Roman aqueduct as a type. To penetrate the substructures of Spanish architectural tradition might mean unearthing several layers of memory, while also discovering long-range continuities and consistent accents in the way that forms were constructed and composed.

In addition to the traditional masonry kit of parts, there was the distinctive Catalan vault which was made from laminated layers of tile. Combined with reinforced concrete, the Catalan vault was well suited to factories and warehouses in which fireproofing was necessary, and a species of industrial vernacular emerged in the Barcelona area based upon the top-lit vaulted hall with parallel bays and low curved ceilings on piers. The laminated tile could also be used in a sinuous geometry so that the wafer-thin surface could carry over considerable distances without the need for ribs or beams. Gaudí explored this technology in the roof of the school next to the Sagrada Familia (a 'saddle vault' combining convex and concave curvatures), but there were others who made of the serpentine or jagged roof shell a virtual Barcelona signature. The Aymerich i Amat Factory at Terrassa, designed by Lluis Muncunill in 1907, combined a wave-like roof with a skeletal armature; other warehouses of the time cut skylights into the apertures left between the parallel rows of protruding roofs. Here was a case of a distinctive local technology which combined artisanry and industrialism, and which opened the way to extraordinary spatial effects.

One architect to grasp the expressive possibilities of complex surfaces and structures was Josep Maria Jujol, who clearly learned much from Gaudí (with whom he worked) but who established an eclectic and emotive style of his own. Jujol rejoiced in the calligraphy of ironwork, the layering of stucco, brick and masonry, and the interpenetration of different

curved geometries in section and plan. He was attracted to Catalan medieval examples which he perceived in his own way, but in fact drew upon a much wider tradition, and was able to splice together several spatial ideas in a single design. Jujol extended the discoveries of his Catalan predecessors, evoked the surrealist aspects of Catalan peasant folklore, and even stirred the underground memory of Arab space, in a language which also owed something to the international currency of Art Nouveau. The Church at Vistabella, near Tarragona, of 1918–23 used splayed diagonal geometry, criss-cross ribbed vaults, and dissolving effects of light, and transformed Gothic and Moorish precedents. Jujol's buildings brought together industrialism and handicraft, materials like concrete and iron with customary ceramic and brick. His elaborate hieroglyphs and 'organic' shapes were infused with a private sensibility for plants and organisms, and amounted almost to a mystical handwriting; but they also registered a poetic and sensuous reaction to the *genius loci* and landscape of this maritime, Mediterranean region.

It was in the entirely contrasting geographical conditions of the northern European countries that some of the most remarkable 'National Romantic' buildings were produced. The Copenhagen Town Hall by Martin Nyrop, of 1892–1902, introduced some of the ingredients and visual conventions for the handling of a public building. This was eclecticism of a high order, blending together medieval and modern inspirations over a body possessed of a calm sense of classical repose. The bold massing (which may have owed something to the example of H. H. Richardson) was articulated by a well-controlled roofscape of undulations and spires evoking, yet also simplifying, Danish prototypes. In plan, the building was organized as two courts, one of them glassed in. The most important public functions were situated along the main axis, and the main chamber (rather as in the medieval Town Hall of Siena) was placed looking over the public square. The principal material of the exterior was brick, the overall palette working its way through a range of reds and browns. As in Hendrik Petrus Berlage's slightly later Stock Exchange in Amsterdam, a work which pursued the route towards pure geometry much further, an urban building was treated as a bold medievalizing mass, unmistakably departing from any vestige of classical representation in its character and associations.

The Stockholm Town Hall of 1909–23 by Ragnar Östberg also engaged with the problem of civic rhetoric by employing a vocabulary of a generalized traditional character. It was a simplified eclecticism which evoked several pertinent urban and institutional models in the history of architecture. The building was organized as a wide block perforated by courtyards and placed upon a platform between city and sea, with a brooding and tapered brown-brick tower rising to one corner. The tower was surmounted by a delicate spire, an ingenious reworking of a traditional form used in various stages of Swedish architecture, and visible in several earlier metamorphoses in the surrounding, and irregular, Stockholm skyline. The Town Hall combined the type of a medieval Italian *palazzo pubblico* with some vague evocations of Venice, and yet contained numerous allusions to Swedish vernacular traditions in its massing, its details and its craftsmanship. The democratic gestures of a wide arcade and an open court linking the urban side to the water were reinforced by an avoidance of dominant axiality in the plan. The court was treated as a space of dispersal in which the visitor was subtly turned towards a lateral flight of steps flanked by diagonal towers, before moving into the interior. While Östberg's design was rich in decorative incident and dense in local imagery, it none the less maintained a clear sense of overall order. Windows, walls and profiles were attenuated and stretched to enhance the sculptural life of the primary forms.

This interest in the visual expression of structural forces and in the movement of the body through spaces was to be found in several key buildings of the National Romantic tendency. Sigfrid Ericson's Masthugg Church at Göteborg, Sweden of 1910–14 seemed to grow directly from its rocky site, its battered and rusticated walls rising from a dense stone base to ever more simplified and chiselled forms higher up. Lars Sonck's Tampere Cathedral (originally St John's Church) in Finland of 1899–1907 gave shape to the visual tensions of load and support in its overall pyramidal massing, and in its compression and expression of space and structure. The secondary articulation of steeply-angled roofs, windows and masonry joints communicated a vital inner image, while the interior columns were muscular in effect. The building achieved a primal presence through a rigorous control of plan, geometry and materials, which was more than just a matter of Richardsonian influence. The varied rustication evoked a textured, cliff-like surface responsive to weather and to the low angle of northern sunlight. The aim was to move beyond any obvious Romanesque or Gothic references to something more primitive. Sonck's inspirations came from several places, among them the medieval stone churches of Åland – buildings of a rugged and timeless quality. St John's, Tampere, was a celebration of granite construction by local craftsmen, and took on the quality of a collective statement for its city.

It was also an affirmation of cultural identity and independence for Finland. Finnish architects such as Sonck and the younger Eliel Saarinen asserted autonomy from the Russian classicizing influence by returning to old indigenous themes arising from a poetic 'reaction' to the glacial landscape, to traditional timber and stone construction, and to the Nordic climate. They took Finnish epics such as the *Kalevala* as their inspiration. They were also touched by popular sentiments which expressed a violent reaction against Tsar Nicholas II's attempts to violate the Finnish constitution. To follow the design process of St John's, Tampere, from its original competition-winning stage (called

146 Martin Nyrop, Copenhagen Town Hall, 1892–1902

147 Ragnar Östberg, Stockholm Town Hall, 1909–23

148 Lars Sonck, St John's (later the cathedral), Tampere, Finland, 1899–1907, drawing of final design, 1901. Museum of Finnish Architecture, Helsinki

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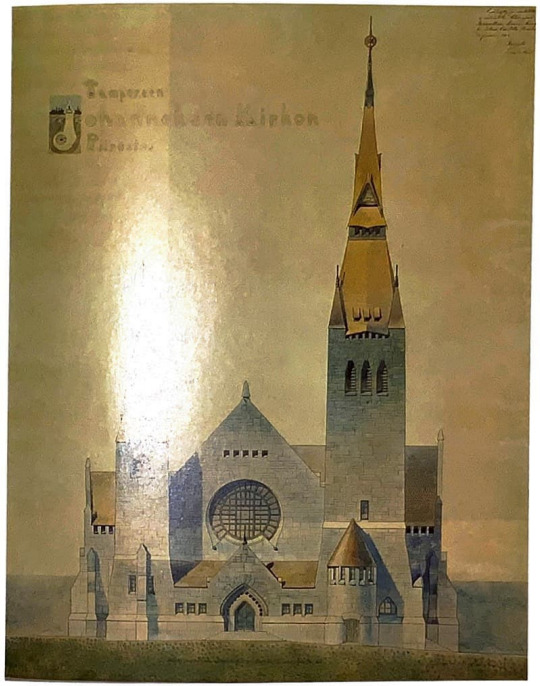

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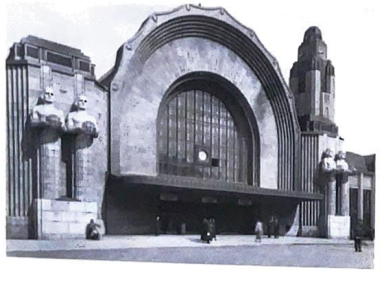
'Aeternitas') to its final stage, is to see how Sonck moved gradually from a simplified form of Gothic Revival, through a stage influenced by the organicism of Art Nouveau, to an idea with a distinct character of its own: what one might be tempted to call a Finnish style. But this would be to put limits on a work of architecture that had a certain universal quality, both earthbound and aspiring.

There can be no doubt that the example of H. H. Richardson played its part in Sonck's crystallization of a personal yet national expression, and he was far from being the only architect to grasp the relevance of this American architect to Nordic European conditions. Richardson's institutional buildings combined a Beaux-Arts planning discipline with an elemental masonry vocabulary of formal geometries and medieval associations. He showed himself adaptable to the new tasks of an emergent nation in the whole range from city to country. The rusticated forms of his buildings suggested several ways for dealing with precisely the kind of rocky, suburban



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149 Eliel Saarinen, Herman Gesellius and Armas Lindgren, Villa at Hvitträsk, near Helsinki, Finland, 1901–3

150 Eliel Saarinen, Helsinki Railway Station, 1904–14

151 Peder Vilhelm Jensen-Klint, Grundtvig Church, Copenhagen, 1913–40

sites that the expanding Baltic cities offered in abundance. His massive integrity was felt to possess an almost geological inevitability which appealed to Scandinavian and Finnish sensibilities.

Among those to be touched by Richardson's example was Eliel Saarinen, who was born in 1873, moved to the United States in the 1920s, and died in 1950. Saarinen's earliest works such as the National Museum in Helsinki of 1902 (designed with Armas Lindgren) were sophisticated reworkings of Richardsonian themes, in which there was evident enjoyment of the transition through stone of several degrees of roughness to textured brick and hewn timber. The full impact of this rugged vocabulary is felt in the complex of residences and studios that Saarinen designed with Lindgren and Herman Gesellius in 1902 for their combined use at Hvitträsk, some distance to the west of Helsinki on a hillside site overlooking forest and lake. Hvitträsk combined international sources derived from Glasgow, Boston and Vienna with an evocative image of the Finnish rural homestead, replete with pergolas, stone platforms, log walls and monumental fireplaces. In both massing and materials, the building responded to its natural setting.

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Saarinen won the competition in 1904 for the Helsinki Railway Station with a flagrantly romantic scheme that had textured stone façades capped by statues of bears. This was fiercely attacked as an excessive exercise in pictorialism by Gustaf Strengell and Sigurd Frosterus, two architects aware of the major changes taking place abroad. Using terms derived from Otto Wagner, they advocated 'a brawn-and-brain style' reflecting the needs and aspirations of the modern age. Evidently Saarinen reacted to these criticisms, for he gradually stripped his formal system of cloying rusticity, disposing purified elements over an almost classical plan and using a language of abstract striation in the façades which no longer referred to any particular style. It was this 'mineralogical' vocabulary that was simplified still further when the architect became active in the United States a decade and a half later (e.g. his entry to the *Chicago Tribune* competition of 1922 which won second prize).

The Grundtvig Church outside Copenhagen, designed by Peder Vilhelm Jensen-Klint just before the First World War (but not brought to completion until 1940), reveals another aspect of National Romanticism: the abstraction of a regional way of building in bold, tectonic forms. Jensen-Klint's design relied upon a radical simplification of Danish church and vernacular prototypes using brick-wall and timber construction, but its jagged silhouette and stepping vertical forms also suggested a geological formation. Indigenous cues were translated into an angular, almost crystalline system of walls, piers and splayed shafts. The interior read as a highly simplified version of Danish Gothic, but carried out in naked brick and bathed in an even light. The basic source was a type of Zeeland country church in which stepped gable ends in brick were used not only for nave and entrance, but also for towers. Similar devices were to be found in the farmhouse and barn vernacular, so that in probing this area of the collective memory Jensen-Klint felt he was reaching towards an archetypal response to the flat Danish landscape and its long rural traditions. However, his building avoided any descent into mere provincialism, and transcended its 'regionalist' agenda with an evocative geometrical order of its own. The Grundtvig Church took its place in a small family of 'traditionalist' buildings conceived in the early decades of this century which

relied upon fundamentals of form, light, proportion and material (the War Memorial at Thiepval of 1924 by Lutyens would be another), and which worked towards the utmost simplicity without making any claims on 'modernity'.

While the very idea of national identity tended to imply unity and consistency, the fact was that most countries were divided into different regions, some of them with cultural affinities remote from those of the capital. This broad generalization applies well enough to the United States in the years leading up to the First World War, the period in which Wright invented the 'Prairie House' for Midwestern conditions, and in which Gill evolved a modern architecture attuned to the climate, landscape and Hispanic memories of southern California. The architects loosely grouped under the heading 'Prairie School' (most of them followers of Sullivan and Wright) considered themselves to be in touch with the values of the American heartland and therefore to be closer to the country's 'true' spirit and identity than the American Beaux-Arts architects whom they criticized for continuing the usual pattern of European importation. Working for the most part in Midwestern states such as Iowa, Illinois and Minnesota, the Prairie School architects (including George Maher, Marion Mahony, William Drummond, George Elmslie, William Purcell, Barry Byrne and Walter Burley Griffin) attempted to produce an authentic reaction to the flat landscape, the extremes of the climate and the cultural ethos of the small country town – a world which they considered to be 'purer' than that of the big city. While the personal styles differed, there was a distinctly Wrightian feeling to most of the production. The Prairie School (which dwindled soon after the United States entered the First World War in 1917) concentrated on the individual home, but also turned its attention to the institutions of small-town America: the schoolhouse, the public library, the bank. Writing in 1918, Irving K. Pond caught the atmosphere behind this short-lived movement already on the wane:

> In imitation of a certain broad and horizontal disposition of lines individually employed, a school of design has sprung up for which its authors claim the title 'American'. The horizontal lines of the new expression appeal to the disciples of the school as echoing the spirit of the prairies of the great Middle West, which to them embodies the essence of democracy.

If there was a single work to distil the American dream of a democratic capitalism rooted in the land, it was surely the National Farmers' Bank in Owatonna, Minnesota, of 1906–8 by Louis Sullivan, a building that was seminal for the Prairie School architects. A low cubic mass in rough brown brick, the main volume of the bank was penetrated by bold arches bringing light to the banking-hall within. Although modest in size, Sullivan's building was monumental in effect, and portrayed the enclosed institution as a sentinel of security and decency in its local farming community. As with Sullivan's tombs, there were echoes of Richardson, though compressed into something more abstract. The tripartite system which Sullivan had used in his skyscrapers was reiterated: a sandstone base with deep openings (suggesting storage boxes or tellers' windows); the grand sweep of the arches up above (enhanced by copper mouldings); the flare of the wall surface at the top into a species of cornice. While there were hints of Roman, Byzantine, even Islamic inspirations, these were blended into something else: an eclectic synthesis of a profound sort, infused with Sullivan's transcendentalist sentiments, and his intention of 'deifying American daily life'. Beyond any particular stylistic designation, the Owatonna Bank was pervaded by a generalized classical sense expressed through the 'primordial' elements of pier, lintel and arch. Perhaps this was Sullivan's 'authentic American' answer to the cosmopolitan superficialities (as he

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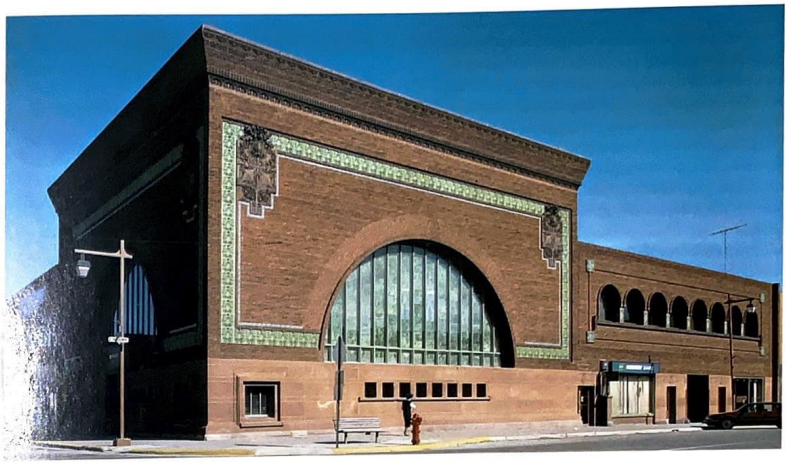
152 Louis Sullivan, National Farmers' Bank, Owatonna, Minnesota, 1906–8, interior

153 National Farmers' Bank



perceived them) of the Beaux-Arts monuments being erected in larger American cities at the time.

Whatever the local cultural agenda of the Owatonna Bank (and of its several cousins designed by Sullivan in small Midwestern towns in the 1910s), the building was like an inclusive emblem of Sullivan's preoccupations in his later years, especially his hope of forming a universal architectural language based upon the abstraction of natural forces and principles. Mechanical processes of electroplating, rolling steel, or even casting bricks, were to be pressed into the service of a 'prose poem' of many tones in which the given character of materials would be transformed by the myth of the American Prairie and of the endless abundance of nature. The inheritance of Arts and Crafts values is sensed in Sullivan's own description of the flecked brickwork of the Owatonna Bank, which combined rough and smooth, light and dark, in a sort of shimmering tapestry, a surface that was virtually alive:

> Manufacturers, by grinding the clay and shale coarse, and by the use of cutting wires, produced on its face a new and most interesting texture … with a nap-like effect, suggesting somewhat an Anatolian 'rug', a texture giving innumerable highlights and shadows, and a moss-like softness of appearance.

In the interior, the usually secretive activities of banking were rendered open and transparent in a single unified space bathed in light. The sober browns of the outside walls were left behind for russet golds and yellowy greens – colours inspired by the prairie in its different seasons. The ornament was far more elaborate too, especially in the suspended light fixtures with their festoons of metallic vegetation, and their small white globular bulbs resembling oozing drops of sap. These lamps were vaguely phallic in form, and suggested both the peeling away of foliage from stalks, and seed-drills coming down to sharp points. It was as if money should be thought of as a 'seed' embedded in the land, then brought to fruition by the skill of agriculture. Capitalism was to sow, then reap, the abundance of nature. Equally there were polarities between 'male' and 'female' principles: the earth being furrowed and ploughed by the machine. A casket of riches, the Owatonna Bank also suggested an abstracted sky floating above an earthbound base. While these cosmic overtones were perhaps more at home in a rural institution than in the shafts of Sullivan's skyscrapers in the big cities, they still sat awkwardly in what was, in reality, a mundane building type. Sullivan's last stand, his dream of

generating a new American culture, blending populism and transcendentalism, rooted in the heartlands, was doomed to failure, swept aside by a national destiny that no longer had a place for idealistic sentiments of this kind.

In the period between roughly 1910 and 1920 there was a widespread swing in several European centres against National Romanticism, Art Nouveau and their Expressionist legacy, in favour of classical values. This took many guises and gave shape to diverse social ideologies and aesthetic points of view. Broadly speaking it was a *rappel à l'ordre* which rejected subjectivism, caprice, and national parochialism in favour of supposedly more 'universal' ideals rooted in several phases of the classical past. From the vantage point of the early years of the twentieth century, the classical tradition was seen as anything but monolithic. The most inventive interpretations involved the transformation and fusion of past types and schemes of order to serve fresh creative impulses. Alongside the somewhat routine and tired productions of academic revivalism there were several developments – both 'modern' and 'traditional' – which relied upon a more 'abstract' interpretation. Beaux-Arts classicism continued to be the dominant mode in the field of public, institutional and monumental architecture in much of Europe and the United States well into the first half of the twentieth century. Even a major international competition such as that for the League of Nations of 1927 was won, eventually, by a design with this pedigree. Beyond the evident use of classical elements (columns, domes, pediments etc.) and ornamented façades, this tended to mean symmetrical plans with major and minor axes marking out the rooms of greatest importance, generous areas for circulation, thick walls articulated by niches or pilasters, and a combination of revered and well-studied classical examples from several periods.

In reality, classicism in the early twentieth century took on different meanings in different national traditions. In the United States it had a worthy pedigree stretching back to the foundation of the Republic, although the efflorescence of the grand manner and the vision of the 'White City' towards the end of the nineteenth century did seem to coincide with the great white fleet, and with the expansion of American power. In Russia, Italianate classicism had the imprimatur of the Tsars and the aristocracy, and so was associated with centralized royal authority. (After the Revolution in 1917 a short-lived *avant-garde* experiment in modernism was soon replaced by another version of classicism within the state apparatus of Stalin.) In Britain the period of free experiment initiated by the Arts and Crafts movement and by Mackintosh was interrupted by a phase of classical cosmopolitanism which served the purposes of several London banks and shops and fitted the mood of late British Imperialism. But Reginald Blomfield's 'not too French', French manner and Herbert Baker's overblown South Africa House (1922) in Trafalgar Square were evidence of the degradation of a tradition rather than its reinvigoration. The great exception was Edwin Lutyens, whose unerring sense of mass, proportion, material, silhouette and siting assured him an easy transition from the Arts and Crafts values of his early houses to the more grandiose gestures and classical innuendoes that larger state and commercial commissions seemed to require. Lutyens looked deeper into the past than his more 'scholarly' colleagues, and his instincts took him back to the bold sculptural inventions of the English Baroque of the early eighteenth century, the work of Hawksmoor and Vanbrugh in particular. This fitted no simple classical category, and fused together the European influences with a national medieval tradition. Lutyens's capacity to grasp the inner connections between different formal lineages served him particularly well in the design of the Viceroy's House in New Delhi, India, between 1912 and 1931 (Chapter 17).

Attacks against the decadence and irrelevance of the École des Beaux-Arts were part of the standard rhetoric of early modernism, but the matter was not so simple. Some of the key figures of the early modern movement like Tony Garnier were thoroughly grounded in the planning disciplines of the École. Moreover, the rejection of the highly ornamental Second Empire mode (e.g. the Paris Opéra) was often accompanied by a desire to return to some more naked 'essentials' of classical order. As has been shown already, 'schematizations' of classicism even played a significant role in the pioneer phase of modern architecture. Sullivan's reformulation of a tripartite, column-like theme for the skyscraper; Wright's radical simplification of

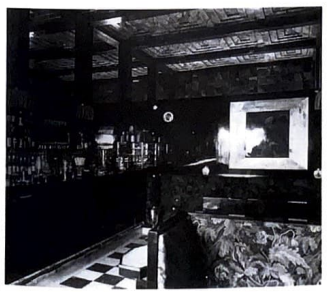
154 Adolf Loos, Kärntner Bar, Vienna, 1907, interior

155 Adolf Loos, Goldman and Salatsch Store, Michaelerplatz, Vienna, 1910–11

base, middle and top in domestic and institutional designs; Perret's Rationalist fusion of reinforced-concrete framing and traditional proportion and trabeation; Behrens's reconsideration of the modern factory in the light of the temple type – all these might be considered as vital reinterpretations of basically classical ideas. Even so unexpected an example as Gropius's Werkbund Pavilion of 1914, with its 'forward-looking' machinist iconography and its play with transparency, is found on close inspection to rest upon a plan with a marked Beaux-Arts character: with primary and secondary axes, a processional hierarchy, and a latterday version of a symmetrical façade. Beyond allusions and ordering devices, the engagement with 'classical values' tended to imply a search for 'ideal' forms and 'immutable' qualities. The painter and writer Amédée Ozenfant suggested: 'Deep in every revolution, discreetly hidden, resides a classicism which is a form of constant.'

The reconsideration of classicism in the years around 1910 to 1920 took several directions. Among those to be affected by the change in mood was the Viennese architect Josef Hoffmann, who had conceived works like the Palais Stoclet in the 'new spirit' around 1905, but who five years later was designing buildings such as the Austrian Pavilion in Rome of 1910–11 with highly simplified classical elements of load and support, striations evoking fluting, and mouldings. His houses of the period around 1912 to 1915 (the Villa Primavesi, the Villa Ast) also registered a marked shift of emphasis, evoking a monumental, almost stately presence by using primary volumes and abbreviated versions of classical pilasters and brackets that were highly inventive in their transpositions and inversions. Adolf Loos, despite his theoretical attacks on ornament, was content in his Viennese works of 1907–12 to make frequent classical allusions; the marble ceiling details of the Kärntner Bar suggested classical coffering, and the façade of the Goldman and Salatsch Store of 1910–11 in Vienna included Doric columns. In Austria, in particular, the return to classical values was intended to evoke the sobriety and supposed cultural integrity of the Biedermeier period of the early nineteenth century. In effect it constituted a reaction against both the innovatory upheavals of the turn of the century *and* the grandiose and rhetorical modes of classicism employed for the main monuments on the Ringstrasse in the 1870s and 1880s.

In Germany there was a parallel tendency to invoke the epoch of neo-classicism as a lost golden age in which 'higher' values were supposed to have been made manifest through a distillation of classical essentials. This was the way that Behrens



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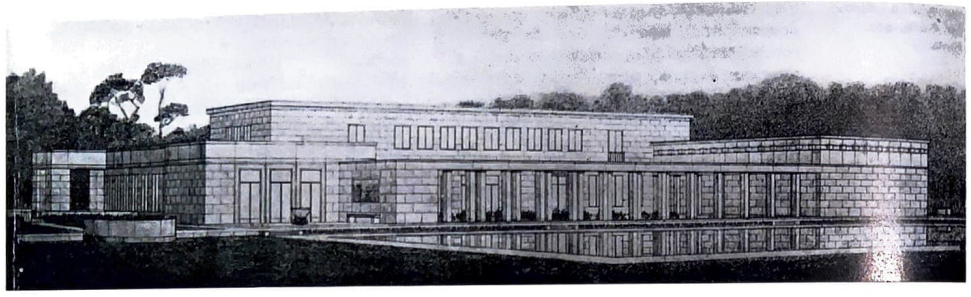

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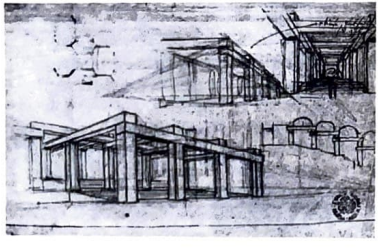
tended to look upon his early nineteenth-century predecessor Schinkel, presumably in the hope that the ideology and patronage of the Deutscher Werkbund might orchestrate a similar 'classic moment' for the modern industrial state of Germany. The houses designed by Behrens around the same time as his AEG factories (e.g. the Cuno Residence at Hagen-Eppenhausen, 1910–11) were markedly neo-classical in spirit, though devices such as the striated cornice revealed the extent to which the architect was willing to depart from any obvious precedent. In later buildings, such as that for the German Embassy in St Petersburg of 1912, Behrens adapted an obvious and relatively mute usage of classical columns and piers. Where Behrens looked to the classical tradition for its lessons in monumentality, Heinrich Tessenow sought out the common bonds between temple and house, classical types and simplified vernacular forms. This was most evident in his works at Hellerau of 1910–12, where the allusions to the classical language were subliminal, and the attitude verged on primitivism.

The earliest works of Ludwig Mies van der Rohe (born 1886 in Aachen) were also frankly classical in spirit (e.g. the Riehl House of 1907 or the Perls House of 1911, both in Berlin). Mies worked in Behrens's office over the period 1908–11 and was exposed to the idea of a 'normative' synthesis for modern industrial design and to the entire question of an industrial culture uniting the pragmatic and the ideal. The stripped-down forms, simplified piers and lintels, and reductivist geometry of his unbuilt project for the Kröller-Müller House of 1912 (to stand on open land outside The Hague, in the



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Netherlands) suggested the extent to which he had already absorbed lessons from Schinkel, if not from Friedrich Gilly. His proposal of 1912 for a Bismarck Monument to stand on a platform above the Rhine at Bingen was even more clearly indebted to the simplified neo-classicism of the late eighteenth or early nineteenth century. Schinkel supplied Mies van der Rohe with ways for dealing with a wide range of building types (suburban villa, pavilion, industrial structure, museum, monument), and with a radical redefinition of basic architectural elements such as the pedestal, the wall, the opening, the column, the pier, the pilaster, the soffit, the pergola and the entablature. Influenced by writings in a

156 Ludwig Mies van der Rohe, project for the Kröller-Müller House, The Hague, 1912

157 Friedrich Gilly, sketch for a pillared hall, 1798

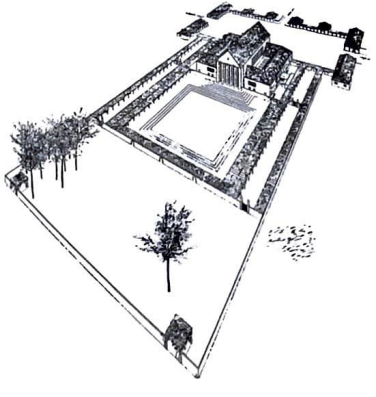
158 Heinrich Tessenow, Dance Academy, Hellerau, 1910–12, perspective drawing

159 Charles Édouard Jeanneret (Le Corbusier), Maison Favre-Jacot, Le Locle, Switzerland, 1912

German Idealist tradition, and by art historians such as Heinrich Wölfflin (whose *Classic Art* appeared in 1899), Mies tended to see classicism in lofty terms as a sublime, geometrical manifestation of the spiritual world. These early experiences would prove critical in later life, especially when he investigated parallels between the modern steel frame and the tectonics of column and load in classical architecture. It was Mies's later suggestion that 'it must be possible to fuse into a harmonious whole the old and new energies of our civilization'.

The early historians of modern architecture concentrated on the mature works of the 'modern masters' and did next to nothing to reveal their formative efforts and their debts to the past. This coincided with the need to project modernism as a [illegible] expression of the spirit of the modern age, [illegible] also had the effect of obscuring an essential [illegible]on between inherited ideas and radical [illegible]rations. It is as well to be reminded that Le Corbusier's (Charles Edouard Jeanneret's) first work, the Villa Fallet of 1907, in his native La Chaux-de-Fonds, Switzerland, was in a 'Jura Regionalist' mode that fulfilled many of the agendas of National Romanticism. This building evoked the local vernacular farmhouses with steep roofs, abstracted the forms of conifer trees and rock strata in its overall shape and detail, and embodied Ruskin's ideas on the use of natural motifs. Le Corbusier's formative years are dealt with in Chapter 10, but here it is valuable to mention his debt to Perret and Behrens; his early travels to Greece and Rome; his passion for ideal form; and his capacity to transform lessons from history into vocabularies directed at contemporary cultural realities. Much of this was visible at an early stage in Le Corbusier's development, and even a youthful project such as the Maison Favre-Jacot at Le Locle, of 1912, already reveals the architect's capacity to blend diverse classical influences (from Behrens, from Palladio, from Parisian *hôtels particuliers*, from the Roman houses in Pompeii) in a coherent statement. Interestingly, this same design was intended to fulfil a 'Regionalist' programme, since the architect had absorbed the writings of a certain Alexandre Cingria-Vaneyre who advocated a purified classicism as the appropriate style for the Suisse-Romande. In the Maison Favre-Jacot the architect even invented an Alpine version of classical ornament.

Beyond particular phases of history, Le Corbusier wished to uncover underlying constants and continuities. The same architect who announced a machine-age Utopia and who learned so much from Cubism, regarded the Parthenon as the supreme architectural creation and enthused over the naked structure of Roman ruins. While his seminal works of the 1920s apparently abandoned the apparatus of historical forms, he never lost touch with tradition. Perhaps he was referring to the foundations laid down in his early years when he stated in 1929 (at the peak of his modernist experimentation): 'Today I am accused of being a revolutionary. Yet I confess to having only one master – the past; and only one discipline – the study of the past.'



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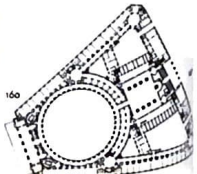
Paradoxically, the very capacity to look at history with this sort of long-range perspective and breadth of vision relied upon the range of eclectic options supplied by the nineteenth century. It also presumed the ability to think of architecture in terms of its primary, abstract values without the intermediary of a particular language or convention. Henry van de Velde, who had been such a key figure in the development of Art Nouveau, later moved towards an 'a-stylar' style which made no particular allusions, and which relied upon a radical simplification of basic elements such as the wall. His design for the Kröller-Müller Museum at Otterlo in the Netherlands (designed from 1919 to the 1930s) was laid out as a formal, symmetrical plan, and was classical in spirit, but abandoned the apparatus of the classical language. Its calm interiors and courts, and its lucid clarity of form, put it at odds with his earlier dynamic and restless buildings. It was one of several buildings conceived in Holland (J. J. P. Oud and Rob van t'Hoff proposed slightly earlier ones) which showed how the stripping down of volumes and planes might open the way to a new kind of reductivism.

The search for elemental values in classicism and in the vernacular contributed to a formal simplification in Scandinavian architecture that supplied a foundation for eventual modernism. In Denmark and Sweden, the shift towards neo-classicism after 1910 was drastic and decisive. Here it was a direct reaction against the medievalism and forced populism of National Romanticism. In Denmark, the change of direction even had the character of a purge involving a return to the qualities of noble simplicity and primary geometry evident in the work of Christian Frederik Hansen, the Danish neo-classicist of the late eighteenth and early nineteenth centuries. The new direction was signalled most clearly by Carl Petersen's Fåborg Museum of 1912–15, a highly concentrated exercise in the fusion of Doric sensibility and stripped vernacular form. Around 1920, the Danish Co-operative Housing Societies constructed several five-storey urban blocks with surrounding gardens in which the architectural effect was created by an almost neutral repetition of windows and smooth stucco wall surfaces, yet with a basically classical rhythm and articulation. The matter-of-fact neutrality of these buildings was not at odds with the aesthetic and social aims of the next generation.

The Copenhagen Police Headquarters of 1919–24 (designed by Hack Kampmann and brought to completion by Aage Rafn, with Hans Kampmann and Holger Jacobsen as collaborators) worked with similar neutral exteriors of impressive starkness, reserving the interior round court and the rectangular atrium for a more ornate treatment, using a twin Doric order in the first case and a Corinthian order in the second. Evidently, the design was inspired by round-court models such as the Palace of Charles V in Granada, although this solution also responded to the need for combining large numbers of offices with an institutional image. The design also paid homage to the Pantheon by repeating the radius in the geometry of the court. Among the most notable features of the Police Headquarters were its impeccable control of circulation, and the ingenious way in which light was brought in at the main junctions of the triangle and dropped the full height of the building through the stair-wells. Edvard Thomsen and G. B. Hagen's Øregård School in Hellerup of 1922–4 worked with more restrained means. It was built around a glazed atrium, with an internal structure reduced to the strictest expression of load and support, and yet the

160 Hack Kampmann and Aage Rafn, Police Headquarters, Copenhagen, 1919–24

161 Police Headquarters, plan



whole was pervaded by a basically classical sense. As a rule, the Danish neo-classicism of the early twentieth century avoided excessive pomp and decoration, and was intended to transmit a sense of social democracy. It was:

> ... not so much an eclectic selection of earlier architectural devices as it was a search to analyse and reformulate the essential tendencies which have always characterized architecture everywhere ... The relation between space and mass, the penetration of surface, form's delineation in light, and the mutual proportional relationship between elements.

It was precisely generic qualities of this kind which allowed the stripped neo-classicism of the [illegible] to form a potential link to the reductivist and [illegible]tive aspects of later modern architecture. [illegible]eer of the Swedish architect Erik Gunnar [illegible]d, who was born in Stockholm in 1885, [illegible]ling in this respect, since he eventually [illegible]ged a transition from classicist beginnings to [illegible] allusive and concentrated modern style rich in [illegible]oes from tradition. Sweden was industrialized later than most of the rest of Europe, and even in the late nineteenth century the economy was largely rural, based upon forestry, agriculture and mining. Between the 1880s and about 1910, the urban architecture of the country went through rapid changes representing a variety of imported eclectic and Art Nouveau positions, against which the Stockholm Town Hall by Östberg stood out like a sentinel of consistency. But a younger generation was seeking new directions and a simpler expression. Soon after 1910, Asplund's contemporary Sigurd Lewerentz adopted a direct and restrained manner using board-and-batten timber and rectangular windows. In the same years Carl Bergsten, who was born in 1879, evolved an architecture of sober rationality, absorbing ideas from Berlage and Wright (e.g. the Liljevalch Gallery in Stockholm of 1916). Asplund's own studies had drawn him towards classical models, and in 1913–14 he travelled in Italy and Greece drawing inspiration from the ancient sites and from the Mediterranean vernacular.

In 1915, Asplund and Lewerentz together won the competition for the Woodland Cemetery at Enskede on the outskirts of Stockholm, a project that would continue to absorb them for the better part of the next 25 years. The earliest proposals for the cemetery were in an informal style with curved roads, knolls and groves carved out of the pine forest. Some of the inspiration came from German Romantic landscape paintings such as the desolate vistas of Caspar David Friedrich. But in the early 1920s Lewerentz altered his landscape style to incorporate a propylaeum, a grand axis, a necropolis, and a series of outdoor spaces defined by formal planting. The intentions behind the landscape were now increasingly related to his and Asplund's study of classical antiquity, and it is possible to sense the influence of diverse ancient complexes such as Hadrian's Villa, or, possibly, the ruins of the Roman Forum. But the whole was also guided by underlying mythical themes to do with the transition from life to death, the procession of burial and redemption and the transubstantiation of natural elements such as water and light. There were echoes too of Nordic burial mounds, and of Christ's route to Calvary. Among the sketches was one for a large, stark stone cross to be seen against the sky (Fig. 162). This was landscape in a tragic mode.

The most compelling individual building to emerge from these early stages in the creation of the cemetery was the Woodland Chapel, designed by Asplund alone between 1918 and 1920. This was placed on a cross axis of the cemetery at the end of an alleyway through the conifer trees and was preceded by a small, sharply defined rectangular portal carrying a totally simplified pediment. The chapel itself was an ingenious blend of classical temple and Nordic hut. The enclosure blended the idea of a Scandinavian country church with a classical *temenos*. To one side was a small burial mound, to the other a low gateway with a disc-shaped floor. In effect, the chapel itself was a miniature and rustic version of the Pantheon, over which had been placed a steeply angled roof covered in wooden shingles. The roof was detailed to come down to a sharp edge which cut off from view the Doric capitals of the slender wooden columns in the portico. Thus, seen from the front it appeared to hover on white wooden cylinders which echoed the trunks of the surrounding trees. The depressed diagonal lines of the roof with their textured wooden surfaces also rhymed with the downward slope of the surrounding conifer branches. The triangular shape inevitably recalled the image of a schematic classical pediment, and so touched off a string of primitivist associations

concerning the possible origins of classical elements in the forms of huts or even the forms of nature. At the same time it evoked the idea of a pyramid floating slightly above the ground.

In contrast to the rustic and textured exterior, the interior of the chapel was smooth, luminous and clear. The dome was flat in profile but top-lit through a lantern, while the floor below was cut to echo the circular form above. This not only reiterated a cylindrical theme found elsewhere in the cemetery, where circular wells were sunk into the ground, but it also created a formal version of a forest clearing under a symbolic sky. The plan responded to the rituals of interment: arrival, condolence, gathering, transition, concentration, last rite, return, procession, burial. The section was a microcosm of themes found elsewhere in the cemetery connecting the underworld to the heavenly realm. Asplund was able to breathe new life into familiar classical types with a content related to the function the building was to serve.

The combination of primary geometries, classical archetypes, vernacular inspirations and natural analogies aligned Asplund with the eighteenth century: with Laugier's ideas about the beginnings of architecture, or perhaps with 'revolutionary classicists' such as Ledoux whose unbuilt, Utopian projects included furnaces, woodmen's huts and houses for rural guards based upon cone, cube, pyramid and sphere. The Woodland Chapel, and the projects which followed it – the Lister Courthouse of 1917–21 and the Stockholm Public Library of 1920–8 (Figs. 365–6) – gave a fresh impetus to this Enlightenment inheritance, but also opened the way to an architecture simple in form but complex in meaning. Asplund revealed ways for fusing the vernacular and classicism, and for bridging the gap between Nordic and Mediterranean worlds.

Among those to grasp the implications was the young Finnish architect Alvar Aalto, who was born in 1898, and who passed through a simplified classicism of his own before absorbing the lessons of the international modern movement (with its own aspirations towards 'universality') in the late 1920s. Theoretically modernism rejected National Romanticism and neo-classicism, but it is probably truer to say that it pushed underground certain of the impulses which had created these tendencies. When both Asplund and Aalto attempted to sensitize modern architecture to their respective cultural and geographical conditions in the 1930s, some of these subterranean streams resurfaced, but in a new form. In a similar way, the mature works of the other 'modern masters' continued to draw sustenance from their early perceptions of nature and tradition. It may be that this reveals a broader principle of radical innovation: 'Every truly powerful period in architecture brings the core back to the surface.'

162 Erik Gunnar Asplund and Sigurd Lewerentz, competition entry for the Woodland Cemetery at Enskede, Stockholm, 1915, sketch of 'The Way of the Cross' by Lewerentz

163 Erik Gunnar Asplund, Woodland Chapel, Cemetery at Enskede, Stockholm, 1918–20, plan

164 Woodland Chapel

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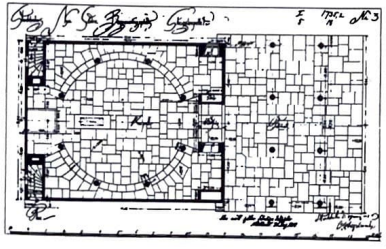

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