Modern Architecture

since 1900

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Introduction

> We have long come to realize that art is not produced in an empty space, that no artist is independent of predecessors and models, and that he no less than the scientist and the philosopher is part of a specific tradition and works in a structured area of problems.
>
> E. Kris, 1952

The historian who sets out to write a history of modern architecture has necessarily to begin with a definition of his subject. Many past eras have referred to their own architectures as 'modern' so that the term on its own is scarcely discriminating. The 'modern architecture' which is the main topic of this book was an invention of the late nineteenth and early twentieth centuries and was conceived in reaction to the supposed chaos and eclecticism of the various earlier nineteenth-century revivals of historical forms. Basic to the ideal of a modern architecture was the notion that each age in the past had possessed its own authentic style, expressive of the true tenor of the epoch. According to the same outlook, a break was supposed to have occurred somewhere around the middle of the eighteenth century, when the Renaissance tradition had faltered, leaving a vacuum into which had flowed numerous 'inauthentic' adaptations and recombinations of past forms. The task, then, was to rediscover the true path of architecture, to unearth forms suited to the needs and aspirations of modern industrial societies, and to create images capable of embodying the ideals of a supposedly distinct 'modern age'.

Already by the mid-nineteenth century such French theorists as César Daly and Eugène Viollet-le-Duc were discussing the possibility of a genuine modern style, but they had little conception of its form. It was not until just before the turn of this century, with considerable stimulus from a variety of intervening structural inventions, that imaginative leaps were made in an attempt at visualizing the forms of a new architecture. This pioneer phase, which resulted in (among other things) Art Nouveau, was the property of the advanced industrial nations of Western Europe and the United States. Even then there was relatively little consensus concerning the appearance of a new architecture; there were, rather, broadly shared aspirations capable of visual translation in a variety of ways. 'Modern architecture', it was intimated, should be based directly on new means of construction and should be disciplined by the exigencies of function; its forms should be purged of the paraphernalia of historical reminiscence, its meanings attuned to specifically modern myths and experiences; its moralities should imply some vague vision of human betterment and its elements should be capable of broad application to certain unprecedented situations arising from the impact upon human life and culture of the machine. Modern architecture, in other words, should proffer a new set of symbolic forms more directly reflecting contemporary realities than had the rag-bag of 'historical styles'.

In actuality a number of styles emerged which claimed 'modernity' as a chief attribute between about 1890 and the 1920s, until in the latter decade it seemed as if a broad consensus had at last been achieved. At any rate, this is what some practitioners and propagandists wished their contemporaries to believe. They thus invested considerable effort in distinguishing the characteristics of 'the International Style' – that expressive language of simple, floating volumes and clear-cut geometries which seemed to be shared by such diverse architects as Le Corbusier, J. P. Oud, Gerrit Rietveld, Walter Gropius, Mies van der Rohe, and the rest. *This* they claimed was the one true architecture for the twentieth century. Other contemporary developments were conveniently overlooked,

and everything was done to plaster over differences and preserve the façade of a unified front.

But history did not stand still, and the same creative individuals who had seemed to be pushing towards a common aim went their own separate ways; in turn, seminal ideas were transformed by followers. Thus the architecture which was supposed (wrongly, it turns out) to have expunged tradition founded a tradition of its own. In the years after the Second World War, many tributaries and transformations were developed around the world. Reactions, critiques, and crises – not to mention widely varied circumstances and intentions – compounded the variety. If a historian were to look back in a century's time at the period 1900–1975, he would not, therefore, be overwhelmed by some single, monolithic main line of development running from the 'pioneers of modern design' (to use Nikolaus Pevsner's phrase) up to the architecture of the last quarter of the twentieth century. But he would be struck by the emergence and domination of new traditions gradually overrunning the inheritance of attitudes and vocabularies bequeathed by the nineteenth century. Moreover, this insinuation of new ideas might be seen in global terms, working its way bit by bit into different national and regional traditions, transforming them and being transformed by them. This book takes such a long view.

Here it has to be admitted that there are particular difficulties of a sort which confront any interpreter of the recent past. The historian who sets out to write a history of modern architecture will be describing and interpreting traditions which have not yet come to an end. There is the danger that he may impose too exclusive a pattern on recent events, so making them point inevitably to whatever aspects of the architecture of his own time he happens to admire. History then degenerates into polemic. This is to be expected in the fashion-conscious literature which always seems to follow in the wake of contemporary movements, but similar faults are found to lie in the carefully pondered scholarly works which pass as the standard books on modern architecture. For all the force and clarity of their achievement, such early chroniclers as Sigfried Giedion, Henry-Russell Hitchcock, and Nikolaus Pevsner tended to share the progressivist fervour of their protagonists. Committed in advance to the idea of a unified 'spirit of the age', they felt they recognized its architectural expression in the works of the modern movement of the 1920s, and saw it as their job to write books of revelation, charting the unfolding world drama of the 'true architecture of the times'. (See bibliographical note, p. 389.)

It is obvious from my earlier remarks that I do not wish to add some glowing extra chapters to such a saga; nor, let it be said, do I wish to add to the ever-growing heap of those 'revisionist' histories intent on demonstrating that modern architecture was some temporary fall from architectural grace. The historian of the present perhaps has a unique and almost unprecedented opportunity to see his subject (or, at any rate the early stages of it) with a certain dispassionate distance, and this should not be thrown away by indulgence in propaganda. Each year more buildings are created and more quarries of evidence on developments earlier in the century are unearthed, and this alone necessitates a revision of the broad picture. But history involves constant reinterpretation as well as the presentation of new facts, and even buildings, personalities, and events that seemed once to have some immutable status must be rescrutinized and reconsidered. Between the ever-growing collection of specialist monographs of quality and the broader but somewhat biased surveys, there is little that can stand scrutiny as a balanced, readable overall view of the development of modern architecture from its beginnings until the recent past. This book is an attempt at bridging the gap.

The earliest historians of modern architecture (perhaps one should call them 'mythographers') tended to isolate their subject, to over-simplify it, to highlight its uniqueness in order to show how different the new creature was from its predecessors. Parallel developments, like Art Deco, National Romanticism, or the continuation of the Classical Beaux-Arts, were relegated to a sort of limbo, as if to say that a building in the 'wrong style' could not possibly be of value. This was both heinous and misleading. It seems to me that the various strands of modern architecture are best understood and evaluated by being set alongside other architectural developments parallel with them, for only then can one begin to explain what patrons and social groups used modern forms to express. Moreover, artistic quality, as always, transcends mere stylistic usage.

Another myth that the earliest writers on modern architecture tended to maintain – again to distinguish the new forms from their 'eclectic' predecessors – was the notion that these forms had emerged somehow 'untainted' by precedent. Again this married well with the progressivist bias in their history-writing, but it was scarcely a sensible way of explaining forms. In their eagerness to demonstrate their 'fresh new start', numerous architects between 1900 and 1930 certainly played down the influence of earlier architecture upon them, but this does not mean one should take their claims at face value. Indeed, the most profound architects of the past eighty years were steeped in tradition. What they rejected was not so much history *per se*, as the facile and superficial re-use of it. The past was not, therefore, rejected, but inherited and

understood in new ways. Moreover, modern architecture itself eventually created the basis for a new tradition with its own themes, forms, and motifs.

Architecture is a complex art embracing form and function, symbol and social purpose, technique and belief. It would be as inadequate in this case simply to catalogue the ins and outs of style as it would be to reduce modern architecture to a piece in a chess game of class interests and competing social ideologies. It would be as mistaken to treat technical advances in isolation as it would be to overstress the role of social changes or the import of individual imagination. It may be that facts of biography are most appropriate (as in the case of Le Corbusier or Frank Lloyd Wright) or that analysis of structure or type is more in order (as with the American skyscraper between the wars); and while a book of this kind obviously cannot portray the entire cultural setting of twentieth-century architecture, it can avoid suggesting that buildings come about in a social vacuum by concentrating on patronage, political purpose, and ideological expression in some instances.

Here I must confess to a certain focused interest on questions of form and meaning. Most of the works to be discussed in this book are outstanding works of art which therefore defy simplistic pigeon-holing. They are neither billboards for political beliefs, nor mere stylized containers for functions, but rich compounds of ideas and forms, which achieve a highly articulate expression. I believe it should be a central aim of any history of architecture to explain why certain forms were felt appropriate to a particular task, and to probe into the underlying meanings. That simple and misleading word 'style' masks a multitude of sins, and when one investigates an artist of any depth one discovers a sort of mythical content which pervades the forms. Ultimately we have to do with the ways in which fantasies and ideas are translated into a vocabulary.

Next there is the tricky problem of where to begin: when does a specifically 'modern architecture' appear? Enough has been said already for it to be clear that there is no easy answer to this question. It is interesting to note the enormous variety of starting-points of earlier histories; these naturally reflected the writer's various notions of modern architecture. Thus, Nikolaus Pevsner, who wished to stress the social and moral basis of the new architecture, began his *Pioneers of Modern Design* (1936) with William Morris and the Arts and Crafts movement of the 1860s. Sigfried Giedion, who was obsessed with the spiritual fragmentation of his own time and saw modern architecture as a unifying agent, portrayed the nineteenth century, in his *Space, Time and Architecture* (1941), as a split era — on the one hand the 'decayed' forms of

eclecticism, on the other those 'emergent tendencies' (many of them in engineering) which pointed to a new synthesis of form, structure, and cultural probity. Henry-Russell Hitchcock, who was preoccupied with describing the visual features of the new style, suggested, in *The International Style* (1932, co-author Philip Johnson) that modern architecture synthesized Classical qualities of proportion with Gothic attitudes to structure. However, in his later writings Hitchcock became less adventurous, preferring to avoid sweeping theories of origins in favour of a meticulous, encyclopedic cataloguing of the sequence of styles.

Naturally the emphasis of history-writing was bound to change once the modern tradition itself grew longer and more varied. Historians of the post-Second World War years, like Colin Rowe and Reyner Banham (whose *Theory and Design in the First Machine Age* appeared in 1960), attempted to probe into the ideas behind the forms and to explain the complex iconography of modern architecture. They were not willing to accept the simplistic lineages set up by their predecessors, and revealed something of the indebtedness of modern architects to the nineteenth and earlier centuries. In this context one must also mention the exemplary intellectual range of Peter Collins's *Changing Ideals in Modern Architecture* (1965), which managed to trace so many of the ideological roots of modern architecture to the eighteenth century. Other writers like Leonardo Benevelo and Manfredo Tafuri built on these foundations to articulate their own versions of a pre-history; in these cases, though, there was a greater awareness than before of the political uses and meanings of architecture.

Here I must emphasize that the stress of this book is less on the roots of modern architecture than on its ensuing development. This is quite deliberate. For one thing, I wish to avoid covering well-known ground; for another, it is the later (rather than the earlier) phases of modern architecture which have been neglected. It is now over half a century since such seminal works as the Villa Savoye or the Barcelona Pavilion were created; but the past thirty years are still navigable only with the aid of a few treacherous maps filled with fashionable tags and 'isms'. A comprehensive treatment of the post-Second World War period is still impossible, but one can at least suggest a scheme which is not simply a one-way road towards some tendency or another of the very recent past.

Moreover, history does not work like a conveyor belt moving between one point and another, and each artist has his own complex links to different periods of the past. A personal language of architecture may blend lessons from ancient Greece with references to modern garages: the individual work of art is embedded in the texture of time on a variety of different

levels. It only misleads to portray buildings as part of unified 'movements'. The more interesting the individual creation, the more difficult it will be to put it in a chronological slot.

Thus the problem of origins is handled in the first part of the book, not through some hapless search for the first truly modern building (or something of the kind), but through the more fruitful approach of tracing the way inherited strands of thought came together in various individual minds in the last decade of the nineteenth century and the first two of the twentieth, for it was in this period that *forms* were crystallized to express, simultaneously, a revulsion against superficial revivalism, and a confidence in the energies and significance of 'modern life'. It was the era of Art Nouveau, of Horta, Mackintosh, and Hoffmann; of Sullivan's and Wright's attempt at creating an 'organic' modern architecture in Chicago; of Perret's and Behrens's attempts at employing new methods and materials in the service of sober ideas which 'abstracted' basic Classical values; it was the era, too, of Cubist and Futurist experimentation in the arts. Pevsner justly described it as the 'pioneer phase' of modern design, and this seems a fair term so long as one is not then tempted to write off its creations as mere 'anticipations' of what came later.

One does not have to be an advocate of the notion of 'Classic moments' in art to single out the 1920s as a remarkable period of consolidation, especially in Holland, Germany, France, and Russia. This period has understandably been called the 'heroic age' of modern architecture; during it Le Corbusier, Mies van der Rohe, Walter Gropius, Gerrit Rietveld (to mention only a few) created a series of master-works which had the effect of dislodging the hold of previous traditions and setting new ground rules for the future.

The establishment of a tradition requires followers as well as leaders, and this has to be explained in a broader context than a mere internal stylistic 'evolution'. In the middle part of the book emphasis will therefore be placed on the range of personal approaches and ideological persuasions at work in the period between the wars. This will include discussion of the problematic relationship between modern architecture and revolutionary ideology in the Soviet Union in the twenties, and between modern architecture and totalitarian regimes in the thirties. We are concerned with something far deeper than a battle of styles: modern architecture was the expression of a variety of new social visions challenging the status quo and suggesting alternative possibilities for a way of life. The treatment of the inter-war years would certainly be incomplete without some consideration of developments in England and Scandinavia and of urbanistic experiments, especially the 'Radiant City' and 'Broadacre City' proposals of Le Corbusier and Wright.

Once a tradition has been founded, it is transformed as new possibilities of expression are sensed, as values change, or as new problems are encountered. Moreover, new individuals inherit the style and extend it in their own directions. The last part of the book will look at the dissemination of prototypes all over the world in the forties, fifties, sixties, and seventies. Here we come face to face with problems attached to the phenomena of transplantation (as modern architecture was grafted onto cultures quite different from those in which it began) and devaluation (as symbolic forms were gradually emptied of their original polemical content, and absorbed by commercial interests or state bureaucracies). Moreover, crises and criticisms occurred within the modern movement, suggesting a more overt reliance on the past.

As well as the late works of the aging 'masters' of modern architecture, this part of the book will consider such movements as the 'New Brutalism' and such groups as 'Team X' and the 'New York 5'; themes like regionalism and adaptation to local culture and climate in developing countries; building types like the high-rise apartment block and the glass-box skyscraper; and the emergence of individual architects like Louis Kahn, Kenzo Tange, James Stirling, Denys Lasdun, Jørn Utzon, Aldo Van Eyck, Robert Venturi, Michael Graves, and Aldo Rossi.

Perhaps it is inevitable that, as the book draws towards the present, the author will fall into some of the pitfalls of his predecessors in championing some aspects, and chastising others, of the contemporary situation. I can at least say that it has been my aim to present a balanced picture and that I have attempted to make the basis of any judgements clear. Modern architecture is at present in another critical phase, in which many of its underlying doctrines are being questioned and rejected. It remains to be seen whether this amounts to the collapse of a tradition or another crisis preceding a new phase of consolidation.

We live in a confused architectural present which views its own past through a veil of myths and half-truths (many of them manufactured by historians) with a mixture of romanticism, horror, and bewilderment. A freedom of choice for the future is best encouraged by a sensible, accurate, and discriminating understanding of one's place in tradition. This book was written partly with the idea that a historical bridge might be built across the stream of passing intellectual fashions from the distant to the more recent past, and partly with the hope that this might somehow help towards a new integration. But such aims have been secondary; the first thing a historian ought to do is to explain what happened and why, whatever people may now think of it.

OVERLEAF

Antoni Gaudí, Casa Milá, Barcelona, Spain, 1905–7, detail of roofscape.

Part 1: The Formative Strands of Modern Architecture
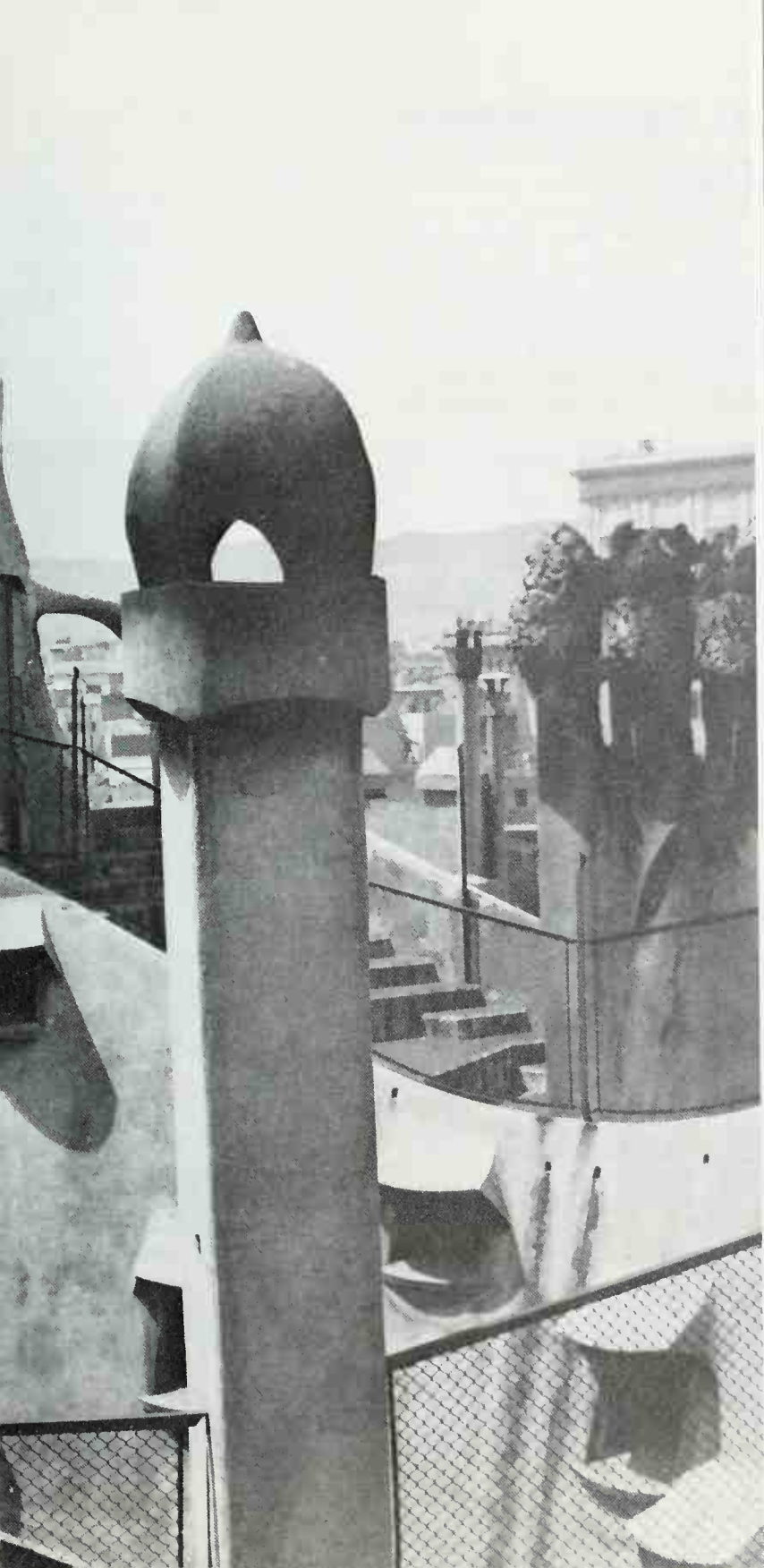
1. The Idea of a Modern Architecture in the Nineteenth Century

Suppose that an architect of the twelfth or thirteenth century were to return among us, and that he were to be initiated into our modern ideas; if one put at his disposal the perfections of modern industry, he would not build an edifice of the time of Philip Augustus or St. Louis, because this would be to falsify the first law of art, which is to conform to the needs and customs of the times.

E. Viollet-le-Duc, 1863

There is a tidy and misleading analogy between history and human life which proposes that architectural movements are born, have youth, mature, and eventually die. The historical process which led to the creation of the modern movement in architecture had none of this biological inevitability, and had no clear beginning which can be pinpointed with precision. There were a number of predisposing causes and strands of ideas each with its own pedigree. Although the critical synthesis began around the turn of this century, the idea of a *modern* architecture, in contrast to a revived style from some earlier period, had been in existence for nearly half a century.

But this notion of a 'modern' architecture was in turn rooted in developments of the late eighteenth century, in particular the emphasis on the idea of progress. For basic to the conception was a sense of history as something which moves forward through different 'epochs' each with a spiritual core manifesting itself directly in the facts of culture. From this intellectual standpoint it was possible to speak of the way a Greek temple or a Gothic cathedral had 'expressed their times' and to assume that modern buildings should do the same. It followed that revivals should be regarded as failures to establish a true expression. Destiny therefore required the creation of an authentic style 'of the times', unlike past ones, but as incontrovertible, as inevitable-seeming, as they. The question was: how could the forms of this 'contemporary' style be discovered?

Related to the birth of progressive ideals was another eighteenth-century development that left its legacy to the nineteenth: the loss of confidence in the Renaissance tradition and the theories which had supported it. This erosion was caused (in part) by the growth of an empiricist attitude which undermined the idealistic structure of Renaissance aesthetics, and by the development of history and archaeology as disciplines. These brought with them a greater discrimination of the past and a relativist view of tradition in which various periods could be seen as holding equal value. The notion of a single point of reference, 'Antiquity', thus became increasingly untenable. John Summerson has characterized this development as 'the loss of absolute authority' of Renaissance norms. A vacuum of sorts was created into which numerous temporary stylistic dictatorships would step, none of them with the force of conviction, or with the authority, of their predecessor. A point would eventually be reached in the nineteenth century when a revival of a Greek, a Renaissance, an Egyptian or a Gothic prototype might seem equally viable in the formulation of a style (fig. 1.1).

Another major force in the creation of the idea of modern architecture was the Industrial Revolution. This supplied new methods of construction (e.g., in iron), allowed new solutions, created new patrons and problems, and suggested new forms. A split of sorts was created between engineering and architecture, with the former often appearing the more inventive and responsive to contemporary needs. At a deeper level still, industrialization transformed the very patterns of life and led to the proliferation of new building problems — railway stations, suburban houses, sky-

1.1 Thomas Cole, *The Dream of the Architect*, 1840. Oil on canvas, 53 × 84 in. (134.7 × 213.4 cm.). Toledo Museum of Art, gift of Florence Scott Libbey: the nineteenth-century dilemma of style.

scrapers – for which there was no precedent. Thus the crisis concerning the use of tradition in invention was exacerbated by the creation of novel types with no certain pedigree. Moreover, mechanization disrupted the world of crafts and hastened the collapse of vernacular traditions. Machine-work and standardization engendered a split between hand, mind, and eye in the creation of utilitarian objects, with a consequent loss of vital touch and impulse. Mid-nineteenth-century moralists like John Ruskin and William Morris in England felt that mechanization was bound to cause degradation in all compartments of life, at the smallest and largest scales of design. They therefore advocated a

reintensification of the crafts and a reintegration of art and utility. Their aim was to stem the alienation they felt grew automatically from the disruptive effects of capitalist development. Those who were later to formulate the ideologies of modern architecture felt that this attitude was too nostalgic and sought instead to face up to the potentials of mechanization by co-opting them and infusing them with a new sense of form. This drama was to remain quite basic to the twentieth century: in essence the question was how to evolve a genuine culture in the face of the more brutish aspects of mass production.

Industrialization also created new economic

structures and centres of power. Where the patronage of architecture in eighteenth-century Europe had relied principally on the church, the state, and the aristocracy, it came increasingly to rely on the wealth, purposes, and aspirations of the new middle classes. As always, élites found in architecture a means for self-expression which could authenticate their position. In turn mechanization remoulded the lower orders of society and made inroads on the form of the city. Once again, architecture was affected. Indeed, a major theme of modern architecture would concern the reform of the industrial city and its replacement by a more harmonic and humane order. The roots of this attitude lay in the numerous critics of an inequable and chaotic social structure who wrote from the early nineteenth century onwards. Indeed, another aspect of the progressive mythos behind the conception of modern architecture was the belief in a just and rational society. One is not therefore surprised to discover the influence of Utopian Socialist tendencies stemming from Charles Fourier and Henri Saint-Simon on the moral outlook of later modern designers. The search for alternative social and urban structures would lie close to the heart of later modern architectural endeavour.

It can thus be seen that the notion of a modern architecture was inseparable from profound changes in the social and technological realms. The problem of architectural style did not exist in isolation, but was related to deeper currents of thought concerning the possibility of creating forms which were not pastiches of past styles but genuine expressions of the present. But then, what were the most important realities of the present? Underlying numerous nineteenth-century debates concerning the appropriateness of forms, there was a nagging uncertainty about what the true content of architecture should be. Thus there was a tendency to locate the ideal in some compartment or other of the past, or else to dream of some hazy, ill-defined future as an alternative to a grimy, unconsoling reality.

These, then, were some of the conditions and problems confronting the first theorists of a 'modern architecture'. Viollet-le-Duc, for example, writing in the 1860s and 1870s, felt that the nineteenth century must try to formulate its own style by finding forms 'appropriate' to the new social, economic, and technical conditions. This was fair enough in theory, but the question still remained: where should the forms of this new style be found? To this there were a number of possible answers. At one extreme were those who believed in great individual leaps of invention; at another were those who thought the matter would somehow look after itself if architects just got on with solving new problems logically and soundly. There was little admission that even a 'new' architecture was likely, ultimately, to be assembled out of old elements, albeit highly abstracted ones.

It could at least be said that the notion of a modern architecture implied a quite different attitude to the genesis of forms than those which had been operative in the previous few decades. One of these advocated revivalism of one or another particular period in the past, some historical styles being regarded as intrinsically superior to others. By imitating the chosen style it was lamely hoped that one might also reproduce its supposed excellences. But, there was the obvious danger that one might copy the externals without reproducing the core qualities, and so end up with tired academicism or pastiche. Moreover, the question naturally occurred: if a set of forms had been right for one context (be it Greek, Gothic, Egyptian, or Renaissance), could it possibly be right for another?

A more catholic view of the past implied that one should evolve a style by collecting the best features of a number of past styles and amalgamating them into a new synthesis. This position was known as 'eclecticism' and did at least have the strength of encouraging a broad understanding of tradition. However, eclecticism did not provide any rules for recombination and gave little idea of the essential differences between authentic synthesis and a merely bizarre concoction of past elements.

Indeed the problem of revival could not be considered apart from the problem of appropriateness in the present. Here it was hard to avoid arbitrariness because there were few guiding conventions relating forms, functions, and meanings. It was all very well for the English architect A. W. Pugin to have argued with such deep moral fervour in the 1830s that Gothic was the most spiritually uplifting and the most rational of styles; but counter-arguments of a similar kind in favour of Classical forms could just as easily be made. Intellectual gambits were thus often used to post-rationalize what were really intuitive preferences. The lure of determinist arguments was strong because they seemed to bring certainty to a situation of extreme flux. If one could claim (and possibly believe) that one's forms were ordained by the predestined course of history, the national spirit, the laws of nature, the dictates of science, or some other impressive entity, then one could temporarily assuage doubts concerning arbitrariness in the use of forms.

Within the confused pluralism of the 'battle of styles', it tended to be forgotten that lasting qualities of architectural excellence were liable to rely, as ever, on characteristics which transcended superficial issues of stylistic clothing. The nineteenth century had its share of master-works which were not categorizable by simplistic pigeon-holing. The outstanding archi-

1.2 Marc Antoine Laugier, the 'Primitive Hut', from *Essai sur l'architecture*, 1753: the quest for beginnings.

tectural quality of Henri Labrouste's Bibliothèque Ste-Geneviève in Paris of the 1840s, was not, after all, so much a function of its being a 'Classical revival', relying on certain acceptable and edifying prototypes, as it was a result of an extraordinarily deep synthesis of form and content. Similarly, the architectural feebleness of G. Scott's Foreign Office in London of a decade later was traceable not to the use of inferior sources, but to an inability on the part of the architect to transform his sanctioned prototypes into an authentic expression. The major talents of the nineteenth century – one thinks of Karl Friedrich Schinkel, of Henri Labrouste, of Henry Hobson Richardson – were able to probe the *principles* of past styles (not just to parrot their effects), then to translate these into authentic vocabularies of their own and achieve a prodigious imaginative unity in their results. One reason they were able to do this was that they possessed an intuitive vision of what was most appropriate to the social state of their time.

Another way of dealing with historical prototype was to indulge in myths of 'origins' and to suggest that one might achieve authentic results by returning to 'beginnings'. Known as 'primitivism', this position first received impetus in the mid-eighteenth century, especially in the writings of the Abbé Laugier. He conceived of the beginnings of architecture in an archetypical 'primitive hut' from which, it was held, the more ornate elements of the Classical system had evolved (fig. 1.2). It tended to be implied that simpler also meant better, and that the farther one went back the more authentic the form was bound to be. However, Laugier's 'primitive hut' had little basis in archaeology, and only a slight basis in texts which had speculated on the beginnings of architecture, and his version of the prototype reflected an essentially Classical bias. Thus primitivism could all too easily end up as a battle of the styles simply played out on a more abstract plane.

Although Laugier's ideas were more arbitrary than he pretended, ones like them had considerable appeal later on. He denied that there were absolute rules in architecture and spurned mere educated taste, arguing instead that the best forms were rooted in functional or structural demands. Notions of this sort gained extra momentum in the early nineteenth century in the writings of J. N. L. Durand and were further nourished by the disciplined (though by no means unintuitive) methods of engineers. At its most extreme this doctrine of so-called 'Rationalism' tended to lead to the dubious proposition that beautiful and appropriate forms would arise automatically if only problems were analysed 'on their own merits' instead of through the filter of precedent. There were a number of fallacies in this position, such as the notion that forms might arise

from functional analysis alone without the intervention of some a priori image, but it was still a weapon with which to attack the whimsies of the most arbitrary revivalists.

One of the main inheritors of this 'Rationalist' viewpoint in the mid-nineteenth century was Eugène Viollet-le-Duc, a French theorist who gave great force to the idea of a 'modern' architecture. As was mentioned, he was disturbed by the inability of the nineteenth century to find its own style and felt that the answer must lie in the creation of forms 'true to the programme and true to the structure'. He remained a little vague on the nature of this truth and tended to assume (often erroneously) that the conspicuous excellence of great past works was due mainly to their capacity for expressing the programmatic and structural 'truths' of their own time. Thus while he was committed to an indistinct vision of some new architecture, he nonetheless believed that the past could have its uses in discovering this new style; he even imagined a situation in which one of the designers of the great Gothic cathedrals had been resuscitated and confronted with a modern building problem and modern means of construction. He argued that the result would not have been an imitation Gothic building, but an authentically modern one based on analogous intellectual procedures. The past must not be raided for its external effects, then, but for its underlying principles and processes.

Of course, most architects of note in earlier periods had always known that the past must be understood for its principles, but had still had the guidance of a prevalent style phase, a shared architectural language, in which to incorporate their findings. Viollet-le-Duc outlined a probing method for intellectual analysis but could still do little to supply the essential 'leap to form'. His imagination was not as strong as his intellect, and the handful of buildings and projects which he left behind him were clumsy assemblages of old images and modern constructional means, usually reflecting his underlying taste for medieval styles (fig. 1. 3). There was little of that sense of 'inevitable unity' — of part linking with part in an ordered yet intuitive system — which distinguishes the true sense of style.

But if Viollet-le-Duc's *forms* did little to solve the problem of a modern architecture, his *ideas* lived on and were destined to have an enormous influence on the generation who became the 'pioneers' of modern architecture, especially when they sought to give architectural expression to new constructional means like concrete, or to new building types like skyscrapers; even the formal innovations of Art Nouveau were kindled in part by his ideals. He supplied a strong counter-tendency against the worst excesses of Beaux-
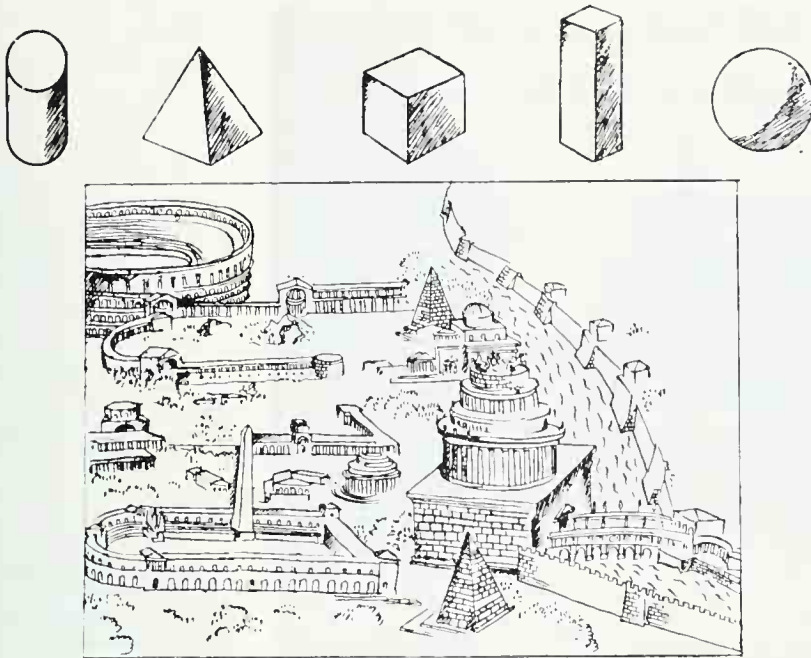
1.3 (*left*) Eugène Viollet-le-Duc, project for a concert hall in iron, c. 1864, from *Entretiens sur l'architecture*, 1872: the attempt to formulate a style on the basis of new materials.

1.4 (*above*) Le Corbusier, sketch of the primary geometrical solids alongside a view of ancient Rome, from *Vers une architecture*, 1923: the abstraction of fundamental lessons from the past.

use of columns or pointed arches, may itself have had some basis in late eighteenth- and early nineteenth-century tendencies towards simplification. One thinks particularly of those drastically abstract modes of reformulating the past implicit in the stripped geometrical visions of Claude-Nicolas Ledoux and Étienne-Louis Boullée. The idea of universal formal values was given extra weight in the late nineteenth century by art historians like Heinrich Wölfflin and Adolf von Hildebrand, who rejected literary values in art in favour of underlying architectonic qualities, and who described past styles in terms of abstract, formal patterns. It is no accident that this way of perceiving the past should have coincided so closely with the emergence of abstract art: as we shall see, both this manner of viewing precedent, and the new language of space and form visualized by painters and sculptors, were to have an eventual influence on the creation of modern architecture.

But other ingredients would also come into play in the formulation of modern architecture – ingredients which had been intrinsic to numerous past buildings. One thinks particularly of analogies with other spheres of reality than architecture, with nature's forms and processes, or with the forms of mechanisms, paintings, and sculptures. Peter Collins has revealed the importance to the nineteenth century of 'mechanical' and 'biological' analogies in theory and design. At a certain level the forms of architecture may be thought of as mimetic; through a process of abstraction they may incorporate images and references. Time and again, if we dig beneath the surface of modern architects' personal styles, we will find a rich world of metaphor and allusion.

Thus, in finding forms to fit the pre-existing aspirations towards a modern architecture, the architects of the 1890s and the first decade of the twentieth century drew repeatedly on both tradition and nature in their formulation of a style. But they did so in ways that were at variance with their immediate predecessors, for their method involved a far greater degree of abstraction. In that respect their quests for novelty were not unconnected with avant-garde developments in the other arts: it can even be argued that some of the most drastic innovators (one thinks particularly of Wright and Perret in these two decades) were also, in some basic way, traditionalists. While they certainly hoped to create vocabularies entirely in tune with modern circumstances and means, they also wished to endow their results with a certain universality: they sought to create architectural languages with the depth, rigour, and range of application of the great styles of the past.

So it was not tradition that was jettisoned, but a slavish, superficial, and irrelevant adherence to it. The

Arts teaching, which frequently (though not always) erred in the direction of academicism, and gave currency to the idea that the great style of modern times would somehow emerge on the basis of new constructional techniques – not through some merely personal formal experiment – just as the great styles of the past had done. Thus Viollet-le-Duc's historical parallels supplied further scaffolding to the *idea* of a modern architecture.

But the question still remained: what should this modern architecture look like? From where should its forms be derived? Obviously tradition could not be jettisoned completely, otherwise there would be no forms at all; the idea of an *entirely new* architecture was simply illusory. Perhaps, then, it might be possible to abstract the essential lessons of earlier architecture in such a manner that a genuinely new combination would be achieved? Indeed, if one jumps forward to the 1920s and examines the seminal works of the modern movement, one finds that they relied on tradition in this more universal sense. One is struck by the confidence of men like Le Corbusier and Mies van der Rohe that they had, so to say, unearthed the central, abstract values of the medium of architecture itself; that they had created not so much a new style, but the quality of style in general – a quality central to all outstanding works of the past (fig. 1.4).

This abstract view of the history of architecture, this idea that the important features of past buildings lay in their proportions, their arrangement, their articulation of formal themes (and the like) rather than in their

1.5 Charles Garnier, the Opéra, Paris, 1861: Beaux-Arts Classicism in the grand manner of a sort that was rejected in the early twentieth century by the avant-garde.
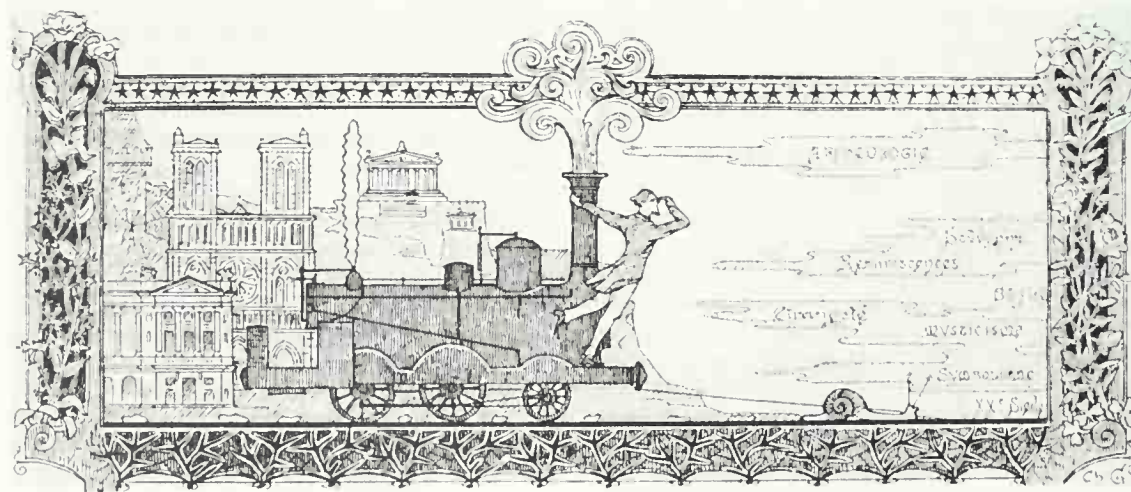
1.6 'La Recherche du Style Nouveau', *Rêvue des Arts Décoratifs*, 1895: the slow progress towards a new style.

rogue in all these respects was frequently (and sometimes unfairly) identified as the École des Beaux-Arts in Paris which was lampooned as the symbol of all that was tired and retardative (figs. 1.5, 1.6). This caricature of academe aside, it is essential to see the vital developments of the 1890s against a backdrop of confusion and caprice in which the problem of style was much discussed but rarely resolved. To the young architectural minds which were to pioneer Art Nouveau and the substantial new developments up to the First World War, writers like Viollet-le-Duc were an immensely powerful catalyst. They had little to stand on in the immediate past except facile revivalism and eclecticism, and therefore sought a new direction by going back to basics and forward to new inspirations simultaneously. In sources they were abundant; the question was how to forge these sources into a new synthesis appropriate to modern conditions.