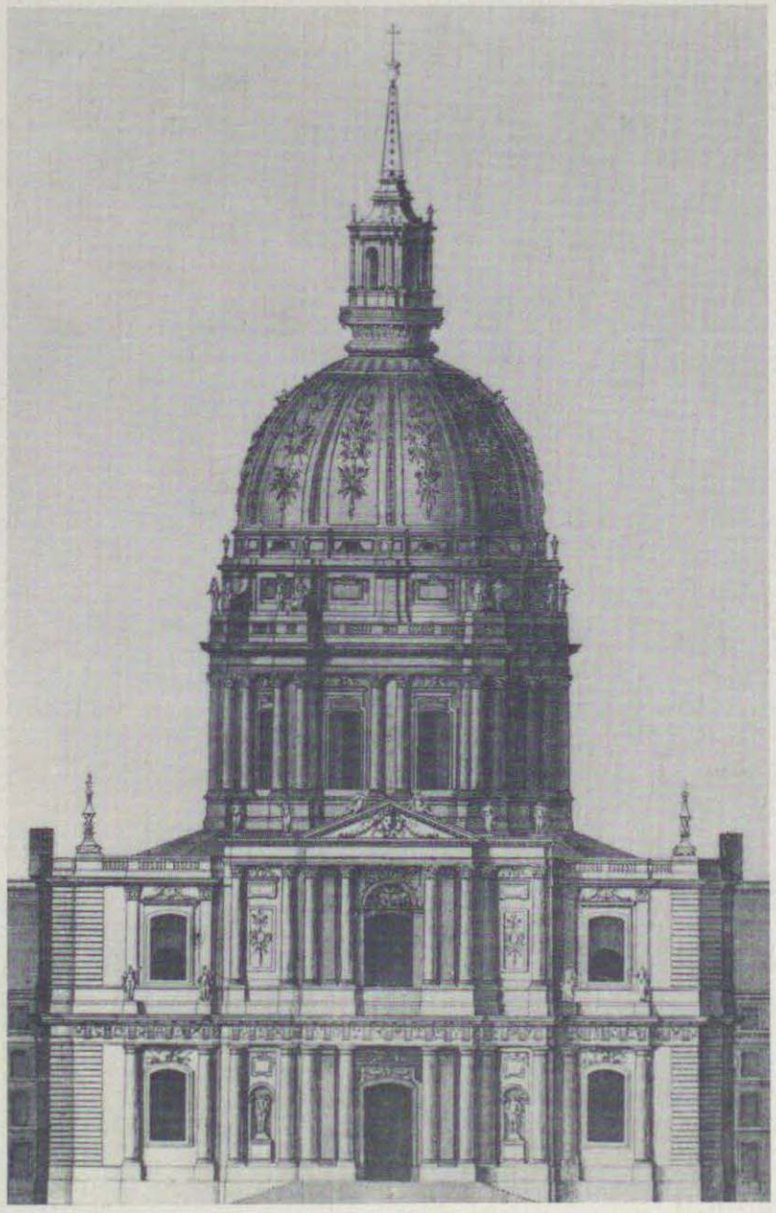
PETER COLLINS

SELECTED WRITINGS



THE FIFTH COLUMN

VOL. 4, NOS. 3/4 ÉTÉ 1984 SUMMER

$10.00

THE FIFTH COLUMN, The Canadian Student Journal of Architecture, is published in Autumn, Winter, Spring and Summer in collaboration with the Canadian Students of Architecture. It is a non-commercial, non-profit enterprise whose principal purpose is the study of Architecture. We invite submissions of material from the Canadian architectural community. They should be typed double spaced on 8 1/2" x 11" paper. The articles and opinions which appear in the magazine are published under the sole responsibility of their authors. The purpose of reproducing drawings, photographs and excerpts from other sources is to facilitate criticism, review or news journal summary.

THE FIFTH COLUMN, La Revue Canadienne des Etudiants en Architecture, est publiée l'automne, l'hiver, le printemps et l'été en collaboration avec le Regroupement des Etudiants Architecture du Canada; le tout sans but lucratif mais plutôt afin de faciliter l'étude architecturale. Dans ce sens, des contributions de la part de la communauté architecturale canadienne seront grandement appréciées. Ils doivent être dactylographiés, à double interligne sur feuilles 8 1/2" X 11". Les articles et les opinions qui paraissent dans la revue sont publiés sous la responsabilité exclusive de leurs auteurs. Afin de faciliter les critiques et commentaires ou la parution ultérieure de compte-rendus, certains dessins, photographies ou extraits d'autres sources ont été reproduits.

Subscriptions/Abonnements: $15.00 per annum.
Library Subscriptions/Bibliothèques: $35.00 per annum.
Patrons/Amis: $35.00 per annum minimum.
Sponsors/Parrains: $100.00 per annum minimum.
Benefactors/Bienfaiteurs: $500.00 per annum minimum.
CSA Members/Membres REAC: Gratis.

Second Class Mail Registration Number 5771.
Courrier de deuxième classe numéro 5771.
THE FIFTH COLUMN (Canadian Student Journal of Architecture) published Spring/Summer (November) 1984.
THE FIFTH COLUMN (La Revue Canadienne des Etudiants en Architecture) publiée Printemps/Eté (Novembre) 1984.
Please address all correspondence and notices of change of address to:/S.V.P. adressez toute correspondance et avis de changement d'adresse à:

THE FIFTH COLUMN,
Room 13 (Architecture), 3480 University St.,
Montreal, Quebec. H3A 2A7. Telephone (514) 392-5407.

All articles appearing in **THE FIFTH COLUMN** are indexed in:/Tous les articles parus dans la revue **THE FIFTH COLUMN** sont indexés dans:
Architectural Periodicals Index, British Architectural Library, RIBA, London.
Avery Library, Columbia University, New York.

Legal Deposit:/Dépôt légal:
Bibliothèque nationale du Québec
National Library of Canada
ISSN 1229-7094

Typesetting by:/Typographie par: Logidec Inc., Montréal.
Printed by:/Imprimé par: McGill University Printing Service, Montréal.

Cover illustration-Church of the Dome, Les Invalides-Elevation (J.H.Mansart)
Frontispiece illustration-The Building of the Louvre (drawn by Sebastien Leclerc)
Theory (page 7)-"Plan au rez-de-chaussée d'une maison à bâtir à Paris sur les dessins de Ms. Mansard" (Blondel, *Architecture Française*
History (page 29)-"Vue et perspective du Château de Versailles du côté de l'Orangerie" (drawn by P. Menant)
Criticism (page 47)-"Coupe prise sur les milieu des Ares-coupe prise sur les milieu des Piliers" (Rondelet, ***Memoire Historique sur le Dôme du Panthéon Français*****)**
Classicism (page 73)-"Détail de la Facade Principale" (Planche 28, Vol. 1- Garnier, ***Le Nouvel Opéra du Paris*****)**

Thanks to Blaine Baker, (Professor of Law), Ulla Manley, Dan Corsillo, Maureen Anderson, Derek Drummond, Irene Rapoport, and Denis Dufficy

All illustrations not otherwise credited have been reproduced from the slide collection of the School of Architecture, McGill University.

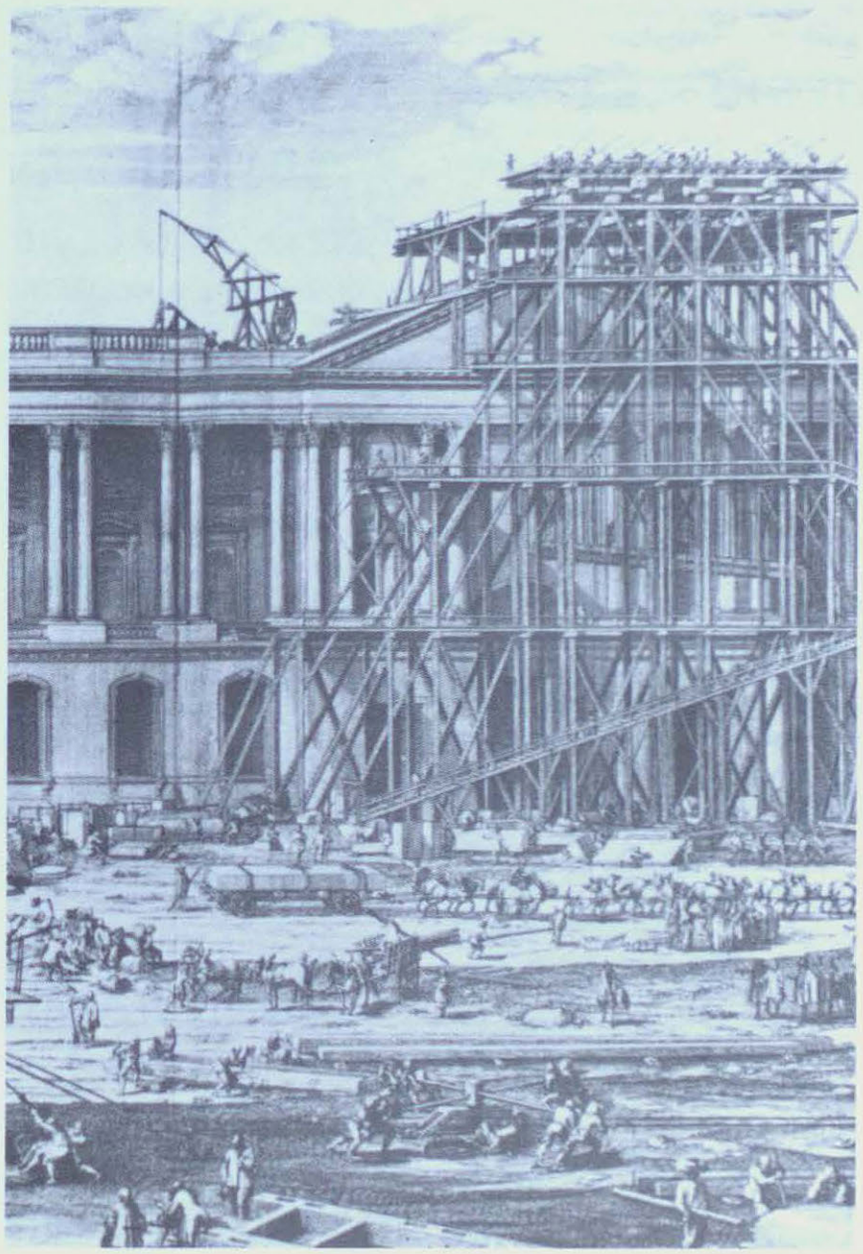


TABLE OF CONTENTS

INTRODUCTION

As one of the last students to have benefitted from the teaching of Peter Collins and as an editor of THE FIFTH COLUMN, it seemed to me important for us to present a selection of his finest writings. The legacy that Prof. Collins left has particular relevance in the architectural debate of the present day—in his consistent and outstanding manner, he upheld views that were often unpopular in his time, but which have, under the current onslaught against the Modern Movement, become accepted as norms.

We began the project by enlisting the help of Prof. John Hancock of the University of Cincinnati, a former graduate student of Prof. Collins', to be the guest editor for this issue. Subsequently, a search through Prof. Collins' files unearthed a wealth of material. Together with Prof. Hancock, a final selection of articles was made under four main groupings—Theory, History, Criticism and Classicism. The resulting collection includes many of his best essays, two book chapters, three lectures and a selection of newspaper articles, book reviews and building critiques.

This monograph does not attempt to be a rigorous and scholarly assessment of Peter Collins' career, but to be, instead, an accurate volume of selected writings—writings which deal with many of the ideals that he so passionately and wittily attacked and defended.

—Graham D. Livesey

Graham D. Livesey is a member of the Editorial Board of ***THE FIFTH COLUMN****.*

BIOGRAPHY

Peter Collins, Professor of Architecture, McGill University, died after a brief illness at home in Montreal on June 7th, 1981. His wife, the former Margaret Taylor of Ottawa, had predeceased him in December the previous year. An ideal teacher, always well prepared himself, he encouraged a rigorous attention to detail among his students. He will be greatly missed by his colleagues, friends and many others interested in architecture. He had a swift and accurate mind and the ability to write exceptionally well. He is surely to be remembered for his books, *Concrete, the Vision of a New Architecture* (translated to Italian as *La Visione di una nuova architettura*), *Changing Ideals in Modern Architecture* (translated to Spanish *Los ideales de la arquitectura moderna; su evolucion*) and *Architectural Judgement*; and, as Editor of the SAH *Journal*, 1967-68. In addition about a hundred essays and reviews have appeared over his name in most of the architectural periodicals in North America and England, and for a time he was architectural correspondent to the *Manchester Guardian*. He also wrote the article "Architectural Theory" for the *Encyclopedia Britannica*. One of his essays was reprinted in Dr. Bissell's Centenary Anthology: *A Century of Great Canadian Writing*.

Early in his career Peter Collins developed a special love and knowledge of the architecture of France. This gave him standards to measure and comment seriously upon all kinds of architectural events, but in other areas an eye for humbug always aroused a quick response in him, sometimes leading to unexpected adventures. His Department of Trivia and Ephemera once caused great merriment and more than a little caution at McGill. His Montreal Philogastric Institute provided a few stiff exercises for local chefs and much pleasure as well.

Born in Leeds in Yorkshire in 1920, his architectural studies at the Leeds College of Art, begun in 1936, were interrupted in 1939 by seven years in the British Army. For two years he was a Trooper in the Yorkshire Hussars; then for three years, an Intelligence Officer, Middle East and Italy; and finally, Captain, General Staff, The War Office, London. Upon discharge he returned to Leeds and obtained a Diploma in Architecture with Distinction in 1948. He went then to Switzerland and France to work on the design of reinforced concrete structures—mostly on Auguste Perret's reconstruction of Le Havre. In 1951 he returned to England to lecture in Architecture at Manchester and later to begin graduate work there under Professor Cordingly. His M.A. thesis, "The Development of Architectural Theory in France in the Mid-eighteenth Century," was completed in 1955. The year before that he received a Silver Medal from the Royal Institute of British Architects for an essay on "Jacques-François Blondel." During this time he was frequently in Paris and on one occasion, in August 1953, he married the charming Canadian who was later responsible for his coming to Canada.

The year he completed his work at Manchester he received a Fulbright Travelling Scholarship and an appointment to lecture in Architectural History at Yale University. In 1956 he was appointed an associate professor at McGill, where he became responsible for reorganizing the undergraduate courses in the history and theory of architecture. It was at this time that he completed the book inspired by his work with Perret, *Concrete, The Vision of a New Architecture*, which earned him the Henry Florence Architectural Book Scholarship in 1960. In 1962 he was appointed a full professor of Architecture at McGill and made a permanent member of staff—by coincidence it was the year he became a Canadian citizen. In 1964, by foregoing holidays and some telescoping of his duties at McGill, he was able to accept, with well remembered pleasure, a visiting professorship at Smith College. In 1965, what appears to have been his most successful book, *Changing Ideals in Modern Architecture*, first appeared. Of the three subsequent editions, one was in Spanish. The following year he was a visiting lecturer at Cambridge University. In 1967-68 he was editor of the SAH *Journal* and, during the summer vacation, a visiting professor at the University of California-Berkley. In 1968 he received the Hitchcock Medallion from SAH-GB.

That same year, a sabbatical leave from McGill permitted him to surprise his friends by returning to Yale as a Research Fellow to begin study in the University Law School—one suspects his interest in law had been aroused by a desire to contemplate the history and theory of architecture in conjunction with the history and theory of another discipline. Begun at Yale, these law studies were completed in Montreal, at Queens, when he obtained the Master of Laws degree in 1971 for a thesis on "Amenity, a Study of Jurisprudential Concepts which Affect the Legal Control of Urban Environments, and Their Relevance to Canadian Constitutional Law." In the same year his last book was published, *Architectural Judgement*, a comparative study in decision-making in architecture and law. In 1972 the award of the AIA's Architecture Critic's Citation marked his eminent contribution to architectural thought in America, a fitting final tribute to a distinguished man.

One must add that Peter Collins was an honorary corresponding member of the *Société des architectes diplomés par le gouvernement*; a *membre de l'ordre des architectes du Québec*, and a Fellow of the Royal Architectural Institute of Canada.

—John Bland

John Bland is the former director of the McGill University School of Architecture.

ASPECTS OF THE 'CLASSICAL' IN THE WORK OF PETER COLLINS

by John E. Hancock

August 23, 1984

The recent return of the term "classical" to the forefront of architectural thought is perhaps nothing so much as a matter of convenience, as it has a certain comfortable vagueness about it which, one suspects, many commentators find useful when faced with the embarrassing diversity of current work. Its connotations and implications are sufficiently diverse that, superficially at least, it is capable of making good journalistic order out of the likes of Graves, Stern, Bofill, Rossi, Isozaki, etc. (in such efforts as Charles Jencks' *Post-Modern Classicism: The New Synthesis* of 1980). It works because although, like "humanistic" and "organic," the application of the "classical" within architectural thought often verges on the meaningless, it does generally call up clear enough images of axial symmetry, columns with tops and bottoms of some kind, relatively sedate proportions, an occasional pedimented roof, and the *de rigueur* Schinkel *Sammlung* on the coffee table—even though all (save perhaps the last) of these could equally well be present in very non-classical designs. In any event, "classicism" and its various forms seem currently to make good titles for conferences under which to invite promising young designers; or good theme issues for major architectural periodicals.

If what we want to say is that the Portland Building, or the Altes Museum, or the Pantheon, is a "classical" building, then the loosely arranged collection which we hold in our minds is probably more or less sufficient. We sense that "obviously" these buildings have something of the "classical" which is important about them. But upon looking further into what really could be meant by aspects of "classicalness," we find that the implications diverge considerably. They seem to form themselves into three interlocking but distinguishable clusters of meaning more-or-less related to each of the forms *Classic, Classicism,* and *Classicist.* For example, we would need to ask whether Schinkel, say, was a "Classicist," whether his works therefore conformed to "Classicism" (or to "Neo-Classicism"), and whether the Altes Museum is necessarily then a "Classic" work. And do all of these need to be simultaneously affirmative? What then do we say of his "medieval" projects? What of Le Corbusier, and the Villa Savoye? What of Philip Johnson's works of the sixties? (Though they portray "obvious" attributes of "*Classicism*" surely they're not "classics?") And even if a building portrays "*Classicism*" does that make its designer a "*Classicist*"? Another way of clarifying the three groups of meanings is to distinguish whether the concept "Classical" is best defined in contradistinction to "romantic" or "expressionistic" (other theories of artistic creation), to "medieval," "mannerist," "baroque," or "vernacular" (other formal styles or object groups), or to "fashionable," "populist," or "cyclical" (other concepts of quality and duration).

In order for the terms of the "Classical" to be useful in any way beyond their usual imprecise application in architectual journalism, and (more to the point here) in order to discover how a consummate Classicist like Peter Collins could have such a low opinion of such ostensibly "classical" works as James Stuart's house in St. James Square, or John Summerson's book *The Classical Language of Architecture* (and, for that matter, of most of the so-called "classical" architects so far mentioned here), we clearly need to explore further the distinctions among the different senses in which one can a) be a "*Classicist,*" b) conform to "*Classicism,*" and/or c) create or appreciate "*Classic*" works.

For Peter Collins the "Classical" was an intense conviction, and one which therefore required great care with the terms by which it was to be understood. My intention here is to offer a perspective which I hope will be useful in two ways: First, in the context of this volume, to clarify in what sense we may say that Peter Collins *was* a consummate "*Classicist*"—in what light can be appreciated the rigor, consistency, and endurance of his beliefs; and second, in the larger setting of architectural discourse, to offer ways in which the terminology of the "Classical" might (despite its periodic popularity) be used with a bit more precision. There is in fact considerable etymological and literary evidence for the assertion that there are *three* general sets of connotations embedded in the "Classical." Its roots and forms in the major European languages provide the means to more clearly discriminate the several senses alluded to above.

The first of these is closely related to the oldest, Latin, root *classicus,* pertaining to "the highest rank or quality," particularly as that quality was later identified by its durability as a useful standard of excellence. By "*A Classic*" we therefore mean an exemplar, whose distinction is proven by a long-standing consensus. Their term is necessarily judgmental and temporal—having to do with both the assigning of value and the passage of time, and the endurance of value over time. The Maison Carée and Chartres Cathedral are "*Classics,*" and we speak of "Classical" music, in that sense. It is the body of permanently esteemed work in a field—often, but not by any means necessarily, from antiquity or possessing the outward appearance of "*Classicism*"...

The second of these connotation sets seems most closely related to an early ninteenth-century neologism (the origins of which Peter Collins, with characteristic tenacity, traced in three languages) which is probably most appropriately rendered by the German *Klassizismus.* Part of the new art-historical interest in "style," was an attempt to describe as such the artistic forms of the ancient Greeks and Romans, and was of course soon particularly associated with those who, in a self- and style-conscious sense, and with great ar-

chaeological exactitude, imitated them. "*Classicism*" is a category of characteristic attributes derived from association with a particular historical period, and (especially as "Neo-Classicism," to which the German form most closely corresponds) became a doctrine of renewed pursuit of those attributes. The term is essentially formal and stylistic—having to do with the description of objects, their categorization into groups, or subsequent efforts to knowingly make new works to resemble them. Most of our "obvious" image connotations of the "classical" (symmetry, the orders, and archaeologically-verifiable proportions and details) are attributes of "*Classicism*" in this sense. As a design method permeated by formal and stylistic concerns, it is undertaken often, but not necessarily always, through the inner motivating spirit of a "Classicist"...

The third cluster of meanings is the most complicated to define, partly because its disentanglement from "*Classicism*" has to be made, for the sake of argument here, somewhat artificial. Yet however artificial it may seem today to separate the formal attributes of a created object ("Classicism") from the attitudes and sensibilities of its creator (a "Classicist"), the fact remains that, especially in France, something we would have to call classical *thinking* pre-dated even the invention of the term "classicisme" by at least two centuries. And by distinguishing the definition of classical *thought* from that of classical *objects* we can better explain how, strictly speaking, there can be one without the other. (It should be mentioned that this is not a distinction which Peter Collins himself emphasized, as is clear from his use of the term "Classicism" in its current English sense to mean also simply "the beliefs of Classicists." But he seems to have been inclined to mistrust the term, at least in its historic context, for its having been merely one of a whole spate of new "-ism" words—e. g., nationalism, socialism, rationalism—introduced in the decades following the French Revolution which may have been motivated as some sort of substitute authority; and certainly for its having been in its origins dangerously close to the German art-historical notion of a "style".)

The classical sensibility which I have identified here through the term "*Classicist*" (the one who holds it) probably had its most consistent and inspired expression in the architecture of the great French classicists whom Peter Collins so admired: the Mansarts, de Brosse, Boffrand, J. F. Blondel, etc. The form which this thinking took prior to the invention of "le classicisme" in the early nineteenth century is best revealed through contemporary French literary doctrine, between which and architecture there was in fact important mutual influence. So in the spirit of the French literary concept of "le classique," the third cluster of meanings pertains to a sensibility—cultivated through a seasoned maturity and confident self-restraint—inclined towards, in the words of Henri Peyre (from the chapter entitled "The Ideal of Art" in his *Qu'est-ce que le Classicisme?): decorum, endurance, order, clarity, serenity, simplicity,* and the *dissimulation of effort.* Nicolas Boileau, in his *Art Poétique* of 1674, had formulated a similarly well-rounded doctrine of attitudinal classicism which included in addition: *verisimilitude*—an evident plausibility derived through reason, common sense, and the social usefulness of the work of art. The "*Classicist*" is defined by an attitude toward the purpose of art in relation to a constituency, to tradition, and to cultural and technical authority; and toward the role of the artist in relation to the nature of the creative process.

In the course of his career Peter Collins worked toward explaining and justifying this kind of classical thought in architectural terms. Unpublished notes connected with one of the last projects of his life, a lecture course entitled "Classicism" given at McGill University in 1979 and at the University of Cincinnati in 1980, reveal this thinking in its most developed state. An architectural "*Classicist,*" in the sense in which the French architects of the seventeenth and eighteenth centuries remain supreme exemplars, would manifest concern for the following:

1) *Theory,* meaning the result of a rational study of examples of contemporary excellence. The Classical can be assessed and justified *intellectually* and through consensus since it is not emotionally, whimsically, or idiosyncratically based.

2) *Proportion,* meaning the clear geometric order of the natural structure, expressed through standardized elements. The Classical can be justified *structurally* since it reveals, or is inspired by, a coherent and reasonable structural system. (This accounts for its frequent affinity with "*Classicism,*" the most complete, expressive, and durable of such systems.)

3) *Perfection,* meaning an ideal which is approached through evolutionary rather than revolutionary change. The Classical can be justified *enduringly* since it disdains fashion, seeking instead to place itself in the longest possible temporal context. (This accounts for its having produced the major share of "*Classic*" works.)

4) *Continuity,* meaning a respect for the traditional past of place (contextual), of building-type (typological), and of the techniques and principles of the discipline as a whole (architectural). The Classical can be justified *historically* since it eschews mimicry and stylistic conformance, yet adapts precedent creatively in light of situational constraints.

5) *Appreciation,* meaning the capacity of the work to be enjoyed on many levels of taste, despite its high and conscious standards of quality. The Classical can be justified *publicly,* since it does not rely for its validation solely on knowledge of the individual artist's expressive intentions or of esoteric speculation within the field for its validation.

Of course it will be realized that to talk intelligently about this frame of mind in modern English requires using the term "Classicism." But it is perhaps only safe to do so if in full recognition of the differences between classicism as a *way of thinking* and classicism as a *category of objects.*

In his theoretical, historical, and critical work, Peter Collins sought not only to explain the classicist sensibility but to live up to it as well. The essays presented in this volume will make very clear the essential recurring themes of his thought, but what might be emphasized here is the overall integrity they reflect in light of the various aspects of "classicalness" so far defined.

In respect for the integrity of the "*Classic,*" for example, were his belief that historical scholarship should distance itself from the recent past, his wariness of published criticisms of new buildings, and the tendency in his own critical writing to defer to the known consistency of larger standards. All these reflect the conviction that judgments of merit in architecture require the perspective of the largest possible timescale. Excellence, in classical terms, requires physical and cultural *endurance*—the salient feature of "Classic" status. Hence, for example, the fashionable "Classicisms" of the early sixties and the late seventies were never really even in contention.

In contempt for the superficiality of stylistic "Classicism" (indeed for most of the art-inspired techniques of *Kunstwissenschaft*) was his conviction that historical scholarship should concern itself with how a building was commissioned, pro-

grammed and constrained by technical and environmental conditions, not merely how it looked, or into which arbitrary and post-rationalized chrono-morphological pigeon-hole it could most easily be placed. It was the nature of the creative act of design, at least as much as the visual attributes of the language employed, which was to be regarded as classical. This is why he so disdained the approach exemplified in Summerson's *The Classical Language of Architecture*, and why he so enjoyed both reading and performing situationist "debunkings" of the stylistic approach (such as Forster and Tuttle's 1971 *SAH Journal* essay on the Palazzo del Te, which he gleefully regarded as having helped drain the concept of "Mannerism" of most of its meaning).

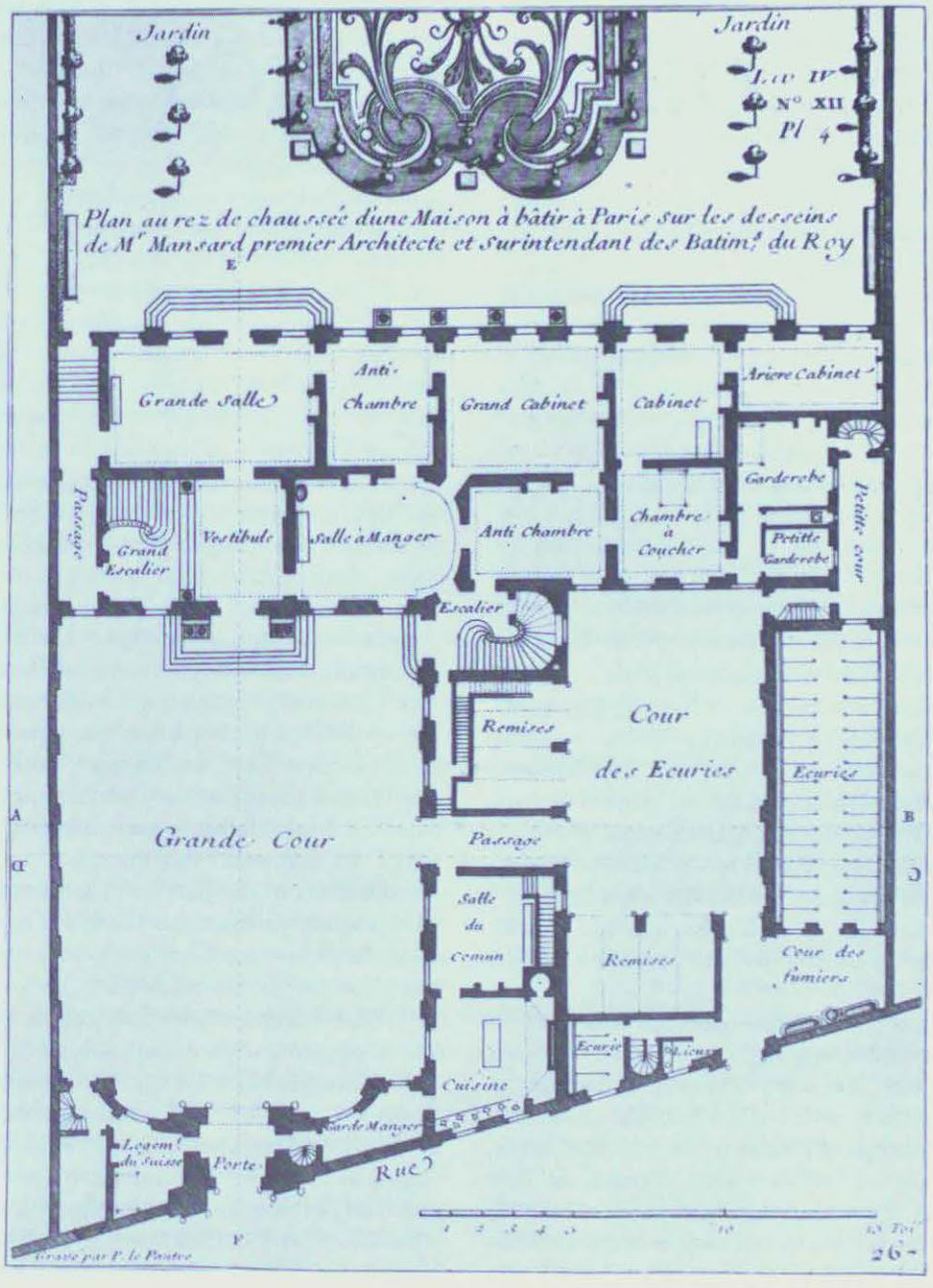
And prominent in his admiration of the French "*Classicists*" was his belief that they were, because of a rigorous theoretical basis and a healthy interactive relationship with historical precedents, more free as designers than either the *style*-ists (who like Le Corbusier, were artificially constrained by a hyper-consciousness of the *Zeitgeist*) or the archaeologists (who, like James Stuart, were excessively constrained by the technique of mere mimicry). The measure of their talent was in the use of such freedom to solve difficult problems well, and to evince in the results decorum, sensible reasoning, and the dissimulation of effort.

Finally, from his vantage point as a "Classicist" there emerged a forceful critique of heroic abstract sculptural Modernism, as will be apparent in the remainder of this volume, particularly amidst disparaging references to Le Corbusier and his influence. This critique is based on the following grounds: a) that it (what we now call, stylistically, "Modernism") seemed often to be proceeding without coherent and historically-rooted *theoretical principles;* b) that it fallaciously regarded architecture as more kindred to abstract art than to rationally *proportioned structure;* c) that it overemphasized the expressive freedom of the heroic individualist-architect in an atmosphere of revolutionary fashion-consciousness, rather than a search for *durable perfection;* d) that it usually conceived buildings as isolated sculptural objects, seldom sympathetic to the *historic continuity* of the urban environments in which they were placed; and e) that it was devoid of the details, visual character, and refined subtlety which give human scale and interest to the environment, and help foster the *public appreciation* of architecture.

When most of these essays were written they were highly polemical on these issues, and their author virtually alone among major critics in remaining less than enthusiastic about so much of modern architecture. Since then, of course, the critique of "Modernism" has become widespread. It is now, one could almost say, virtually complete; and key points of contention have included most of those just listed. So although the manifestations of "Post-Modernism" (including its currently popular wave of so-called "Classicism") clearly represent just another ephemeral fashion, there increasingly appears to be lying beneath and behind them a return of genuine concern for theory, history, precedent, context, ornament, and authenticity. And this fact should at least offer us the opportunity to consider the persistence of these issues in the writings of Peter Collins (despite the vicissitudes of fashion throughout his life) not only as a record of his tenacity, genius, and dedication to principle, but as a promise of true "Classic" *endurance* for the standards of a true "Classicist" scholar.

John E. Hancock is an architectural historian at the University of Cincinnati. He studied history and theory with Peter Collins, obtaining the degree Master of Architecture from McGill University in 1978.

Peter Collins 1920-1981


Jardin
Jardin
Liv. IV
N° XII
Pl 4
Plan au rez de chaussée d'une Maison à bâtir à Paris sur les desseins de M.r Mansard premier Architecte et Surintendant des Batim.ts du Roy
Grande Salle
Anti-Chambre
Grand Cabinet
Cabinet
Ariere Cabinet
Garderobe
Petitte Garderobe
Petitte cour
Passage
Grand Escalier
Vestibule
Salle à Manger
Anti Chambre
Chambre à Coucher
Escalier
Remises
Cour des Ecuries
Ecuries
Grande Cour
Passage
Salle du Comun
Remises
Cour des fumiers
Ecurie
Cuisine
Garde Manger
Logem.t du Suisse
Porte
Rue
A
B
C
D
E
F
26-

ON THEORY

OECODOMICS

Reprinted from the March, 1967 issue of the ***Architectural Review.***

Perhaps it is the almost total irrelevance of architectural theory to architectural practice that drives historians of the Modern Movement to despair, cynicism or—worst of all—eighteenth-century studies.

With this sentence, Reyner Banham began his review of Renato de Fusco's *L'Idea di Architettura* in the AR, July 1966. In its context, it was simply a witty paradox introducing some pointed comments about Ruskin, Croce, etc.; but isolated from its context, it distends to constitute an ominously disquieting apophthegm. For if, in fact, architectural theory is considered among the intelligentsia to have "almost total irrelevance to architectural practice," either the word "theory" is being used merely as an existentialist gibe, or else Dr. Banham's definition of "theory of architecture" needs a radical overhaul.

His own first book, it will be remembered, was entitled *Theory and Design in the First Machine Age;* but curiously enough on the few occasions when the word "theory" occurs in the text, it occurs in conjunction with such adjectives as Cubist, Elementarist, Futurist, except of course in the first few pages, when he discusses Guadet. In other words, though the title might lead one to think that Dr. Banham is concerned with theorists of *architecture*, he is only in fact concerned with what he calls on page 66: "theorists of Abstract art." Now if the purpose of his book was to demonstrate that the architectural ideals most vociferously enunciated during the First Machine Age were in fact architecturally-irrelevant theories of painting, sculpture, literature and music, his argument is, in my opinion, brilliantly conclusive. But if this was not his purpose, it would be fallacious to deduce from his evidence that "architectural theory" was, is, and always will be, eye-wash.

Before going any further, I suppose I must stick my neck out and say what I personally think the term "architectural theory" did, and always should, mean. This is embarassing, not because I have any doubts on the matter, but because "Vitruvius go Home" was the most inspired lecture-title Dr. Banham ever devised. However, since Vitruvius, whether we like it or not, supplied the most enduring definiton of architectural theory so far published, it will not be amiss to begin with his definiton of *Ratiocinatio:*[2] "Theory is that which is able to explain and analyse material constructions by the exercise of skill and reason." In other words, theory for him, as for me, means the sum total of academic knowledge required to design a building, as opposed to the sum total of practical experience.

To avoid the opprobrium attached by Dr. Banham to "eighteenth-century studies," I will gloss over the fact that the traditional interpretation of "architectural theory" was first undermined in that era by the ruins of Athens (when J.D. Leroy divided his book into two parts so as to study the buildings (a) as related to "history" and (b) as related to "theory"), and simply assert that the subdivision of architectural studies into "theory" and "history" officially occurred in 1818. In that year, the French Government, when revising the Statutes of the Ecole des Beaux-Arts, created a *second* architectural professor; and in order to distinguish between the two, the first was called "the professor of theory" and the second "the professor of history."

This official distinction could not have occurred at a more opportune moment, since Historicism, in the form of archaeological Revivalism, had already eroded the traditional roots of architectural evolution beyond repair. Unfortunately, however, the schizophrenic system of teaching developed in Paris in the nineteenth century disregarded the distinction between history and theory, and as a result made the confusion worse. Successive professors of history, being practising architects, understandably tried to relate their courses to contemporary problems. But the professors of theory thought only of justifying the tectonic forms they favoured by triumphantly demonstrating their primeval origins. Indeed, one professor of theory, J. B. Lesueur, actually entitled his book: *The History and Theory of Architecture.*

Julien Guadet was problably the first professor of theory to attempt to find a way out of this dilemma. Appointed in 1894, at the age of sixty, his basic solution was certainly not ideal; but at least it was clear-cut, and developed with extraordinary lucidity. He took "theory" to mean the detailed study of *building-types* which the students would one day have to design for eventual clients; and as far as he was concerned, history could be taught in any way the archaeologists wished.

The conventional prohibition against criticizing (and hence mentioning) the works of living colleagues naturally inhibited him when dealing with the more immediate aspects of contemporary building-types; hence much of the informa-

tion he imparted was inherently obsolete, and would have remained so even if steel and reinforced-concrete construction had not just then been invented. But when all his difficulties are taken into consideration, his attitide must command our respect, since he was more concerned than any of his predecessors with giving students solid notions on which they could develop and assess *future* designs. Perhaps his philosophy of teaching is best summed up by a remark in his lecture on theatres. Commenting on Charles Garnier's elaborate analytical monograph, he said: "unfortunately this sort of book is rare; I regret it all the more because if there existed one for each type of building, the collection would constitute a complete course on the theory of architecture"(iii. p. 73).

The task of those who immediately succeeded Gaudet was unenviable, and the first occupant remained in office until 1933 without giving any lectures at all.[3] In 1937 Georges Gromort made a gallant attempt to evolve something different; but although in the preface to his own course he dismissed Gaudet's course as mere history, the bulk of his book is little more than a superficial summary of Guadet's text. However, he seems to have felt certain in his own mind that this superficiality was one of the prime virtues of his approach. "The theory of architecture," he asserted in his preface, "is that ensemble of uncontested principles which are equally valid for every type of building." Thus, following Auguste Comte's dictum as quoted by Vaillant[4] (to the effect that "true theory is always general, just as healthy practice remains constantly special"), and pursuing a method already popularized by Trystan Edwards and others, he elaborated upon such generalities as "unity," "duality," "contrast," etc., thereby boosting an abstract notion of "architectural aesthetics" which had been hotly repudiated by Guadet and his friends, especially after Viollet-le-Duc (who was responsible for instituting a Chair of Aesthetics at the Ecole des Beaux-Arts) had been replaced by Hippolyte Taine.

All-embracing theories of "aesthetics" today reign supreme, and since we no longer consider it indelicate for a professor to discuss the work of his colleagues in front of his students, it would be flogging a dead horse to show that Guadet's approach is now hopelessly inadequate for present needs. But the main reason for this is that, whereas eighty years ago all the "historical, theoretical and practical" knowledge required of an architect could be published in a single volume, such as Gwilt's revised *Encyclopaedia*, the knowledge required today is so complex and subdivided that many architectural students spend about three hundred and fifty hours a year in lecture-rooms during their five-year academic training. Thus the task of writing a modern synthesis of "The Theory of Architecture" would be as formidable as trying to bring Dr. Robison's *Mechanical Philosophy* up to date.

Many authorities argue, very cogently, that since the theory of architecture is so complex, and fragmented into so many disparate parts, a course of study specifically entitled "The Theory of Architecture" is no longer valid, and hence the term itself is meaningless. I have every sympathy with the main conclusion, but none with its corollary. On the contrary, I would contend that it is precisely because the theory of architecture is so diffuse and subdivided that a synthesis is absolutely essential. An architect must not only know how to evolve designs; he must also know how to assess them. The means of achieving this within a university is of course debatable. Perhaps the answer is to be found in the arguments for or against the *Intentions* of Christian Norberg-Schulz. I myself believe that it is impossible actually to *teach* students the criteria of assessment, and that all one can hope to do is provide the stimulus and techniques which will permit each student to evolve a true philosophy of design for himself.[5]

I am convinced that it is wrong, in this age of constant change, even to attempt to impose a neat philosophy of architectural ideas on architectural students. Moreover, gifted and imaginative students would reject such an attempt with derision. Hence it would seem to me that the problem confronting our schools of architecture is not how to expound a viable and coherent theory of architecture (which still means, for me, those unlimited permutations of Firmitas, Utilitas and Venustas which can produce the best environment with respect to each individual programme), but how to expound the *history of theory* in such a way that each student can then go on to create a theory valid for his own generation.

This of course involves an appraisal of the meaning of Dr. Banham's term: "historians of the Modern Movement," since architectural history is too readily evaluated today in its threadbare nineteenth-century terms as the science of attributing precise dates to extinct ornament. Anyone who has attended congresses of architectural historians will be only too well aware that these meetings are still dominated by art-historians and archeologists who are concerned with little more than the classification of forms: chronologically, morphologically, or chrono-morphologically;[6] that the majority of participants tend to be indifferent to the synthesis of forms/programmes/technology/enviroment. I do not despise the work of these scholars; but it is useless to architectural students unless someone has first sifted it for such theoretical implications as it may contain.

To sum up, then: my view is (a) that each student must be given the appropriate means to create his own viable, synthetic theory of architecture, and (b) that the most promising way to achieve this would seem to be by discussing fully, in his presence, all the architectural ideals formulated since the invention of printing. If philosophers limit themselves to the architectural implications of symbolism and semiotics (i.e. to purely abstract "theories of *form*"), and if historians limit themselves to digging in Anatolis, no harm will be done; but each architectural student will then have to fend for himself. For it cannot be emphasized too dogmatically, *pace* Dr. Banham, that all conscientious architects evolve *some* theory of architecture of their own, whether it be good, bad , or indifferent; and their teachers' main concern must be that a viable, coherent theory should have taken possession of their minds before they are legally empowered to modify the environment in which we live.

NOTES:

1. Since neologisms like "Ekistics" and "Semiotics" are fashionable nowadays, Professor Collins has preferred "Oecodomics" to "The Theory of Architecture" as the title of his essay. But the term is simply a Greek equivalent of *De Re Aedificatoria*, and should therefore be strenuously resisted by all who share his view that "The Theory of Architecure" is still an appropriate and meaningful expression.
2. For the benefit of those Latin scholars who at this point are taking out their pens to write a letter to the Editors, I should state that every manuscript variation and printed Latin version of this text has been submitted to the Classics departments of Columbia and McGill, so I am well aware that there are as many translations as there are translators.
3. According to verbal information given me by his son-in-law Paul Gélis.
4. See title page of A. Vaillant's *Théorie de l'Architecture* (Paris, 1919).
5. *Cf.* Guadet, i. 652: "I shall be happy and proud if, when you think over these lectures, seeking to summarize their contents for yourselves, you find that the only way to condense their substance is to use the single word: TRUTH."
6. The most advanced stage of the disease. For example, no one knows whether Baroque is a morphological or a chronological term. Architectural taxonomy has reached such profundity that we find Professor Morrison claiming that the earliest "Georgian" house in North America was built in 1688, whilst Professor Gowans has named the period from 1725 to 1750: "American Queen Anne"...

THE ARCHITECTONICS OF PURE TASTE

Reprinted from the May, 1961 issue of the ***Royal Architectural Institute of Canada Journal****. This article was subsequently republished under the title of "The Gastronomic Analogy" (Chapter 16) in* ***Changing Ideals in Modern Architecture, 1750-1950****, McGill University Press, Montreal, 1965.*

In a lecture on "The Principles of Design in Architecture," given on 9th December, 1862, to the cadets of the School of Military Engineering at Chatham, James Fergusson, the architectural historian, explained to his astonished audience that the process by which a hut to shelter an image is refined into a temple, or a meeting house into a cathedral, is the same as that which refines a boiled neck of mutton into *côtelettes à l'Impériale* or a grilled fowl into *poulet à la Marengo.* "So essentially is this the case," he continued, "that if you wish to acquire a knowledge of the true principles of design in architecture you will do better to study the works of Soyer or Mrs. Glass than any or all the writers on architecture from Vitruvius to Pugin."

No other architectural theorist, either before or since, seems to have used this analogy; a very curious fact when one considers the general cultural significance attached to the word "taste." "Taste," as early dictionaries make clear, meant originally only "the sensation excited in certain organs of the mouth," and its metaphorical adoption in the seventeenth and eighteenth centuries as the standard term for what we now call "aesthetics" (a neologism invented in Germany in 1750) implies a clear recognition of the importance of this faculty as a key to understanding the nature of human discernment. As Addison pointed out in *The Spectator* of June 19th, 1711, "we may be sure this metaphor would not have been so general in all tongues, had there not been a very great conformity between mental taste and that sensitive taste which gives us a relish of every different flavour that affects the palate." Yet few of the various treatises on aesthetics published in the second half of the century even discuss this parallel, and the most exhaustive of them, namely the *Essay on Taste* published by Archibald Alison in 1790, does not mention food and drink at all.

One reason for this curious omission (apart from another, more important reason, which will be dicussed later) may be that gastronomy was then in its infancy. Until the end of Louis XIV's reign, eating habits were extremely coarse, and it was not until the middle of the eighteenth century that modern refinements in cooking were widely adopted. The word "gastronomy" itself was not intoduced into the French language until about 1800, and we are told by Brillat-Savarin, the first modern writer on the subject, that even in 1825 it was still sufficiently novel to bring "a smile of hilarity to all countenances." The general appreciation of fine cooking was due mainly to the establishment of restaurants, the first of which was founded in Paris in 1770, and it was not until the Napoleonic era that these had multiplied sufficiently to give French cooking its universal and popular prestige. But it is still difficult to explain why the analogy between architecture and fine cooking should have been so persistently neglected during the last century, considering the urge experienced by so many architectural theorists to justify their ideas analogically with reference to other sciences and creative arts.

There is no doubt that if one wishes to demonstrate the distinction between architecture and plain, ordinary, straightforward building (and this is clearly what Fergusson was trying to do), the distinction between gastronomy and plain, ordinary, straightforward cooking possesses many close similarities not displayed by music, literature, biology, mechanical engineering, or any of the other arts or sciences with which architecture has so often been compared. Firstly, it is concerned, as Brillat-Savarin observed, with the conservation of mankind, and is thus, unlike the other arts, a necessity rather than a luxury. Secondly, unlike all those analogies just listed, it concerns something which is both a science and an art. Scientifically, gastronomy demands the combination of a number of prepared materials of known strength, arranged according to an ideal sequence or plan, the efficacy of which can be analysed and tested. Artistically, it goes far beyond the dictates of scientific analysis, for gastronomy, like architecture, requires intuition, imagination, enthusiasm, and an immense amount of organizational skill. Gastronomy is also more expensive than plain, honest, straightforward cooking, since it usually involves lengthier preparation and richer ingredients. It seems reasonable to suppose that there

may also be other, more subtle, similarities between gastronomy and architecture, and that these may help us to visualize what the essential virtues of architecture ought to be.

Perhaps the most instructive way to seek out these similarities is to compare gastronomy and modern architecture in the age in which they both originated, namely the mid-eighteenth century, and then compare them as they are today. This first era, according to John Steegman, can only be fittingly described as the era of the Rule of Taste. This title is most appropriate, he says, because it implies a régime in which taste—the only word expressing both an immutable quality of discernment, criticism and perception, and an active sensitivity to temporary fashions—is paramount, and a time when fashions in taste are governed by universally acknowledged rules. These rules were not in fact very easy to determine, but there is no doubt that the leading architectural theorists of the period were constantly trying to formulate them, and that they did this by studying not only the buildings of antiquity, but the best buildings of their own day. The first regular meeting of the French Academy of Architecture began its discussion in 1672 with the question: "What is good taste?", and although the problem was never satisfactorily resolved, it was generally agreed that "the true rule for recognizing things which display good taste is to consider what has always been most pleasing to intelligent persons, whose merits are known by their works or their writings." In other words, the supreme rule of the classical artist was that his work should please.

This desire to please was also, and still is, the principle aim of a good chef, but it is doubtful whether it is the aim of all the leading painters, sculptors and architects today. For whereas a good chef is concerned only with the whims of his clientele and the appreciation which his artistry will receive, artists like Henry Moore boast their refusal to fulfil commissions requested by connoisseurs they respect. A good chef does not, after competitions, write abusively of experts who prefer some other artist's work. He does not feel that he is prostituting his art by creating something which resembles a work created two centuries before. If ever he says to a client: "take it or leave it" (and there are ways of saying this in French with considerable force), it is because he realizes that his client has no standards of taste, not simply because the person's tastes differ from his own. On the contrary, it is in the vicarious adaptation of his own tastes to each different customer's appetite that his supreme artistry resides; hence his art is always essentially human, because it keeps in the closest contact with the subtly varying moods of mankind.

Today, taste is no longer synonymous with aesthetics, because the modern theoretical approach to art takes no account of the public at all. The eighteenth century philosophers, though fully aware of the distinction between what they called "active taste" and "passive taste," were essentially concerned with the latter, i.e., with art from the point of view of an observer's reactions. Today, however, as a result of the influence of Benedetto Croce, aesthetic theories are usually only concerned with the act of artistic creativity itself. Art is considered to be essentialy a form of expression, and it now irrelevant to enquire whether or not it gives pleasure, since this is not its aim. It is as if an omelette were judged simply by the genuineness of the chef's passionate urge to go around breaking eggs.

The architectural theorists of the mid-eighteenth century tried to establish classical recipes for good architecture in much the same way as the chefs of that period were trying to establish classical recipes for *haute cuisine*, and the criterion of both was that the results should be widely enjoyed. Not just enjoyed by other architects and other chefs, or by the editors of the *Almanach des Gourmets* and *l'Architecture Française*, but by all persons of cultivated taste. Now this very word "cultivated" implies that taste can not only be trained, but should be trained according to certain universally accepted standards. If those who teach the arts do not believe in such standards, or if they claim, like Paul Rudolph, that they are still searching for such standards, it is clear that whatever the merits of their instruction, they are concerned essentially with fashion, not with taste.

The standards of gastronomy have remained unchanged for two centuries, and are uncontested. The standards of architecture would also be uncontested if romantic influences had not, for two centuries, vitiated its theoretical basis, and spread the germs of its debilitating criteria like phylloxera throughout the western world. It is no coincidence that anglo-saxon cooking is proverbially bad, for bad food and bad architecture both derive from the same philosophical disease.

This disease is, quite simply, romanticism, or the refusal to accept the fact that, in the highest art, sensation must be subordinate to reason. For two centuries, western art has been divisible into two antagonistic categories, which may be described either as romantic versus classical, or emotional versus rational. Now the essential nature of the revolution which took place in French cooking in the mid-eighteenth century was that the coarse and purely sensual methods of Roman, Mediaeval and Renaissance eating were *rationalized*. "Gastronomy," explained Brillat-Savarin, the father of the new art, and whose only defect was an over-fondness for improper jokes about sausages, "is the rationalized knowledge of everything which relates to man in so far as he nourishes himself." "Only intelligent men," he continued, "honor fine food, because the others are not capable of an operation which consists in a sequence of appreciation and judgements."

In conformity with Brillat-Savarin's philosophy, the leading French architectural theorist of the mid-eighteenth century similarly defined taste as "the fruit of reasoning," and added, in words which almost paraphrase Diderot's definition of a true philosopher, that "taste founded on reason accepts neither ready-made systems nor the authority of private opinions." But in England at this time, the writers on Taste were already rejecting classicism in favour of romanticism, and it is doubtless mainly for this reason that Alison, in his *Essay on Taste*, did not mention food at all, since gastronomy clearly did not fit into the romantic aesthetic theory of "the association of ideas."

According to this theory, man's awareness of the beauty of proportions is due entirely to a mental association of the relationship between form and function, and the appreciation of... the beauty is due... entirely to the stimulus given man's imagination by (in the case of Gothic Revival, Greek Revival or Classical designs) the evocation of the lost glories of the Middle Ages, Greece or Rome. Today, we also seem to consider that architectural beauty is based on the idea of functionalism and romantic associations, although nowadays we romanticize the future, rather than the past. In both instances architectural appreciation, being subjective, is primarily governed by fashion, which to the classical theorist was "the tyrant of taste." "Taste, once aquired, should exclude every kind of fashion from architecture as so many obstacles to its progress," the professor of architecture at the French Academy told his students two centuries ago, and

went on to criticize young architects for neglecting sound principles in favour of new inventions, which must inevitably be superseded by other novelties in their turn.

Novel recipes for preparing food are, of course, frequently invented, but the old recipes still retain the same authority and prestige which they had before, because they are, literally, what Frank Lloyd Wright called "in the nature of materials," and thus their aesthetic properties never become stale. The recipes in Viard's *Cuisinier Royal* (a book already printed in ten seperate editions by 1820) are all to be found in the latest edition of *L'Art Culinaire Français*, and the latter only supersedes the former because in the latter, there are three thousand recipes more. In gastronomy, there is no prestige attached to novelty *per se*, and nobody asks a chef if he can be guaranteed always to provide something "contemporary." Nor would any gastronome ever refuse *filets de volaille à la Bellevue* simply because they were invented by Madame de Pompadour, or angrily ask why he was not getting the latest recipe from the *Ladies' Home Journal* instead. In cooking, as in any art which really flourishes, the only values recognized are those concerned with degrees of excellence, and the decline in architecture occurred when architects forgot this, and started worrying about whether they were being "contemporary" or "reactionary," instead of whether their work was good or bad.

There are several factors which encourage this attitude, but there is one which is particularly obvious, namely the fact that whereas the eighteenth century recognized the rarity of a creative artist, the twentieth century, convinced of the operation of some universal law which equates supply and demand, and deluded by a combined faith in the virtues of a college education, and an equally solid faith (fostered by exhibitions of Action Painting and juvenile art) in the virtues of no artistic education at all, is convinced that everyone is potentially some kind of an artistic genius, and that anyone can become a creative architect once he can use a set-square and pass the technical exams. Yet it must be obvious that in architecture, as also in gastronomy, drama, and music, there are two kinds of artist; those rare spirits who can create original compositions, and those, less gifted, whose vocation is to adapt, interpret or assist.

Creative genius is in fact extremely rare in all the arts, but it is demonstrably rare in gastronomy, drama and music because it is the general public, rather than a few avant-garde connoisseurs or magazine editors, which decides whether the artist's originality is worth anything or not. Any contemporary musician can get his compositions broadcast, but with rare exceptions, the only public auditorium in which he has a chance of hearing his work twice is, according to Sir Thomas Beecham, the Albert Hall in London (the echo of which has long been notorious). Theatre-goers and music-lovers, as well as gourmets, know from hard experience that even the most favourable conjunction of circumstances rarely produces more than half-a-dozen original geniuses in each generation, however generously they may be subsidized by the Ford Foundation or the Fulbright Fund. Most artists are condemned by Fate, whatever their ambitions, to be executants who adapt and re-interpret (with greater or lesser sensitivity and appropriateness) the basic ideas created by someone else; yet all young architects regard themselves as creative artists, because our whole system of architectural education is specifically organized to give them this idea.

In English, the word "chef" is synonymous with "cook," but this title, like that of "architect," should belong by right to those who have not only fully mastered every known aspect of their art, but were endowed at birth with the divine gift of the Muse. "*On devient cuisinier, mais on naît rôtisseur,*" wrote Brillat-Savarin, in Aphorism No. XV. "*On devient ingénieur, mais on naît architecte,*" wrote Auguste Perret a century later, and listed it as Aphorism number one.

TOWARDS A NEW ORNAMENT

Reprinted from the June, 1961 issue of ***Architectural Review****. This article originally appeared under the title "Aspects of Ornament."*

All architects agree that architecture is something more than just plain, honest, straightforward building, but it is becoming increasingly doubtful, as the variety in contemporary monumental buildings increases, whether they agree as to what that "something" is. It is clear, for example, that many buildings serving the same function, such as the latest university buildings constructed in England and America, have little in common with one another (apart from the use of modern building technology) except "the rejection of the trappings of the historical styles"; that stirring but superannuated war-cry which was the inspiration of the early pioneers. But whereas the importance of these buildings is widely accepted, and their architectural qualities frequently discussed, the nature of the factors which differentiate these qualities from purely technological qualities has yet to be unequivocally defined. It cannot be simply a matter of good proportions, because proportion has little relevance to Giedion's theory concerning the Interpenetration of Space, whether it be Baroque space or Cubist space. Moreover, it is clear from at least two recent competitions (the Sydney Opera House and the Toronto City Hall, where the proportions of both winning entries have had subsequently to be considerably modified because of the structural inadequacies of the original designs) that proportion is not considered an important criterion. The distinction must therefore lie in something else.

In the nineteenth century, the majority of theorists had no doubts whatsoever about the nature of this distinction, since they generally agreed with James Fergusson that architecture was "nothing more or less than the art of ornamented and ornamental construction."[1] The problem which obsessed them was to decide what was the correct type of ornament. There were, of course, one or two eccentrics who rejected the idea of ornament altogether. J. N. L. Durand had insisted, at the beginning of the century (when the French state was in fact too poverty-stricken to ornament new public buildings even if it wanted to), that beauty in a building resulted naturally and necessarily from the most economical structure imposed on the most economical plan. Horatio Greenough, still smarting over the rejection of his nude statue of George Washington, similarly insisted on the total rejection of ornament, and used arguments which were later to be employed by Adolf Loos. But the nineteenth century in general approved unquestioningly the desire for ornament, which Owen Jones, for example, believed "must necessarily increase with all peoples in the ratio of the progress of civilization."[2] As a result, ornament, far from being rejected by the leading architects, became more luxuriant and more extravagant as the century proceeded, until it culminated in the rich overall surface decorations we associate with the nineteenth-century buildings of Louis Sullivan and Frank Lloyd Wright.

Curiously enough, the problem which occupied the most thoughtful and progressive mid-nineteenth-century theorists was not so much concerned with the nature of ornament as with the nature of plain straightforward building. Two answers were put forward; the first, making use of an analogy with literature, claimed that plain building was comparable to vernacular speech; the second, making use of no analogy at all (a singularity at a time when analogy seemed to most theorists to be the only alternative to archaeology) claimed that plain building was nothing more nor less than civil engineering itself.

The belief in the virtues of "vernacular" structures was the basic tenet of the Queen Anne Revival, first proposed exactly a century ago by the Rev. J. L. Petit, a well-known belligerent of the Battle of the Styles, and probably inspired by Scott's *Remarks on Gothic Architecture* (1858), where the relationship between "vernacular domestic architecture" and the ecclesiastical architecture of the thirteenth century was fully discussed. At a lecture given in May 1861, he suggested that if his audience were to look at the best monumental buildings of Queen Anne's reign, they would see that these were simply vernacular buildings plus ornamentation of a very appropriate kind. As a result, they harmonized with the character of the houses men built when they built without reference to style, and were guided solely by the consideration of their own requirements, the state of society, climate and materials.[3] It was a style, moreover, which was perfectly suited to the wants of their own day; "expressive, or capable

of being made expressive of the spirit of the age; and sufficiently comprehensive to embrace both vernacular and monumental works, and that large class which partakes of both characters."[4]

The significance of this proposal, as far as more recent developments in architecture were to be concerned, was threefold. Firstly, it deliberately broke through the archaeological barrier which in England and America had separated architecture from life for nearly a century, and substituted the idea of selecting architectural forms on the basis of their appropriateness, and according to the designer's unfettered choice. The Queen Anne period was taken as a suitable precedent because many buildings constructed then were characteristic of what Sir John Summerson has called "artisan mannerism"; the unsophisticated mixing of various tectonic and decorative elements without that antiquarian pedantry which in the following reign so often typified the architecture of Palladianism. Moreover the Revival itself went even further; it often employed motifs that were not eighteenth-century at all, but more strictly Jacobean. In other words, the "Queen Anne" style in England was really the equivalent of the "Francis I" style in France, when Renaissance decorative motifs were applied undogmatically to freely-planned compositions (as on the Francis I wing at Blois) without strict reference to antique precedents or rules.

Secondly, the Queen Anne Revival introduced into England the philosophical notion of Eclecticism. This word is frequently misused to signify an indiscriminate use of styles, such as was exemplified by those architects who designed Palladian buildings one day and Gothic buildings the next without any apparent misgiving. In this sense, it corresponds to what theologians more correctly term "Indifferentism." The true meaning of Eclecticism is defined in the *Encyclopaedia Britannica* as "a composite system of thought made up of views selected (εκλεγω) from various other systems," and it was in this sense that it was proposed by César Daly in the *Revue Générale de l'Architecture* in 1858.[5] The idea undoubtedly stemmed from Victor Cousin's series of lectures entitled *The True, The Beautiful and The Good*, published five years earlier, in which the historical method was applied to philosophy in the same way that Darwin was then applying it to biology and architects were applying it to architectural design. Victor Cousin claimed that one should not pedantically accept any one philosophical system to the exclusion of all others, but decide rationally and independently what philosophical facts were true, and then recognize and respect them in whatever historical contexts they appeared. The history of philosophy thus became, he asserted, "no longer a mass of senseless systems, a chaos, without light, and without issue; but in some sort a living philosophy." If, in this sentence, we substitute the word "architecture" for the word "philosophy," we have the basis of the theory proposed by César Daly, elaborated by Guadet, and still taught in most of our schools.

Thirdly, it introduced the notion that the basis of a living architecture was, in J. L. Petit's words, "our ordinary or vernacular architecture." The important effect of this on subsequent architectural theories cannot be exaggerated. In the first place, it undermined the old idea of relating monumentality to temples and churches by giving minor domestic architecture a predominant influence over architectural theory. Thus the houses designed by the pioneers of modern architecture became the most influential means by which new forms and ideas were introduced. In the second place, it challenged the Italian Renaissance doctrine—introduced into architectural education in 1806 with the foundation of the Ecole des Beaux-Arts—that architecture was essentially one of the three Arts of Design; for by insisting upon the analogy between architecture and literature (in which composition also makes use of a vocabulary of standardized elements), it separated the theory of architecture from that of sculpture and painting; arts in which, as Susanne Langer has observed, a vocabulary of elements plays no part. Lastly, it established the doctrine that this vocabulary must consist of tectonic elements corresponding to what in traditional structural systems called "vernacular"; a name used because the elements were established by local craftsmen on purely practical grounds, and assembled in accordance with the requirements of functional plans.

The only problem to decide was what, in the 1860's, corresponded to "vernacular" building, and it is to James Fergusson's credit that he seems to have been the first to perceive that the supersession of traditional building materials and techniques by the new materials and techniques of the Industrial Revolution was precisely the reason why any New Architecture was really necessary at all. The new vernacular, he said, was to be found in the works of the engineers, since these were the people who now followed "the commonsense principles which guided builders in all previous ages." If the architectural profession were to be properly organized, the engineer would merely be "the architect who occupied himself more especially with construction and with the more utilitarian class of work" whilst the architect, properly so called, would be "the artist who attended to the ornamental distribution of buildings, and their decoration when erected."[6]

The fact that no New Architecture appeared until the very end of the nineteenth century, despite the hopes placed in frames of cast and wrought iron, was a result of the fact that no radical technological innovation was economically utilizable as a complete structural system until steel frames and reinforced concrete frames (i.e. frames in which the vertical as well as the horizontal members were resistant to tensile stresses) were introduced after 1880. Even then, the need to cover steelwork with fire-resistant faience, and the difficulty of making concrete surfaces homogeneous, encouraged an even greater use of ornament, whilst providing the most convincing justification for separating the concept of ornament from that of the structure which it concealed. But between 1900 and 1950 a highly complex and varied vocabulary of new and elegant structural components was gradually evolved, until at the present day the nineteenth-century dream of a new tectonic "vernacular" has become a reality. The problem now is: has this vocabulary become so rich that architecture can be produced by merely combining these tectonic elements into the most rational and economical arrangement required by a particular programme, or does the essence of architectural composition still consist of honest straightforward building plus something else?

In the 1920's and 1930's, the pioneers of our own architecture seem to have had only a vague presentiment of the difficulties which this problem would eventually produce. In 1935, Walter Gropius accurately recorded that the "first or rationalizing stage" of modern architecture was only "a purifying process," and that the ultimate goal was the "composite but inseparable work of art, the great building in which the old dividing line between monumental and decorative elements will have disappeared for ever."[7] But being unwilling, because of his rejection of history, to refer to any historical precedents, his only hint as to the nature of this new monumentality, of the *differentia* which would distinguish monu-

mental architecture from just good plain building, was merely that it would be found "in those simple and sharply modelled designs in which every part merges naturally into the comprehensive volume of the whole,"[8] a definition which at best only paraphrases the standard classical aphorisms enunciated from the time of Alberti to that of J. F. Blondel.

Le Corbusier's early writings appear more helpful, since he not only distinguished between the "engineer's aesthetic" (which produces only harmony) and the "architect's aesthetic" (which produces both harmony and beauty), but made specific recommendations as to how this beauty was to be attained. Yet even Le Corbusier's speculative contribution has turned out to be largely illusory, for he has now abandoned his early system of "regulating lines" (which was in fact little different from the standard method of proportioning then use at the Ecole des Beaux-Arts), whilst his latest buildings clearly owe nothing to the machine-precise profiling, or *modénature*, which he recommended as exemplified in the Parthenon. *Towards a New Architecture*, with its constant appeal to the authority of ancient temples and churches of various historical periods, in fact made little methodological advance on nineteenth-century Eclecticism, whilst his deliberate omission of Gothic monuments brought the historical basis of his theory completely in line with that of the devotees of Queen Anne.

Probably the only really frank examination of this problem within the last century has been that formulated during the Queen Anne Revival itself by Robert Kerr, professor of the Arts of Construction at King's College, London, and one of the most caustic critics of the architecture of his age. In a lecture given at the RIBA in January 1869, he put forward the view that since architecture was obviously just a dress by which the artist's pencil, like a magician's wand, transformed a structure from a dull lifeless piece of building into something eloquent, it ought more fittingly to be called the Architecturesque. This dress was constituted, he said, primarily by ornament, the desire for which, more than anything else, separated the intelligence of man from that of the lower animals, and urged him to strive after perpetual novelty. What people had been in the habit of calling "the principles of architectural design" were simply the principles of architecturesque treatment. Good architecture was true architecturesque, bad architecture spurious architecturesque, and the means of obtaining both were fourfold: structure ornamentalized (or rendered in itself ornamental), ornament structuralized (or rendered in itself structural), structure ornamented, and ornament constructed.

Now preposterous as Robert Kerr's argument may seem, his terminology is not inappropriate to some of the more publicized monuments of to-day. There can be no disputing the fact that architecture is becoming increasingly "ornament structuralized," if not "ornament constructed," for the whole trend of Le Corbusier's powerful influence has been moving in this direction for some time, and is now bearing fruit on both sides of the Atlantic. Is Chandigarh an example of what J. M. Richards once called "the sincerity which is at present architecture's special virtue, and the inevitability which it gets from its appearance being so closely related to its structure?"[9] If so, we should examine carefully what we now mean by "structure." Or must we admit, to continue Richards's phraseology, that modern architecture is becoming "merely decorative, an imitation of itself?"[10]

It has long been recognized that the ideal of creating monumental architecture solely by the consideration of our own requirements, the state of society, climate and materials is quite impractical without some additional quality which, in fact, is nothing more nor less than the artist's creative intuition. This must either order, proportion, refine and embellish a basic economic structure and composition, or create shapes which greatly transcend the mere economical fulfilment of practical needs. But refinement and adornment were both included in what the eighteenth-and nineteenth-century classical theorists understood by "ornament," as when the Abbé Laugier wrote: "the flutings and other enrichments with which the sculptor's chisel charges different elements are true ornament, because they can be accepted or suppressed without altering the nature of the Order."[11] By rejecting the idea of "ornamentalized and ornamented structure," and disregarding the principle enunciated by Fénélon when he remarked (concerning the superiority of classical architecture over gothic) that "one must never allow into a building any element destined solely for ornament, but rather turn to ornament all the parts necessary for its support," we seem to have been led to adopt "structuralized and constructed ornament," and this charge was levelled against Le Corbusier and his friends as early as 1925: "Nobody speaks now of anything but straight lines, essentials and construction; but if one looks closely, it is obvious that ornament is still the only thing that matters, so that there are finally more useless things than ever before. These useless elements are so rigid and bare that the uninitiated assume them to be necessary; thus the error is all the more serious for being dissimulated."[12]

One cause of the present luxuriation in suspended concrete awnings and extravagant concrete roofs has lain, initially, I think, in too hastily rejecting nineteenth-century rationalist principles when discarding nineteenth-century imitative practices. As a result, all the leading post-1930 theorists except Mies van der Rohe threw away the baby with the bathwater. The great mid-nineteenth-century rationalists, such as Charles Barry in England, and Henry Labrouste in France, had applied the right principles to the wrong materials, an error for which they were hardly to blame, because the proper materials had not yet been perfected. But the twentieth-century theorists, following the lead given by Etienne-Louis Boullée a century before, not merely rejected superfluous ornament and the tyranny of past styles; they rejected also the classical definition of architecture as "the art of building," claiming that Alberti and his successors had foolishly mistaken the cause for the effect. They did not, like Boullée, preface their treatises with the words *ed io anche son pittore*, but they might fittingly have done so, for the principles they substituted were mainly concerned with light, shade and space.

Their reason for doing this must, I think, be obvious. During the nineteenth century, architecture had been brought into disrepute by the archaeologists and antiquaries, whose wrangles had culminated in the Battle of the Styles. To avoid the same error, the theorists who tried to create a New Architecture sought to avoid all references to the history of architecture. But if one cannot theorize with reference to the architecture of the past, one cannot theorize about architecture at all. The only alternative is to rely in analogies. The French and English theorists of the nineteenth century sought analogies with biology, machinery, speech and, in at least one instance, gastronomy. But the leading German theorists of the twentieth century, perhaps through a Spenglerian fascination for "space," and a mystical attachment to the philosophical notion of "architectonics,"[13] preferred an analogy with painting, sculpture and industrial design, espe-

cially when these so conveniently developed into "abstract art."

The theory of those who, pursuing the ideals of nineteenth-century rationalism, opposed this attitude, is not easy to define with certainty, because its exponents were usually taciturn men, who felt that a few epigrams were quite adequate to explain their work to those who really wanted to understand. But its general principles can, I think, be summarized under three headings corresponding to the planning, construction and appearance of buildings, or, if one prefers, to the Vitruvian categories of commodity, firmness and delight. As regards "commodity," they believed that since the purpose of architecture is to create useful, interesting, varied and harmoniously related spaces, urban architecture is superior to rural architecture because it not only defines indoor spaces, but also combines to create plazas, courtyards and streets. Thus, even when developing new cities, they were led to study the appearance of buildings in terms of contiguously aligned façades. It may be true that "the basis of the Victorian view of architecture was as large-scale sculpture,"[14] but such sculpture was not thought of as isolated in a void, or seen from above, like Malewich's "Architectonics," but as contributing to a perspective seen from the ground. The pioneers of contemporary architecture, under the influence of the "Queen Anne" tradition (which based its theory of a "vernacular" architecture on suburban villas), and of Constructivist sculpture, were unable to conceive of architecture except as isolated elements, visible from all round; and it is typical of the confused reasoning in *Towards a New Architecture* that, although virtually all Le Corbusier's published domestic projects were designed in this way, the historical example he uses to support his views (namely a Pompeiian house) exemplifies exactly the opposite principle, in that here the exterior has no visual significance, and all the open spaces on the site are obtained by means of courtyards inside.

As regards "firmness," the nineteenth-century classical rationalists realized that a minimal structure is not only unnecessary in small spans, but is probably incalculable, since the forces are so varied. Moreover, as Léonce Reynaud had pointed out, "one must not conclude that all the parts of our structures must be submitted to the laws of mechanics, for it is evident that the prescriptions of science can lead to great difficulties of execution."[15] But they considered that there should be an economical correspondence between the forces to be resisted and the structure designed to resist them,[16] and believed, like Viollet-le-Duc, that "Construction, for the architect, is the employment of materials with the preconceived idea of satisfying a need by the simplest and most solid means."[17] At the end of the last century, and at the beginning of this, they used frames rather than elaborate cantilevers, because the leading building contractors had shown these to be the most economical way of erecting multi-storey buildings when no question of aesthetics was involved. They were not unmoved by the sight of great halls built for international exhibitions, but they did not regard their roofs as structural paradigms for spaces of a fifth the span.[18] Similarly, they would have studied an engineer's architectural structures, rather than his bridges, if they had wanted to apply his principles to the problems they were studying themselves.

As regards "delight," the nineteenth-century classical rationalists believed that the only difference between architecture and plain, honest, straightforward building was that architecture was both sensitively proportioned and pleasingly detailed, whereas plain building was not. In this their ideas seem to have been in harmony with those of every other period of European architecture, except the Italian Renaissance and the German Baroque. If we compare an early stone cotton mill (such as the mill at Curbar illustrated in J. M. Richards's *Functional Tradition in Early Industrial Buildings*) with any of the really important classical rationalist buildings in England, such as Charles Barry's Bridgewater House, we can see that the differences have nothing to do with "the trappings of the historical styles," but are simply due (apart from variations in size and plan, resulting from the difference of function) to the fact that the apertures and volumes are more carefully proportioned, and the surfaces more carefully worked. If we take the worst possible French example, namely Garnier's Paris Opera House (which even in its own day was criticized for its excessively Italianate Renaissance and Baroque polychrome ornamentation), we see that in the one part comparable in composition and plan to the mill at Curbar—namely the six-storey administrative office block which constitutes the northern end—a similar policy has been observed. And whatever one may say of the rest of the Paris Opera House, there is no doubt that unlike Boullée's or Utzon's designs for opera houses, this building can be clearly seen, by its compositional elements, to be a theatre, and by its detailing to be the most important theatre in the state. As J. F. Blondel once observed, the more accurately we can express the relative importance and function of buildings by this means, the closer are we to achieving "that infinite variety between different buildings of the same type or of different types" which is the essence of style. "Style, in this sense," he explained, "is like that of eloquence; it is the poetry of architecture."[19]

The mid-Victorians, who hated insipidity, were usually over-fond of ornament (which they regarded as the natural expresssion of wealth), but even so, the best architects who pandered to their tastes realized that the essential difference between architecture and plain building lay not in complexity and extravagance (whether this be thought of in terms of construction or of the interpenetrations of space) but in proportion, refinement, and, if appropriate, adornment. As a result, their buildings have a scale and tactile richness which can only be appreciated by walking amongst them, and looking at them close to. The best urban buildings of the nineteenth century are seldom very interesting when seen from the air. They certainly have not the same compositional interest which models of important modern buildings usually possess. But at ground level they have a warmth and humanity found in the best architecture of all ages except our own, and this is becoming more and more obvious as old and new buildings become more frequently juxtaposed.

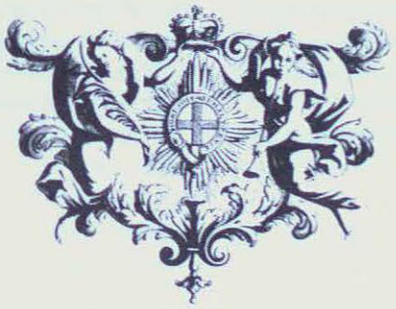
It is no longer posssible to use the word "ornament" in Alberti's sense of an "auxiliary brightness," because this word, thanks to Adolf Loos, is now regarded as obscene. But there is no virtue in banishing obscenity from our vocabulary unless we also banish it from our practices, and if we have no choice, as seems likely now, between ornamenting our structures or constructing abstract ornament, it is perhaps time we seriously revaluated nineteenth-century rationalism is terms of the potentialities of the second Machine Age.

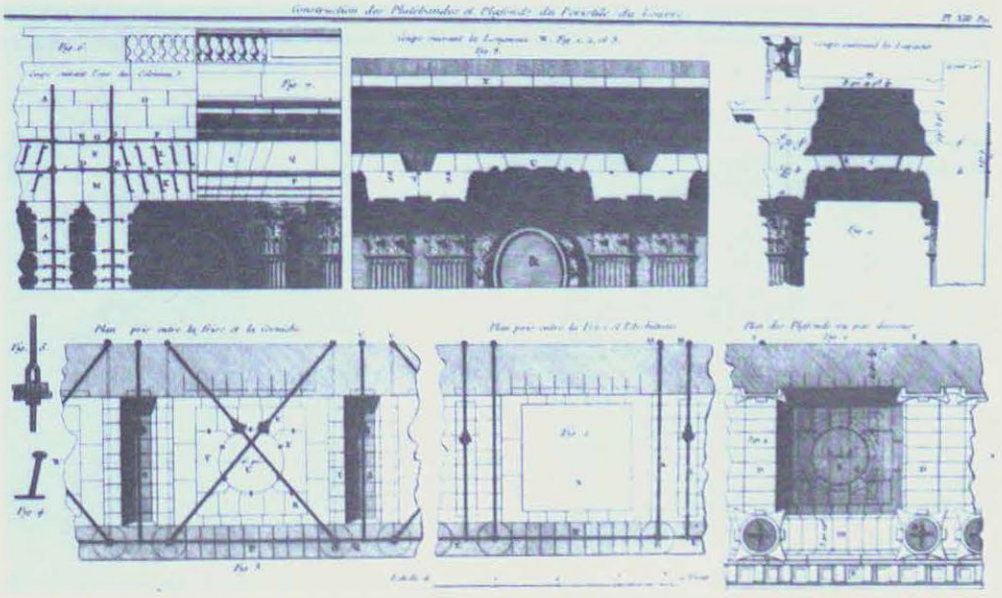
NOTES:

1. James Fergusson: *A History of Architecture* (1865), vol. i, p. 9.
2. Owen Jones: *Grammar of Ornament*, first sentence of chapter 1.
3. It required a theorist who was not a professional architect to perceive the importance of this characteristic of vernacular building. Another thoughtful layman, Dr. John Robison, had remarked on the same thing in his lectures on *Mechanical Philosophy* given at Edinburgh University at the end of the eighteenth century: "In the simple unadorned habitations of private persons, every thing comes to be adjusted by an experience of inconveniences which have resulted from too low pitched roofs,

and their pitch will always be nearly such as suits the climate and covering. Our architects, however, go to work on different principles...We cannot help thinking that much of their practice results from a pedantic veneration for the beautiful products of Grecian architecture...Since stone is the chief material of our buildings, ought not the members of ornamental architecture to be refinements on the essential and unaffected parts of a simple stone-building?" (1822 ed. p. 555).

4. *The Builder*, vol. xix, p. 351. The fact that this idea was put forward very soon after the Battle of the Styles (i.e. The Foreign Office Competition controversy of 1857-59) is clearly of great importance when assessing the significance of the Queen Anne Revival. In the sole authoritative monograph on this subject (AR July 1943, p. 16) Dudley Harbron was only able to trace the style back to 1874. The first Queen Anne Revival building, according to Professor Hitchcock, was the lodge at Kew Gardens, dated 1867.
5. This, as Professor Pevsner has kindly pointed out, is contemporary with Scott's correct use of this term in his *Remarks on Gothic Architecture* (p. 265), published in the same year. But whereas Scott demanded unity of style (i.e. based on thirteenth-century Gothic) and believed that "like all genuine styles," the style of the future must have "its roots in the temple" (p. 273), the essence of Daly and Petit's advocacy was to disregard archaelogical classifications, and to accept all buildings of the past as a potential "porfolio of motifs." It is worth noting that Diderot, in the *Encyclopédie* of 1755, defined it rather differently from both and in a way typical of classical rationalist thought. "An eclectic," he wrote, "is a philosopher who treads underfoot prejudice, tradition, seniority, general consent, and authority, and...goes back to the clearest general principles, examining them, discussing them, and accepting nothing except it be on the evidence of his own experience and reason." We may compare this with the remark of J. F. Blondel (who contibuted the articles on Architecture to the *Encyclopédie*): "The ancients can teach us to think, but we must not think as they did..." (*Cours*, vol. iii, p. lv).
6. James Fergusson: *ibid.* vol iii, p. 474.
7. Walter Gropius: *The New Architecture and the Bauhaus* (1935), p. 44.
8. *Ibid*, p. 32.
9. J. M. Richards: *An Introduction to Modern Architecture* (1940), p. 13 of revised ed.
10. *Ibid.*
11. M. A. Laugier: *Essai sur L'Architecture* (1755), p. xvi.
12. Auguste Perret, quoted in *L'Amour de l'Art* (1925), p. 174.
13. Cf. the quotation from Muthesius' *Stilarchitektur und Baukunst* (1902) given by Reyner Banham on pp. 73-76 of *Theory and Design in the First Machine Age:* e.g. "the re-establishment of an architectonic culture is a basic condition of all the arts & c." (p. 76). In this wide sense, the term is clearly a garbled derivative of the penultimate chapter of Kant's *Critique of Pure Reason* (1781).
14. J. M. Richards: *ibid.*, p. 26.
15. L. Reynaud: *Traité d'Architecture* (1860 ed.), p. 6. It is in the writings of Reynaud, Choisy, and other mid-nineteenth century professors of architecture at the French Engineering schools (Ecole Polytechnique, Ecole des Ponts et Chaussées, Ecole de Génie Militaire) that the clearest exposition of classical rationalist principles is to be found.
16. P. L. Nervi foresaw that the proportions of Utzon's design for the Sydney Opera House would have to be changed. "The fact is that this building is an eloquent example of the most open anti-functionalism in statics and construction, and a consequence of the arbitrary nature of their forms, which clearly run against the laws of static construction. One can easily imagine the brilliant feats of calculus, technique, and the *waste of materials* which will be necessary *even if they succeed without substantial formal and other modifications*, in keeping it standing." *Casabella* (July 1959).
17. E. Viollet-le-Duc: *Dictionnaire Raisonné de l'Architecture Francaise, XIe-XVIe Siècle*, vol. iv, p. 1.
18. It is now almost a tradition for the leading architectural historians to speak slightingly of Perret's use of reinforced concrete frames in multi-storey buildings, by contrasting them with some other designers' spiral stairways, winch towers or 200-ft. span vaults. But it is obvious, from the evidence of Perret's own work (e.g. the stairway in his own office, the reservoir tower at Saclay, and several of his single-storey buildings) that he himself avoided frame construction where it was inappropriate. The continued popularity of frame construction among building contractors for multi-storey offices and apartment blocks suggests that it is still one of the most efficient systems in its proper place.
19. J. F. Blondel: *Cours d'Architecture* (1771), vol. iv, p. lv.





Pierre Patte, Mémoires sur les objets les plus importants de l'Architecture

THE LINGUISTIC ANALOGY

The Language of Post-Modern Architecture

One of the keynote speeches at the ACSA (Association of Collegiate Schools of Architecture) Annual Meeting, Santa Fa, 1979. In the Published Proceedings, John Meunier, editor.

The current, and certainly the most widely popularized analogy between architecture and language nowadays is that whereby architecture is interpreted in accordance with the theory of literary criticism called "structural linguistics." For this reason, I begin with an illustration from Charles Jencks' *The Language of Post-Modern Architecture.* In the text which accompanies this picture, he writes—

When pre-cast concrete grills were first used on buildings in the late 1950's, they were seen as "cheesegraters," "beehives" or "chain-link fences." Ten years later, when they became the norm in a certain building type, they were seen in functional terms: i.e. "this looks like a parking garage."

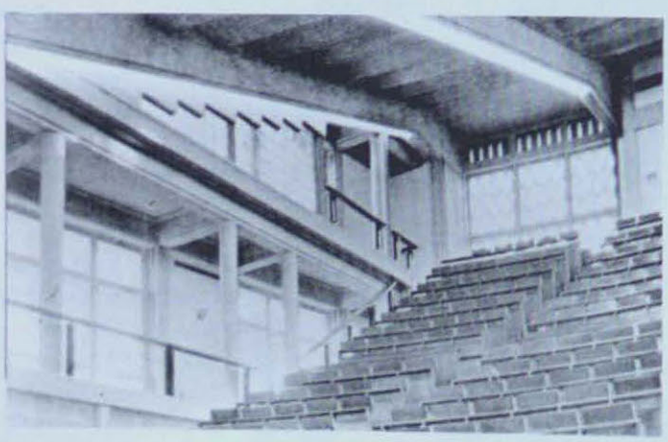
The caption to his illustration says:

While the "cheesegrater" is now no longer perceived as a metaphor, the precast grill is on rare occasions still used for offices. Whether it signifies garage or office depends on the frequency of usage within a society.[1]

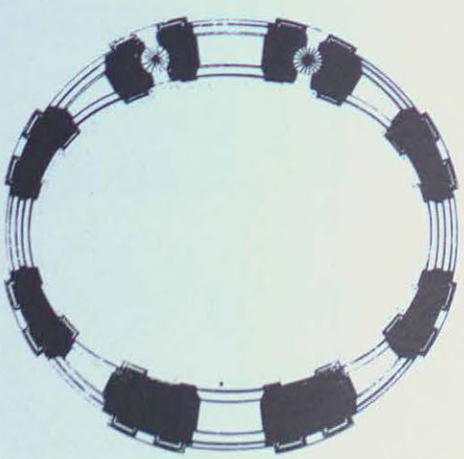
It is not my present purpose to argue, in the context of this lecture, the accuracy or otherwise of this general philosophical approach, which in France is called "structuralism." But it seems to me essential to begin any discussion on "the linguistic analogy in the history of architecture" by distinguishing between the basic theoretical concepts used today and those initiated two centuries ago.

In the 1750's, the idea emerged that all buildings can, if well designed, express their purpose. The idea was not that this purpose needed to be explained verbally. It was, on the contrary, that a building's function was "announced" by the manner in which it was designed. Similarly, architectural criticism was concerned primarily with assessing the way each architect had translated the requirements of his client into a building, and overcome the constraints imposed by topographical and financial limitations. The final result was judged by reference to the standards of classical composition, the only standards then recognized as valid.

In the 1750's architectural criticism, (which concerned the translation of needs into visual shapes) differed from lit-



D. Honegger: University at Fribourg—Auditorium



Marinette, Architecture Française

Le Vau: "Plan de l'Eglise du Collège des Quatres Nations"

erary criticism, which was then primarily concerned with translating one language into another (such as Latin into the vernacular). Today, literary criticism is still a form of translation; but instead of translating from one language to another, the critic simply translates from one type of English into another type of English, or from one type of French into another type of French. The linguistic analogy used by architectural theorists two centuries ago was part of a process of logical thought. Its purpose was essentially heuristic. It was concerned, like all philosophical analogies since the time of Plato, with inductive speculation which might hopefully lead to the discovery of new useful hypotheses. Though it began in the mid-eighteenth century, its heyday was in the the 1850's when the Battle of the Styles was bringing Revivalism into disrepute, and when no viable new systems of architectural construction—such as steel and reinforced-concrete frames—had as yet been economically developed within the building industry. From the late-ninteenth century onward, the biological and mechanical analogies became more popular; but since they were also used heuristically, it mattered little which analogy was argued providing it produced new and valid ways of building.

This is a detail of the main auditorium of the University of Fribourg, in Switzerland, designed in the late 1930's. Since it was always intended to be a university, it was also intended to look like one. But nothing could have been further from the architect's thoughts than that it should be seen in terms of a "figure of speech." And I suggest that what was true in the 1930's was also true in the 1750's when Jacques-François Blondel was writing his four great folio volumes of architectural criticism entitled *Architecture Françoise*. There is not a single metaphor or simile in the entire work; and he rarely found it necessary to describe one building by reference to another.

Consider, for example, his criticism of Le Vau's Collège des quatres Nations.[2] The problem was unique in that the site was not only irregular, but faced the south facade of the royal palace of the Louvre. The problem was therefore not simply one of relating form to function, but of relating it to the most dominant civic monument in Paris—a monument which, in fact, was then in the course of completion by the same architect.

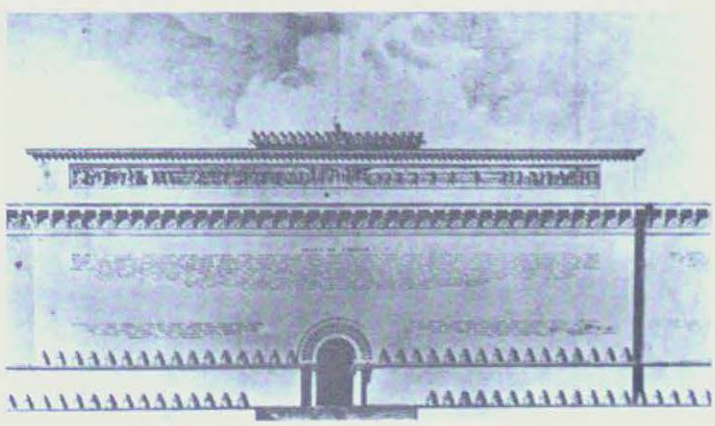
Its chapel is unusual in that although the dome is oval internally, it is circular externally. The architectural problems of reconciling these two shapes are obvious, and close analysis of the program indicates why the problem arose.[3] But whereas Anthony Blunt had nothing more to say about the entire building than that "the domed church flanked with wings curving forward combines motives from Pietro da Cortona and Borromini,"[4] Blondel discussed its shape, details, proportions and general visual effects without reference to any other building whatsoever, but solely on the basis of general principles, or with reference to the character which such architectural compositions should "announce."[5]

It will be obvious that this word "announce" already implied a linguistic analogy. The idea is of course as old as Vitruvius, and derives from Greek sources which Vitruvius himself consulted. But it may well be that J. F. Blondel was the first theorist to go on to assert that good architecture is analogous to poetry. In his lecture-courses given during the following two decades, he specifically claimed that the appropriate expression of function constituted the "poetry of architecture."[6] He himself naturally illustrated this concept by referring to buildings by other architects; but it will be permissible for us to consider his theory by reference to a building which he himself designed. This is the *corps-de-garde*, or garrison headquarters at the focal point of the main plaza in Metz. Blondel was responsible for the whole of this urban renewal project, which included a new city hall on the south side and incorporated the medieval cathedral on the north. He was obviously attempting to give this building a military character, yet without detracting from the civic and ecclesiastical environment of which it formed a part. No "classical orders," as we would understand the term nowadays, were explicitly used. Instead, reliance was placed on the emphatic rustication of the basement storey, and the austere proportions of the fenestration. The only reference to the function of the building which did not derive from its proportion and profiling was the sculptural decoration of the pediment, which specifically proclaimed its military character by means of the unequivocal iconographic symbolism familiar to everyone in that age.

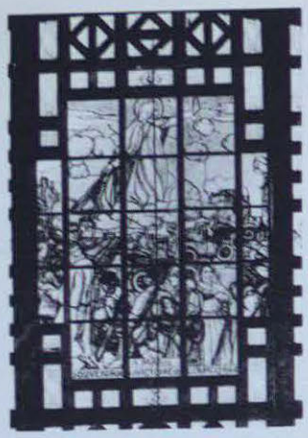
In an era which could not conceive of architecture other than as a continuation of the artistic legacy of Greece or Rome, it was inevitable that Blondel should have considered "poetry" and "style" to be virtually synonymous. For him, style in architecture was like style in eloquence. "In architecture, as in literature," he wrote, "a simple style is preferable to an inflated style."[7] This doctrine was a commonplace in the literary theory of the age. But the next generation of architects—men like Etienne-Louis Boullée—were to show a marked predilection for "the inflated style" in terms of scale, even though they ostensibly, and indeed ostentatiously, opted for extreme simplicity in terms of shape.

Boullée's theories have been so well publicized in recent years that there is no need to quote any of his numerous references to "the poetry of architecture" found in his manuscript treatise.[8] But the "poetry" to which he alluded was not so much an analogy with language as with easel-painting. It was the ancient doctrine summarized by the latin maxim: *ut pictura poesis*. He sought an architecture which would have the

Garrison Headquarters—Elevation



Boullée: Assemblée Nationale—Elevation



Auguste Perret: Nôtre Dame, Le Raincy—detail

qualities he admired, and envied, in the works of such painters as Hubert Robert.

His ideals had thus little in common with those of Blondel. For whereas Blondel considered that the poetry of architecture derived from each building's individual expression of function, Boullée, being obsessed with the metaphysical virtues of Plato's five basic geometrical solids, gave primacy to form; and there is something almost pathetic in his search for appropriate titles to attach to each of his huge hollow pyramids and unconstructable spheres. His most famous design is his "cenotaph to Newton," whose body then lay (as it still does) in Westminster Abbey, but was presumably to be transported to France, solely to give meaning to his graphic abstractions.

Even his designs for more practical public buildings, such as the parliament for the new French revolutionary regime, designed in 1792, show little imaginative grasp of either the real or expressive function of such buildings. The plan of his parliament building is just a symmetrical assemblage of rectangles around a circle: and one only has to compare it with Barry's Palace of Westminster, designed forty years later, to appreciate Boullée's poverty of invention. The immense blank facades—of a type which Blondel considered appropriate only for prisons—could only be made to express legislative function by anticipating Venturi's Lesson of Las Vegas. It was in fact designed as a vast bill-board, with the complete text of the Declaration of the Rights of Man incised on its surface like the inscription on a Brobdingnagian tombstone. Far from being analogous to language, the facade literally *was* language, and nothing more than language. It was the neutral support for a written message which Boullée would have inscribed in neon lighting had he known how.

In more recent years, the same dilemna was dealt with in an identical manner by Warren Perry when he designed the Berkeley Law School. The text on the facade consists of two eloquent passages from the writings of Chief Justice Benjamin Cardozo; extracts from a lecture which he delivered at Yale in 1921. The lettering is as elegantly arranged, and as typographically impeccable, as the prose it transcribes. But it can only be read by persons standing close. When seen from a distance it is sufficiently illegible to be classifiable as abstract ornament, and no doubt this is the effect which the architect (who was then Dean of Architecture at Berkeley) intended.

After Boullée's death, the third heuristic phase in the development of the linguistic analogy was inaugurated by J. N. L. Durand, whose use of it was influenced by the fact that he had to teach the rudiments of architecture to students of engineering. Durand's method was diametrically opposed to that of Boullée, even though superficially the resulting compositional designs of his students had much in common. For whereas Boullée was concerned only with the total effect, Durand was primarily concerned with the assembly of component parts. To quote his own definition: "The component elements of architecture (that is to say columns, beams, walls, windows, and so on) are to architecture what words are to discourse, and what notes are to music."[9] His fondness for the word "architectonic" suggests that he may owe a debt to Emmanuel Kant, who gave the penultimate chapter of his *Critique of Pure Reason* the title: "The Architectonics of Pure Reason."

Forty years later the whole attitude towards the linguistic analogy had changed. The professional architectural theorists of the classical era were rapidly being swamped by romantic enthusiastic amateurs who, though frequently possessing immense intellectual ability, had little pratical experience of building, but simply enjoyed talking about it. Ruskin's influence was the most insidious. Being deeply sensitive to the poetic qualities of all visual phenomena, he perceived no basic difference between nature and architecture. In so far as he found similar beauty in both, it was the transient everchanging beauty of irregular and erratic shapes which most powerfully excited his oratorical gifts.

His description of the Rhine Falls at Schaffhausen—that diminutive Swiss equivalent of Niagara Falls—is full of allusions to vaults, arches and domes; and to precious marbles with melodious names, such as chrysophrase.[10] Moreover, there are enough metaphors and similes in this text to satisfy even the most garrulous professors of English literature and literary criticism. But Ruskin's literary techniques for describing natural phenomena carried over into his architectural criticisms, whereby St. Mark's Venice is described less as a building assembled by the hands of men, than as a marvelous manifestation of the work of God. [11]

In fairness to Ruskin, it should be emphasized that this famous description, comprising a single sentence of over four hundred words, contains far fewer metaphors and similes than might be expected. Moreover, there is very little ambiguity in any of them. Perhaps the magic of his architectural prose resides precisely in the accuracy of his terminology: in his meticulous choice of descriptive words which are totally convincing because they are never whimsical or far-fetched.

But whatever the merits of Ruskin's imagery, the fact remains that for him, the eloquence of a facade derived solely from its sculptural details and mosaics. James Fergusson argued in his book *The Principles of Beauty in Art* (which was published in the same year as the *Seven Lamps of Architecture*) that eloquence, poetry and drama were the highest forms of art, and that the only aspect of architecture which could similarily be classified as "phonetic" (to use his own terminology) was ornamentation.[12] But it was precisely this which, for Ruskin, distinguished architecture from ordinary building. The facade of St. Mark's is indubitably a masterpiece. But what makes it absolutely unique is that no two pairs of capitals are alike. It had been assembled gradually, over a period of five hundred years, out of miscellaneous fragments looted from the ruins of Byzantium.

The colonnade of the tempietto at San Pietro in Montorio was also made of looted fragments: in this instance, recycled corinthian shafts, recuperated from antique ruins, were cut down to the proportions appropriate for a Doric entablature. But for Ruskin, such buildings posessed no poetic eloquence whatsoever; and he consistently ridiculed what he called their "mechanical repetition."[13] Comparing the effect

of romanesque and byzantine work with designs such as these, the former were, he wrote, "like that of poetry well read and deeply felt to that of the same verses jangled by rote. There are many to whom the difference is imperceptible," he said, "but to those who love poetry it is everything—they had rather not hear it at all than hear it ill read."[14] For Ruskin, as for Jacques-François Blondel, architecture was not analogous to a text which needed to be read: it actually talked: but whereas Blondel's architecture spoke in accordance with the classical rules of syntax and decorum, Ruskin considered that the principal defect of the Renaissance theorists was that "They discovered suddenly that the world, for ten centuries, had been living in an ungrammatical manner, and they made it forthwith the end of human existence to be grammatical."[15]

Ruskin's early hostility to traditional architectural rules and to constructional standardization demonstrates most clearly his incomprehension of how buildings are actually designed and how they achieve their stability. Whether his prejudices were justified by aesthetic, sociological or religious rationalizations, picturesque variety was for him the spice of life. Eccentric arcades such as those adorning San Michele at Lucca, were for him the quintessence of architectural poetry; and his concept of "The Lamp of Sacrifice" was not a call for restraint but for profusion. Anticipating current theories of Structural Linguistics, he demonstrated that linear ornament can, by careful verbal dissection of its symbolism, be seen as ornament "in depth"; as an *écriture* capable of rendering the riches of its poetic vitality to anyone with sufficient patience and education to examine each component fragment, and uncover the subconscious motives which activated the sculptor's chisel. For Ruskin, the standardized polychrome columns in the gardens at Versailles, and the sculptural panels which adorn its remarkable three dimensional arches, were unworthy of serious attention. "Mechanical" and "Pagan," they were for him what, in Structuralist terms, would be called *"écriture degré zéro."*[16]

Nevertheless, whether we like it or not, today's architecture, like that of the Renaissance, is an architecture of standardization. But whereas, in the seventeenth and eighteenth centuries, the distinction between temporary structures and permanent stuctures was clearly understood, today this distinction has become so blurred as to be virtually non-existent. Paint and plywood architecture are no longer images of future buildings, but the buildings themselves. When photographed in full colour, they need only be published to become historical monuments.

There is nothing new in lathe and plaster facades, such as that erected for the ceremonial inauguration of Soufflot's church of Ste. Geneviève in Paris. But these are regarded by us as architecture because they were ultimately replaced by a permanent structure of solid stone, and only the inscription on the frieze had in fact changed.

The lesson of the Paris Panthéon, unlike the lesson of Las Vegas, is that real architecture persists, however frequently we change the writing on the wall.

It seems to me therefore that the linguistic analogy can only become effective again for architects by reaffirming its heuristic potentiality, and treating its affinity with literature with great circumspection. The French system of *explications de texte* was originally intended to teach people how to *write* more clearly and effectively. The current emphasis seems to be concerned mainly with teaching them how to *read*. The contribution of Structural Linguistics to a general theory of spontaneous generation may well be enormous. But architectural design is not concerned with transforming things into words or old words into new words; it is concerned with transforming words into things: with transforming the total program into graphic images which eventually become the working drawings of an executed building. This transformation must always derive essentially from some theory of architecture. I believe whole-heartedly that there is such a thing as a theory of architecture, and also that the history and criticism of architecture are closely related. But the three are nevertheless separate disciplines.

In conclusion, I should like to comment on a curious oversight in Charles Jencks' analysis of pre-cast concrete grills. What seems most strange to me is not that he disregards their true origin in Perret's church at Le Raincy, designed in 1922: it is that he seems to have been unaware that these elements were "analogies" in the current "structural linguistic" sense—that is to say, in the sense defined by the progenitor of all modern structural linguistic research: Ferdinand de Saussure.

De Saussure devotes two chapters to "analogies" in his *Cours de Linguistique Générale;* and in these chapters, he places particular emphasis on the creative and generative role which analogies have played in the history of language. The general theme of these chapters is that many new words and grammatical forms were often created or generated analogically in imitation of other word-forms, rather than in accordance with internally logical linguistic rules.

But it was precisely by this process of analogy that Auguste Perret's pre-cast concrete elements evolved in the 1920's. In his search for an appropriate fenestration system for his new church at Le Raincy, he eventually decided to constitute a screen of pre-cast components and to design each element by analogy with the pierced marble panels used by the ancient Romans within the apertures of thermae halls. Indeed, he took specific care to denote these novel elements by the latin name of their prototypes: *claustra*, since (unlike Le Corbusier and Gropius) he experienced no shame in acknowledging his debt to the dead forms of the past.

This kind of analogy is probably inevitable when new structural or functional systems are being initially developed, and need architectural expression. But no analogies or metaphors, however scintillating in their wit, will stimulate the evolution of a genuine contemporary architecture if they derive only superficially, and without genuine cause, from theories of literary criticism.

As Fowler points out in his classic reference book on *Modern English Usage*, there is a clear and well-defined distinction between analogies used as a logical resource—that is to say heuristically—and analogies used as an influence on word-creation. It is possible that both types of analogy need to be studied, but architectural theory will never benefit from the current tendency to confuse the two.

NOTES:

1. C. Jencks: *Language of Post-Modern Architecture* , p.40.
2. J. F. Blondel: *Architecture Françoise* , Bk. iii, pp. 4-6.
3. Ibid, p.6, & *Cours d'Architecture* , Vol. 4, p. lxviii, etc.
4. A. Blunt: *Art and Architecture in France* , p. 230.
5. J. F. Blondel: *Cours d'Architecture*, Vol. 2, pp. 229 ff.
6. Ibid, Vol. 4, p. lv.
7. Ibid, Vol. 4, p. lvi.
8. E. L. Boullée: Manuscript, p. 70 (H. Rosenau transcript p. 26).
9. J. N. L. Durand: *Précis de Cours*, (1813 ed.), pp. 29-30.
10. J. Ruskin: *Modern Painters* (1851 ed.), p. 344.
11. J. Ruskin: *Stones of Venice* (1880 ed.), Vol. ii, pp. 67-68.
12. Op. cit. (1849 ed.), p. 121.
13. J. Ruskin: *Seven Lamps of Architecture*, ch. 5 passim.
14. Ibid, ch. 5, para. XXI.
15. J. Ruskin: *Stones of Venice* (1880 ed.), Vol. iii, p. 55.
16. R. Barthes: *Le degré zéro de l'écriture* (1953).

PARALLAX

Reprinted from the December, 1962 issue of ***Architectural Review.***

Those architects who base their theory of architecture on Sigfried Giedion's analysis of its modern developments (and this, I suspect, is tantamount to saying all architects under forty) will doubtless be so used to the idea that Space-Time is an essential element of contemporary architecture that they may consider it an impertinence to enquire whether, outside the realm of astronomy and nuclear physics, the term means anything at all. Giedion himself is curiously vague about the precise way this new space concept operates. Part VI of *Space, Time and Architecture* is called "Space-Time in Art, Architecture and Construction," and its first chapter is called "The New Space Conception, Space-Time." Yet in this first chapter, the hyphenated word does not occur at all, whilst in the remaining eighty pages of Part VI, it occurs only four times, namely with reference to the three famous buildings and one famous project in which its characteristics are apparently to be discerned.

Paul Rudolph believes that the concept of Space-Time has been the motivating force behind much of the International Style, and that in the hands of a great man, this concept can be immensely successful.[1] On the other hand, John Burchard and Albert Bush-Brown contend that even the serious efforts of Giedion have been unable to build believable connections between Gropius's *Werkbund* building at Cologne and the recondite Space-Time of Einstein.[2] It seems worth enquiring, therefore, what Space-Time really does signify in terms of architecture, and whether, if it means anything, the meaning could be more accurately expressed in simpler terms. This enquiry aims neither at philological hair-splitting nor at substituting one catchword for another. Its purpose is to give a clearer idea of what the fundamental aesthetic nature of contemporary architecture is, whereby it can be more accurately studied and its future possibilities more effectively explored.

One difficulty of analysing the implications of Space-Time in architecture is that it seems to mean different things to those who use it. In some passages it evidently means "related to Einstein's theory of relativity," whilst in other it seems to mean only "related to *avant-garde* paintings of the 1910's and 1920's." Sometimes it is used as a synonym for "four-dimensional," sometimes as the equivalent of "non-Euclidian geometry," and on at least one occasion it is used to explain the architectural signifiance of Zen Buddhism. I propose to look briefly into each of these various meanings in an attempt to isolate those ideas which have some application to architectural design.

Firstly, we can, as Burchard and Bush-Brown rightly observe, dismiss as an illusion any idea that using the words "Space-Time" establishes a firm analogy with Relativity. Indeed, Giedion in one instance seems to dismiss this relationship himself as a "temporal coincidence."[3] However inspiring the announcement of Einstein's initial theory must have been to painters and writers when it was published in 1905, and however exhilarating his startling experimental proof of the final theory (published a decade later) must have been in 1919, the fact is that neither had anything to do with the kind of space that painters, sculptors and architects are involved with, but were a development of the algebraic techniques of analytical geometry, extended to solve problems in dynamics. Moreover, although Einstein's general theory of relativity (which is concerned with accelerated motion) involves non-Euclidian geometry, his "special" theory of relativity (which is concerned with uniform velocity) does not.

It is clear therefore that when Giedion talks about non-Euclidian geometry as if Euclidian geometry were limited to three dimensions,[4] and claims that "like the scientist, the artist has come to recognize that classic conceptions of space and volume are limited and one-sided,"[5] or that "the essence of space as it is conceived today is its many-sideness,"[6] he is not talking about anything which would have been intelligible to Einstein; for Einstein never claimed that space was many-sided, or that "in order to grasp the true nature of space the observer must project himself through it." On the contrary, it was precisely because of the impossibility of measuring our absolute velocity through space that he engaged upon his famous research. His great feat was to demonstrate why it was that the true nature of space was not apparent to observers moving through it, and the truths he enunciated were more to the effect that problems of measurement involving mass and light are not so much a matter of geometry as a matter of history. "The past," wrote R. G. Collingwood

in his *Philosophy of History*, "consisting of particular events in space and time which are no longer happening, cannot be apprehended by mathematical thinking because mathematical thinking apprehends objects that have no special location in space and time, and it is just that lack of peculiar spatio-temporal location that makes them knowable."[7] Einstein's theory may, without unduly broadening the meaning of "history," be said to constitute the ultimate extension of historicism[8] to our interpretation of nature by relating it to astronomy and nuclear physics.

In such circumstances one would not expect to find any detailed explanation of the Space-Time qualities of modern architecture in Einstein's own writings, but he makes one remark in his introduction to Max Jammer's *Concepts of Space* which provides a useful clue as to his own ideas concerning the relationship between architecture and space. "Now as to the concept of space," he wrote, "it seems that this was preceded by the psychologically simpler concept of place. Place is first of all a small portion of the earth's surface identifiable by a name...a sort of order of material objects and nothing else."[9] Now this is precisely the kind of space involved in architectural design, as one might contend that a "place" (plaza, piazza) is the largest space that an architect is able to deal with as a unified work of art.

Closely related to the analogy with Einstein's theory of relativity is the notion that modern architecture is characterized by its use of a fourth dimension. "The fourth dimension," wrote Le Corbusier in *New World of Space*, "is the moment of limitless escape evoked by an exceptionally just consonance of the plastic means employed,"[10] and whatever this may mean exactly, it is obviously related to Giedion's notion that the "fourth dimension" enables us not merely, like the Cubists, to depict the world in a new way, but to *see* it in a new way. The four-century old habit of seeing the outer world in terms of three dimensions, Giedion tells us, rooted itself so deeply in the human mind that until quite recently no other form of perception could be imagined. "No wonder," he concludes, "that the modern way of seeing the world in terms of four dimensions should be so difficult to comprehend."[11]

Now "fourth-dimensional" in architecture presumably means time considered as a measure of displacement, and since buildings do not move (although Moholy-Nagy defined Space-Time architecture in terms of automobiles, trains and trailers),[12] the "fourth-dimensional" component must necessarily be contributed by the observer. Yet Giedion states not only that to appreciate a Space-Time structure in its entirety one must move through it and around it; he also states that one can appreciate both the inside and outside simultaneously by staying in the same place—a seemingly contradictory distinction which depends in fact on the extent to which the structure is sheathed in plates of glass.

According to Giedion, it is impossible to comprehend Le Corbusier's Maison Savoye by a view from a single point, since "quite literally," he says, "it is a construction in Space-Time. The body of the house has been hollowed out in every direction—from above and below, within and without—so that a cross-section at any point shows inner and outer space penetrating each other inextricably, in a way which Borromini had been on the verge of achieving in some of his late Baroque churches."[13] Le Corbusier gives much the same interpretation of it, although he does not use the expression Space-Time, and considers that his building exemplifies the exact opposite of Baroque principles (which, according to him, produced an architecture conceived on paper around a fixed theoretical point). Moreover, far from considering his own principles exclusively modern, he derives them from Arab architecture. "Arab architecture gives us an invaluable lesson. It is appreciated *whilst walking*, and it is only thus, while moving around, that the observer sees the architectural dispositions develop."[14]

Giedion's other great Space-Time paradigm, the Bauhaus, is also, according to him, too complex to be summed up at one view, so that it is necessary here again to go around it on all sides, to see it from above as well as below. This means, he says, new dimensions for the artistic imagination; "an unprecedented many-sidedness." But for him, the specific Space-Time quality of the building is attributable to the fact that the extensive transparency permits interior and exterior to be seen simultaneously *en face* and *en profile* "like Picasso's *L'Arlésienne* of 1911-12."[15]

Perhaps, then, Giedion's views might be summarized by saying: modern architecture is characterized by the fact that the inside of a modern building can often be appreciated from single external viewpoints, and the external totality of a modern building can only be appreciated as a sequence of visual impressions. If this is so, it is the converse of what occurs when one looks at traditional buildings of similar purpose; for in a typical Renaissance villa comparable to the Maison Savoye, the totality of the outside of the building is intelligible from a single viewpoint (because of the axial symmetry), whereas the interior can only be appreciated as a sequence of visual impressions obtained by moving from room to room. But "fourth-dimensional" does not, for Giedion, simply refer to the movement of an observer. In an introductory passage, he makes clear that he regards it as evidence of the evolution of art. The Renaissance manner of seeing the world three-dimensionally, he tells us, was an important step forward, because the art of previous centuries had been two-dimensional. Thus our contemporary four-dimensional vision is in one sense revolutionary, but in another sense it is simply an inevitable advance in the evolutionary progress of civilization.[16]

Disregarding the question whether all the art of pre-Renaissance cultures really was in fact two-dimensional, whether even painting was then two-dimensional, and whether, for example, a mediaeval Italian painting depicting the same person participating in several sequential events on the same panel is to be called two dimensional, three dimensional or four-dimensional;[17] disregarding also the logical extension of Giedion's theory which would seem to imply that the next development of art is to become five-dimensional, then six-dimensional (as in the dynamic theory of gases) until eventually it becomes *n*-dimensional; it is surely enough to say that this evolutionary theory is only possible if one considers the *creation* of space to be indistinguishable from the *depiction* of space. That painters have found new ways of "conquering" space, first by mastering perspective and then by discovering techniques for producing the illusion of infinity, is a matter of common knowledge. But to suggest that architects before 1400 actually *created* only two-dimensional architecture, in the way that between 1500 and 1750 they were creating three-dimensional architecture, and that the Baroque heralded the creation of four-dimensional architecture, is to divest the words of any real tectonic meaning, and nobody except Moholy-Nagy has ever been rash enough to try to demonstrate the theory by reference to historical examples. He illustrates the theory by asking us to believe that Egyptian architecture was "one-dimensional" because their temples could be comprehended by walking

through the sphinx alley leading towards its façade; that Greek architecture was "two-dimensional" because the architects of the Acropolis designed a two-dimensional approach to "the temple;" and that the spectator inside a Gothic cathedral became the centre of co-ordinated space cells of all directions, whilst the Renaissance and the Baroque brought man into closer contact with the inside and the outside of its buildings. "In our age of airplanes," he concludes, "architecture is viewed not only frontally and from the sides, but also from above—vision in motion;"[18] i.e. Space-Time.

The interpretation of architecture in terms of space was initially a contribution of German philosophers, and it goes back at least to the beginning of the nineteenth century.[19] But the influential disseminators of this idea were the late ninteenth-century German art-historians, and it is significant that when Wölfflin (from whom Giedion derived his basic ideas about the primacy of space in art-historical analysis) discusses architectural space most eloquently, it is with reference to the *painting* of an architectural interior, rather than to an architectural interior itself. Altdorfer's early sixteenth-century painting of the birth of the Virgin, he tells us, characterizes well the fundamental difference between the German and Italian conceptions of space, since here "space is undefined and in motion," whereas with Brunelleschi all forms are defined and distinct. In Altdorfer's interior, he continues, the nave and aisles flow into one another, "and what is more, a rotating, whirling movement throws the entire space into a turmoil." The church's ground plan remains intentionally unclear, and the painting, he therefore concludes, compensates for the completeness of the diverse views offered to the spectator wandering on the spot "by transforming finite into infinite form."[20]

When Wölfflin discusses Baroque interiors, his descriptions are almost indistinguishable from Giedion's description of the Space-Time experience of the Maison Savoye. "We move round them," he writes, "because in the intersections new pictures constantly arise. The goal cannot lie in a final revelation of the intersected form—that is not even desired—but in the perception, from as many sides as possible, of the potentially existing views."[21]

Nevertheless, Giedion's interpretation of Baroque clearly differs from Wölfflin's in that Giedion sees Baroque only as the anticipation of Space-Time, and I suspect that the immediate source of Giedion's theory is to be found not in Wölfflin's lectures or Einstein's theory, but in an extremely influential and popular German book which appeared in 1918, when Giedion was a student in Munich, namely Spengler's *Decline of the West*. If specific evidence were required to demonstrate Spengler's influence on Giedion, it could be adduced by the term "Faustian," that most Spenglerian of expressions, which occurs in *Space, Time and Architecture* on page 525, with reference to the League of Nations competition. But for readers of Giedion, nothing could be more conclusive than the following quotation from *Decline of the West*:

The temple of Poseidon at Paestum and the Minster at Ulm... differ precisely as the Euclidian geometry of bodily bounding-surfaces differs from the analytical geometry of the position of points in space referred to spatial axes. All Classical building begins from the outside, all Western from the inside...There is one and only one soul, the Faustian, that craves for a style which drives through walls into the limitless universe of space, and makes both the exterior and the interior of the building complementary images of one and the same world-feeling...The Faustian building has a visage, and not merely a façade.[22]

"Faustian" might be an appropriate substitute for the increasingly unpopular word "International" as a stylistic identification of twentieth-century architecture, but regardless of "style," I would suggest that in fact the visual effects usually referred to as Space-Time, Fourth-Dimensional, and so on, are nothing more or less than modern developments of the exploitation of effects of parallax. The phenomenon of parallax (whereby an apparent displacement of objects occurs when the point of observation changes) is also, like Space-Time, a device for astronomical measurement, but unlike Space-Time it has always been an important element of architectural composition, and has been manifest in architecture ever since the first hypostyle hall was constructed. It occurs in every large space containing rows of free-standing columns, and must have produced particularly striking effects in the great mediaeval churches and halls when these were also subdivided by low screens, or spanned by deep hammer-beam roofs.

The aesthetic revolution which has occured in architecture within the last century has consisted firstly in the reversal of the traditional method of exploiting parallax, and secondly in its extension by means of a greater use of cantilevers and glass. Reversal of the traditional method is best exemplified in Le Corbusier's work, and it is probably this which relates it so closely to Cubism; for, as Sir John Summerson has observed, "Just as Picasso's work is, as he has said, a sum of destructions, so, in a sense, is Le Corbusier's; for to him the obvious solution of a problem cannot possibly be the right solution...he sees the reverse logic of every situation."[23] Extension of the traditional method is best exemplified in the works of Gropius, and particularly of Mies van der Rohe, that greatest of all pioneers of modern parallax, whom Giedion, with regard to Space-Time, completely neglects. But all the leading architects of the century have exploited it to some extent, whether it be Frank Lloyd Wright's use of large balconies or free-standing mushroom columns, or even Perret's emphasis on isolating point supports. Its most striking development today is in the use of high towers which change their apparent relationship as one moves round the building, as introduced by Louis Kahn.

By the reversal of traditional methods of parallax, I mean the fact that until the present century, parallactic effects were usually visible in large covered spaces because of the need for intermediate supports, whereas nowadays technology seems to have imposed a moral obligation to roof even the largest areas as uninterrupted volumes. Conversely, whereas formerly buildings containing a number of rooms produced no effects of parallax within their sequence of prismatic enclosures, all subdivided spaces now tend to be treated as if they were converted hypostyle halls. By the extension of parallax, I mean that modern structural systems have removed any compulsion to make structural space-articulators symmetrical, whilst recent developments in glass-making and in heating and ventilation have allowed the same tectonic elements to be visible in parallax both inside and out.

Giedion is clearly right in distinguishing between these new parallactic phenomena and the *trompe-l'oeil* spatial effects of the Baroque, since it was precisely the lack of parallactic displacement which hampered the illusion that Baroque pictorial effects were real. But he is wrong in implying that Baroque designers never did exploit parallax in a modern way, for it occurs in rococo interiors where large mirrors are placed symmetrically on opposite walls. According to Wölfflin, the beauty of a Rococo mirror hall differs from the beauty of a Renaissance interior (the ultimate effect of which lies, he says, in the geometric proportions) because one is intangible and the other tangible, and because one is imprecise

and the other clear.[24] But the main distinction is surely that in a rococo mirror hall, the architecture and the occupants are reflected to infinity by images which always remain in true perspective relative to each observer, no matter where they may move. Thus three-dimensional geometric proportions are extended further into space, whereas the aim of Baroque interior decorators was to destroy geometric proportions altogether by disrupting the volumes which unadorned architecture naturally creates.

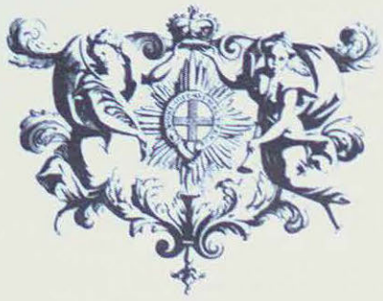
It will be seen, then, that there was something very radical and important in the mid-eighteenth-century fondness for mirrored interiors, as there was also, by the same token, in their fondness for ruins (where interiors and exteriors also appear to be seen simultaneously). Both these features, often regarded as merely whimsical frivolities, were the aesthetic roots of modern architecture as it exists today. Indeed, some writers of the time seem even to have been dimly aware of the true signifiance of such effects, as when Robert Wood, describing the ruins of Palmyra in 1753, observed that "so great a number of Corinthian columns, mixed with so little wall or solid building, afforded a most romantic *variety of prospect.*" The effect was undoubtedly exploited deliberately by Soufflot at Ste. Geneviève, for as Wolfgang Herrmann remarks, "While the visitor moves forward, the cluster of columns seems to move too, opening up constantly changing views"—an effect actually described by Soufflot's successor Brébion in a letter dated 1780.[25]

What is most strikingly novel about current attempts to exploit effects of parallax is that they are so often used without adequate regard for the needs of privacy, and that they are so often described in unnecessarily pompous terms. Phrases such as "continuity of space," "mobility of space," "expansion of space" and "over-lapping and tied-together space-volumes" are no doubt harmless justifications for an exceptionally lavish use of glass, yet when one of the great Rococo exponents described the new idea in 1737, he wrote simply that "the mirrors make a mutual reflection between each other, thus prolonging the view and producing a very pleasant effect."[26] It is difficult to see why anyone need say more than that.

Giedion's terminology will probably persist, whatever interpretation we give it, because of the modern credulous appetite for pseudo-scientific mumbo-jumbo; and the fact that it was used recently to explain traditional Japanese architecture and its relation to Zen Buddhism will occasion no surprise.[27] It is even to be found outside architectural writings, as for example in a recent periodical where, in an article entitled "A Study of Free-Time Activities of 200 Aged Persons," their Space-Time activities are carefully described.[28] Yet here, on close examination, it is apparent that "space-time activities" was simply a misprint for "spare-time activities," and one may perhaps be excused for wondering whether a similar typographical transposition has not occurred in one or two recent books on modern art.

NOTES:

1. *Canadian Architect*, March, 1959, p.65. The most recent thorough exposition of the relationship between Space-Time and the International Style occurs in William H. Jordy's article on the PSFS Building in the *Journal of the Society of Architectural Historians*, vol. xxi, No. 2, p. 75: "To ensure their dynamic, space-time equilibrium, Howe & Lescaze utilized the full range of space-time architectural devices. There is the extravagant transparency of sheets of glass extending the here beyond. There are open forms, like the cantilevers and the abrupt termination of the projecting columns short of the parapet at rooftop, there are continuities where one might expect breaks, like the windows bent and folded around corners. There are interpenetrations and interlockings. There are violent juxtapositions wrenching the eye from one shape to another. Finally, there is the intrinsic lack of interest and articulation of the unembellished parts which encourage the eye to abandon the part for the ensemble.'
2. J. Burchard and A. Bush-Brown, *The Architecture of America*, pp. 317, 429.
3. S. Giedion, *Space, Time and Architecture* (1956 ed.), p. 432.
4. *Ibid.*, p.431.
5. *Ibid.*
6. *Ibid.*, p. 432.
7. *Op. cit.* (1956 ed.), p. 5.
8. Cf. previous article in AR, August, 1960, p. 101.
9. *Op. cit.*, p. xiii.
10. *Op. cit.*, p. 8.
11. S. Giedion, *Ibid.*, p. 431.
12. L. Moholy-Nagy, *Vision in motion*, p. 256.
13. S. Giedion, *Ibid.*, pp. 518-9.
14. Le Corbusier, *Oeuvre complète de 1929-1934*, p. 24.
15. S. Giedion, *Ibid.*, p. 489.
16. *Ibid.*, p. 431.
17. Cf. P. A. Michelis, in *Journal of Aesthetics and Art Criticism*, viii, pp. 71-86.
18. L. Moholy-Nagy, *Ibid.*, p. 244.
19. Cf. Hegel's *Philosophy of art* (1920 ed.), pp.91-7.
20. H. Wölfflin, *The Sense of Form in Art* (1958 ed.), p. 67.
21. H. Wölfflin, *Principles of Art History* (Dover ed., n.d.), p. 223.
22. O. Spengler, *Decline of the West* (1926 ed.), p.224.
23. J. Summerson, *Heavenly Mansions*, p. 189.
24. H. Wölfflin, *Ibid.*, p. 223.
25. W. Herrmann, *Laugier*, p. 121 and footnote 72.
26. J. F. Blondel, *Décoration des Maisons de Plaisance*, i, p. 27.
27. N. H. Carver, *Form and Space of Japanese Architecture*, p. 130.
28. *Sociology and Social Research*, xiv, p. 157.



RETREAT FROM THE BLEAKNESS WITHIN

Reprinted from the May 26, 1962 issue of the ***Manchester Guardian.***

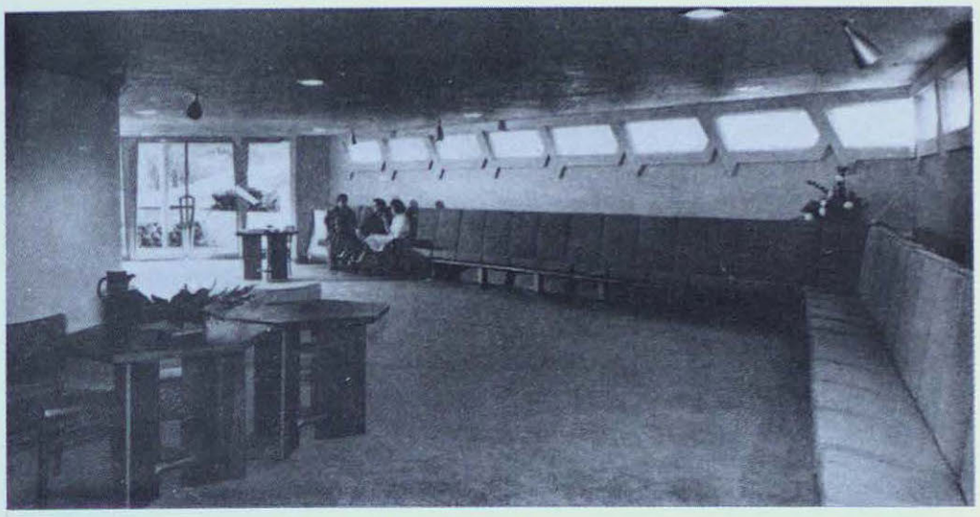
Everybody, as Reyner Banham once pointed out, knows that Modern Architecture is undecorated. This concept is the layman's recognition check: flat roof, big windows, no decoration. It originated in 1908 with Adolf Loos' manifesto declaring ornament to be a crime, established itself rapidly as a matter of faith, and has now been so widely accepted for a quarter of a century that there seems little point in trying to repudiate it. Architects stopped designing ornament, craftsmen stopped making it, to such an extent that few could now produce it even if they tried.

Two typical recent examples of undecorated non-domestic interiors by distinguished American architects are the vestibule of 500 Park Avenue, New York (the new headquarters for the Pepsi-Cola Corporation), by Skidmore, Owings and Merrill, and the vestibule of the Kalita Humphreys Theatre at Dallas, Texas, by Frank Lloyd Wright. Wright, from an early age, showed an incomparable genius for creating dramatically proportioned and subtly related interiors, but his chief skill always lay in his ability to subdivide and adorn them with decorative elements of delicately calculated richness and scale. It was perhaps this skill which he inherited specifically from the teaching of Louis Sullivan. Unlike Sullivan, he never built and decorated a large theatre during his lifetime (the Dallas Theatre being in fact completed after his death), but anyone who has studied the interiors of his famous houses built during the first quarter of the present century, or the vestibule of his Tokyo hotel, can well imagine what such a theatre, built by him at that time, would have looked like. The walls and ceilings would have been vigorously modelled, and the surfaces, richly textured with abstract geometric patterns, would have combined with the whole to form an environment of incomparable splendour in complete harmony with human scale and mood.

There were doubtless many good reasons why his Dallas theatre was left so plain, but no one will deny that it is completely barren, and the bunch of flowers on the table only draws attention to the poverty of the surrounding design. The director claims that "Frank Lloyd Wright intended here to excite the viewer with anticipation of the dramatic experience inside," yet whilst it might conceivably do this for some plays, it is unlikely to excite much anticipation for Oscar Wilde's *Importance of Being Earnest*, which is currently being performed. Perhaps modern architecture is itself too much concerned with the importance of being earnest, and in its puritanical pursuit of a new morality is becoming completely unsympathetic to any rich visual experience except those constituted by variations of light and space.

The vestibule of the ten-storey Pepsi-Cola building might perhaps seem to trivial to instance as an example of this trend, but its architects have designed some of the finest office buildings in North America, and its qualities are very characteristic of what passes for "prestige architecture" in North America today. The exclusive use of glass or plain marble slabs for walling shows a clear influence of Mies van der Rohe. The determination to leave the street level quite bare (and thus simulate a building mounted on stilts) shows a clear influence of Le Corbusier. But despite the many fine qualities of the rest of the building, the vestibule itself is so bleak as to be almost a caricature of modern architecture, reminiscent of the décor of Jacques Tati's film *Mon Oncle*. This vestibule has been characterized by one critic as "chaste," but a more appropriate word might be "sterile." Presumably the ground floor, which may eventually be used for occasional non-commercial exhibitions, was left empty to give the "prestige" by its sheer extravagance. But the owners, whether appalled by the ludicrousness of this vast hall occupied only by a single uniformed attendant, or awe-struck by it sepulchral nudity, have subsequently decided to cover the entire floor with flowers, and thus made the giant advertisement appear to be lying in state.

The lobbies of most office buildings and theatres built at the beginning of the century undoubtedly were, like the many domestic interiors of the period, poorly lit and over-ornate; but they presumably corresponded to some extent to a natural craving for the visual enjoyment of richness which, for centuries, has been regarded by most people as one of the legitimate fruits of wealth. When Owen Jones wrote the first chapter of his famous *Grammar of Ornament* in 1856, he claimed that "the desire for ornament increases with all peoples in the ratio of progress in civilization," and there was little sympathy at that time for Horatio Greenough's view that



Architectural Forum

Frank Lloyd Wright: Kalita Theater, Dallas—Lobby

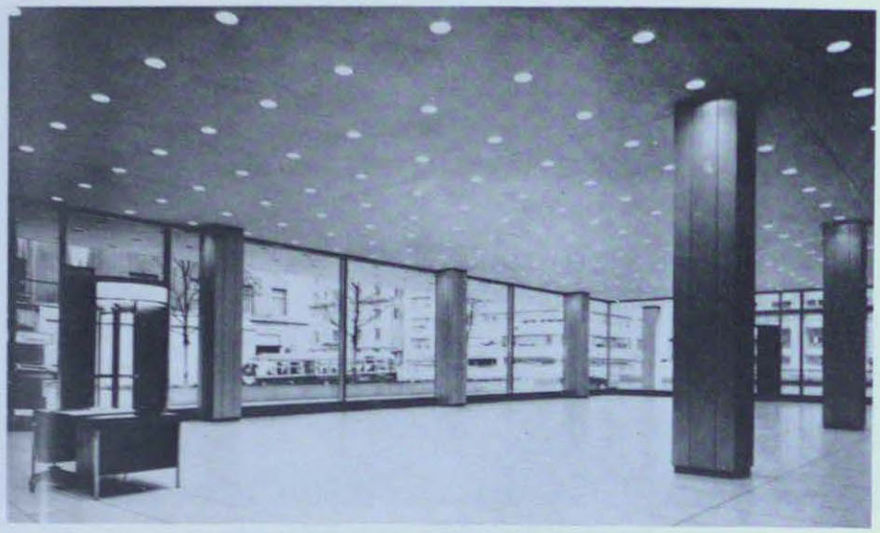
ornament was merely "the instinctive effort of an infant civilization to disguise its incompetence." It was natural, in an age of plenty, when mediaeval and Renaissance culture was so much admired, that Greenough's assertion should pass unheeded, just as it was natural, sixty-five years later, for a generation recovering from the catastrophe of the First World War to accept Le Corbusier's assertion that "decoration is the essential overplus, the quantum, of the peasant; proportion is the essential overplus, the quantum, of the civilized man." But we are living in a new age of plenty, when austerity no longer has much moral justification, and it may well be that under such conditions Owen Jones' contention was not entirely wrong.

I am not suggesting that there would be any justification for reviving the kind of interior popular in the second half of the nineteenth century (and which Owen Jones himself was one of the first to condemn): but I do suggest that architects here and elsewhere will have to design their structures with more concern as to their potentiality in terms of interior elegance if they are to retain public respect. At present, the walls of an entrance vestibule, however important or luxurious, can be fashionably designed only with plain sheets of glass, plain sheets of marble, or abstract murals (which in recent New York examples have ranged from two carefully drawn lozenges to a series of random holes illuminated by flickering coloured lights behind). The rhythms, patterns, and compartmentation of surfaces, which in earlier centuries gave human scale to interiors, have almost completely vanished, and the only real contribution made by the present generation to interior design is in the skilful exploitation of the effects of artificial light.

I believe that public is yearning for an architecture of humanism; not that pseudo-Renaissance humanism extolled by Geoffrey Scott and Henry Hope Reed (which is only meaningful in an age of masonry construction) but the humanism which accepts architecture as a composition of standard elements designed and assembled to accord with human scale. Frank Lloyd Wright knew and mastered better than anyone else of his generation the subtleties and intricacies of scale, but being at heart a nineteenth-century romantic, he rejected the standardization imposed by the industrial machine. Architects such as Skidmore, Owings and Merrill have industrial standardisation at their finger-tips, but their interiors too often reflect more the scale of machinery than of men. It was undoubtedly a great feat of engineering to include panes of glass at 500 Park Avenue measuring nine feet by thirteen feet ("enough glass to make 159,000 12-ounce Pepsi-Cola bottles"), but the main advantage of plate glass windows at street level is to allow passers-by to see something interesting within. With modern lighting, modern materials, and modern tools, rich interiors should surely not be impossible to achieve, and it is apparent from the wonderful creations of shop display designers that the potentialities for this sort of environment are enormous, once architects abandon their more austere spatial abstractions and think in terms of space as actively enjoyed by the common man.

The absence of ornament on the outside of buildings began as a reaction against its excessive use in the nineteenth century, but it only became general once architecture came under the baneful influence of abstract sculpture, for clearly nothing could be more alien to sculpture than ornament. The lavish ornamentation favoured in the nineteenth and early twentieth centuries was unquestionably symptomatic of a decline in the standards of taste, for architectural theorists of all ages have insisted that exterior ornament should be subordinated to structural elements, and regulated according to a building's social importance and use. But the complete absence of ornament inside public buildings seems to me very abnormal, and quite unjustifiable by ethical, practical or historical criteria. There may be evidence that the interior bleakness of most new American buildings corresponds to a spontaneous popular demand, but it seems more reasonable to attribute it to the sociological-architectural doctrines which have been propagated for the last half-century, and have shown, when put into effect, such marked indifference to the warmer inclinations of the humanity they claim to serve.

The pioneers of the "contemporary" interiors were Mies van der Rohe and Le Corbusier, both now famous as architects, but originally distinguished as an exhibition designer and a painter respectively. The ideal environment for exhibiting works of art is a series of simple interrelated

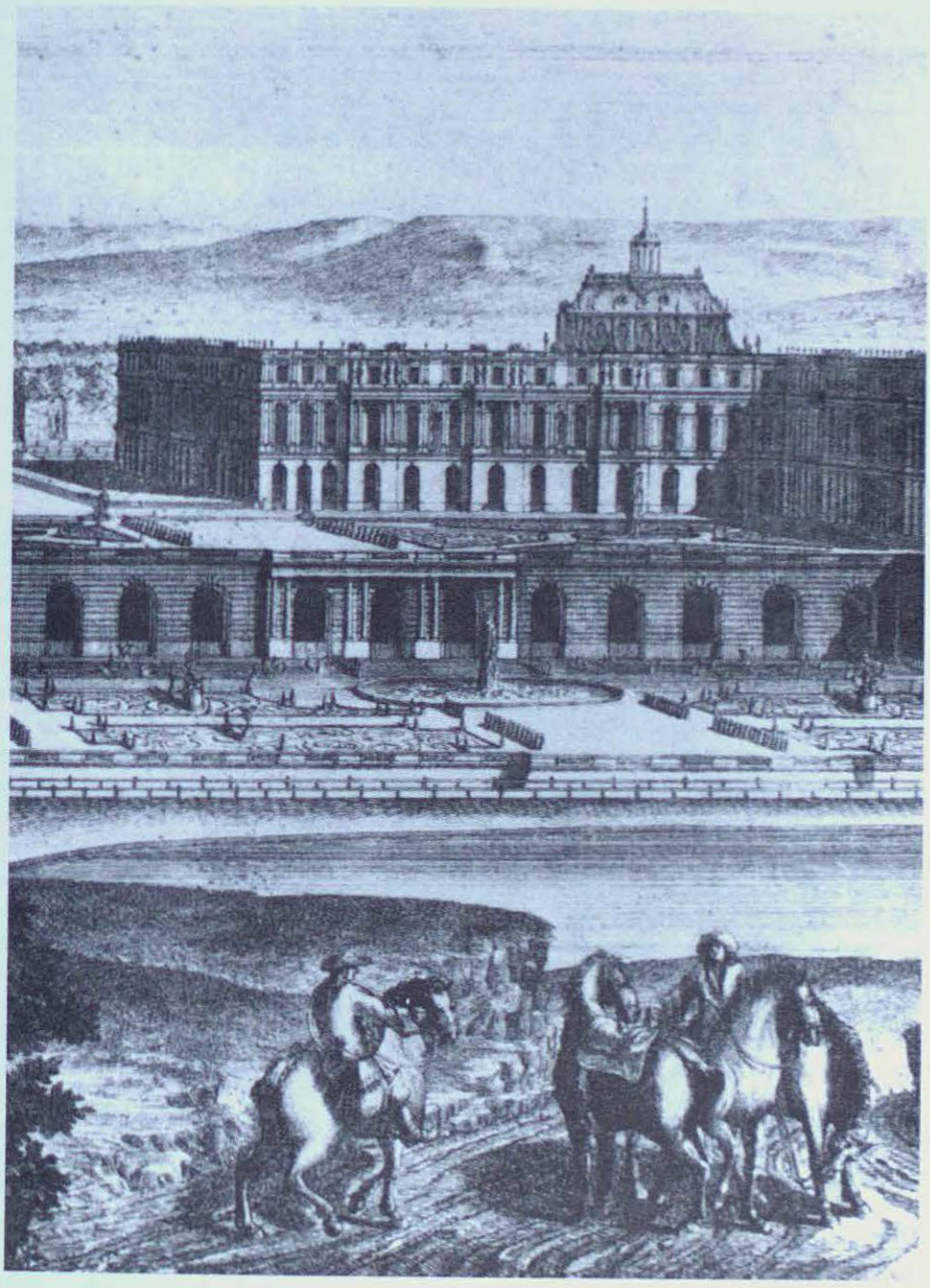


Architectural Forum

Pepsi-Cola Building—Lobby

spaces; the ideal environment for painting picture is a tall bare room with a large window occupying one wall. Both require plain surfaces to function efficiently; the former to allow artefacts of different character to be displayed together, the latter to allow artefacts to be created without any environmental influence at all. Neither would appear to be ideally suited to the habitation of human beings, unless of course one happens to be painter or an exhibition designer by temperament or profession.

The artist's studio, which became the paradigm for all Le Corbusier's interiors, and the exhibition pavilion, which became the paradigm for those of Mies van der Rohe, were well suited to the low cost housing developments which were the main concern of these designers, as architects, immediately after the First World War, but they proved less capable of satisfying the needs of an affluent society, such as is represented by Europe and America today. One only has to glance through current fashion magazines to see that the rich and sophisticated do not decorate their houses in the "contemporary" style unless they collect works of art, in which case their houses become miniature museums. Typical of these is the architect Eero Saarinen's residence, in which there is virtually nothing except pictures, sculpture, and the smooth fibreglass chairs ("antiques of modern architecture") he designed himself, and sits in with such an acute air of discomfort (whilst his wife and son sit on the floor). The walls and ceilings are flat white surfaces, and the ornamentation, for such it is, consists of intricate oriental sculpture mounted on pedestals, or brightly-patterned abstract paintings hanging on the walls. Little wonder that so many wealthy Americans furnish their dwellings with antiques, or that "reproduction Victorian furniture," which would have been inconceivable twenty years ago, is now in popular demand in the less expensive stores in New York.



ON HISTORY

PARADIGMATICS

Reprinted from the March, 1968 issue of ***Architectural Review.***

...the revolution that has taken place in the intervening years in the relation of the history of architecture to the practice of architecture. The two have separated; they are different employments—two games now, not one.

SIR JOHN SUMMERSON

(speech given at the presentation of the Royal Gold Medal, 1967)

The differentiation of the species "architectural historian" from the species "architect" undoubtedly reflects a vital development in our present concept of architecture's relationship to its own history. But this development does not explain why architectural historians have tended more and more to become fused with the genus "art historian"; a fusion so intense that the American Society of Architectural Historians, with a membership of 3,500, is virtually obliged to hold its annual meeting in conjunction with the College Art Association of America. The fusion seems to have little to do with the nature of architecture, and seems due more to philosophical developments in nineteenth-century Germany and to artificial pressures exerted by, or congenial to, academic administrations. That the two disciplines can derive mutual benefits from a close awareness of their related activities is incontestable; indeed, the concept of the "unity of the arts of drawing" is of such venerable antiquity as to constitute, in some measure, a historical justification in itself. But for those architects and architectural historians who are concerned with discovering what, if any, is the practical value of architectural history, and with the means of conveying such significance as it may have with unequivocal clarity, there are dangers in this fusion which are greater than the dangers which arose from the fusion of architecture and archaeology a century ago.

Firstly, there is the danger of arbitrarily imposing a universal and interchangeable system of classification. The idea of an interchangeable terminology has, of course, been for over a century the harmless affectation of a small coterie of critics of painting and music, whereby, for example, paintings are commended for their "tone," and music is praised for its "colour." But whereas such transpositions were originally innocuous literary contrivances, the ideal of a universal taxonomy has now become so solemnly orthodox and rigid that most of the standard textbooks on the history of music used in American universities divide the subject into "medieval," "renaissance," "baroque," "rococo," "classical," "romantic," "post-romantic" and "twentieth century," as if these classifications were demonstrably fundamental to all forms of artistic expression. Indeed, Joseph Machlin's *The Enjoyment of Music* even includes numerous illustrations of painting, sculpture and architecture, in a transparent endeavour to convince juvenile musicologists that this universal classification requires no philosophical proof. In the history of music, this classification was introduced by Curt Sachs, who studied the history of art in Berlin before switching to the history of music. But the system fits so neatly into the concept of the "unity of the arts" that other musicological classifications (such as the theory that the history of music has only three main divisions: "candlelight," "gaslight" and "electric"—a theory which has obvious important architectural implications) are seldom even considered.

The second danger exemplified by this universal art-historical taxonomy is the confusion between morphological and chronological classifications. In the musicological sequence just quoted, "post-romantic" is obviously a chronological classification, though "romantic" would seem to be morphological; and the ambiguity of mixing terms indicative of formal characteristics with terms indicative of specific eras would seem to me far more harmful than is usually supposed (if one may judge from the architectural histories published in recent years). Many architectural historians actively support this confusion, and would presumably argue that formal characteristics are inseparable from the motives which produced them, and hence inseparable from the era in which they were produced. This point of view is well expressed by Kerry Downes in his rejection of Mannerism as a classification for the work of Hawksmoor. "It is tempting," he writes on page 47 of his monograph, "to stretch an overworked stylistic term and call Hawksmoor a Mannerist, although none of the classic explanations of sixteenth-century Mannerism

would account for Mannerist Style in the England of Queen Anne. It certainly cannot be explained by reference to social history, for the 1640's and 1680's had passed without it." Yet the claim that Hawksmoor was Baroque must surely be open to similar objections if we accept Joseph Machlin's explanation of its causes—the establishment of the "absolute state," Cartesian rationalism, bourgeois ambition and the intensification of piety (a summary which corresponds fairly closely with that given by Henry Millon in *Baroque and Rococo Architecture*). Hence we are left in the uncertainty as to whether the term "Baroque" signifies the possession, in common, of a number of morphological characteristics, or whether it is simply a synonym for "1600 to 1750."

Moreover (and here we come to the third danger confronting architectural history) there are many scholars who, whilst accepting these main art-historical categories, introduce sub-categories which are in fact the very negation of that basic classification. Confronted with the difficulty of transmuting such an individualistc architect as Hawksmoor into a general category they would not hesitate to dub his work "neo-Mannerist" or even "Hawksmoresque." Indeed, it can be argued that the promiscuous proliferation of subcategories by such suffixes as "-esque," "-oid" and "-istic," or of such prefixes as "neo-," "proto-" and "crypto-," constitutes the hidden complex mechanism by which the procrustean bed of stylistic unification is made to work.

This mechanism would not be such a danger if architectural historians cold agree on a standard terminology. But there is not even any consistency among the leading authorities as to what precise distinction is implied by "Early Gothic," "High Gothic" and "Late Gothic," so there must be even less unanimity as to the meanings to be attached to mongrel expressions like "Late Baroque Classicism" or "Classicist Rococo." For some authors, terminological variations are frankly a device for providing literary piquancy, as in such adjectives as "Byzantinizing," "Byzantinoid" and "Byzantinesque": three terms which are all to be found in the same authoritative book. Nevertheless, the fact that the author of this book remarks that a certain building "is not easily pigeon-holed stylistically" suggests that stylistic pigeon-holing is a taxonomical ambition which still survives with unabated force in the most orthodox Rickmanesquoid tradition.

Defenders of multiplicity in stylistic classification argue that, whatever its disadvantages may be, these do not outweigh its usefulness; and they claim that, provided an author defines his terms, no confusion need be feared. Thus the standard textbook on Early American Architecture begins by stating: Quite arbitrarily, we shall in this book use the term "Colonial" to apply to those styles that flourished in the eastern colonies in the seventeenth century, and the word "Georgian" for the style that flourished in the eighteenth century in the English colonies of the Atlantic seaboard. The fact that the eastern provinces remained colonies of England until the Revolution may make such a distinction seem slightly illogical—as indeed it is from the standpoint of political history. The three reasons given are: *(a)* that this terminology is more forceful than a division into "Early Colonial" and "Late Colonial"; *(b)* that it avoids the use of confusing subcategories such as "Late Early Colonial"; and *(c)* that the term "Georgian," as a synonym for "1700 to 1780," is now customary usage in the United States. Yet, whatever the validity of these motives, it is evident that a student initially indoctrinated into this terminology will be completely confused when he is later told, by other historians, of the importance of the Queen Anne Revival in nineteenth-century America—especially now that a later textbook on American architecture identifies "American Queen Anne" with the period 1725 to 1750.

Finally, the greatest danger of all is that of giving undue emphasis to the identification of prototypes—a danger increased by the popularization of the erudite synonym: "paradigm." Few students of nineteenth-century architecture are now so ignorant that they cannot define a "Ledolcian Paradigm" or explain immediately why "Soufflot's Panthéon provides no such simple paradigm as Stuart's temple." The importance, for architects interested in the history of ideas, of understanding the influence of Durand's didactic technique, and knowing why the Munich Glyptothek might aptly be described as "generically Durandesque" is, I think, uncontestable. But in so far as Summerson is justified in describing both architecture and architectural history as "games," it is because the latter has become a game of "hunt the precedent," whereas the former has become a game of "hunt the unprecedented." I would claim that this antithesis is not just a play on words, but is the fundamental reason for the separation to which Summerson refers; a separation that is largely the fault of retarded developments in architectural historiography. The persistent emphasis on paradigms is obscuring what was *original* in buildings of earlier ages, and *why* earlier architects considered that their work was original; for it cannot be overemphasized that the inner compulsion towards originality has always been the mainspring of every great creative impulse in architecture, and future architects must surely be more intrigued by the manner in which buildings of the past were considered original by those who designed them, than by any real or conjectural prototypes. The criteria of originality have changed from epoch to epoch, and it is these changes which have most significance in the history of architectural ideas. If architects today occasionally display an extravagant concern with novelty for its own sake, it may well be because architectural historians are still unemancipated from a methodology devised when the principles of Revivalism constituted the basic architectural philosophy of the age.

HISTORICISM

Reprinted from the August, 1960 issue of ***Architectural Review.***

The historians of modern architecture, by the very nature of their subject, cannot resist the temptation to be up to date. Henry-Russell Hitchcock finishes his *Architecture Nineteenth and Twentieth Centuries* (1958) with buildings constructed in 1956: Jürgen Joedicke's *History of Modern Architecture* (1959) includes photographs of models, such as that of Utzon's Sidney Opera House, yet to be built. The result is that architects are incessantly being reminded that everything they create forms a link in the chain of architectural development, and that their own work must therefore have some classifiable elements of novelty if the theory of evolution is to have any validity in the domain of art. The art historians, to use Gerhard Kallmann's phrase, are breathing down the architects' necks.

Hitchcock faces this problem squarely in the last chapter of his distinguished book. "The very extent in time of what should be considered 'the present' is a subjective matter," he writes. "I have known American architectural students whose present was so limited that they had never heard of Perret! To anyone under thirty the effective present will hardly extend backward more than five or ten years." Yet even ten years is a precious insulation against Historicism, and one which is essential if architecture is to develop in an uninhibited way. It represents the distinction between the history and theory of architecture. Recent developments in architectural historiography seemed at one time to be encouraging the assertion of this distinction by showing a greater objectivity as compared with the histories of a century ago. Indeed, so objective have architectural historians now become, that they rarely permit themselves any qualitative assessment at all beyond "crisp" or "jolly." Yet there are greater dangers than partiality in historical writing, for partiality can at least be perceived and refuted, whereas up-to-dateness exerts a subconscious influence which only advertising agents can claim to assess. History undoubtedly ends with the present, but historical studies must end sometime before then if we are to avoid confusing history with prophecy. One only has to look at the buildings admired twenty years ago to see how hazardous it is to anticipate the historical values which should be set on what we are now building ourselves.

It is not, I suspect, sufficiently realized that the distinctive character of modern architecture, or in other words the essential difference between architectural ideas before 1750 and architectural ideas since 1750, derives almost entirely from a new kind of awareness of history. It would be quite wrong to assume that the study of history is a natural, inherent, inevitable kind of human activity, or that it has been regarded in all ages as a distinctive form of thought. The Greeks were not interested in history because it is concerned with what is transient and changing, with facts in a space-time location, whereas the scholars of Antiquity were more concerned with what was permanent and immutable, such as is expressed by mathematics. The Roman historians such as Livy did begin their histories at a more remote period of the past than the Greeks (whose histories were little more than contemporary chronicles) but their aim in doing this was to show the Eternal City as having existed ready-made from all time, so that they could hold up the mythical morality of its first citizens as an example to their contemporaries. Mediaeval scholars had no more critical awareness of history than the scholars who preceded them, since they merely substituted the authority of theology for that of mathematics, and thought it incumbent on them to interpret the past entirely in terms of the Divine Plan.

With the advent of the Renaissance, historical thought followed Greek and Roman traditions, although it was soon to be modified by the influence of Descartes, whose scientific method was applied to historical research. It was in this age that manuscripts were first accurately dated and scientifically evaluated, and that non-literary documents, such as inscriptions and coins, were first used to check the narratives of early writers, thus leading the way to the archaeological researches of the modern age. But it is a curious fact that although the study of ancient buildings and ancient manuscripts had formed an inevitable counterpart to the revival of Antiquity, history itself had little influence on seventeenth and early eighteenth century thought, because people then, like those of Antiquity, were more interested in the present than in the past. History was rarely taught in schools before about 1760, when it was introduced into the Dissenting Academies by such teachers as Joseph Priestley. Chairs of

modern history had been founded at Oxford and Cambridge in 1724, but no lectures were delivered at Cambridge until 1773, whilst at Oxford the chair was usually occupied by such people as Thomas Gray, the poet. No chair of history was established at the Collège de France until 1769.

The first modern history ever to be written, according to Eduard Fueter, was Voltaire's *Siècle de Louis XIV*, published in 1751. The first history of architecture was that included as the first section of J. F. Blondel's *Architecture Françoise* of 1752. Others had written biographies of architects, and numerous travellers had published descriptions of ancient buildings, but apart from Fischer von Erlach's highly fanciful collection of engravings entitled *Historical Architecture*, there was no other book which assembled in chronological sequence a description of buildings from the time of the Egyptians, nor were there any lecture courses on the subject before Blondel opened his school of architecture in the rue de la Harpe.

Blondel had contributed all the articles on architecture in the *Encyclopédie*, so that it is not unnatural that he should have undertaken a task so much in harmony with the theme of that work.[1] But being, like the other *Encyclopédistes*, a rationalist, he did not think of the past as a collection of disparate styles, but as a progressive series of improvements, interspersed by occasional retrogressions, which had culminated in the architecture of his own day. Graeco-Romano-Renaissance architecture was for him simply "Architecture" ("It was in the reign of Francis I," he wrote, "that architecture began to regain favour in France"), and since architecture thus meant for him the forms invented by the Greeks, improved by the Romans, perfected by the French, and used more or less correctly by every architect in Europe and America, he was incapable of seeing any Roman or Renaissance modifications as either current or obsolete, but only as either good or bad. He was in fact not a historian at all but a theorist (which was all he ever claimed to be), and since there could be no theoretical value for him in studying primitive or non-classical architecture, he confined himself to recounting the literary descriptions of ancient buildings extracted from the most celebrated authors of the past.

It was not until about 1820 that any general illustrated histories of architecture, such as we know them today, were published, and these were made possible only by the large number of monographs on Greek, Gothic and Oriental architecture published during the previous seventy years. Most of these general histories have the distinctive characteristics of Voltaire's historical works; they are critical, scientific, evolutionary, concerned with all eras and countries, and designed primarily to trace the origins and progress of varying manners or styles. Also, like Voltaire's histories, they aim at radical reform, and display, for all their occupation with the past, a dissatisfaction with the present and a great concern for the future. It is in these historical surveys, published between 1820 and 1850, that the demand for a New Architecture first appears.

One of the earliest expressions of this demand occurs in James Elmes's *Lectures on Architecture, comprising the History of Art from the Earliest Times to the Present Day*, first published in 1821. Elmes was a successful practising architect, but though he sided with what he calls "the Greek faction," this did not blind him completely to the dangers and frustrations which the co-existence of stylistic factions entailed. "An indiscriminate patronage of ancient or foreign art is not the encouragement now required by the British School," he proclaimed; "had the Greeks fostered alone Egyptian art, they would certainly never have become the inventors of their own pure style. The Romans, on the contrary, by their exclusive patronage of Greek architects, are known only as degenerators, instead of inventors or restorers."

Another architectural historian to profess dissatisfaction with current architecture was Thomas Hope, whose *Historical Essay on Architecture* was published in 1835. Being an amateur, he was under no obligation to demonstrate the practicability of his speculations, and was therefore free to propose reforms without restraint. "No one," he wrote, "seems yet to have conceived the smallest wish or idea of making the new discoveries, the new conquests, of natural productions unknown to former ages, the models of new imitations more beautiful and varied, and thus of composing an architecture which, born in our country, grown on our soil, and in harmony with our climate, institutions, and habits, at once elegant, appropriate and original, should truly deserve the appellation of 'our own'."

The culmination of the first great age of architectural historiography was James Fergusson's *Illustrated Hand-Book of Architecture*, first published unsuccessfully in 1849, revised and re-issued in its complete form in 1855, and eventually enlarged and extended in 1865 to form his famous *History of Architecture in all Countries from the Earliest Times to the Present Day*. Fergusson's main purpose in publishing his *Handbook* was to effect a return to "the true principles which might guide us in designing or criticising architectural objects" by means of the study of all buildings constructed before 1500. He had no doubt that a New Style could be created, because, as he explained in his introduction, no nation in any age or in any part of the globe had failed to invent for itself a true and appropriate style of architecture whenever it chose to set about it in the right way. "What that process is," he announced, "may perhaps be best explained by an example, and as one of a building character, though totally distinct, let us take ship-building," which he did. He confessed that no architect had shown any ability to put the philosophy he recommended into effect, but found satisfaction in contemplating the Crystal Palace which was, he claimed, "at least one great building carried out wholly in the principles of Gothic or any true style of art."[2]

In the past century, the reforms which Fergusson demanded and predicted have come into effect, but Historicism, the curse of the nineteenth century, has not for that reason been exorcised, mainly because architectural historians are deliberately or unconsciously keeping it in being. Sigfried Giedion goes so far as to assert that historical self-consciousness is a good thing, and that the trouble with the nineteenth century was that "it lost all sense of playing a part in history," people then being either indifferent to the period in which they lived or hating it. It is undoubtedly true that nineteenth century architectural historians did not think many buildings of their own century worth recording, but then, neither does Giedion. Auguste Choisy, in his *History of Architecture* published in 1898, only mentions two buildings constructed in France since 1780 (namely the Halle au Blé and Labrouste's Bibliothèque Nationale), but then Giedion himself does not mention many more. It is all very well to lament the fact that nineteenth-century documents concerning urban development or new mechanical inventions were not scrupulously preserved for historical inspection, but this would seem to me a very healthy defect; for as Parkinson's Law seems to indicate, as soon as organizations start deliberately filing their records with a view to future historical research, there is every probability that their organization has ceased to be of any historical importance whatsoever. If the architectural innovators of the nineteenth century omitted to preserve their records, it was perhaps because they strove to

emulate a tradition for which there were virtually no contemporary documents left.

The term "contemporary history" was invented by Giedion, and its meaning explained by him in the opening pages of *Space, Time and Architecture*. It does not mean, as it would for a political historian, the history of his own times, but a selection of those structural and spatial developments of the past few centuries which seem to him relevant to the creative needs of the present age. But this is precisely what the late nineteenth-century architects understood by "theory." If we compare *Space, Time and Architecture* with Julien Guadet's *Elements and Theory of Architecture*, published in 1894, we find that the former treats the development of forms in much the same way as the latter. When Guadet discusses the spatial and structural possibilities of masonry stairways, he does so by exemplifying all the various masonry stairways constructed since the Middle Ages, just as Giedion explains the steel frame aesthetic by tracing its development from the cast-iron factories of Boulton and Watt.

There are of course major differences between the philosophies inspiring these two books. One is that whereas Guadet, lecturing so soon after Viollet-le-Duc's disastrous course on aesthetics at the Ecole des Beaux-Arts, considered it wise to be ostentatiously impartial in his selection of historical examples, Giedion's analysis is frankly tendentious, even within the limits of the Modern Movement itself. Neither Mies van der Rohe nor Alvar Aalto were included in the first edition of *Space, Time and Architecture*, which was essentially a justification of the doctrines of CIAM, of which he was secretary. But there is a more important difference than this. Whereas Giedion very rightly keeps revising his book to bring it continually up to date, Guadet, from the first, rigorously excluded all mention of the works of living architects because he thought it indecorous for a professor to comment on his colleagues' work. "Amongst the works of your masters," he announced in his inaugural address,"there are some which, luckily for our epoch, will not only be classics in the future, but are so today. But you will appreciate that I cannot instruct, indeed must not instruct, by taking examples from among the works of living architects, because no professor wants to risk being accused of flattery." As a result, the *Elements and Theory of Architecture* went through five editions in ten years with the text unchanged.

We thus find the paradoxical situation that whereas the twentieth century tries to give its histories of architecture the up-to-dateness of theory, the nineteenth century tried to give its theory of architecture the objectivity of history. Both attitudes are wrong, but they represent little more than a demarcation dispute, and it is to be hoped that theorists and historians will soon be able to settle the matter by direct negotiation, without subjecting contemporary architecture to the inconvenience and disruption of a crippling aesthetic strike. We cannot escape our awareness of history; of what Le Corbusier calls "*L'homme* dans le *temps* et dans le *lieu*" but we can mitigate its more harmful effects on architectural creativity by maintaining a clear distinction between the history and theory of art. It is becoming less and less easy to do this because Historicism, after having imposed itself on biology a century ago by means of the theory of evolution, has now begun to control our basic thought-processes as a result of the importance now attached to psycho-analysis. Psychologists and sociologists have discouraged the nineteenth-century emphasis on abstract moral judgements of goodness and badness, right and wrong, in favour of the accumulation of *case-histories* of those who appear to express their emotions in an unusual way, and so architectural historians may well feel that they, too, are able to provide a substitute for traditional principles, and the value-judgements these require, by simply analysing, classifying, and tracing the origins of the newest architectural forms backward into the past. Architects have certainly many advantages in knowing the precedents for any forms they use, but none in seeing the forms themselves prematurely pigeon-holed; indeed, nothing but frustration can result from labelling nascent developments with catchwords, and categorizing their first expressions as paradigms, before the creators themselves are clearly aware of what they are aiming at, and before it is certain that the forms produced are of any historical worth.

NOTES:

1. The article on "History" had been contributed by Voltaire.
2. In view of the publication in the AR for April 1960 (pp. 280-282) of a detailed description of Marshall's Flax-Mill in Leeds, it may be remarked that Fergusson considered that this revolutionary industrial structure (less the facade) would have been more suitable for the British Museum than the building constructed by Smirke (see J. Fergusson: *Observations on the British Museum, &c.* (1849), pp.39-48).

THE EIGHTEENTH CENTURY ORIGINS OF ARCHITECTURAL SCHOOLING

Reprinted from the November, 1979 issue of the ***Journal of Architectural Education****. This article originally appeared under the title of "The Eighteenth-Century Origins of Our System of Full-time Architectural Schooling."*

Although the first full-time school of architecture seems to have been that established by J. F. Blondel (1705-1774), our present concept of architectural education unquestionably had its roots in the system which originated in Paris in 1671 as part of Louis XIV's establishment of the Académie Royale d'Architecture. In the present context, there is little to be gained from studying the first forty years of the Academy's existence. The lecture courses of the first professors (which exist as books, unpublished manuscripts, or *précis* reported in the Academy minutes) are invaluable evidence of the *theoretical* instruction imparted. But despite its royal founder's implied intentions,[1] the Academy's educational facilities initially comprised little beyond these lecture courses. Hence the system is best studied in the period following the grant of a Charter in 1717, when experience had taught the academicians how best to proceed, and when the new Letters Patent stated clearly the Academy's basic pedagogical responsibilities.

The general character of the school had inevitably been adumbrated well before this date, as a natural consequence of the characteristics of architectural practice in France in the late 17th and early 18th centuries. It is important to enumerate and emphasize these characteristics because of radical changes which were to occur after the French Revolution, when a very different system—usually called the "Beaux-Arts system"—was put in its place.

The first characteristic stems from the fact that the Academy of Architecture was totally independent of the Academy of Painting and Sculpture founded in 1648 by Cardinal Mazarin, an Italian prelate whose views on art were entirely ultramontane. Hence the Academy School was also completely independent of the school of painting and sculpture.

The second characteristic stems from the fact that the lecture courses given by the Academy of Architecture were *libres et gratuits*, i.e., they could be attended by anyone and attendance was free of charge. It was only gradually that there emerged a "school" in the current sense of the term: an institution where young aspirants were registered as "students," and where specific qualifications were needed to entitle them to the special educational privileges provided.[2]

The third characteristic stems from the fact that this was an era in which only the most important buildings were designed by persons designated as "architects." Thus, few architects were initially elected to the Academy, and they tended to regard their title *architecte-du-roi* as virtually a synonym for "architect."[3] But one of the conditions of election was that they must reside in Paris, so as to be able to attend the weekly meetings. Hence other architects were unrecognized, expecially those who lived in the provinces.

When the Academy was founded, only six architects, plus a professor and a secretary were appointed. When J. H. Mansart became Superintendant of Buildings in 1699, the number of members was increased to fourteen.[4] The 1717 Charter increased this number to twenty. In 1756, membership was finally set at thirty.[5] This restriction on membership of the Academy vitally affected the eventual organization of the School, since the Charter laid down that the number of official "students" should be proportionate to the number of academicians. Thus article 40 stated that every academician was to nominate one student (clearly envisaged as being one of his own pupils or assistants), and that the professor could nominate six students.

The evolution of the Academy School's curriculum and policy conveniently divides itself into three phases. The first lasted from the date of the Charter until 1762 (the date of Jacques-François Blondel's appointment as Academy Professor). The second phase lasted until J. F. Blondel's death in 1771. The third phase ended with the dissolution of all the Academies by the revolutionary government in 1793. This final phase was distinguished mainly by the influence of E. L. Boullée, and others like him, who were political as well as architectural visionaries. It was their grandiose projects, and the doctrines set forth in Boullée's *Architecture, essai sur l'art*, which formed the bridge between the old academy school and the 19th-century Ecole des Beaux-Arts; and it was their political sympathies with the new *régime* which put the organization of the new school in their hands.

The second phase was undoubtedly the most important, and its importance was due to the fact that Blondel introduced many of the methods he had perfected in his own private school of architecture. I propose, therefore, to describe the development of this school and its influence on subsequent architectural education. But there were *three* Blondels teaching and practising architecture in France between 1671 and 1774, so it will be appropriate to begin by explaining clearly which Blondel is the hero of this essay.

Chronologically, the first Blondel was François Blondel,

the Academy of Architecture's first professor, best known nowadays as the author of the *Cours d'Architecture* published in 1675. He was essentially an expert in structural engineering and stereotomy, and had been selected by Louis XIV to teach mathematics to his own son, the Grand Dauphin. The second Blondel (1683-1756), an architect who was born in Rouen, moved to Paris, and became a member of the Academy. He established a creditable reputation as an architect, interior designer and draughtsman, and taught several young architects of the next generation, including Cuvilliès and his own nephew, Jacques-François. Only Jacques-François Blondel concerns us here; so he is the only Blondel who will be referred to in the rest of this text.

Blondel's school started officially (i.e. with the Academy's permission) in May 1743;[6] but the date on which he actually started giving organized tuition is uncertain. In his preface to the *Architecture Françoise*, published in 1752, he claimed to have been teaching for fifteen years "publicly and privately," so that he must at the latest have started teaching in 1737. He did not however set up his Ecole des Arts in the rue de la Harpe in Paris until 1740.

"Before 1740," wrote Pierre Patte, who completed the last two volumes of J. F. Blondel's published *Cours d'Architecture*, "there was no school in Paris where a young man might be trained and learn everything he needed, such as architectural and ornamental drawing, perspective, stereotomy, quantity surveying and all the other numerous details involved in building construction. He had to visit successively various teachers to learn each of these subjects, which wasted time, and caused him usually to learn drawing and neglect the rest. It was for this reason that M. Blondel created an Ecole des Arts, where several teachers, specializing in these various subjects taught in one place under his directions."[7]

Blondel himself explained at length the purpose of his undertaking in the August 1747 issue of the *Mercure de France*. "To train skilled architects," he wrote, "it is indispensable to unite the study of all the relevant arts" (i.e. painting, sculpture, garden design, masonry, joinery, carpentry, locksmith's work, etc.); and this, he asserted, had never been done before. Thus a young man who intended to be an architect was often ignorant of perspective, mathematics, the principles of design, and the arts of drawing. On the other hand, those who were trying other professions, such as painting, neglected to study what they should know about architecture, geometry, optics, etc. Another equally serious inconvenience, in his view, was that most young men started studying architecture and its related professions as a result of advice given them, and rarely from their own inclination. If all the arts were to be explained to them one at a time, they would, he considered, be in a better position to decide for themselves which suited them best.

Another advantage was that they would understand the relationship linking the art they had chosen with all the rest, of which they could at least learn the rudiments. By these means he anticipated that there would be fewer mediocre architects, fewer superficial mathematicians, fewer tasteless decorators and fewer untutored draughtsmen. These reflections seemed to him so important that he thereupon conceived the idea of forming a school in Paris where all the arts relating to architecture would be assembled, and where reputable teachers of each could impart the subjects in which they specialized.[8]

In Blondel's annual inaugural address to the students given in 1754, he said: "From my experience, I judged it essential that these different branches of knowledge should be acquired according to common principles, and taught by several professors who, being united in the same spirit, would teach in a way calculated to bring out the best in each student. Thus, as a result of careful co-ordination, those entrusted to us can progress in regular stages from the knowledge of precepts to an understanding of taste, from theory to experience, and from speculation to practice."[9]

It may thus be fairly claimed for Blondel that he originated, in the first half of the eighteenth century, a system of full-time architectural education which was not introduced into North America for nearly another hundred and fifty years, but which is now the generally accepted method of architectural training both in Europe and America.

As was to be expected, the Academy rather resented the efforts made by an independent architect to set up a school of architecture in Paris, especially when that architect was not even an Academician. After running his school privately for two years, Blondel sought to widen the scope of his work, and to interest the public by putting an advertisement in the press. First, however, official sanction had to be obtained from the Lieutenant-General of Police; but the Academy was opposed to the idea, so permission was refused. Fourteen months later, however, the Academy reversed its policy and decided that "Mr. Blondel's school would be useful to the public and to the progress of young persons who wish to apply themselves to architecture."[10]

The main function of Blondel's school was to give *full-time* training[11] (as compared with the Academy School, where tuition was only given two mornings a week). We do not know how many attended, either as day students or boarders, but the school evidently enjoyed a high reputation which extended beyond the frontiers of France. One of the school prize-winners of 1755 was Jacques Heumann, a native of Hanover. Sir William Chambers, whose election as first corresponding member of the Academy took place in 1762, was one of Blondel's pupils;[12] and such a distinguished and successful architect as Servandoni did not hesitate to send his own son Jean-Raphael to study at Blondel's Ecole des Arts. The reputation of the school was such that the government chose it to teach architecture to the students of the Ecole des Ponts et Chaussées, i.e., the state school of civil engineering. As a result, Blondel received a grant of Fr2,400 per annum to provide these six students with books and drawing instruments, and to defray other expenses, in addition to the normal fees. This stroke of good fortune can be regarded as a reward of virtue, because Blondel himself had, from 1749 onward, awarded twelve free places in his school each year to students who were "more favoured by nature than by fortune."[13]

The fears of anxious parents who contemplated sending their sons as boarders were allayed by the description which Blondel gave of his establishment, which included a room set apart for, "fencing, music and dancing; exercises to which particular attention is paid, since they should form part of the education of all well-born persons who devote themselves to architecture, and who are destined to live in the best society... Moreover, to make this establishment as useful as possible, I have selected a person of recognised probity who, at my request, and under my supervision, has kindly undertaken to give board and lodging in the same well-aired house situated in a suitable part of Paris. She will supervise the endeavours and good manners of those who, sent to Paris without this help, would often find themselves left to their own devices, and thus lose the fruit of their studies. By these means, they will find under the same roof, and at a reasonable price, the necessities of life, and facilities for becoming skilled in the different branches of the Fine Arts."[14]

The curriculum of the school, as finally evolved, is given in the introduction to volume three of his *Cours d'Architecture*, published in 1717; and although it is difficult to imagine architectural students of any period submitting fully to such an exacting discipline, the picture it gives is probably no less accurate than most documents of its type.

Tuition was given to architectural students from 8 a.m. to 9 p.m. every day of the week except Sunday, with an hour off for lunch from 2 to 3 p.m. The morning period was entirely devoted to the theory of architecture (later published in book form), and studio work. The latter might consist of copying details, preparing improved designs of well-known buildings, or designing original schemes in accordance with programs carefully prepared and dictated.

Many of the programs were doubtless for the same rather luxurious types of building which were the subjects of the annual Academy competition. Blondel not unnaturally trained his students with an eye to the most influential type of patron; and although few can have hoped to emulate his most distinguished pupil, Richard Mique, who eventually became architect of Marie Antoinette, several rose to be Academicians. Several of the programs were, however, for simple utilitarian buildings, and Blondel makes it quite clear how important it was that this type should be included. When speaking of economy, he asserted that he intended to stop his students from always occupying themselves with luxurious projects, and to teach them to adapt buildings to restricted sites. "Make no mistake," he warned them, "this type of study is no less useful than those large compositions which are often beyond your capabilities, and which you treat superficially, eventually abandoning them for something new and even more vague."

It was his experience that they should first of all try to make something of a hilly, irregular and restricted site; that they should keep within the conditions prescribed by the program or given by the client; and that they should above all observe a spirit of suitability and economy in every type of building. "Try to reduce the cost of your work to half, then to a quarter," he told them; "it is a process one nearly always has to go through in practice."[15] Already in his first publication, Blondel had remarked that nothing shows more the merits of an architect than when, limited by the site and the money available, he combines good taste and good planning, and nobly relates all the parts of his building.[16]

Blondel's general method of dictating programs was based on the Academy system, but there can be no doubt that his were drawn up with much more care and attention to detail:

By program I mean the enunciation of a fairly detailed project, which the professor gives his students that they may understand his intentions, and the sequence they should follow in composing the esquisse *under his supervision. The students then do a finished drawing, without being allowed to depart from their first thoughts. It is the professor's duty to explain clearly and precisely the conditions of the program, including the dimension of the site, its various levels, and any special restrictions of the type one always finds in building. Before dictating the program, he should himself, in the tranquility of his office, have made preliminary sketches, as the only means of keeping to essentials thereby in a way preparing the student's work. After having thus conceived it, he should, in everybody's presence, analyse, extend, and develop speculatively the type of project concerned, giving references to precedents, and reminding students of similar buildings by great masters, or those described by the best authors. He should try to make them realize the subtle differences which distinguished buildings constructed for the same purpose... so that those participating can stock their minds with those things bearing most analogy to the project given, and, before beginning, conceive a clear idea which will enable them to make fewer mistakes concerning the proper arrangements and requirements of each composition.*[17]

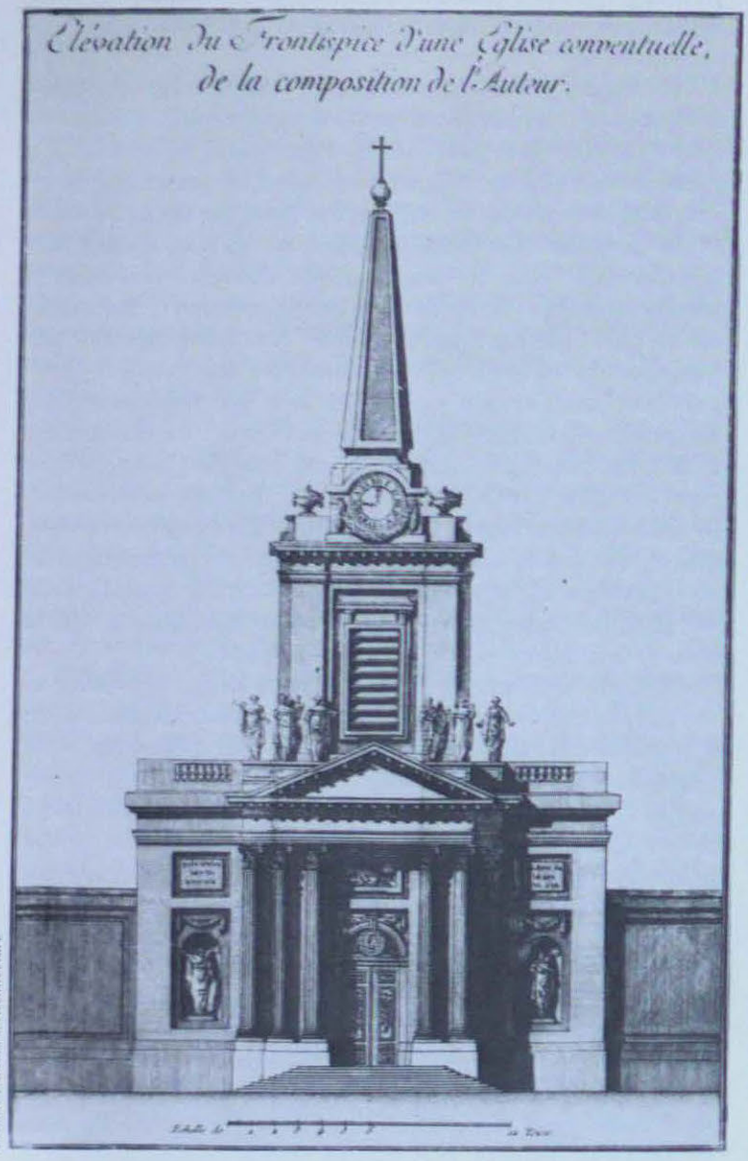
He always advised his students never to hurry. On *esquisse* days, they were given about twelve hours to finish; and he frequently told them to pass a third of the time thinking over the problem in complete silence, and then to spend the same length of time trying several ways of fulfilling the conditions of the program. The remaining four hours was, in his opinion, adequate time to translate their thoughts and make a precise *esquisse* to the required scale. "Remember," he would say to his students, "that the better you have digested the program, the easier it will be to produce the finished drawings. You must regard *esquisse* day as a day of triumph; any weariness you may feel on that day will ensure for you an easy time for the rest of the program; and only thus have you the right to expect the prize awaiting you." But few students followed his advice; and he lamented what a lot there were who, quickly extracting one sentence from the program, immediately grabbed a scale and dividers, and started drawing without comprehending that they should have the concept fully in their heads before putting pencil to paper.

Blondel's programs were of several kinds, according to the purpose of each exercise. The few published in his *Cours d'Architecture* are all exercises in elevational treatment: a triumphal arch, a commemorative column, a fountain, the gateway to an arsenal, a church porch, the doorway to a stable, a palace facade, a belvedere, a lighthouse, and so on.[18] But programs were also set as exercises in planning and interior design, and a few were devoted to the design of gardens.[19]

In each program the scale required for the *esquisse* and for the finished drawings was clearly stated. Before the establishment of schools of architecture, there seems every reason to believe that no architects ever drew to a regular scale. After ensuring that their drawings would fit onto the piece of paper selected, they would draw a scale line of convenient but arbitrary length, and then divide it into appropriate sub-divisions by means of dividers. It is for this reason that dividers were always the architect's badge of office, to be held in a prominent position when having one's portrait painted.

The need to establish conformity of scale first appeared when student competitions became an annual feature of the Academy. The first record of a definite scale being imposed occurs in the Academy minutes for January 10th, 1701. The subject proposed for the prize that year was a parish church porch 120 feet wide, and competitors were told to "reduce this on the drawing to 1 inch for 6 feet." From then onward, it became the rule to prescribe a convenient scale, although sometimes the degree of convenience was a matter of opinion. On one occasion, the Academy students complained that their *loges* were too small for them to make the large scale drawing to the size demanded, and begged to be allowed to plan to a scale of four-twelfths of an inch to six feet instead of to twice that scale.[20] The scheme for this particular year (1772) was a royal palace, which was to have an elevation 660 feet long. To the scale demanded, this would have produced a drawing 6'-3" wide, and as the students were asked for two elevations, full plans and a section, we can sympathise with their predicament.

The French units of measurement were: the *toise* of six feet, the *pied* or foot (equivalent to 1.066 English feet), the *pouce* or twelfth of a foot, and the *ligne* or twelfth of an inch. The scales chosen were not based on an inflexible system; and in the specimen programs given by Blondel in his *Course*, the scales required for *esquisses* and finished drawings vary considerably. They are usually expressed as so many *lignes* or



Blondel, Cours d'Architecture

pouces to so many *pieds* or *toises*; but the fractions are frequently awkward, and drawings must still have been scaled with dividers from a specially drawn scale-line.

In addition to designing academic projects, much time was spent examining existing buildings in and around Paris:

It is only by an attitude of comparison that we can judge the relationship of the parts of a building to the whole, so as to take what is best from each, and as it were deduce so many principles capable of leading us nearer and nearer to perfecting our art. Yet this perfection seems to draw further away, because young architects neglect to examine carefully different buildings and the finer points of edifices not generally admired.[21]

Blondel would have heartily endorsed Viollet-le-Duc's dictum, written a hundred years later, to the effect that an architect is not, and never can be, anything but a part of the whole, beginning what others will finish, and finishing what others have begun; that he cannot work in isolation, for his work is not his own personal effort, like the painter's picture or the poet's verse. Thus any architect who claimed to impose an art on a whole epoch would, in Viollet-le-Duc's opinion, be committing an act of pure folly.[22]

The assessment of the merits of existing buildings was an intrinsic part of Blondel's system; but it naturally provoked a certain amount of resentment amongst his fellow architects, especially when he published his criticisms in book form, and delivered them in public lectures. The wealth of polite circumlocution with which he gilds the pill of adverse comment shows how anxious he was not to offend, but he found it necessary more than once to defend his motives, and disclaim charges of partiality. His only aim, he asserted, was the perfection of the arts. Beauties universally approved would be so regarded by him; mediocrity would be censured in his book with suitable restraint. He knew that his sincerity would displease some people, but he contented himself with the thought that the honesty of his intentions and the esteem of scholars would sufficiently repay him for the vexations of those who sought to give a discreditable interpretation to his zeal.[23]

Twice a week, during April and May, Blondel spent the afternoons from 3 to 9 p.m. conducting parties of students round Paris to examine on the spot either the exteriors or interiors of churches, or the planning, elevations and interior decoration of domestic buildings.[24]

We have no record of all the buildings they visited; but the elaborate guide books of Paris published in many editions by Brice and Piganiol de la Force make it clear that most palaces and mansions could be fully inspected, and it seems not unlikely that Blondel's students were able to take full advantage of these facilities. In his *Architecture Françoise*, Blondel refers to the number of times he has shown visitors round the palace of Versailles,[25] and at the beginning of his *Cours d'Architecture* he remarks that it is not sufficient just to visit important peoples' dwellings: one must contemplate the facades, walk through the interior, come outside again, remind oneself of the reasons for which it was built, and reflect on the type of edifice, the uses of the rooms, and the people who live there.[26]

Nevertheless, he considered that an architect's first care should be to make his facades both elegant and well proportioned; always related to the internal planning, but in accordance with the laws of elevational design.[27] When criticizing the Collège des Quatres Nations (now the Institut de France) by François d'Orbay, he brings out this point very strongly. After criticising some of the windows, he writes:

D'Orbay's supporters will not fail to reply that criticism is easy and practice difficult. Moreover, they will say that the interior required this particular type of window. But this excuse, if it is one, does not change the window's unsuitability, and all unsuitable architecture is imperfect, especially when the design of an important monument is involved. For after all, there are not only rules in architecture; there is also ingenuity. With a little thought it will be apparent that the latter, in the hands of a great and skilful architect, provides him with the means of overcoming the greatest difficulties, and of reconciling in a less trivial way the interior with the exterior of a building.[28]

Unlike most of those who take upon themselves the duties of art criticism, Blondel was not afraid to offer his own works for public appraisal, or make positive suggestions for improving the buildings he criticised. In his first published work, containing his own designs for country houses, he states that unlike the majority of authors who, to have their work admired, show only its most attractive side, he is prepared to criticise the defects he was unable to avoid. "One can even turn these imperfections to profit, and draw lessons from them, of which a regular building would give no clue. When one has already acquired a certain knowledge of architecture, other people's errors serve as a guide. I shall not, therefore have so much vanity as to hide my own from the reader."[29]

One of his great pleasures was to redesign celebrated buildings in the light of his own criticism, and his students were given similar practical exercises in criticism. In the third

volume of the *Cours d'Architecture*, there are two illustrations of Perrault's celebrated Louvre colonnade. Plate VI is a view of the central portion which Blondel describes and criticizes in five pages of text. Plates VII and VIII, which are an elevation and plan respectively, show the same view "with several changes proposed by the author of these lectures," and are accompanied by four pages of explanation. Similar studies were made for other buildings, and Blondel tells us how, more than once, he got his students to draw suggested changes in the elevation of the palais du Luxembourg, the entrance to the hôtel de Soubise, and many of the other buildings he criticised during his lectures.[30]

Formal visits were not only made to completed buildings, but to workshops and building sites. "To merit the title of architect, it is not sufficient to have been a draughtsman for several years...Before taking the risk of actually constructing, one should have spent several years visiting workshops and buildings;"[31] and at a suitable time, when the weather was fine, we find Blondel taking his students round the various workshops in Paris, so that they would have practical knowledge of building and of craftsmanship, and could examine systematically the totality of systems of construction, the way they fit together, their durability, strength, weight and thrust; so that they could learn the terminology and local trade practices, and the method of drawing up specifications, contracts and site layouts. The examination of these sites continued from the time excavations started until the time the building was completed.[32]

Blondel advised his students never to waste their free time, but to spend it usefully visiting the studios of celebrated artists and architects, or going to various buildings being constructed in the city. In some of them they could examine the foundations, footings and various kinds of vaulting; in others the roof, roof drainage and carpentry work.[33]

During summer, the students spent their mornings surveying, levelling and quantity surveying; and much time was spent in other forms of scientific study and practical work. The senior students spent three or four hours every afternoon studying stereotomy (for which there was a special workshop containing full-size models of masonry), carpentry and joinery details. The junior students also studied stereotomy on Mondays, Wednesdays and Fridays, but took "history of art" (i.e. as described in classical literature) and sketching on Tuesdays, Thursdays and Saturdays. The first two or three hours of every afternoon were devoted to mathematics (for quantity surveying) descriptive geometry and conic sections (for stereotomy), mechanics (for building machinery), water supply and drainage. In November and December, part of each morning was devoted to perspective, and to experimetal physics relative to the art of building.[34]

These different lessons were given in several rooms which looked out onto a large garden. One room was used by the junior students designing projects; in both of these rooms, sets of finished drawings to large scale were exhibited. Next to it was a room used to display various techniques of drawing, including a number of originals, with specimens of sculpture in the round and low relief. The fourth room was for lectures in mathematics, perspective, fortifications, quantity surveying and theoretical stereotomy. Finally, there was a large room which contained books, instruments, all kinds of models and a fine collection of framed drawings. It was here that lessons were given in experimental physics.

It will be apparent here that Blondel's pedagogical method was what would nowadays be praised as *une structure pluridisciplinaire des programmes d'études*. It seems clear to me

that it still persists in schools (such as my own) which have always been affiliated with faculties of applied science. At McGill, as elsewhere, there was radical departures from the traditional *architectural* courses when the influence of Le Corbusier and the Bauhaus led to the general rejection of traditional pedagogical methods; but the basic engineering discipline persisted, and recent disenchantment with Le Corbusier's *urbanisme* has caused many features of the 18th century design curriculum to be reintroduced, albeit under more trendy names.

NOTES:

PV: Procés-Verbaux de l'Academie Royale d'Architecture;
MP: J. F. Blondel, De la distrubution des Maisons de Plaisance (1737-8);
AF: J. F. Blondel, Architecture Françoise(1752);
Cours: J. F. Blondel, Cours d'Architecture (1771,1777).

1. PV *i* ix;
2. PV *iii* 59
3. PV *vi* 22
4. PV *iii* 58
5. PV *vi* 341
6. PV *v* 314-342
7. Cours *v v*
8. Mercure de France, *August 1747*
9. Discours sur la necessité de l'etude de l'Architecture (*Paris, 1754*) *p. 69*
10. PV 5 *May 1743*
11. Mercure de France, *June 1755*
12. PV *vii* 96
13. Discours, *1754, p. 8*
14. Cours *iii lxxxix*
15. Cours *ii* 336
16. MP *i 126*
17. Cours *iv lxxxiv*
18. Cours *iv xci*
19. Cours *iv cix*
20. PV *viii 135*
21. AF *iii 17*
22. Dictionnaire Raisonné, *i xvi*
23. AF *iv 90*
24. Cours *iii lxxxv*
25. AF *iv 124*
26. Cours *i 433*
27. AF *iii* 52
28. Cours *iii 274*
29. MP *i 103*
30. Cours *iii 81, 140*
31. Cours *iii lxiv*
32. Mercure de France, *August 1747*
33. Cours *iii xxiii*
34. Cours *iii lxxxvii*

THE SHAPE OF ARCHITECTURAL HISTORY

A Review of:

History of Architecture on the Comparative Method

By Sir Banister Fletcher

Reprinted from the September 7, 1961 issue of **The Manchester Guardian**.

News of the publication of a completely revised edition of Banister Fletcher's *History of Architecture on the Comparative Method* will have brought a pang of emotion to the heart of everyone in the English-speaking world who has ever been called upon to study architecture—especially if it was to pass an exam. For years it has been the handy reference book of every serious student and the last refuge of every dullard. Its authority has been accepted—though with decreasing enthusiasm on the part of the more enlightened—for generations, and indeed it has been in use for so long that its origins have become in certain respects forgotten or obscured. Who realizes today, for example that it was not the work of a single author, but (perhaps like the *Iliad*) was originally written by two men with the same name? For in fact the principal author of the first edition was not the future Knight Bachelor, Officer of the Order of the Legion of Honor, Commander of the Order of Leopold II of Belgium, Commander of the Order of Ta-Shou Chia-Ho of China,(Sir Banister very properly limited himself to five Orders), but his father, the Professor of Architecture and Construction at King's College, London. The latter's name was unostentatiously dropped as soon as the former achieved a knighthood (awarded in 1919 in recognition of the fact that he was the senior sheriff of London in the year the armistice was signed), and doubtless quite rightly, for many modifications were made by the son after his father's death. But the general organization of the text remained unchanged, and there is good reason for believing that this may have been the older man's idea.

Before explaining why this assumption can be made, and before discussing either the important modifications incorporated during his son's lifetime, or the results of Professor R. A. Cordingley's new and careful revision, it will be appropriate to distinguish the three types of general history of architecture which seem generally possible. Firstly, there is the type most common in the nineteenth century, but still occasionally produced today (as for example Sigfried Giedion's *Space, Time and Architecture*), which is inspired by the distinctive theory of architecture its author seeks to propagate, and which thus constitutes what the French would call an *histoire à thèse*. Secondly, there is the type—best exemplified by Louis Hautecoeur's monumental nine-volume history of French classical architecture—which might be described as encyclopaedic; a book which contains a number of critical observations and assessments, but aims primarily at collating and dissecting as many buildings as possible, so as to classify them, like biological specimens, into various species or groups. Thirdly, there is the type best exemplified by Nikolaus Pevsner's *Outline of European Architecture*; a book in which the text is critical without being doctrinaire or opinionated; discursive, though none the less precise and factual; and where examples and illustrations are in general restricted to buildings which illustrate the introduction or development of specific architectural ideals.This is the most readable kind, and perhaps the only kind which is widely recommendable as a means of comprehensively, objectively and thoughtfully studying the topic; but the other two are both invaluable and indeed essential in their own way, provided the books are properly used.

As first produced in 1896, the *History of Architecture on the Comparative Method* clearly belonged to the first type. The pattern on which it was based was unquestionably intended to reinforce the mid-nineteenth century theory known as "Rationalism," and thus its form was most likely due to Banister Fletcher senior (who was very much involved with building construction and was for many years a district surveyor), rather than to his son. This Rationalist character is evident from the title alone, for the idea of a comparative history of architecture (analagous to those studies in comparative anatomy which had been made early in the nineteenth century by biologists such as Cuvier) had long been the dream of those who demanded a new architecture based on logical and up-to-date construction, and was one of the first manifestations of the idea of architecture as something "organic." It was first formulated in 1849 by James Fergusson, who put it forward six years before publishing his own great history of architecture which Banister Fletcher's eventually superseded; and it was given its most forcible expression three years later, in France, by Viollet-le-Duc.

"When," demanded the latter, in one of his periodic fulminations against the Ecole des Beaux-Arts, "will our poor school see the arising of its Cuvier to teach us the comparative anatomy of antique and modern monuments, and to

teach us not to put rabbit's feet on a monkey's body, or to cloth the skeleton of a lizard with fur?" The answer to this question we now know to be 1896; but in the meantime, Darwin had published his famous theory, so Banister Fletcher not only adopted Fergusson's notion of a comparative history of architecture, but also tried to demonstrate the *evolution* of architecture by showing the direct influence of enviroment (geographical, geological, climatic, religious, social and political) on changes in architectural form.

As revised by Sir Banister Fletcher after his father's death the *History of Architecture on the Comparative Method* still maintained intact those divisions of the text dealing with environmental influences, though these were considerably tempered and (not always felicitously) enlarged. But it became evident, as edition succeeded edition, and as the weight increased to three and three-quarter pounds, that the author was now more concerned with the illustration of ancient buildings (of which over three thousand were eventually depicted and over a thousand more were either succinctly or superficially described) than with discussing ideas. The result was that the original theme of the book became gradually obscured. This was not necessarily a misfortune, since the efficacy of the "comparative method" as a means of throwing light on the evolutionary process of architectural development was always open to question, and the book, in its later editions, had seldom in fact done anything beyond provide a facile method of tabulating the characteristics of the various "styles." But the modified character of the book made the need for a radical revision more and more urgent, and we may all rejoice that after six years' painstaking work on the part of Professor Cordingley and his collaborators, this task has now been successfully fulfilled.

The principal changes needed, once it was accepted that the book had become irrevocably encyclopaedic in character, were such as would ensure a better balance between the various historical periods. Even within the context of the original framework, Sir Banister Fletcher's revisions had always been somewhat erratic, but since the original character of the book had been that on an *histoire à thèse*, its neglect of certain periods was at first relatively unimportant. For example, it was not entirely unreasonable that, in the original edition, the section on English architecture should terminate virtually with the death of Wren, since the elder Banister Fletcher's theories were incompatible with eighteenth-century Palladianism, and he, like Fergusson, considered that true architectural evolution had virtually ceased once the Renaissance had become an established fact.

He therefore summarily dismissed Lord Burlington's villa at Chiswick (which he then attributed to Inigo Jones) because it had, he said, introduced the "pediment and portico style" which had lead to "the neglect of the fundamental principles of architecture, namely suitability of purpose, utility and appropriateness." But in its encyclopaedic form, with all the original moralizings deleted, the book's continued neglect of architectural developments after 1700 made the work ludicrously inadequate, and it was this, more perhaps than anything else, which caused the reputation of the work to decline.

Professor Cordingley's most urgent task was therefore to bring the book up to date chronologically, and this he accomplished by adding three entirely new chapters, of which two (entitled respectively "Nineteenth and Twentieth Century Architecture in Britain" and "Nineteenth and Twentieth Century Architecture in Continental Europe") were written by him and the third (entitled "Architecture of the Americas") was written by Frank Jenkins. But no less important task was that of bringing the book up to date in the sense of making the earlier parts accord with recent scholarship. So well has Professor Cordingley matched his literary style to that of the late Sir Banister Fletcher that the full magnitude of these changes is not immediately apparent, and they can only be detected by carefully collating with the earlier edition. But once this is done, it is evident that the revised text is comparable to an elaborately embroidered modern tapestry into which more ancient fragments have been carefully, piously and unobtrusively woven. Even sentences which begin as Banister Fletcher and end as Banister Fletcher usually turn out to be substantially Cordingley in the middle. It is to be hoped therefore that future bindings of the book will follow the policy adopted by the publishers of *Simpson's History of Architectural Development*, and, by titling future copies of this edition *Sir Banister Fletcher's History of Architecture*, allow the name of the new author to be embossed on the spine.

The only reservations which architectural historians are likely to have will probably concern the amount of space allotted to the different buildings and periods. No one will quarrel with the increased allotment of eleven pages to Greek architecture (which brings the total number of pages to seventy-seven), especially now that Professor Cordingley's new revision makes it undoubtedly the most thorough, precise and readable architectural account (as opposed to an archaeological account) available. But when one considers the small number of important Greek buildings, constructed between 650 B.C. and 146 B.C., of which any vestiges, however fragmentary, remain, and then compares this with the number of important buildings constructed in Continental Europe from 1830 to the present day, it seems unnatural that only fifty-eight pages should be accorded to the latter.

Furthermore one may question the wisdom of respecting Banister Fletcher's classification whereby the Renaissance ends at 1830 (the end of the "Georgian Period") and modern architecture therefore has to begin at the death of George IV. Admittedly Sir John Summerson's *Architecture in Britain 1500-1830* terminates on this date, but here he was making no pretence of specifically studying the "Renaissance," and the fact that Henry-Russell Hitchcock, when writing the companion volume on *Architecture, Nineteenth and Twentieth Centuries*, felt bound to begin at about 1750 shows clearly where the most recent authorities on the subject consider the roots of modern architecture to lie.

For example, there is little doubt that the ideals of modern architecture were very much influenced by the buildings and writings of C.N. Ledoux (1736-1806). But the new *History of Architecture on the Comparative Method* only mentions him twice (under the heading "French Renaissance"); once in order to attribute to him (erroneously) the hôtel de Salm, and once to remark that he was "fertile of progressive ideas." But clearly, unless a student of modern architecture knows what those progressive ideas were, his understanding of the subject will be seriously limited.

Such defects in an otherwise impeccable revison were presumably dictated by the obligation to keep as near as possible to the pattern of the original book. But as a result, the latest edition now starts as an encyclopaedia and finishes as a compendium. For the early periods, it is unquestionably more than adequate to fulfil the historical needs of an architectural student. But for the later periods, it is likely to be primarily of value to the laymen; and indeed, given the length, these chapters could hardly be improved upon as a concise and well-balanced account of the main architectural developments which have occurred during the last hundred and thirty years.

A Review of

Vincent Scully's

THE EARTH, THE TEMPLE & THE GODS

Reprinted from the ***Journal of the Society of Architectural Historians****, Volume XXII, Number 1, March 1963,*

It is probably fair to say that this is the most distinguished book of its kind to be published in the English language since the publication of Ruskin's *Stones of Venice*. Like Ruskin, Scully writes prose which exudes a tense emotional involvement with his topic; like Ruskin, he has the gift of writing euphoniously as well as persuasively; like Ruskin, he has the power of transforming factual statements into a special poetry of his own, transmuting archaeological descriptions into passionately articulated assertions of an aesthetic vision. That each of his perceptions is transfused by a mystical vision of Space, rather than by Ruskin's mystical vision of God, is simply an accidental characteristic of the age. This book is a delight to read, even for its narrative alone, and it should not be long before Scully's description of the Parthenon (which concludes his ninth chapter) rivals Ruskin's description of St. Mark's in popular esteem. But more important than this, his book will also be highly valued as a completely new and refreshing interpretation of Greek architectural ideals by everyone called upon to study the subject.

For if this book were simply a felicitously phrased interpretation of a well-worn theme, like Henry Adams' *Mont St. Michel & Chartres*, it would have little architectural or historical interest. As it is, its author shows that he has not only literary talents of exceptional value, but also that he possesses the rarest of all abilities to be found amongst archaeologists, namely the gift of historical imagination. Reading this book, one cannot but marvel that it has taken two centuries of staring at ruins and rumaging amongst fallen stones for an architectural historian to raise his eyes at last to the horizon, and see the Greek temple in its totality, that is to say, as forming, with its environment, an inseparable whole, whereby earth, temple and god are but one.

Not that this book is simply a modernized *Voyage Pittoresque de la Grèce*. On the contrary, it was only after careful study of the various literary sources available (notably the vast amount of periodical literature published by the various archaeological schools) that the author visited each site, and related all the ascertainable facts to his own observations. He sensibly divides his book according to the dedication of each temple (rather than according to chronological or stylistic criteria) and is thus able to preface the study of each group with a discussion of the type of site evidently considered appropriate by the Greeks for each god or goddess. He then proceeds to analyse each building so dedicated, and to explain not only how its location corresponds to the Greek notion of propriety (which was doubtless what Vitruvius meant to some extent in the sentence: "*Decor perficitur statione, quod graece θεματισμός dicitur*"), but also many other features which have hitherto been regarded as eccentricities or even errors in Greek design.

Inevitably there are passages in which the author's efforts to substantiate his thesis are not entirely convincing, and even the thesis itself seems curiously unsupported by the kind of solid literary evidence one might expect. His insistence that everything the Greek architects did was always motivated by profound aesthetic or religious reasons (as for example in his novel justification of the lack of curvature in the stylobate at Bassae) sometimes taxes the reader's credulity. Moreover, one could have hoped for a clearer indication of the extent to which the Greeks went *inside* their temples. But this is a splendid book, magnificently written, and its only blemish is to be seen in the photographic illustrations which, though profuse and more than adequate to illustrate the text, are of a quality which does less than justice to the theme.

Scully will readily be forgiven, especially by those who have visited Greece in the summer, for preferring to travel there in winter; but dull skies and shadowless buildings ill convey the impression of the Greek landscape at its best. It is to be hoped therefore that the next edition of this book will be a de luxe edition, with larger and brighter photographs, and that many of these will be in colour to form a harmonious accompaniment to the author's dazzling prose.

FRANKLEUDREIT

A Review of:

Frank Lloyd Wright: A Study in Architectural Content

By Norris Kelley Smith

Reprinted from the October, 1966 issue of ***Progressive Architecture****,*

During the last 50 years, there have appeared about a dozen books on architectural history that can justifiably be described as masterpieces. This is one of them. It is quite short, but in it Professor Norris K. Smith expounds with sparkling lucidity an interpretation of Wright that not only clarifies numerous hitherto apparently inexplicable facets of Wright's life and work, but deftly pulls the rug from under the whole cumbrous intellectual superstructure published so far in honour of the master.

The chapter titles are, respectively: "The Cause Conservative," "Wright and Romanticism," "The Oak Park Years," "Crisis," "A New Beginning and Its Destruction," "Depression and Resurgence," and, finally, "Assessment." But the book is dominated by two grand themes. The first is that of the fundamental and dramatic antagonism that rends assunder the personality of any proselytizing nonconformist; for, obviously, the more he finds that success crowns his preaching, the less nonconformist he becomes himself. The second theme is the influence on 20th-Century architecture of non-Hellenic modes of thought. I shall not discuss the first theme, since any commentary might diminish the intensity of the reader's pleasure when confronted with Professor Smith's impeccably organized and inspiring prose. However, the second theme is susceptible of constructive comment, since it is is more controversial than the author's plausible presentation may lead one to suppose.

Basing his deductions on Thorlief Boman's *Hebrew Thought Compared With Greek* (a book originally written, it should be noted, in German), Professor Smith writes: "What I shall try to demonstrate is that (Romanticism and Classicism) derive from the two main sources of Western thought, the Hebrew and Greek respectively" (pg. 36). He then convincingly quotes Bowman to show that the Greek concept of "being" implied something objective and inert, and the Greek concept of "form" implied tranquility, moderation, and the harmonious expression of the intellect, whereas the Hebrew concept of "being" implies becoming and "the Israelite finds the beautiful in that which lives and plays in the excitement and rhythm" (pg. 40). Professor Smith approvingly follows Boman in commenting that the beginning of St. John's gospel (which, in English, is translated as, "In the beginning was the Word," and, in German, as *"Im Anfang war das Wort"*) is rendered by Goethe ("who goes back to the Hebrew (Aramaic) original," pg. 56) as, "In the beginning was the Deed"—a curious sort of corroboration in that (a) Goethe was not exactly an authority on Aramaic, (b) St. John's gospel was written in colloquial Greek, and (c) the quotation is from the Poodle scene in *Faust*. But from all this, and much more evidence, Professor Smith concludes that *"Wright thought in Hebrew"* (pg. 39).

Now it is incontestable that a person's thoughts are intrinsically affected by the language in which he thinks them, and thus one cannot thoroughly understand any architect's thoughts unless one is familiar with the language in which they were expressed. *But Wright, unlike St. John, not only shows no evidence of ever having thought in Hebrew; he was, if anything, antisemetic.* The phrases with which, in his *Autobiography*, he describes the Jewish draftsmen who were working for Adler (who was the son of a rabbi); his offensive description of Ottenheimer; even his taut reference to his Uncle Jenkin's

friend Rabbi Hirsh, demonstrate this conclusively. How, then, are we going to reconcile Professor Smith's conclusions abstracted from Boman with the demonstrable facts concerning Wright's intellectual growth?

The solution of this dilemma is not, I think, hard to find; and, if correct, must have important implications for the historical interpretation of the whole evolution of contemporary architecture. My contention is that, whereas it is true that Wright and especially Sullivan were primarily stimulated by the writings of—or conversations with—Jewish intellectuals, both these men were essentially stimulated by *Germans*, whether of Jewish or Gentile blood; and though there may well be a large element of Jewish influence in 19th-Century German aesthetic philosophy (stemming, for example, from Moses Mendelssohn), it is not hard to prove that the more obviously non-Classical aspects of Wright's philosophy, of the Bauhaus philosophy, and indeed of Le Corbusier's philosophy, stemmed essentially from a century-old synthesis of German mystical and philosophical beliefs.

As regards Wright, he himself states in the *Autobiography* that he was mainly influenced by Carlyle, Coleridge, and Emerson; in other words, by the three 19th-Century writers most keenly engaged in promoting translations of German thought into English. As a young architect, he came under the influence of a superman who, from the beginning, he significantly refers to as *Lieber Meister*—a term of respect easy to understand when we realize how much Sullivan owed to his German-Jewish friends Edelmann and Adler. It was Edelmann who taught Sullivan "the highest transcendentalisms of German metaphysics" (i.e., Kant's doctrine that the *Critique of Pure Reason* was an architectonic plan for a new science) and introduced him to Wagnerian opera, just as it was Edelmann who "led Louis to Adler" (*Autobiography of an Idea*). Sullivan certainly did not have much respect for Adler's racial origins, since he referred to him as a "short-nosed Jew"; but Adler obviously had a great influence on Sullivan's mind by introducing him to the works of Gottfried Semper. And Goethe, Wagner, Semper, Adler, and the Bauhaus all have this and only this in common—they were associated with Weimar.

In Professor Smith's final chapter, "Assessment," quoting Karl Löwith, he calls the Communist creed "a pseudomorphosis of Jewish-Christian messianism." But it seems more important to emphasize that, although Karl Marx's father became a Christian and cut himself off from the Jewish community, Karl Marx thought and wrote in *German*. And it was the affinity of Marx's abstract politico-historical theories with the Teutonic philosophy of his age that made Wagner the leading exponent of the artistic implications of *The Communist Manifesto* and caused Gottfried Semper to flee from Saxony after the revolution for which the "Manifesto" was written and seek protection through the British Prince-Consort, Albert of Saxe-Coburg-Gotha. Indeed, when Semper published his first book (based on his experience in organizing the 1851 London Exhibition), this book, which was the ultimate source of Arts-and-Crafts philosophy, was written not in English but in German, and printed in Brunswick.

Professor Smith is absolutely convincing in his assessment of the reasons that prompted Frank Lloyd Wright, in 1909, to desert his family and architectural practice and go into voluntary exile in Europe. But I am less surprised than he that Wright handed over his practice to "a German-born architect who had no particular knowledge or sympathy for Wright's work." Nor am I surprised that when Wright left the shores of America, he went straight to...Berlin.

URBAN RETROSPECTION

A Review of:

The Historian and The City

Edited by O. Handlin and J. Burchard

Reprinted from the July, 1967 issue of ***Progressive Architecture****, copyright 1967, Reinhold Publishing.*

Symposia are ideal media for the exchange of scholarly opinions because the governing bodies of universities and foundations have not yet realized that "symposium" is simply the Greek word for "a drinking party." Admittedly, this symposium shows only slight evidence of the stimulating influence of alcohol, though the affluence of printer's inkohol is evident in M.I.T.'s well-produced paperback text. The editing is a bit fuddled, for the origins of Philadelphia are described 120 pages after the description of the city's development in the 19th century, whilst on page 71, the assertion "Professor Brogan has cited..." seems clearly nonsensical, since Professor Brogan's paper does not appear until page 146. However, these lapses are evidently due to a rearrangement of the original sequence, and it must be admitted that the published sequence is ideal, *provided it is read in reverse.*

Literary "stylists" doubtless favor an arrangement whereby a book becomes more and more absorbing as it reaches its end. But there must be many who, like Soames Forsyte's great-uncle James and myself, happily display their senility by gobbling the most succulent morsels first, so that satiety results only when the most unappetizing parts remain. Anyway, I strongly recommend readers of *The Historian and the City* to start with the final chapter; and the fact that the editor himself has contributed this chapter, rather than a preface, suggests that he himself would secretly approve such advice.

Let us begin, then, by considering "Part VII: Conclusion," written by John Burchard in his most brilliant mood. The aim of the symposium was, he states, to confront those who teach city planning, or the history of city planning, with other kinds of historians—economists, political scientists, and philosophers—in the hope of determining how the history of cities can most profitably be studied in relation to the actual problems of urban design. The result, as he frankly observes, was futile; only the most callous and credulous reader will find logic in his prophecy that the next symposium on the subject will prove more helpful. This conclusion is almost an insult to the eminent and distinguished contributors to the volume under review.

The futility resulted mainly from the fact that "there was no real effort to define what we were talking about, either history or the city. The definition of the latter was of course the more slippery." However, there is no reason to assume that the failure to produce viable definitions was due either to the oversight or the incompetence of the participants. Dean Burchard might usefully have added that the main danger in studying cities historically is precisely that the scholar is irresistibly led to escape from considering what a city *is* by elaborating on what it was in the past. His own favorite definition of a city as "the congeries which multiply the opportunity to exercise choice" seems excellent; but, as he himself points out, the most important discrepancy between the attitudes of the various speakers revolved around the problem as to whether every city is unique, or whether, on the contrary, all cities have enough common characteristics to permit the notion of "the city" to be studied in abstract concepts.

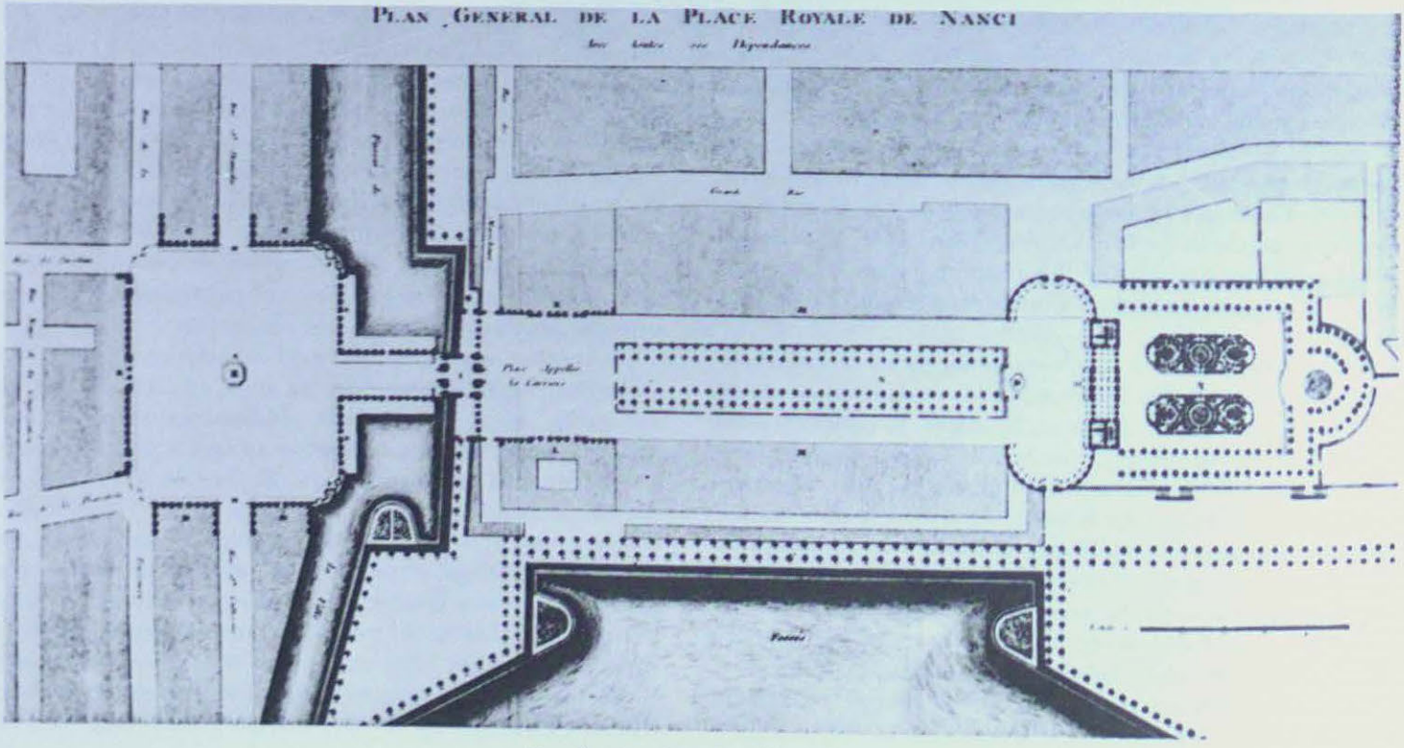
This discrepancy was never resolved. Indeed, none of the speakers whose ideas are published seems to have even grappled with the dilemma during the symposium. Those who discussed cities abstractly talked a good deal about "parameterization," but were singularly reticient about the precise character of the parameters they envisaged. Those who concentrated on individual cities only became eloquent when describing economic developments during the Middle Ages or the Renaissance, whilst the occasional desperate endeavors of economists and social historians to introduce architecture into the argument often lacked conviction.

"Another question that went largely unasked," writes Dean Burchard, "was whether the study of urban history had any utility." He noted that Henry Millon had asserted that the historian was under no obligation to find a utilitarian value for history, and admitted himself that he saw "no reason why the life of a city may not be as good a thing to start from as anything else in the examination even of young ladies." This latter argument is extremely cogent, as I can verify after conducting a summer course on the History of Paris for Smith College. But, clearly, the purpose of the symposium at M.I.T. was not to discover what teachers of urban history can learn about their female students, but what the students themselves can learn about the present and future states of a city

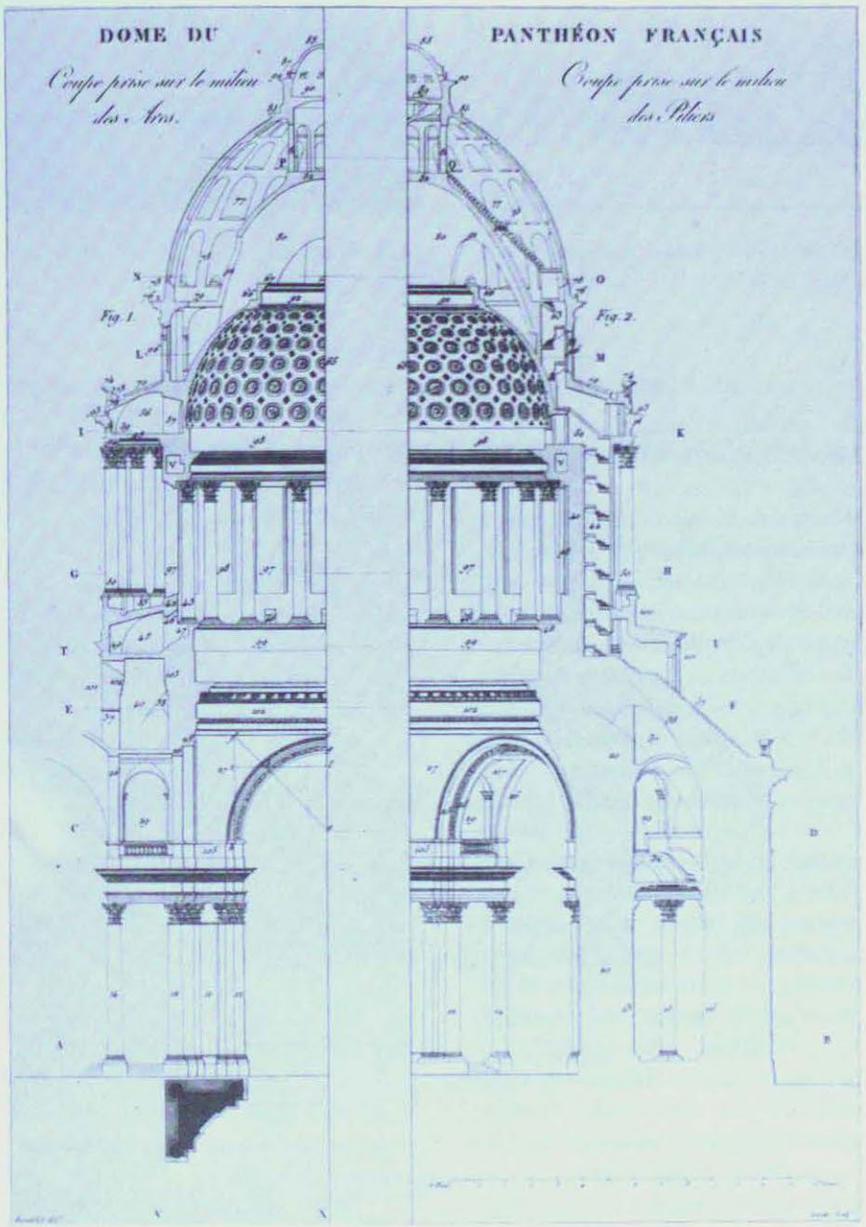
by studying its history; for there seems little point in having the symposium at all if it is already taken for granted that all knowledge is useful.

However, the participants in the symposium had the right to assume, for the sake of argument, that if the history of cities is of practical use, there must be some ways of studying it that are superior to others; and, in this respect, the best part of *The Historian and the City* is the penultimate section in which Sir John Summerson, in a characteristically explicit and lucid paper, demonstrates that Mumford's superficial approach does more harm than good, for, as he emphasizes, it is essential to study the history of cities in minute detail after having obtained all the available evidence relating to the social, psychological, economic, and technological forces by which they were formed. Nevertheless, Sir John Summerson would probably be the first to admit the validity of Mr. Warner's complaint regarding the inaccessibility of so many of the documents necessary for a complete assessment of even the smallest urban units, and the unmanagability of the mass of documents that are accessible for the larger units.

Perhaps the clue to the whole problem is to be found in Christopher Tunnard's paper, where he makes a firm distinction between "city planning" and "urban design." He seems to suggest that historical studies are only really relevant to the small groups of buildings that form the nuclei of larger urban agglomerations. Here, as he points out, qualitative measurements of the constituents of environmental appropriateness can be studied accurately and comparatively. It thus seems likely that the professional planning consultant, faced with the problem of advising administrators and financiers on future expansion, must rely more on studies of current economic, sociological, and psychological forces, rather than on the history of such forces; and that the history of cities is only useful to future planners in so far as it deals with the evolution of architectural forms, and the formulation of architectural ideals, made manifest when groups of buildings were designed by a single architect, or organized by a concerted team.



Places Carrière et Stanislas, Nancy, France



ON CRITICISM

THE PHILOSOPHY OF ARCHITECTURAL CRITICISM

Reprinted from the January, 1968 issue of ***The American Institute of Architects Journal.***

Any evaluation of architectural criticism, and any discussion as to its purpose and techniques, must presuppose one of two alternatives. Either it is simply a species or aspect of a general activity called "criticism" or an activity which must be considered *sui generis*. Historically, both concepts seem to have emerged in a literary form[1] at about the same time (i.e., in the middle of the 18th century) when Jacques-François Blondel introduced criticisms of Parisian buildings into his published lecture course and when Denis Diderot included criticisms of architectural drawings exhibited at the biennial *Salons*.

At first sight, the notion that architectural criticism is essentially a species of a general activity called "criticism" seems extremely attractive because we have been led by Renaissance humanists into paying unquestioned homage to the ideal of *Uomo universale* and have been conditioned by two centuries of transcendentalism into accepting the paradoxical idea that generalization is so superior to specialization that all forms, ideas and activities can be subsumed within some kind of conceptual unity. Hence the popular architectural notion of *Gestaltung*, whereby "the approach toward any kind of design—of a chair, a building, a whole town or a regional plan—should be essentially identical."

This philosophical concept of organic unity is not peculiar to our own profession, any more than the concept of the "unity of the arts" is peculiar to art historians. It is a general philosophical attitude shared by the Western world for many decades, whereby pedagogy is now conceived as something independent of, and superior to, what is taught; and salesmanship is now conceived as something independent of, and superior to, what is sold. It is thus only natural that we should initially regard criticism as something independent of, and superior to, what is criticized.

It may, however, be more fruitful, in the present context, to take the alternative point of view and consider architectural criticism as a very special activity related only to architecture. In so doing, we may also profitably subdivide this activity into four categories: popular criticism, lay criticism, professional criticism and self-criticism, considering each in turn.

Popular criticism

By popular criticism I mean architectural criticism intended for the general public, and it will at once be apparent that the purpose of this type of criticism is radically different from that which we associate with journalistic criticisms of music, drama and the graphic arts. In general, the public reads criticisms of concerts, plays and exhibitions to find out whether to take the trouble of visiting them. But it bodes ill for the future of architecture if the popular critic of buildings is concerned simply with evaluating their scenic attraction.

There is, of course, nothing wrong with regarding architecture as a form of entertainment. Guided tours round the Lincoln Center are as innocuous as guided tours round the Piazza S. Marco. But the fundamental values of both groups of buildings extend far beyond the reactions of gaping tourists; and it is characteristic of the misapprehensions which can be caused by this kind of criticism that the greatest popularizer of the church of St. Mark, namely John Ruskin, had not the slightest understanding of, or sympathy with, Catholic liturgy or beliefs. Similarly, the architectural qualities of an opera house can only be assessed by people who enjoy operas, who have attended numerous operatic performances in this particular building, and whose experience of other opera houses gives them a basis for comparative evaluation.

These assertions may seem unnecessarily restrictive; but even if they are only partly true, they suggest that architectural criticisms acceptable to the popular press are of little value except as public relations and a means of advertising the architectural profession.

Lay Criticism

By lay criticism I mean not only the layman's criticism of buildings seen or occupied but, most important of all, his criticisms of projects for commissioned buildings. Neither of these aspects of architectural criticism has received the attention it deserves, mainly, perhaps, because even when records exist, they are often incomplete or fragmentary. There are, however, a number of surviving published records which are particularly instructive, such as the various reports of Congressional or Parliamentary committees on the design of government buildings.

AIA Journal

"Criticism by visitors to popular places such as Lincoln Center is more than anything a form of entertainment."

AIA Journal

"Westminster Hall, subject of constructive lay criticism with significant results."

For example, there can be few more instructive chapters in the history of architectural criticism than the debate held in the British House of Commons on March 1, 1824, when Soane's enlargement of Westminster Hall (then used as a court of law) was subjected to parliamentary attack. During the debate, Henry Bankes opined that "there was no modern architect whose works could be entirely commended," and objected to "the abominable taste in which new buildings of a different order of architecture had been grafted onto the old Gothic." Grey Bennet, taking full advantage of parliamentary privilege, asked who the architect was, "in order that the public might know whom to avoid." Charles Tennyson "animadverted in strong terms on the incongruous absurdities that were manifested in the modern additions of mongrel architecture." Sir J. Mackintosh said that "the system of undistinguishing destruction with respect to ancient royal palaces, and other venerable buildings, which had been so prevalent of late years, was not in unison with the feelings and sentiments of Englishmen," and demanded that new buildings should be in accordance with the *national* character (i.e., Gothic). Sir T. Baring referred to Nash's Brighton Pavilion as "the Kremlin." Even the Chancellor of the Exchequer "regretted quite as much as his honourable friend, the existence of the unpleasant excrescence of which he had so deservedly complained."

As a result, the House of Commons decided by a vote of 43 against 30 to establish a committee to inquire into the state of the Law Courts then being erected at Westminster Hall. The committee's report was tabled on May 14, 1824, and as a result, Soane was obliged to make many radical alterations which can be seen on the drawings preserved in the Soane Museum.

Extracts from this debate have been quoted extensively because they suggest that laymen had far more influence on the development of the Gothic Revival in England than historical text-books might lead us to suppose; and in our present age, when there is so much emphasis on architect's architecture, it seems important to stress the effect of clients' opinions in influencing architectural design. Conversely, in an age which still sympathizes with the 19th century romantic notion of the artist as either a heroic rebel or an intrepid pioneer, it seems worth emphasizing that no architectural criticism can afford to ignore the client's attitude both before and after the completion of a building.

Professional Criticism

By professional criticism I mean criticism *of* architecture *by* architects *for* architects, and this can be subdivided into two groups: the criticism of finished buildings and the criticism of preliminary drawings. The professional usefulnesss of adequate and skillful criticisms of finished buildings is indisputable. Nevertheless, "adequacy" and "skill" are difficult terms to define conscientiously and may well imply notions which the editors of architectural periodicals will find impossible to accept.

For example, I have gradually come to the conclusion that no building can be assessed adequately in environmental terms unless the critic himself has lived in that environment. I doubt if any building can be assessed adequately in functional terms until many months after its occupancy. I do not see how full justice can be done to the architect's final design unless a wide selection of preliminary drawings and models are both illustrated and discussed. But editors of architectural magazines can hardly be expected to be sympathetic to theories of criticism which demand so much space, so much delay and so limited a choice of critics.

On the other hand, the criticism of preliminary drawings—especially competition drawings—has proved itself historically to be the most useful and vigorous type of professional criticism, and this was, generally speaking, the only type of criticism published in architectural periodicals a century ago. By escaping the futility of proposing ameliorations for the immutable (a dilemma inherent in all but the most lyrical criticisms of finished buildings) it enjoys both the validity and responsibility we associate with criticisms of the performing arts. Being concerned solely with the *interpretation* of drawings or models, the critic has as much right to speculate on their ultimate effectiveness as the architect responsible for their design.

It is for this reason that this type of criticism constituted the historical origin of modern architectural education. The *Concours d'émulation*, introduced systematically 200 years ago, have persisted because they provide the only method of comparing architectural solutions to a given problem and creating an awareness of the many possible relationships of small-scale drawings or models to the structural and spatial realities they are intended to represent.

In some schools of architecture, those who teach design are specifically described as "design critics." In other words,

our profession has instinctively recognized that, as far as the process of *creativity* is concerned, the essence of architectural education is architectural criticism. One might even go so far as to assert that the criticism of drawings and models intended to constitute projects for future buildings constitutes the only activity really worth describing as architectural criticism; for the so-called "criticism" of buildings which have already been erected is seldom at its best except when it is a type of history—an objective description of selected significant facts.

Unlike architectural journalism (where the evaluation of a building will only arouse public interest if it either describes novelties or condemns mediocrity), the criticism offered to architectural students by experienced practitioners and scholars is securely based on the knowledge that the audience is not only deeply involved but constantly on the alert for any inconsistencies or inadequacies in the evalutions given. A student demands that criticisms of his work be lucid analyses of specific virtues or failings, and not simply witty expressions of sentimental enthusiasms or dislikes. If a design, which a student thinks is brilliantly original, should seem in the critic's opinion to be neither, then that opinion must be justified verbally with clarity and erudition. If the student's novelties are manifestly inappropriate or unconstructable, he must be given convincing and experienced arguments for their suppression.

Such criticisms are not recorded or published. They are not subject to those methods of electronic information retrieval which constitute the criteria of academic or literary stature. But they are powerful forces available for improving the environment in which we live. For each student can be made to see that the dialogue between his teacher and himself is simply an exercise in one aspect of the process of design, which he must learn to perform in solitude once his academic training is at an end. For there is no difference between criticism and self-criticism except the number of people involved.

Self-Criticism

The intrinsic involvement of criticism in the creative process of literature and music is beyond dispute, so widespread is the evidence provided by marginal corrections and revised scores. But this involvement is just as great in all the creative processes of the human mind, even if its evidence in some disciplines is more obscure. The distinction made by our leading structural engineers (such as Mario Salvadori) between "design" and "analysis" is, in fact, a distinction between intuition and self-criticism, even though the essentially mathematical quality of this criticism seems to set it apart from the more subjective and frequently uncertain self-criticism of the architect.

Nevertheless, every evaluation of an intuitively conceived form is a criticism, and criticism implies criteria. How to establish architectural criteria, and how to use them, is beyond the scope of this essay; but if what has so far been written has demonstrated the practical value of architectural criticism, both architectural practitioners and architectural students can at least be encouraged to work out the criteria for themselves.

NOTES:

1.Verbal criticisms of buildings are presumably as old as architecture itself, and some have survived in documentary form, as for example, Bernini's views on French architecture reported in Fréart de Chantelou's diary (published in 1885). However, I doubt if the systematic publication of criticisms of buildings by architects, art critics or teachers of architecture antedates 1750, though occasional critical allusions to architecture are to be found in essays and satirical verse.

John Nash: Royal Pavillion, Brighton—as remodelled (1815 - 23)

H.R. Hitchcock, *Architecture: Nineteenth and Twentieth Centuries*

JUDGEMENT

AS A RATIONAL PROCESS

Reprinted from ***Architectural Judgement****, McGill-Queen's University Press, Montreal, 1971. This chapter subsequently appeared as an article entitled "Architectural Judgement" in the June, 1971 issue of the* ***Canadian Architect****.*

Any opinion expressed about a building or group of buildings can, in its widest sense, be called a rational judgement. In this sense, Ruskin's rapturous assessment of the merits of St. Mark's, Venice, is just as much a reasoned judgement as a surveyor's report on the condition of a mediaeval barn. In the narrower and stricter sense of the term, however, it may be assumed that professional judgements in architecture are neither the dithyrambic transmutations of poetic experiences induced by the contemplation of a building, nor the bare catalogue of a building's physical merits and defects. They are, we may presume, sober and sensitive critical assessments of the total quality of a building envisaged as a synthesis of every aspect of its design. Such assessments are rarely put into writing (even by judges of architectural competitions); nor are they elaborated into lengthy detailed expositions customary in Courts of Appeal. But elaborations of such judgements, and even attempts to reconcile or distinguish conflicting opinions, by means of reasoning, seem to be an indispensable part of the architect's *creative* process. The only controversial aspect of the activity concerns the difficulty in reaching general agreement as to what exactly this "rational" element implies.

The nineteenth-century theory of Rationalism, as expounded most eloquently by Viollet-le-Duc, has been criticized from two diametrically opposed points of view. First there are those who contend that an architect, being an artist, designs intuitively, and hence judges intuitively, so that the merits of his works are incabable of assessment by Aristotelian, Cartesian or any other "rational" methods. Secondly, there are those who contend that nineteenth-century Rationalism was just a clumsy and obsolete substitute for judgements now capale of solution with absolute precision by computers. The only common ground of these two dissenting points of view is the shared implication that *debate* about architectural judgement is impossible. Hence those who hold either view would presumably deny that legal judgements could possibly provide any useful analogy to architectural judgements, since the former, being based in Anglo-American law on an "adversary" system, assumes that there must be two points of view, even if one point of view is virtually untenable.

Scepticism as to the reality of "Rationalism" as a dialectical process cannot be ignored, because such scepticism was expressed even by those who were most influential in popularizing the doctrine in the nineteenth century. César Daly, in an editorial in the 1866 issue of the *Revue Générale*, stated that although the Rationalist School (with which he sympathized) was assuming considerable importance in France, its virtue in assuring technological progress was offset by its inevitable tendency to retard aesthetic progress.[1] John Summerson (whose essay on Viollet-le-Duc and his theory is a masterpiece of its kind) considered that Rationalism was vitiated by the fact that it was possible to envisage two kinds: the first depending wholly on the extent to which function can be mathematically stated, and the second depending on the architect's personal interpretation of function. "The first sort is ruthless in its application of means to ends; the second sort adapts both means and ends to a game of its own. The first sort of architecture is, as a matter of fact, almost impossible for conception...the second sort of architecture is a perfectly feasible one, the only proviso being that the function of the building be considered as a sufficient emotional interest to make this dialectic mode of expression significant."[2]

The credibility of nineteenth-century Rationalism has been affected in the present century by the introduction of parallel concepts, such as the idea of "organic architecture" developed by Frank Lloyd Wright, and the cult of "functionalism." Moreover, there are doctrinal ambiguities inherent in such architectural labels as "rationalism" and "functionalism" which are well exemplified by the title of Alberto Sartoris's "panoramic synthesis of modern architecture," published in Milan in 1935, where the title on the front cover reads: *Gli Elementi dell' Architecttura Funzionale*, whilst the title on the spine reads *Architecttura Razionale*. In this instance, the confusion was to some extent due to misgivings expressed by

Le Corbusier in a letter written in 1931; a letter which Sartoris published in the preface. In this letter, Le Corbusier contends that the term *architecttura razionale* is too limited, and adds: "our rationalist cenacles negate, though only theoretically, the fundamental human function of beauty, namely the beneficial and invigorating action which harmony has upon us."

Walter Gropius also rejected the term "rationalism" in *The New Architecture and the Bauhaus*, though this was mainly due to the disrepute into which *Die neue Sachlichkeit* had fallen in the 1930's.[3] "Rationalism," he wrote, "which many people imagine to be the cardinal principle (of the New Architecture), is really only its purifying agency. The liberation of architecture from a welter of ornament, the emphasis on its structural functions, and the concentration on concise and economical solutions, represent the purely material side of that formalizing process on which the *practical* value of the New Architecture depends. The other, the aesthetic satisfaction of the human soul, is just as important as the material."[4] These emphatic repudiations of Rationalism by both Le Corbusier and Gropius, and their reasons for repudiating it, are important, because the nineteenth-century ideal of Rationalism, as expounded by Viollet-le-Duc and exemplified by Henri Labrouste, had never implied that "Rationalism" must necessarily exclude emotion. Following Boileau (whose *Art Poétique* was written in 1674), these French theorists regarded reason as an arbiter of architectural criticism, and never as the sole mechanism of architectural creativity. Hence, any discussion as to whether architecture should be either rational or emotional would, as far as these theorists were concerned, be intrinsically futile.

The validity of Rationalism as a basis for architectural criticism must surely depend on whether or not the essential qualities of good architecture can be assessed by *debatable* judgement. Before the Freudian era, this concept of a reasoned judgement, though difficult to define with philosophical precision, was at least relatively free from ambiguities in this respect. But since the middle of the last century, when the verb to "rationalize" was gradually introduced into our vocabulary, the difference between "reasoning" and "rationalizing" has obscured and complicated the essential nature of the problem. Nevertheless, it is some consolation to reflect that the complexities which this ambiguity has introduced into architectural theory are miniscule compared with its devastating effect on legal theory; and although American jurisprudence has now more or less recovered from Jerome Frank's shattering assault on the traditional theory of legal judgement, the nature of this assault, and the peculiar vulnerability which theories of legal judgement display to such attacks, makes legal theory an ideal "model" (as the sociologists would say) for elucidating the fundamental problems of professional judgement in architecture.

Professor Frank's argument in *Law and the Modern Mind* may be summarized as follows: "It has long been a tradition among lawyers to assert that judicial decisions are reached by a process of reasoning. But in fact, this overt display of reasoning is sheer bunkum. When a judge hears a case, he gradually makes up his mind (since the law insists that he *must* make up his mind); but he does so in response to a variety of factors which have nothing to do with reason, and range from the bias of his social prejudices to the rawness of his ulcers. The so-called 'reasons' which he finally sets forth in his official opinion are nothing more than rationalizations of predetermined hunches. If he has decided to give judgement in accordance with precedents cited on behalf of the plaintiff, his trained intelligence and mastery of legal jargon will easily allow him to demonstrate their relevance. If, on the contrary, he favours the defendant, he can just as easily demonstrate the opposite. Judicial opinions are simply the expression of a subconsciously persisting chidhood image of a 'father-figure;' and anyone who studies such opinions in the hopes of understanding the nature of law will be wasting their time."

Much of the force was taken out of Jerome Frank's argument by the simple expedient of promoting him to the Bench, when, as Judge Frank, he discovered that the judicial process was rather more objective than he had hitherto supposed. But even if we accept that Jerome Frank's original theory has now been shown to be incorrect, we are not thereby dispensed from analysing the rationalist theory of architectural judgement with the same scepticism that he displayed. Viollet-le-Duc, the father of modern architectural rationalism, approached the same problem from the other end when he wrote: "Observe in how many cases Reason confirms the judgement pronounced by Taste. Often—perhaps always—what we call taste is but an involuntary process of reasoning whose steps elude our observations."[5]

Similarly, the careful analysis made by Mrs. Johnson Abercrombie with respect to the psychology of perception and reasoning[6] must not be allowed to obscure the fact that the legal profession long ago accepted, as one of the facts of life, that eye-witnesses frequently give contradictory evidence without the slightest taint of perjury. Indeed, it is one of the commonplace duties of a court of law to fashion justice from such contradictions and inconsistencies, asserted in perfectly good faith. Hence, although it is certainly useful for an architect to understand the psychology of perception, professional judgements in architecture, like professional judgements in law, become little more than academic exercises if we subscribe to a theory that all humanity can be so schooled in perceptiveness as to describe uniformly both the shape and significance of objects seen, and to draw identical conclusions from occurrences observed.

Every architect knows perfectly well that, when designing a building, his initial reasoning process is a sequence of rationalizations, in the sense that it is a series of "inspirations rigorously analyzed by reason."[7] He visualizes some relationship of forms intuitively, and then tries to justify it in relationship to the programme. Often it is only with the greatest reluctance that he can bring himself to abandon his brainchild and search his mind for another. In practice, therefore, the question is not so much "why does the architect *choose* certain relationships of space?" but rather "why does he *reject* certain relationships of spaces?" The quality of an architect's creative talent may well be measured by the variety of spaces he is capable of conceiving; but the quality of his judgement depends upon his criteria of rejection, and the scruples with which they are applied.

Here, perhaps, lies the only real difference between the judicial functions of law and architecture. However creative the celebration of a High Court judge may be, it must necessarily be of a somewhat different order from that of an architect. Admittedly, it is quite possible, in theory, for a High Court judge, like an architect or an advocate, to envisage the solution of each particular problem as a process of selection and permutation from among every precedent he has ever encountered throughout his career. But in practice, judges rarely need to range beyond those precedents which are actually cited to them by the lawyers in charge of the case. Famous disputes have indeed been decided on the basis of one of the judge's own discoveries. Chief Justice Best's decision

in *Jones v. Bright* (1829) was largely influenced by a precedent not cited at the bar.[8] *Norway Plains Co. v. Boston and Maine R.R.* (1854)[9] was decided on the basis of *In re Webb*, which Chief Justice Shaw seems to have come across accidentally when looking up another case in the same unreliable volume of Taunton's Law Reports.[10] But such occurences must be rare. In fact, architectural judgement seems to be an amalgam of the functions of all the participants of a legal trial, in that an architect must not only weigh the merits of arguments, both for and against each potential solution, with judicial impartiality, but he must stimulate the adversary system of a Common Law trial by some kind of private intellectual debate within his own mind.

If this analysis of the creative process of architecture is correct; if architectural judgement is in fact more concerned with rejection than selection, then perhaps the most apt legal definition of reason is that given by Blackstone two centuries ago, when defining customary law. "Customs," he wrote, "must be reasonable, or rather taken negatively, they must not be unreasonable."[11] This, essentially, is all that the traditional Rationalist has ever demanded of an architectural design. He does not ask that it should demonstrably fulfil its function to perfection, that its structural system should demonstrably be the most elegant and economical that any civil engineer could devise, and that its environmental amenities must be proved to be unsurpassably exquisite. He simply asks that no architect should continue working on a project once he has become aware that it is unsuitable in its composition, illogical in its structure and incapable of harmonizing with its environment or with its component parts. This moderation partially explains why Rationalism is so unfashionable today. Rationalism has always been essentially a tolerant doctrine; hence it is as uncongenial to those for whom architectural creativity is analogous to Action Painting as it is to technocrats who dream of creating an everlasting urban utopia within five years.

Another reason why Rationalism is unpopular is that it conceives of reason in much the same way that the law conceives of a "reasonable man." Whenever litigation involves alleged negligence, the traditional Common Law test is usually: "what would a reasonable man have done in the circumstances?" Judicial definitions of a reasonable man have been numerous, varied and picturesque; but the frequency with which a jury of twelve reasonable men can stubbornly refuse to give a reasonable verdict has so persistently exasperated the judiciary, that jury trials in civil cases are becoming increasingly rare. Reasonable men also exasperate famous architects; for whatever definition we may choose for a reasonable man, it is unlikely that any architectural Form-Giver would recognize him as his ideal client. The basis of Le Corbusier's housing units (as they evolved from the mock-up exhibited in Paris in 1925 to their culmination in the various Unités d'Habitation) has been the Parisian artist's ideal dwelling since the mid-nineteenth century, i.e. a large glazed studio at the front, with an indoor balcony at the back covering the kitchen area and containing a bed. How suitable this is for a reasonable man, is difficult to assess, though the transformation of Pessac,[12] and the alacrity with which *béton brut* interior walls are covered with wallpaper suggest that the proletariat is more conservative than *avant-garde* architects care to admit. The sociological surveys of three housing units (including the Unités d'Habitation at Nantes) conducted by Paul Chombart de Lauwe estimated that thirty-two percent of the housewives at Nantes considered their kitchens to be too small, whilst forty-five per cent considered them so small as to be totally inadequate.[13] "Whilst granting to architects the role of educator of the occupants, and wise promoter of a new way of life in new dwellings and new cities, we nevertheless think that more attention should be paid to the needs and desires of families," the author writes. "For example, the solution which consists in providing a wide opening from a bedroom onto a living room is unacceptable."[14]

Rationalism has recently come under attack from another quarter. With the sudden advent to popularity of architectural theorists who advocate complete permissiveness, and affectionately regard Las Vegas as the twentieth-century equivalent of Versailles, it is no longer enough for Rationalists simply to demand greater tolerance in judging what is reasonable; they must reaffirm their belief that their kind of tolerance does not exclude criteria, and that such criteria can be enunciated in the form of rational principles.

The classical concept of "architectural principles" was unfortunately undermined by well-meaning but inept treatises published in the first half of this century, when "principles" were discussed rather aridly in terms of platitudinous generalizations such as "unity," "contrast," "balance," "punctuation," "inflection," and so on. In the present context, it will be profitable to forget such classifications for the moment, and examine whether any help can be obtained by analogy with the notion of "principles" as understood by practioners of the law.

The popular idea of a legal principle is of an orotund Latin epigram. This idea was probably first popularized by Lord Bacon, who announced in his *Elements of the Common Laws of England* that "the rules themselves I have put in Latin, which language I chose as the briefest to contrive the rules compendiously, the aptest for memory, and of the greatest authority and majesty to be avouched and alleged in argument."[15] However, the idea proved so infectious that when, in 1863, Chief Baron Pollock absent-mindedly made the comment: *res ipsa loquitur*[16] instead of simply saying "the thing speaks for itself," the phrase was adopted with such enthusiasm and alacrity by the Bar, that it was eventually used to designate a principle enunciated by Chief Justice Erle (in Scott v. London & St. Katherine Docks)[17] to the effect that "where an accident is such as in the ordinary cause of things does not happen if those who have the management use proper care, it affords reasonable evidence, in the absence of explanation by the defendants, that the accident arose from want of care." By 1896, we find the principle being specifically referred to as "the rule of *res ipsa loquitur*" in an American court of law;[18] and it has been so termed ever since.

If, however, we seek the essential character of legal principles, as expounded or implied by judges when deciding cases, it seems clear that they stem from an entirely different concept, first enunciated (also in Latin) about a century ago: the concept of a *ratio decidendi*. The full implications of *rationes decidendi* are a favourite topic of professors of jurisprudence, since they allow full play for the intellectual sport of demonstrating the inherent contradictions of previous scholars' definitions. For our purposes, however, it can be defined quite adequately as the doctrine that there must always be some fundamental reason for deciding a case one way rather than another, and that this reason is the principle, or fundamental criterion, on which the case has been adjudged (whatever other remarks may have been made by the Court in its published opinion).

To demonstrate the relevance of this concept to the problems of architectural judgement, let us take, as an example, a critique published by Professor Peter Prangnell on the

Amsterdam City Hall Competition.[19] After describing the Toronto City Hall, the Boston City Hall, and Wilhelm Holzbauer's winning project for the Amsterdam City Hall as "three monuments to the idiocy of our times," he justifies this rebuke by explaining that, traditionally, city halls have housed the secular organization by which city services are provided and regulated, and thus a city hall should demonstrate those qualities that citizens really value. Such qualities, he says, vary with the occupations and interests of each citizen; hence a city hall should be, in microcosm, the image of streets and places of cities; freely accesible and interiorized.

After describing the prize-winning Amsterdam scheme as simple-mindedly boorish, Professor Prangnell amiably continues: "the whole package does not make one civil gesture towards that extraordinary example of the city Amsterdam. This must be the crucial issue..." Then, after elaborating upon the nature of this crucial issue, he expresses the view that two projects, one by Heijdenrijk and the other by Hertzberger, *did* take it into account.

If Professor Prangnell had been one of the official judges of the competition,[20] he would obviously not have asserted that the qualities praised in these schemes were *alone* sufficient to justify giving their authors the prize. He would, for example, have had to make sure that both Heijdenrijk and Hertzberger had complied with all the published conditions of the programme. But if we assume, for the sake of argument, that the judges were wrong in specifically asserting that Heijdenrijk did not comply with the condititons,[21] then the *ratio decidendi* of Professor Prangnell's judgement could be stated as the principle (which he enunciates) to the effect that "a project for any public building must have, at its root, a concern with the city-like fabric of support and fill, and must be concerned primarily with supporting all those elements and actions of life that make for agreeable citizenship."[22]

Whether or not this *ratio decidendi* is valid, or whether it means anything at all, is, in the present context, immaterial. It need simply be noted that Professor Prangnell very logically based his judgement of this whole complex issue on one single principle which he considered of over-riding importance, and that he supported it by reference to two *precedents* which he considered authoritative, namely Shadrach Woods' Free University of Berlin and Le Corbusier's Venice Hospital.[23]

The second important aspect of Professor Prangnell's principle of judgement, which is also relevant to the judicial theory of a *ratio decidendi*, is its implicit assumption of a context. It is appropriate here to note that there has long been a lively controversy among jurists as to whether a *ratio decidendi* is totally dependent on its context, or whether it constitutes a principle with a life of its own. Cardozo seems to have taken the latter viewpoint, since in *The Nature of the Judicial Process* he criticized[24] Lord Halsbury's pronouncement that "a case is only an authority for what it actually decides. I entirely deny that it can be quoted for a proposition that may seem to follow logically from it. Such a mode of reasoning assumes that the law is necessarily a logical code, whereas every lawyer must acknowledge that the law is not always logical at all."[25] Yet if we examine the context of Lord Halsbury's statement, there seems much to be said for his point of view, which was by no means novel, and had been made by numerous judges, as for example by Chief Justice Best in *Richardson v. Mellish (1824)*.[26]

The particular case referred to by Cardozo (*Quinn v. Leatham*, 1901) revolved around the general issue as to whether a dispute between members of a trade union and an employer of non-union workmen was a trade dispute within the meaning of the *Conspiracy and Protection of Property Act* of 1875. The crucial problem which eventually confronted the House of the Lords was whether or not a decision in an earlier case (*Allen v. Flood*, 1898) constituted a binding precedent. Lord Halsbury contended that it did not, since in *Allen v. Flood*, it had been decided[27] that the defendant had uttered no threat, the trade union had passed no resolution, and the defendant had done nothing except express his personal views in favour of his fellow members. In *Quinn v. Leatham*, however, the evidence had shown that there had indeed been a conspiracy to induce the plaintiff's workmen to go on strike; hence whatever might have been the *ratio decidendi* of *Allen v. Flood*, it could never, according to Lord Halsbury, be applicable to a lawsuit based on the Statute in question.

This doctrine had been stated even more forcibly by Lord Halsbury in an earlier case (*Monson v. Tussaud*, 1894):[28] "I have some difficulty," he said, "In following the argument that a decision of the Court on one set of facts is an authority upon another and a totally different set of facts. Of course, if the two sets of facts are governed by some principle of law, the principle of law affirmed by the Court is equally authoritative to whatever facts the principle may be applied; but where the strength and cogency of the facts themselves, or the interference derived therefrom, is in debate, I cannot, as a matter of *reasoning*, compare one set of facts with another and bring within any governing principle."

These judicial opinions have been quoted in detail since they illustrate a principle of legal judgement which seems highly relevant to architectural judgement, even though it seems to have been generally overlooked by those who have written about architectural "rules." There is undoubtedly a whole *corpus* of architectural principles, enshrined in precedents, which can be aduced by the aid of reason, and applied to new or even hypothetical situations. But the congruity of the context is essential to the proper application of such principles, otherwise they produce only mechanical, alien and moribund *pastiches* of a type which brought "the rules of architecture" into justifiable disrepute. According to Howard Robertson's *Principles of Architectural Composition*, "the examination of the practical factors which influence the design of buildings in a direct and concrete sense forms a study quasi-independent of the consideration of design in the abstract."[29] But even the most superficial study of legal judgements will convincingly demonstrate that there is no such thing as "the consideration of adjuction in the abstract," and that even the broadest of legal generalizations depend for their application, in the last resort, on the context in which they are applied. Consider, for example, the maxim which can be translated as: "no one will be heard to assert his own shameful conduct."[30] At first sight, this proposition that no one may come into Court simply to ask for punishment might seem so obviously in accordance with the administration of temporal justice as to be applicable automatically, as indeed it *was* so applied by Lord Mansfield when he refused to allow a juror to testify to his own impropriety.[31] But it eventually became clear that a jury *does* reach its decision by improper means (such as by casting lots), there is literally no other way of detecting such impropriety other than by a sworn confession from one of its members.[32]

I claim then, that if we regard the principles of architecture in the same light that judges regard the principles of law, those principles are equally meaningful and genuine, since they form part of a creative "cybernetic" process involving *reasoning within an appropriate context*. For although the primary

ing is ostensibly the specific requirement of a client, in law and architecture any valid decision must depend on wider contexts: the context of history (which provides precedents), the context of society (which provides safeguards for the public with regard to the possible effects of any decision on those not immediately involved) and the context of the physical environment (which provides both a sense of place and the judicial guidelines of customary law). All these factors must be in context of legal reasoning is ostensibly the specific issue in dispute, just as the primary context of architectural reasonvolved in the process of reasoning, just as the process of reasoning must be involved in the process of evaluation, and when an architect can enunciate his reasoning with the same clarity and precision as a High Court judge, he may feel assured that his judgement is professional in the noblest and most apt sense of the term.

NOTES:

1. Op. cit., vol. xxiv, col. 3.
2. J. Summerson, *Heavenly Mansions* (paperback ed.), p. 149.
3. See B. M. Lane, *Architecture and Politics in Germany, 1918-1945* (1968), p. 130.
4. Op. cit. (1935 ed.), pp. 19-20.
5. E. E. Viollet-le-Duc, *Entretiens* (1863), vol i, p. 29, here given in Bucknell's translation, p. 29 (*très-souvent peut-être toujours le sentiment du goût n'est qu'un raisonnement involuntaire dont les termes nous échappent.*")
6. In *The Anatomy of Judgement* (1960), ch. 2 and 3. The author of this book is now Reader in Architectural Education at London University; but when it was written she was in the Department of Anatomy, studying "perception in cerebral palsied children." The book is not therefore specifically concerned with architecture.
7. Viollet-le-Duc, *op. cit., vol. i, p. 179:* "*... l'inspiration revêtue d'une distinction particulière à toute oeuvre produite par un sentiment vrai analysé rigoureusement par la raison, avant d'être exprimé.*"
8. 5 Bing. 533 at p. 543: "However, I do not narrow my judgement to that, but think on the authority of a case not cited at the bar, *Kain v. Old*...&c., &c."
9. Supreme Court of Massachusetts, I Gray 263.
10. Unfortunately, the eighth volume, to which Chief Justice Shaw referred, was notoriously unreliable. Cf. remarks (quoted in a footnote to chapter six) by Baron Parke in *Hadley v. Baxendale.*
11. Sir William Blackstone, *Commentaries on the laws of England,* p. 77 (Intro., sec. 3).
12. See: Philippe Boudon, *Pessac de la Corbusier* (1969).
13. P. Chombart de Lauwe, *Famille et Habitation* (1960), p. 80.
14. *Ibid.*, p. 107.
15. *Op. cit.*, Preface.
16. A phrase he doubtless recollected from Cicero's *Oratio pro Milone* (though Cicero wrote "*res loquitur ipsa*"); or from *Roberts and Tremayne's Case* reported in Cro. 16 Jac. I, p. 508.
17. 1865, 3 H. & C. at 601.
18. In *O'Neal v. O'Connell* (167 Mass. 390), per Lathrop J. The term appears in the 1867 edition of Bouvier's Law Dictionary, but in no earlier edition.
19. *The Canadian Architect,* March 1969, pp. 60 ff.
20. Which included Professor Sir Robert Matthew and Professor J. Schader.
21. *Jury Report,* p. 23.
22. *The Canadian Architect,* March 1969, p. 62.
23. *Ibid.*
24. *Op. cit.* (paperback ed.), p. 32.
25. *Quinn v. Leathon* (1901) A.C. 495 at 506.
26. 2 Bing. at 248.
27. It is important, in the present context, to note that when *Allen v. Flood* was decided in the House of the Lords, Lord Halsbury dissented from the majority opinion. In other words, he differed as to the interpretation of the facts constituting the subject of the *ratio decidendi.*
28. 1894 I Q.B. at 689.
29. *Op. cit.*, p. 3.
30. "*Nemo turpitudinem suam allegans audietur.*" Professor Wigmore, in his famous treatise on *Evidence,* describes this as an eighteenth-century maxim; but in fact it occurs in Coke's *Institutes* (Bk. IV, ch.64) in the form: "*allegans suam turpitudinem non est audiendus.*"
31. *Vaise v. Delaval* (1785) I Term. Rep II.
32. Cf. the Pennsylvania case of *Commonwealth v. Weizman* (1936) (25 Pa. Dist. & County 469), where the members of the jury were fined $10.00 for Contempt of Court.

Grand Stair Hall, Bordeaux Opéra, by Victor Louis

ARCHITECT'S ARCHITECTURE VS. LAWYER'S LAW

Reprinted from the February, 1969 issue of ***Architectural Review.***

For the last two hundred years it has been customary to regard the philosophy of architecture as a branch of the philosophy of the "Fine Arts," or as part of that branch of philosophy known as "Aesthetics." Since there is no disputing that architecture is a "visual art," the advantages of studying its criteria with respect to other "visual arts," or with respect to some philosophical system which demonstrably underlies all forms of "art" (whether visual or otherwise), will be only too obvious. But the justification for basing a philosophy of architecture *exclusively* on such philosophies is by no means self-evident, and may indeed be questioned on three major grounds.

Firstly, the notion that architecture is akin to painting and sculpture is based on certain methods of training which were current in Italy in the early sixteenth century; but even if these methods were valid at the Renaissance (which is by no means certain) it does not necessarily follow that they must be valid today. Secondly, it is clear that, whilst a number of distinguished philosophers have regarded "Aesthetics" as a key to the understanding of all the "Fine Arts," this concept pre-supposes the notion that all activities so classified have certain fundamental qualities in common; for there can be little point in discussing *differentiae* until the existence of the *genus* has been demonstrated. Thirdly, whatever may have been the "artistic" condition of architectural practice before the mid-eighteenth century, it is now undisputably a *profession*; thus it would seem wise to examine whether or not its principles can be deducible by analogy with other professions, such as medicine and law, before regarding the practice of architecture as professionally *sui generis* or artistically unique.

The first two notions, which imply that architecture, sculpture and painting should be considered as belonging philosophically to the same *genus*, and that an understanding of "Aesthetics" provides the philosophical apparatus for comprehending all the "Fine Arts," can be disputed on a number of grounds. In the present context a reference to two authorities will suffice. The first is E. L. Boullée, who complained: "Oh how preferable is the fortune of painters and writers; free and without any kind of dependence, they can choose all their subjects and follow the impulse of their genius. Their reputations depend upon them alone."[1] The second is professor W. E. Kennick, whose essay "Does Traditional Aesthetics Rest on a Mistake?", published in the *Collected Papers on Aesthetics* edited by Fr. Cyril Barrett, suggests that the concept of "Aesthetics" is devoid of all philosophical reality. Undoubtedly, the traditional "Aesthetic" basis of architectural philosophy has certain practical values; but it seems to me that the traditional emphasis on the visual or emotional qualities of architecture has been due to fortuitous historical and philosophical causes which have given "Aesthetic" theories an unmerited preponderance. The purpose of this study is certainly *not* to demonstrate the total irrelevance of this traditional "Aesthetic" basis, but simply to question its total adequacy. In other words, it is an attempt to correct a distortion and disequilibrium of method which has vitiated much which now passes for architectural criticism and has caused architectural philosophy (or "architectural theory" as it is sometimes called) to fall into unmerited disrepute.

At the same time, it should be pointed out that, paradoxically, students of law show considerably more antipathy toward the study of jurisprudence than architectural students show towards the philosophy of architecture; so much so that the Faculties of Law of French speaking universities have virtually abandoned all attempts to include the philosophy of law in their curricula.[2] Similarly, in medical schools, the philosophy of medicine is virtually non-existant as an academic discipline. But it can, I think, be shown that this undervaluation on the part of the students of law and medicine (as compared with students of architecture) is explicable in terms of the peculiarities of their chosen professions. The Anglo-American system of law is such that students enter the legal profession with the primary intention of becoming *advocates*. Doubtless many of them are optimistic enough to hope that one day they will achieve such eminence as to be called upon to *judge*: but it is only natural that their main academic interest, as students, should be with the material and techniques of *litigation*, and only the most exceptional students can be expected to have the perspicacity to perceive the importance of philosophical problems which will have little practical relevance for them before they are either elected to the Legislature or promoted to the Bench.

Similarly, medical students have every incentive to devote all their intellectual energies to the materials and techniques of healing, without pondering about the *condition humaine* of those they will heal. The complex and challenging

scientific problems concerning the prolongation of human life must seem of more pertinence to the medical students than any ethical problems concerning the extent to which such prolongation may or may not increase the happiness of those involved. Hence, the average medical student is as little concerned with the implications of condemning men to live as is the law student with the implications of condemning men to die.

Architectural students sometimes show impatience with the philosophical problem related to their art, but for very different reasons. Their main concern is with the absorbing creative processes of architectural design, and with the vast mass of technological and sociological information required to achieve it effectively; yet they are well aware of the philosophical implications of criticism, since in many schools of architecture those who teach design are in fact called "critics." But students, by virtue of their youthful inexperience, inevitably tend to see the present as the beginning of the future rather than as a transitional period constituting a prolongation of the past. This does not mean that a philosophy of architecture will only be acceptable to them in so far as they can be made to perceive its immediate relevance to their own current creative activities. But it does mean that any attempt to convey that philosophy by reference solely to the past is fraught with peculiar difficulties unknown to the teacher of the Common Law, since (as all law students are well aware) the study of law and the practice of law are essentially, by their nature, *historical* disciplines, based on precedent and on statutes inacted in the past.

The literature devoted to the study of architecture as a profession is scarce. So far, only two standard works seem to have been published in English. The first, by Frank Jenkins, is entitled *Architect and Patron*, and is essentially a factual history. The second, Barrington Kaye's *The Development of the Architectural Profession in Britain*, is far more philosophical; but since the author is a sociologist, he bases his arguments on the general definition of a profession as "an occupation possessing a skilled intellectual technique, a voluntary association and a code of conduct." At first sight, the concept of "a code of conduct" might seem the obvious and facile link between the philosophy of architecture and the philosophy of law. But in fact this present enquiry is not in any way concerned with the social behaviour of architectural organizations, but rather with the problems of choice implicit in the term "skilled intellectual technique." This, of course, has little relevance to Dr. Kaye's thesis.

In order to explain what, in the design of buildings seems to indicate a real affinity between jurisprudence and the philosophy of architecture, I would suggest four headings. The first is the popular concept of "natural laws" as meaning the laws of inanimate nature. The second is the more accurate concept of "natural laws" as meaning the relationships between members of a civilized society. The third is the concept of "conventional law" as meaning obligations based on social convention.[3] The fourth is the concept of "judgement," as meaning evaluation based on explicable criteria. It will be apparent that, in Vitruvian terms, the first three correspond to *firmitas*, *utilitas* and *venustas* respectively; but such correspondence would be merely verbal and artificial unless it could be established that both jurisprudence and the philosophy of architecture have a common basis. I would suggest that they have, and that it is the notion that both professions presuppose "rules" of some sort or another.

The notion that law implies some sort of rule would seem so fundamental to the whole concept of jurisprudence as to be self-evident. Indeed, it might be argued that, in so far as the study of jurisprudence (in its contemporary English sense) originated in the mid-eighteenth century with Blackstone's lectures,[4] the idea of legal rules and the nature of legal rules is the whole basis of a philosophy of law. Yet Professor Hart devotes considerable space in *The Concept of Law* to what he terms "rule-scepticism,"[5] and this scepticism is of immense relevance to any study of the philosophy of modern architecture (which can also be regarded as originating in the mid-eighteenth century), since the conflict as to whether rules are or are not a fundamental aspect of architectural design has been a vital factor in the development of architectural thought. The number of books which, during the last two hundred years, have attempted to demonstrate that architects of the eras prior to 1750 achieved excellence by observing certain rules of proportion (thereby implying that similar rules might be applicable today) is considerable. Even Le Corbusier's *tracées regulateurs* and "Modulor" belong essentially to this tradition of thought. But when J. F. Blondel complained in the mid-eighteenth century that students were wilfully disregarding rules in an unscrupulous quest for originality,[6] he bore witness to the emergence of "rule-scepticism" which many architects today would consider the essential trait of modern architecture. Hence, until the nature of "rules" and "rule-scepticism" has been resolved with respect to both disciplines, there seems little point in enquiring why or how this scepticism arose in architecture, or in what manner any rules do or might still apply.

It is important to emphasize here the generic quality of the term "rule"; for, as John Austin implied in the first lecture of *The Province of Jurisprudence Determined*, a law is obviously some kind of rule, but all rules are not necessarily some kind of law. Thus in architecture, we may legitimately distinguish between those natural laws which affect *firmitas* and *utilitas*, and the possibility of another class of rule which may or may not affect *venustas*, but which is certainly the only class of rule which the majority of architectural theorists from 1750 onward have considered to be the domain of architectural philosophy.

This latter type of rule can best be understood in the context of those which Professor Hart discusses with respect to games. The whole essence of a game is that despite certain intrinsic and widely recognized values, its rules are essentially *arbitrary* and a matter of *convention*. Whether or not it is meaningful to say that someone plays tennis "beautifully" (a semantic problem discussed by R. G. Collingwood[7] and other writers on aesthetics) need not detain us here. The important fact is that it is certainly meaningful to ask whether the game itself is meaningful. Some enthusiasts may justify the sport by reference to "natural laws," such as the desirability of keeping oneself fit, or the desirability of fostering social relationships; and these arguments may well provide a partial justification. But they can never constitute a *total* justification. Tennis may be played because it is healthy, because it is socially useful, or simply because it is enjoyable. But it is only playable at all if tennis-players voluntarily agree to certain rules which, in a legal sense, may be termed "arbitrary." These rules, in other words, are solely tennis-players' rules; but whereas no one would scornfully dismiss the skill of a tennis-player by some derisive expression such as "tennis-players' tennis," architects, doctors and lawyers can see quite clearly what would be derogatory about the descriptions: "architects' architecture," "surgeons' surgery" or "lawyers' law."

The essentially derogatory nature of such criticism is its

implication that the practitioners are making a mere game out of something of far deeper human concern. The histrionic oratory of a popular advocate may effectively save a malefactor from well-deserved retribution, or deprive a plaintiff of the restitution of his rights; but it will usually irritate the judge, and must be considered by any thoughtful member of the jury as being just as despicable as the medical virtuosity which prolongs the senility of an octogenarian by a few more months, or that architectural virtuosity which disregards the reasonable requirements of a client and the amenities of his neighbours in the search for "artistic" expression. It is not that these aspects of forensic, surgical or architectural skill are held in low regard. What is criticized is the cynicism, conceit and distortion of values which arrogates to one aspect of professional skill a virtue isolated from the total good which the profession is intended to achieve and the purpose it is intended to serve.

Ethically, then, the most obvious affinities between jurisprudence and architectural philosophy would seem to be those based on what are termed "natural laws" and those based on laws concerning voluntary obligations. But it seems worth emphasizing that, in the first category, the scientific concept of "law" derived initially from the juridical concept of law, rather than vice versa. Newton regarded his own discoveries as simply "mathematical principles of natural philosophy," and it was the Rev. John Wallis who first seems to have related them to the Laws of Divine Providence. He coined the term "General Laws of Motion" in 1668 when explaining his astronomical theories to the Royal Society. It seems doubtful whether the notion of scientific "laws" entered French thought before Voltaire published his *Eléments de la Philosophie de Newton* in 1738, when he refers in his preface to *"ces lois primitives de la nature que Newton a découvertes."* Moreover, even though Dr. Johnson's definition of law as "an established and constant mode or process; a fixed correspondence of cause and effect" sounds scientific in a modern sense, the source he gives for this definition is Shakespeare's *Cymbeline*.

Hence the question: "To what extent do the laws governing rational structures and functional plans relate to natural law?" is of more relevance to jurisprudence than might first appear, because if one considers structural and functional laws in relationship to the philosophy of law, rather than to the philosophy of science, one can see why so much variety is permissible. The prestige of wide-span structural engineering—despite the number of bridges which have dramatically collapsed—has tended to make architects think of the "laws" governing short-span structural design as imposing immutable shapes on structural members such that they become simply a kind of diagram of the minimal dimensions needed to resist bending, compression, buckling and shearing. For over a century, therefore, the philosophy of architectural structures has suffered through being an intellectual battleground where the most vociferous belligerents have been the ultra-rationalists, who regard the shapes of all structural members as mathematically predetermined, and the ultra-aesthetes, who regard them as completely arbitrary. Yet the juridicial (as opposed to the "scientific") concept of "natural law" is essentially concerned with the prescription of minimal requirements. No jurist ever regarded sumptuary laws as natural. Hence, although an architect is very properly liable in law if the dimensions of his stuctural members prove inadequate for stability, one can readily envisage many reasons why he might be morally and professionally justified in deliberately exceeding the minimal dimensions. Such justification would almost certainly relate to some concept of human happiness or human dignity, and hence might legitimately be regarded as based on "nature," though not on "natural law" as the term is generally understood by scientists. Apart from individual definitions of natural law, many systems or aggregations of natural law have been formulated by successive generalizations during the last two centuries. They are important because they seem to have one fundamental quality in common, namely an appeal to a universal ideal which can be enunciated in the form of certain principles of order. Whether or not any kind of "ideal" is valid will be discussed in due course. But it is relevant at this stage to note that a particular generation often has the illusion that its formulations of "natural laws" are unequivocally applicable to every eventuality by the simple use of reason. Yet jurists usually find that what is "rational" is less a matter of law than a matter of fact, and the failure of architects to appreciate this basic theoretical distinction—so obvious in legal theory—has obscured much of the merit of the so-called Rationalist school of thought.

The Rationalist theory, as expressed for example by Viollet-le-Duc in his seventh *Entretien*, is a clear illustration of this problem. A building, according to him,[8] is a sort of "organism"; the visible manifestation of the laws of nature; and he considers it illogical to enunciate any other kind of rule, since true architectural forms are nothing more or less than the "expression" of structure. But this "expression" can only be deduced by reason, and once architectural theorists embark on speculation as to what is structurally reasonable, they are confronted with the same dilemna which confronts jurists when they are asked to prognosticate concerning legal judgements involving the interpretation of "reasonable" behaviour. Admittedly even jurists are divided as to the nature of this dilemna, possibly as a result of the political theory (derived perhaps from Montesquieu) whereby there has been a failure to distinguish between general rules and the problem of interpreting those rules authoritatively in a particular context.

Thus Montesquieu's assertion that "there is no liberty if the judiciary power be not separated from the legislature and executive"[9] is manifestly misleading, since it ignores the legislative power which the judiciary must inevitably assert. Hence (if I may rephrase a remark by Professor Hart in such a way as to give it a specifically architectural implication) there are two minimum conditions necessary and sufficient for the existence of an architectural system. On the one hand those rules of behaviour which are valid according to the system's ultimate criteria of validity must be generally obeyed, and on the other hand *its rules of recognition specifying the criteria of architectural validity and its rules of change and adjudication must be effectively accepted as common public standards.*[10]

Enough is known of the history of architectural theory during the last two hundred years for the importance of the first condition to be evident. Few theorists have ever been so eccentric as to deny the general rules of architecture. Even among the leading combatants engaged in the Gothic Revival's internecine strife, it can easily be shown that the general principles postulated by Viollet-le-Duc differ little from those postulated initially by Ruskin,[11] and that those postulated by Pugin[12] differ little from those postulated by Vitruvius. The frustration and sterility of the Gothic Revivalists' quarrels (to the extent that they *were* frustrating and sterile) resulted from the failure to grasp the need for establishing the criteria of validity and the rules of change and adjudication. And such frustration and sterility must inevitably be the mate of any theory of architecture which does not see that *criticism* is as fundamental to the natural laws of archi-

tecture as it is to the natural laws of society, since any law, whether it be forensic or architectural, is meaningless except in so far as it is related to specific cases. A similar argument applies to "Functionalism"—the term usually employed by architectural historians to indicate that aspect of Rationalism concerned with efficient planning. Ever since the Napoleonic era, when Durand published his treatise, the principle that good planning is the essence of good architecture has been enunciated with the complacent implication that the mere formulation of the law would itself ensure rational spaces. Even the complete absence of any visible sociological justification for the spaces delineated in Durand's published plans seems to have been overlooked by those who (perhaps unwittingly) have subscribed to his written doctrine. In recent years, the promotion of the study of human relationships and human emotions from the realm of literature to the dignity of "Social Sciences," combined with the awe inspired by electronic computers, has led to a resurgence and enhancement of Durand's theory, whereby architectural planning is again considered to be subject to the same kind of "laws" as those studied in other departments of the Ecole Polytechnique. Yet when the actual *design* of a major public building is involved, it is apparent (from the vast variety of solutions considered totally acceptable by those who designed them) that the element of uncertainty is commensurate with the *rationes decidendi* concerning the application of the fifth amendment of the United States Constitution.[13]

Hence, the conclusion to be drawn from comparing the laws of nature as they affect the philosophy of architecture with those which are the concern of jurisprudence would seem to be as follows: whereas in juridical law two distinct elements are essential, namely a body empowered to create law, and an adequate number of trained professionals empowered to interpret it; in architecture the first of these elements is irrelevant, since any such laws as exist are either the three primary general laws of Vitruvius (*firmitas, utilitas* and *venustas*), or mathematical principles which are so specialized as to be outside the competence of purely architectural studies. These may derive from experiments in acoustics, structural engineering, sociology, psychology, climatology or any other science. But the purpose of an architectural philosophy is not to test the validity of laws, but to establish the criteria of validity and the rules of change and adjudication, combined and applied in specific architectural circumstances to produce a "just" result. The philosophy of architecture is thus synonymous with the philosophy of architectural judgement; i.e. criticism.

The process of criticism implies the need for some kinds of standard, and when comparing jurisprudence to the philosophy of architecture in the mid-twentieth century, few paradoxes are more striking than the persistence of a faith in legal standards and the absence of a faith in architectural standards. Before 1750, when structural materials were virtually limited to timber and masonry, when stuctural calculations were completely unscientific, when human needs were relatively simple, when building-types were relatively few, and when the pattern of cities were relatively homogeneous, it is not surprising that the validity of fundamental principles of Antiquity could be accepted by reasonable men without hypocrisy. Their notions of order, arrangement, eurythmy, symmetry, propriety and economy[14] may not have corresponded exactly to those of ancient Rome; but the correspondence was evidently sufficiently close to allow a universal concept of architectural standards to find wide acceptance among those who, because of influence or affluence, were able to control the environment which architects were called upon to create. Today, however, the multiplicity of building materials, the advances in accurate structural analysis, the complexity of society, the extent of financial investment in real estate and the incompatibility of conflicting urban planning requirements have created a situation where the very notion of a "perfect building" seems not merely incongruous but virtually meaningless.

The same incongruous disparity is evident in law, yet the belief in standards is not thereby destroyed. When American philosophers and jurists framed the United States Constitution, American lawyers were still trained in England, or self-taught on the basis of English legal commentaries. Hence, it is not surprising that their first attempts at creating ideal republican laws should consist of the vaguer legal concepts of Antiquity amalgamated with the traditional specific privileges of their British ancestors; or that, in the expanding economy of a new capitalist and industrialist society, they should interpret "liberty" and the "pursuit of happiness" as legal principles indicating that legislation should be limited to the security of persons and property. Today, when legislation, like architecture, is thought of primarily as an instrument for social reform, the incentives offered to lawyers to find ways of circumventing the law are in some circumstances more tempting than the incentives to urge their strict observance, and experts on taxation law will more frequently be called upon to advise on how taxation can be avoided without penalty, than how the fiscal intentions of the legislature would most properly be fulfilled.

The importance of the advisory function of lawyers is of fundamental relevance to any study of jurisprudence as it relates to architectural philosophy, since legal advice is essentially a forecast of court decisions, and court decisions are based on the notion of *consistency and conformity to standards or norms of judgement*. The architectural implications of this principle are evident to anyone who cares to compare the decisions of the traditional Ecole des Beaux-Arts juries with the results of jury decisions in recent international competitions. The grading of French academic projects after a "judgement" still suggests that the jury, after studying several hundred projects in a few hours, eventually concludes that a certain solution is best, and hence that every scheme which approximates to this solution should receive a "mention" or a "médaille." Similar techniques seem to have been used in judging some of the nineteenth-century public competitions in England (such as that for the London Law Courts). The premiated schemes have much in common, so presumably the rejected schemes were based on concepts which the jury deemed inferior or unacceptable. Yet few would claim that a similar philosophy has been in evidence in recent major competitions. It seems fairly clear that the prizes were not awarded to the schemes which elaborated, in a superior manner, certain norms to be found among many of the more accomplished submissions, but that, on the contrary, the various prizes were given to the schemes which seemed most distinctively idiosyncratic.

The desirability of such norms would seem to suggest that instead of thinking of *venustas* as something which, in the domain of architectural creativity, is highly personal, we should think of it more in terms of the kind of *social obligations* legally associated with the notion of propriety. Even in games, where the rules are discretionary, some kind of *convention* is implied; and the importance of this fact is only too clear when one considers how derisively the term "conventional" is used by critics of the "Fine Arts." When painters or

poets are "unconventional," it is a personal decision connected with the expression of their own private emotions. In so far as it ceases to be purely private, it will usually only concern very few people. But just as the publicity given to certain paintings or certain poems can be considered, by society, to be obscene or libellous according to law, so we should consider whether or not unconventional modifications to our environment can in certain circumstances fall so far outside the norms of convention—either by being too idiosyncratic *or too unimaginative*—as to outrage public notions of decorum and propriety. If so, what is the architect's moral responsibility in this respect?

The ability to establish norms is clearly more difficult in architecture than in law, since in the latter profession, the notion of *precedent* is still highly prized. Yet even with precedents as a guide, differences of judical opinion are only too frequent, as is bewilderingly obvious from the number of times decisions in primary courts are reversed by courts of appeal, and by the number of times a final judgement of the United States Supreme Cout is rendered on the basis of five in favour and four against.[15] What chance, then, has an architectural jury, which regards precedent as a defect rather than a virtue, of achieving judgements which will be acceptable to the contestants, to the profession and to the public at large?

This question can be answered in two ways, and both answers not only call in question certain basic assumptions in current text-books on architectural philosophy, but indicate how salutary it would be for architectural theorists to study their own subject on the basis of the methods of teaching law. First, the current architectural assumption that precedent is the worst kind of guidance can only be based on a partial conception of architecture: that is to say, on the "Aesthetic" theory criticized at the beginning of this essay. Secondly, few jurists can justifiably claim nowadays to be judging by deference to the standards of the public, since the architectural profession—mainly through the influence of Le Corbusier—tends increasingly to regard itself as a paradigm for the whole human race.

The fact that legal judgement implies criteria and that legal criteria imply ideals, has given rise to a basic controversy in jurisprudence which cannot be ignored when trying to relate jurisprudence to the philosophy of architecture. This controversy, expressed in simple form, is whether or not the concept of "justice" is inherent in the concept of "law." Architecturally, this corresponds to the difference of opinion between those who contend that there can be no such thing as "bad architecture," because if a building is badly designed, it is not architecture at all, but simply "building."

Now there can be little doubt that a jurist's failure to forecast accurately a legally valid court decision is in no way synonymous with an assertion that justice has been denied. But if we transcribe this distinction into an architectural context, and ask whether the failure to design an "ideal building" means that there is no such thing as "ideal architecture," the answer seems comparable to the type of answer which justifies the study of legal *dicta*. In law, though there can be no such thing as an ideal judicial decision, the concept of justice makes it essential, in a civilized society, for judicial decisions to approximate as closely as possible to this concept. Such a concept need neither be abstract nor universal; on the contrary, the more the concept of justice relates to the realities and diversities of the administration of the law, the better. But unless law schools demand constant reflection on the nature of ideal justice, it seems doubtful if the approximation of human judgements to the ideal of justice will be maintained, and it certainly will not increase.

In conclusion, then, it may be asserted that the study of leading cases in legal education plays the same role as the study of architectural ideals in architectural education, and that both are increasingly necessary as the complexity of each discipline grows. Both are essentially concerned with the two fundamental facets of every legal or architectural problem: the search to identify the perfection of each discipline according to its nature, and the critical search for specific examples of *decisions* which approximate closely (or are prevented from approximating closely) to these perfections.

Abstract speculation about "perfect justice" is, in isolation, as futile as abstract speculation about "perfect architecture." On the other hand, exclusive concentration on the actual conditions of architectural or legal practice are likely to prove debasing to both professions. The art of effectively teaching jurisprudence and the philosophy of architecture must surely be to treat both these aspects with sufficient realism to make their relevance obvious to the student, whilst at the same time applying such techniques of criticism as will give each student a sense of professional integrity; for unless this sense of integrity is inculcated in the formative stages of a professional career, it seems doubtful if it will emerge during the temptations and human fallibilities of professional practice.

NOTES:

1. *Boullée's treatise on Architecture* (ed. Rosenau), p. 30: *"Oh! combien est préférable le sort des Peintres et des hommes de lettres! libres et sans aucune espèce de dépendance ils peuvent choisir tous leurs sujets et suivre l'impulsion de leur génie."*
2. In countries where the law has been codified, pedagogical techniques neccessarily differ from those considered most effective in jurisdictions where the Anglo-American common law tradition prevails.
3. Sir George Paton (*Text-book of Jurisprudence* (1967) p. 96) points out that Aristotle "made a useful distinction between natural justice, which is universal, and conventional justice, which binds only because it was decreed by a particular authority."
4. In Sir William Blackstone's preface to his *Commentaries*, he begins: "The following sheets contain the substance of a course of lectures on the Laws of England, which were read by the author in the University of Oxford. His original plan took its rise in the year 1753; and, notwithstanding the novelty of such an attempt in this age and country, and the prejudices usually conceived against any innovations in the established mode of education, he had the satisfaction to find...that his endeavours were encouraged and patronized by those, both in the university and out of it, whose good opinion and esteem he was principally desirous to obtain."
5. *Op. cit.*, ch. VII.
6. *Cours d'Architecture...contenant les leçons données en* 1750 *& les années suivants par J.F. Blondel* (1771), vol. IV, p. XV: *"Il est de jeunes Architectes qui prétendent que les règles ne servent qu'à les embarasser, & à émousser, pour ainsi-dire, la vivacité de leur imagination."* *Cf.* also *ibid.*, p. LIII: *"Qu'ils ne croient pas, comme quelques-uns leur font entendre, que tout est épuisé, & que, pour paraître neuf, il faille avoir recours à la singularité."*
7. R. G. Collingwood, *The Principles of Art* (1938), p. 39.
8. *Entretiens sur l'Architecture* (1863), vol. I, p. 285: *"Il est impossible d'enlever à un édifice du XIIIe siecle ou d'y attacher des formes decoratives sans nuire à sa solidité, à son organisme, si je puis m'exprimer ainsi...Cette forme n'est pas le résultat d'un caprice, puisqu'elle n'est que l'expression, décorée si vous voulez, de la structure; je ne puis vous donner les règles imposées à la forme, puisque la qualité propre à cette forme est de se prêter à toutes les nécessités de la structure."*
9. *Esprit des Lois*, Bk. XI, ch. VI (*"De la constitution d'Angleterre"*): *"Il n'y a point encore de liberté si la puissance de juger n'est pas séparée de la puissance législative et de l'exécutrice."* Since some commentators have asserted that most of the principles expressed by Montesquieu in this chapter were derived from Locke's *Treatise on Civil Government*, it seems worth pointing out that Locke distinguished simply between the legislature and the executive, and did not comment on the judiciary. Cf. also, in this respect, Diccy's *Law and Public Opinion in England*, Lecture XI, e.g. "judical legislation aims to a far greater extent than do enactments passed by Parliament, at the maintenance of the logic or the symmetry of the law" (1926 ed., p. 364).
10. H.L.A. Hart, *The Council of Law*, p. 113.
11. e.g. in "The Lamp of Truth."
12. e.g. in the first paragraph of *The True Principles of Pointed or Christian Architecture*.
13. See especially Judge Jerome Frank, *Law and Modern Mind*, for a particularly cynical commentary on the administration of justice in the United States of America.
14. Vitruvius, I. ii.
15. *Cf.* J. Frank, *op. cit.*, ch. VI.

UGLIFICATION AND DERISION

Reprinted from the August, 1959 issue of the ***Royal Architectural Institute of Canada Journal.***

"Art," the Director of the National Gallery of Canada was reported as saying recently, "is not beauty. The purpose of art is to enlarge our emotional experience, and this includes the emotions of horror, disgust and pity." Here we have, succinctly expressed, what may now be regarded as the most conventional and widely accepted art theory of the twentieth century. It was the Italian philosopher, Benedetto Croce, who first, some fifty years ago, created a philosophical system which justified the artistic exploitation of ugliness (already made fashionable by Victor Hugo and the French Romantics at the beginning of the previous century) and finally discredited the earlier assumption that the creation of beauty was the purpose of art. Since then, his views have been upheld by philosophers and art critics alike, and nothing could better illustrate this general acceptance than the fact that since 1929 the article on Aesthetics in the *Encyclopaedia Britannica* has been contributed by Benedetto Croce himself.

It is noteworthy however that neither Croce nor R. G. Collingwood, the most distinguished English philosopher to elaborate this theme, have had very much to say about architecture. Indeed, so obvious is this omission that it recently prompted a lecturer in architecture at Durham University to publish a book on the architectural implications of Collingwood's *Principles of Art*, though without any marked success. The dilemma is fairly obvious. Either one must deny that beauty—Vitruvius' *venustas*—is necessary to architecture, or one must deny that architecture is art.

Resistance to the rejection of architecture as a form of art comes most strongly from the Art Historians. To some extent this is due to the accidents of an academic system whereby in most universities the "History of Art" courses include architecture automatically, and thus painting, architecture and sculpture are dealt with together in classroom texts. This tendency is evident in the latest and most sumptuous series of the type (edited by Nikolaus Pevsner), the *Pelican History of Art*; nor is the exceptional publication of a volume devoted exclusively to architecture of the nineteenth and twentieth centuries any indication that the general art-historical attitude is modified when dealing with contemporary design. On the contrary, the whole basis of the editor's *Pioneers of the Modern Movement from William Morris to Walter Gropius* indicates, by its title alone, that the art of design, "*commune padre delle tre arti nostre, architettura, scultura et pittura,*" is still, as at the Renaissance, considered to be the common discipline uniting all three. Siegfried Giedion even extends the intuitive process of artistic creation to engineering. "If Maillart can claim to have developed the slab into a basic element of construction, modern painters can answer with equal justice that they have made surface an essential factor in the composition of a picture," he explains in *Space, Time and Architecture*. "This is no longer a fortuitous optical coincidence, as might be objected, but a definite parallelism of method."

There are art historians who do not merely regard contemporary architecture as contemporary art, but even as the mistress art. R. H. Wilenski considers architecture the art *par excellence*, since it is non-representational, and contends that the typical function of the architect as artist is the typical function of the sculptor and painter as well. The architect's business, he says, is to contribute to the definition, organization and completion of his formal experience by creating a concrete object symbolizing his actual or imagined perception of certain lines, balances, recessions, and so forth. "If he can do this he is what we call an artist, and if he cannot he is just a builder and nothing else."

Since it may thus be generally accepted that in the most advanced, as well as the most reactionary circles, architecture is still regarded as art, it may possibly be asked whether, since art is not beauty, architecture is compatible with ugliness. To such a question, the reply would doubtless be that there is here a misunderstanding of the problem altogether, since Croce's definition of art is less concerned with the object produced, than with the emotions involved in producing it. The statement "art is not beauty" does not mean that works of art cannot be beautiful, but simply that it is immaterial whether they be beautiful or not. "Ugliness," in common parlance, is merely the opposite of "beauty," so that in such circumstances it is irrelevant to judge a work of art (and hence a work of architecture) by either term.

The persuasiveness of this argument is undeniable, and yet it seems contradicted by the fact the Siegfried Giedion finds no alternative but to use the terms "beauty" and "ugliness" in his text. Of Maillart's bridge near St. Gall, to which passing reference has already been made, he explains that "To appreciate the full plastic *beauty* of the form of this

bridge" it is necessary to view it from beneath, and goes on to deplore the fact that its slanting columns with splayed-out heads are bound to appear, to eyes that are blind to the vision of our own day, "*somewhat ugly.*"

It seems evident, therefore, that the only tenable line of argument is that whilst beauty is a permissible and even frequent characteristic of architecture, it is not as essential as was at one time supposed, and that there are occasions when architecture, like the other arts, may appropriately enlarge our emotional experience with the emotions of "horror, pity and disgust." Such a view has undoubtedly a long and hence presumably respectable ancestry. Anthony Blunt has suggested that Mannerism was an expression of the despair experienced by Michelangelo and his friends after the Sack of Rome. Kenneth Clark has thoroughly expounded the reasons why Gothic was used as an effective means of inspiring melancholy during the second half of the eighteenth century. There is at least one historical precedent for the use of architecture to inspire horror and disgust. J. F. Blondel, being an exponent of French Classicism, disliked Gothic ornament, but between 1750 and 1770 he recommended it to his students as appropriate for prisons, as a means whereby the architecture could "express externally the disordiliness of the lives of those detained within."

A deliberate search for ugliness similar to that analysed by Lydie Krestovsky in *La Laideur dans l'Art à travers les Ages* can only with difficulty be paralleled in architecture. But Kenneth Clark justly refers to Butterfield's "sadistic hatred of beauty," whilst Robert Kerr, a contemporary of Butterfield and Professor of Construction at King's College, London, even considered "The Ugly" to be an established architectural style of the period. It arose, he explained, as a reaction against the effeminacy of the Gingerbread Style, and was an extreme manifestation of the rationalist creed of structural honesty. But just as the seventeenth century puritans suppressed bear-baiting "not because it gave pain to the bear, but because it gave pleasure to the spectators," so the nineteenth century pursuit of ugliness in architecture was more the expression of a sour sense of righteousness, than a sensitive interpretation of "life-enhancing" ideals.

The Ugly Style has however a certain indirect relationship to twentieth century art theory, in that it anticipated the deliberate use of deformity as a weapon with which to combat conventional artistic prejudices. As Robert Kerr pointed out, "If the architect be an advocate of mere muscular ugliness, his work will probably set common criticism at defiance." John Summerson has observed that the ugliness of Butterfield's buildings was a systematic and calculated assault on popular taste. "In this imagination there is something of the *fauve*, something of the contemptuous joy of distortion and destruction." He might even more aptly have described Butterfield as a Dadaist, since there is apparent in his work that same savage urge to deride accepted canons of beauty which prompted the Dadaists to exhibit a reproduction of the Mona Lisa adorned with a moustache. Butterfield, in fact, has more right to be considered the father of the Modern Movement than William Morris if we really wish to make a close parallel between modern architecture and modern art.

The triumph of the Modern Movement is now complete. There are few architects today under forty years of age who display any craving to design Ionic capitals or Gothic finials; nor could they draw them if they wanted to, since it is long since there were any schools where such detailing was taught. The Ugly is thus only possible nowadays in terms of Contemporary design. Perhaps we still occasionally need buildings which express horror, pity or disgust, if merely to stir us from lapsing into apathy. It is doubtless for this reason that "The New Brutalism" has been given such publicity by the Architectural Press. In general, however, it is difficult to escape the conclusion that whether art is, or is not, beauty (or whatever modern euphemism one may prefer to substitute for this outmoded word) there is a social obligation to construct beautiful buildings, and a healthy satisfaction derived from so doing, which overrides any conflicting abstract principles which philosophers and art historians are prepared to defend:

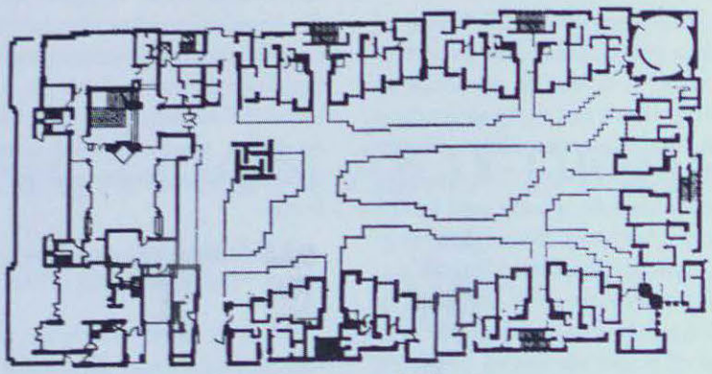
But suddenly you touch my heart, you do me good, I am happy and I say: "This is beautiful." This is Architecture. Art enters in.

Yet however much we may disregard Croce's theory, it has inevitably had disastrous consequences for architecture, since the fear of seeming to judge a work of art by whether or not it has beauty—*id quod visum placet*—has created a situation whereby architectural criticism is virtually dead. Whereas fifty years ago architectural periodicals printed acid comments about buildings they considered unpleasing, and editors wrote trenchantly about contemporary practices and taste, today the profession is merely presented with so many fashion plates, and what little editorial comment there is, is relegated to the back page. With relatively few exceptions, the only criticisms ever published are of art exhibitions; speculations on the significance of paintings or expatiations on the art-historical sources from which the artist's style has been derived. More and more, the architectural magazines have come to resemble *Vogue*; photographs of the latest models sandwiched between brightly coloured advertising material frequently reproducing identical illustrations.

As a counter-measure, the profession is in urgent need of a periodical comparable to *The Times Literary Supplement*; that is to say, a collection of criticisms, published anonymously, which comment on new buildings as they appear. Since only a small proportion of those completed each month throughout the continent could ever be selected, an architect might well consider it a compliment to have his work singled out, for clearly no building would be discussed unless it was of obvious interest and merit. The commercial press would have little reason for being interested in such an undertaking; but it is a project entirely within the sphere and competence of a professional society. If the RAIC were to empower its *Journal* to include this amongst its other duties, it would not merely be fulfilling a public service; it would be creating the most powerful and influential force for improvement to which architecture is susceptible in the present day. There would be no need to begin ambitiously. One review a month would suffice to establish some sort of tradition, set an example, and evolve a suitable technique. But there would be no limit to the scope of such an endeavour if it proved initially successful. By concentrating upon the *effect* of architectural designs upon the public, rather than upon the *motives* of the architect creating them (as is presupposed by Croce's aesthetic doctrines) it might well remove the main cause of that instability which is bogging us down in romanticism and individualism, and which prevents the emergence of that true classicism to which industrial standardization naturally tends.

Les artistes romantiques cultivaient la solitude, douloureux privilège de l'élu, et, du haut de leur tour d'ivoire ou de leur rocher d'exile, ils criaient à la foule indifférente que le poète devait être et le mage le pilote de la société. L'auteur classique, au contraire, ne croyait pas déroger en s'adaptant à son auditoire lorsque celui-ci le méritait. Aussi se donnait-il comme règle suprême de PLAIRE.

AN APPRAISAL



Massey College—Ground Floor Plan

A Critique of:

MASSEY COLLEGE, TORONTO

Reprinted from the October, 1963 issue of the ***Royal Architectural Institute of Canada Journal****. This review was subsequently republished in a slightly modified version under the title "Home for Scholars" in the November 28, 1963 issue of the* ***Manchester Guardian****.*

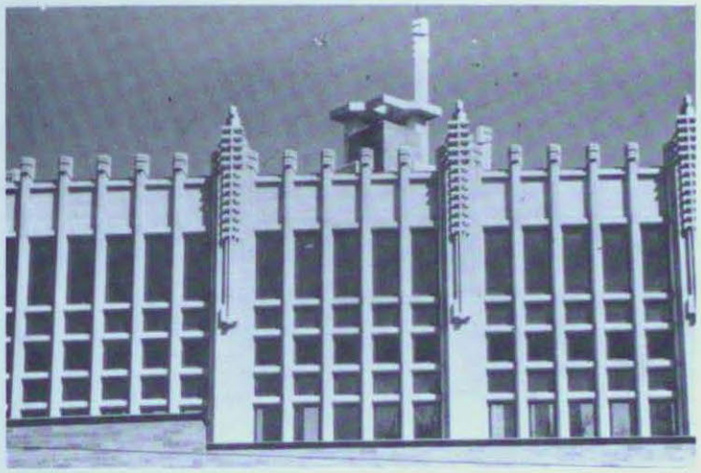
For members of the architectural profession, the main importance of Massey College lies in the fact that despite its obvious efficiency in plan, pleasantness of appearance and soundness of construction, it challenges with shameless vigour many of the basic architectural concepts which seem to constitute orthodoxy as expressed in the leading architectural magazines in Europe and the United States.

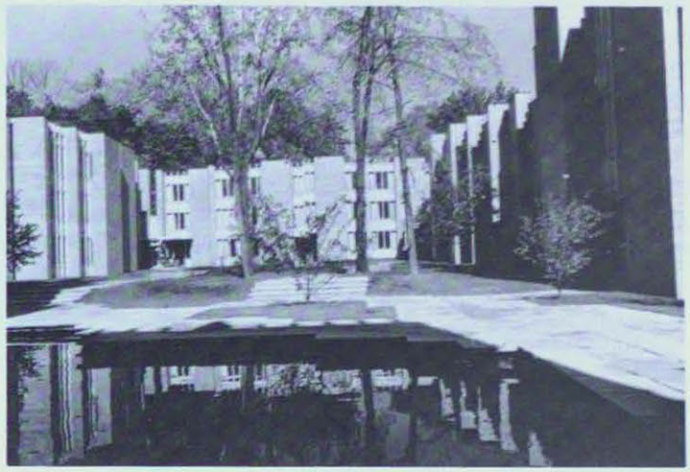
Consider, to begin with, the plan. According to the *avante-garde* theorists, such as Professor Llewelyn Davies and Reyner Banham, the worst thing any self-respecting architect can do is to accept either the client's program, or a traditional program, as the basis of his own design. Reyner Banham criticized Coventry Cathedral because, according to him, it kept too closely to the traditional arrangements of Anglican worship, whereas the whole liturgy should, in his view, have been reinterpreted in twentieth century terms to produce a twentieth century program. Professor Llewelyn Davies has been even more categorical in his attitude (although the uninspiring results of his attempts to apply his own theory in the new "Times" building may well have tempered his arrogance in this respect): "The client's brief is nearly always wrong, and a bad brief inevitably results in disastrous architecture." But in the competition for Massey College, the four contestants were presented with an extremely detailed brief by a group client (namely the trustees of the Massey Foundation) who had very definite ideas as to what was wanted; and the client not merely specified in detailed terms the physical facilities required, but stated the precise environmental character which was considered most suitable.

The nature of the amenities to be provided was prescribed in unequivocal detail, even to the extent of describing the character of the dining hall, common room and so on, and requiring, for example, that fireplaces should be provided in these communal rooms and in the resident Fellows' rooms. There is no doubt that the program was strongly influenced, if not directly inspired, by personal recollections of the type of community which was established at Oxford seven centuries ago and has flourished vigorously ever since, and it is clear that the trustees deliberately intended that the graciousness and dignity of the accomodations provided at Oxford in the middle ages should be found at Massey College.

For visitors familiar with Oxford, there is undoubtedly an aura of traditional collegiate life about the plan of this new building in Toronto. But interestingly enough, the plan is in no way based on that of an Oxford college, and is strikingly original both in the organization of the circulation and the planning of the various rooms. Nowhere, at Oxford, can one find anything comparable to the spatial configuration of the common room, with the dining hall so elegantly superimposed. In fact, if one analyses and compares, one finds that the only really similar feature is the common presence of an enclosed courtyard whereby all the rooms look onto an inner communal tranquility. Perhaps the *avant-garde* theorists would prefer to have seen an isolated refectory and dormitory blocks, although it is difficult to see how one can reject the contemporaneity of this courtyard plan except on the grounds that it corresponded also to the needs of scholars before the First Machine Age, and hence is no longer valid.

Let us now consider the appearance of the building, since it is in this respect that hostile critics of the design will find most cause for raillery, in that, in the name of Progress, they can easily take the architect to task for using forms reminiscent of both the Middle Ages and of Frank Lloyd Wright's architecture previous to 1914. There can be no doubt that the window and spandrel details, and the pinnacles, could justifiably be classified by archaeologists as neo-Gothic, and in this sense, they are curiously comparable to Barry and Pugin's facades for the Palace of Westminster. Moreover, such romantic associations with mediaeval prototypes can hardly be dismissed as fortuitous, even though the architect himself protests his complete ignorance of the history of architecture. Hence, one has the uneasy suspicion that this design is essentially a kind of scenery, and any architect visiting the building is inevitably reminded of the brilliant speech made by Robertson Davies, now Master of Massey College, when he addressed the RAIC in 1960, and proclaimed that "you are the designers of the scenery against which we act out the





drama of our personal lives."

It may well be that Robertson Davies and the Fellows of Massey College will find the same kind of comfort there which the Victorians discovered in their neo-Gothic villas as they immersed themselves in Sir Walter Scott's romances. It may be that Ron Thom has responded too superficially to Roberston Davies' plea: "Would it not be possible for some of us—a few of you architects and a handful of us ordinary people—to conspire to bring a whisper of magnificence, a shade of light-heartedness and a savour of drama into the setting of our daily lives?" But here, at Massey College, magnificence, light-heartedness and drama have undoubtedly been created with a skill which borders on genius; and the only question the hostile critic may legitimately ask is whether it is proper to achieve these effects by means which so patently appeal, however subtly, to nostalgic reminiscences of a past which is not Canada's, and therefore have an exotic as well as revivalistic flavour.

Much criticism of this nature could, I think, be validly countered by claiming that there is nothing very wrong with using traditional forms when building in traditional materials, and since this building is constructed of brick and limestone, it could reasonably be urged that the detailing is perfectly legitimate. However, before discussing this aspect of the design (which relates more to the validity of the structural system than to the problem immediately under consideration) I should prefer to deal with the other criticism which has been levelled against the building, namely that it is reminiscent, in its forms and ornamentation, of the early architecture of Frank Lloyd Wright. In other words, it is to be condemned because it seemingly indulges in what Nikolaus Pevsner has recently called "The Return to Historicism"; i.e., the imitation of a style authentic only in the first decade of the present century.

Does Massey College set Canadian architecture back fifty years, as one critic has suggested? The answer can indeed be in the affirmative; but only if one regards architectural style as comparable to fashions in clothes, whereby the nature of architecture changes every spring. If one considers that Frank Lloyd Wright was one of the pioneers of modern architecture, and that he had already reached maturity by, say, 1903, then it is difficult to see why the forms he was using in 1913 should cease to be valid in certain circumstances today. The operative phrase here, of course, is "in certain circumstances;" since clearly, the forms Wright used so successfully in Midway Gardens are obviously not applicable to every circumstance. But it may reasonably be argued that Massey College is precisely a circumstance in which they *are* applicable. The building is surrounded by neo-Gothic masonry and brick buildings of various periods with which it now harmonizes. The geometry of the composition seems peculiarly-suitable for, and in comformity with, the disposition of the accomodation. The general atmosphere created by these forms seems to combine with singular felicity to create both the dignity of an academic building and the comfort and intimacy of residential accomodation. Thus of all the works created by the so-called "Form-Givers" of modern architecture since modern architecture first assumed its definitive character fifty years ago, it can hardly be denied that, from the point of view of what Robertson Davies has called "magnificence, light-heartedness and drama," no idiom could be more suitable than that which has actually been chosen, and executed with such masterly originality and verve.

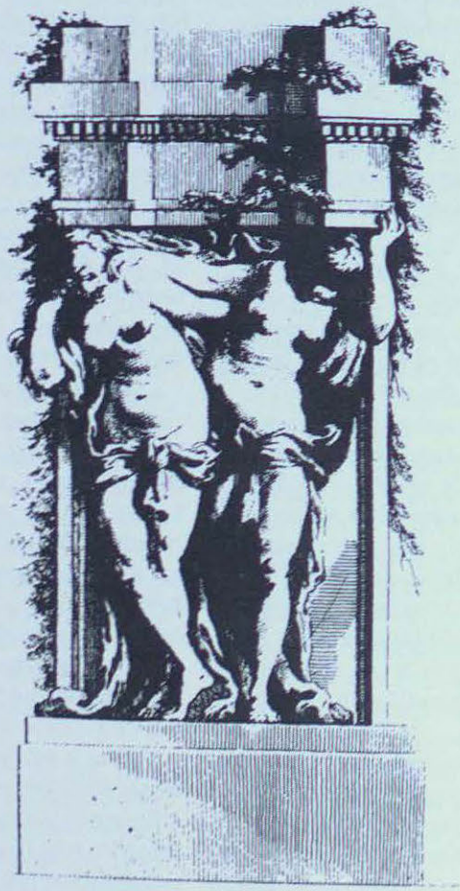
There remains then only one other possible basis of criticism (if we respect the triple criterion of *utilitas, venustas* and *firmitas*), namely the validity of the structural system. Was the architect right to build this three-storey building in load bearing brick and limestone, or should he have ostentatiously called to his aid some of the more daring technological developments which have appeared in the last fifty years? Perhaps a clue to the resolution of this dilemma is furnished by the fact that although the fenestration and spandrels are of carved limestone, the architect originally specified concrete, and only allowed limestone to be substituted when the building contractor demonstrated that it was cheaper.

Now it seems to me that if one "designs" concrete in such a way that limestone can be substituted, there is something inherently wrong with the design itself, and in this respect it is interesting to compare the finished building with one of the competition projects rejected, namely that by John B. Parkin Associates. I do not for one moment intend to question the decision of the jury in rejecting this design, for there seems

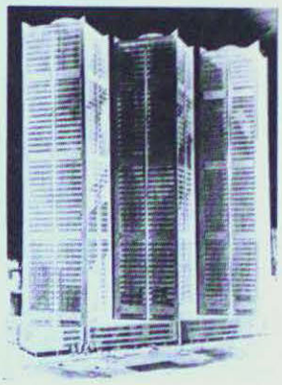
no doubt whatsoever that the plan of the winning scheme was better, and that its appearance was more pleasing. But it is noteworthy that Parkin Associates made a deliberate attempt to utilize and exploit contemporary technology in their design, especially in their method of roofing the dining hall, and I would suggest that it is axiomatic that *really great architecture is infused, by the very nature of architecture as both an art and a science, with the urge to utilize and exploit the most up-to-date structural system that the the spatial requirements of a building will permit.*

Massey College, as now completed, is, by virtue of its very excellence, a valuable lesson to architects as to the true nature of architecture, for it illustrates the fallacy of believing too strongly in the fashionableness of today's abstract forms, just as it shows the folly of seeking modernity in novel programmatic requirements alone. Thus it bears striking evidence to support the view that there is no reason why an architect cannot create a completely contemporary building with a traditional program, traditional materials, and geometric forms evolved in an earlier decade. But at the same time it does suggest that genuinely epoch-making architecture can only result through the application of the latest technological processess. There is no reason why every building should be epoch-making. The trustees of the Massey foundation did not ask for an epoch-making building. They asked for a building that would be eminently functional, eminently sturdy, and eminently beautiful, and that is what they got.

Massey College, Toronto
Architects—Thompson, Berwick & Pratt
Architect in Charge—R. J. Thom



STOCK EXCHANGE TOWER, MONTREAL



A Critique of:

PLACE VICTORIA

Reprinted from the June, 1966 issue of the ***Architectural Review.***

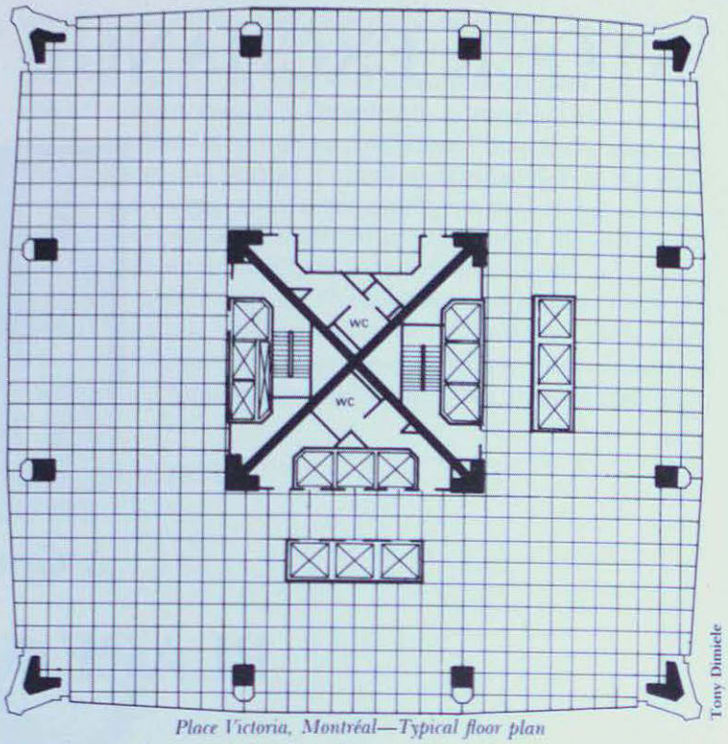
This new building, officially opened on October 17, 1965, is commonly referred to as the Place Victoria—presumably by analogy with another magnificent tall office building built recently in the heart of Montreal: I. M. Pei's Place Ville Marie. But whereas the most striking feature of the latter is its provision of spacious open-air pedestrian plaza at street level within the boundaries of the site chosen for development, the Montreal Stock Exchange Tower adjoins an existing plaza (i.e. Victoria Square) which it was simply intended to complement and enhance.

That it does enhance it is incontestable; but it does so in a manner probably quite unforseen by Luigi Moretti when working on the initial project four thousand miles away. As actually built, with its four facades parallel to the surrounding street pattern, this single tapering prismoidal shaft, shooting 624 feet into the sky, forms a superbly dominant focal point to Victoria Square—a small and previously insipid rectangle occupied by a dismal garden surrounding the two symbols of French and English civic pride respectively: a statue of the then reigning monarch and a public convenience.[1] But it should be noted that Victoria Square measures only about twice the area occupied by the tower now constructed beside it. The original scheme was for *three* such towers, set diagonally and continuously, whereby the longitudinal axis of the complex would have been at right angles to Victoria Square. To my mind, this solution, though financially lucrative in its provision of three million square feet of rentable office space, would have disastrously overpowered its setting; for though the perspective published by Moretti, seems to imply, with a kind of Piranesian *bravura*, that this massive cliff of zig-zag curtain-walling would have formed the boundary to a vast plaza at least 600 feet wide extending northward, in fact only the end corner would have faced Victoria Square, which is to the east and constitutes merely a minute fragment of the space implied by the sketch.

So far only one tower has been built, though a second is unfortunately intended to occupy the rear extremity of the site. The internal planning of the tower is not original except in so far as it relates to the novel structural system employed; but this is one of its virtues as compared with Nervi's earlier Pirelli Building which, despite its many real merits, was conceived by the client (according to Reyner Banham's appraisal in AR, March, 1961) more in terms of publicity than of functional efficiency. The economic problems of tall office buildings—such as the ratio of elevator shafts to the total subdivisible rentable floor area, and the optimum qualities of perimeter walling—were solved many years ago, wherefore originality in this domain is only likely to be achieved at the expense of values extraneous to the basic problem. Not that there is anything intrinsically wrong with this kind of originality. On the contrary, when the shape of a skyscraper is conceived in terms of, say, the peculiar configuration of the site, or of the dominant character of its immediate environment, it would seem to be of particular interest and merit. But clearly such special conditions make the resultant building less useful as a model for buildings elsewhere, and it is precisely because such restrictive conditions did not radically influence the structural design of the Montreal Stock Exchange Tower that it can be regarded as a paradigm of universal validity.

Since the original concept of the building was produced by Nervi and Moretti, and since Nervi is uncontestably the greatest designer of reinforced-concrete structures who has so far graced this planet, it will be tempting for future historians to attribute all the merits of the stucture to them, and any jarring qualities to the Canadian architects, engineers and contractors who built it. It would, however, be most unfair to take such a prejudiced approach, especially as some of the most attractive features of the design, such as the visible diagonal trusses of the "mechanical floors," and the bowed curtain walling cantilevered in front of the sructural columns, do not appear on Moretti's published perspective. Moreover, if Nervi had been allowed by Quebec law to take full personal responsibility for this 10m. stucture, it is by no means certain that he would have persisted with his original plan for leaving the structural concrete of each corner shaft exposed. I myself wish he had. But in a city where the outdoor temperature often drops to fifty degrees below freezing point, the possibilities of thermal distortion in the four monolithic shafts, each half as high again as the Pirelli Building (where the

Robert Bianchini



Tony Dimiele

Place Victoria, Montréal—Typical floor plan

structural concrete was also encased externally, despite the temperate climate) are such that any engineer, however intrepid, might be forgiven for not taking the risk of a kind which few clients and even fewer lawyers would ever be likely to condone if anything went wrong.

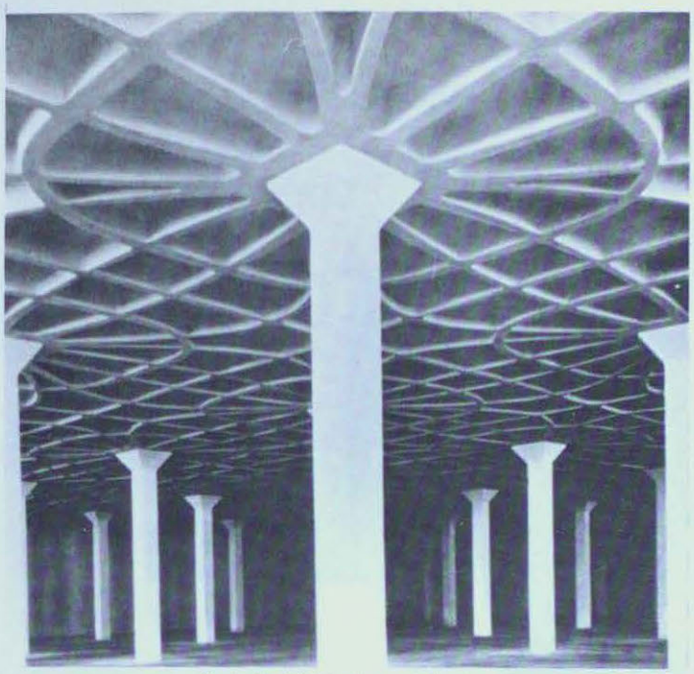
There is, however, another important, though perhaps more controversial, reason for being cautious in assessing the extent, if any, to which Nervi and Moretti's original concept has degenerated as a result of their enforced association with local architects and engineers. It is now common for art-historians (whose views on these matters are, according to Nervi himself, extremely unreliable[2]) to assert that Nervi is essentially a designer of thin shells and folded slabs; a notion which derives partly from the tendency of his biographers to emphasize—very properly—his long-span single storey structures,but mainly from one of the Neo-Plasticist dogmas enshrined in *Space, Time and Architecture*[3]. In fact, it is apparent from an inspection of Nervi's various short-span multi-storey structures, such as the Bologna Tobacco Factory, that he not only uses what some writers derisively dismiss as "post-and-lintel concrete structures" but that these buildings are essentially refinements of the system patented by Hennébique in 1892, i.e. rectangular columns, haunched beams, and ribbed plates for the floors.[4]

Admittedly, Nervi's plates usually have ribs which span in two directions instead of one, to produce intersections of extra-ordinary beauty. Moreover, at the suggestion of Aldo Arcangeli, who was one of his assistants involved in the design of the Gatti Wool Mill, Rome, he elaborated these ribs further by making them follow sinuosities ostensibly representing the isostatic lines of the floor's principal bending moments. But such refinements are not only of questionable structural authenticity; they can only be justified aesthetically when the soffit is left visible. Thus in those of his buildings which require, by their function, the inclusion of complex electrical and mechanical gadgetry in the ceilings, simple ribbed-plate floors based on a standardized rectangular grid are evidently considered by him to be most correct.

This issue of ribbed plates versus slabs was of crucial importance in the design of the Montreal Stock Exchange Tower, because whereas in steel-framed skyscrapers, the decisive factor in designing the floors is usually their depth, here it was their weight. In other words, it was not only considered more economical, but was structurally manditory, to design a floor of minimum weight rather than of minimum depth. For the spans and live loads given it would doubtless have been possible to make all the floors of simple solid slabs; i.e. of constant thickness throughout. But the enormous weight of forty-seven such floors would have required so many wasteful and elaborate structural devices to resist the instability to be anticipated in the event of an earthquake, that any solution of this kind was out of the question. The floors, as built, therefore consist of 3-inch plates combined with 18-inch ribs, the latter being spaced at intervals of approxiametly six feet. It should be noted that this was the type of floor always envisaged by Nervi, although his initial project was later modified by the local engineers, who changed the positions of the pairs of intermediate columns (superimposing them behind the cutain-walling on each of the four facades), and suppressed the beam originally conceived as spanning between the corner supports.

The two most striking elements of the overall concept are, first, the so-called "mechanical floors" and, secondly, the corner supports themselves. The "mechanical floors" at the seventh, nineteenth and thirty-second levels do indeed contain a certain amount of mechanical equipment and ducts; but they are essentially a means of joining the central core (consisting of X-shaped shear walls of solid reinforced concrete, which house the escape stairs and most of the lifts) to the corner shafts on the exterior. By this means the tower, which stands on a site as liable to earthquake tremors as San Francisco, is given the fullest possible rigidity. The three great pairs of diagonal trusses, each about 23 feet deep, which link the central core to the corner shafts, are partially visible from outside, and they undoubtedly give the tower a variety and novelty which is all the more attractive, to me at any rate, because they are structurally needed.

The corner supports of the tower taper gradually from the ground to the top storey with an entasis which greatly contributes towards the elegance of the building's silhouette. Admittedly, the visible surface is simply a veneer; indeed, the space between each monolithic structural shaft and the precast slabs which encase it is so large that a man can climb up between the two faces for periodic inspections. But, the ve-



Gatti Wool Mill, Rome—Structure

Robert Bianchini

neer follows faithfully the shape of each structural support, which consists of a continuous prong of roughly triangular section, diminishing in thickness towards the top.

Nervi first seems to have put forward this concept when collaborating with Ponti on the Pirelli Building; but in Montreal it achieves a far nobler, authentic and more eloquent expression, and the importance of its evolution cannot be too enthusiastically stressed. The traditional concept of multi-storey reinforced-concrete buildings—valid enough when the height of the building does not greatly exceed its width—has been that of a series of superimposed standardized floors supported by simple cylindrical or prismatic columns. These columns normally decrease in cross-sectional area at each successive floor, since the total superimposed load naturally becomes less in proportion to the distance of each floor from the ground. The system is in itself perfectly logical, since it not only corresponds to the statical requirements of vertical loading, but allows all the faces of all the columns to be vertical— an advantage which is evident whenever the intervening spaces have to be partitioned or glazed. But such a concept relies, for its ultimate justification, on the assumption that a building is something that stands on the ground: an assumption which therefore regards the soil-condition as an independent problem, to be solved after the initial design for the building has been accepted. According to this notion, all buildings may be envisaged theoretically as constructed on solid rock, whether the "rock" be real or artificial; and it is well displayed in the *Unité d'Habitation* at Marseilles, where there is in fact no stuctural continuity whatever between the bases of the *pilotis* and the reinforced concrete substructure buried in the ground. Nervi, however, with his genius for discovering the essential nature of each structural problem, perceived that in a skyscraper, where the height is many times the width, the stucture does not simply rest on its foundations; it is vertically cantilevered from its roots. And he therefore evidently concluded that however much the foundations may be submerged, their existence should be attested by the continuously sloping profiles of the structural elements they engender above ground.

The structural system used in Montreal Stock Exchange Tower is at present unique; but only unscrupulous individualism can prevent it from becoming the prototype of a whole series of skyscrapers of comparable design, scattered throughout the world. It will undoubtedly be an honour for Montreal if the future students of architectural history make a special visit to that city to see this splendid building. But it will be a far greater honour for Nervi, reflecting glory back on the architectural profession itself, if the other cities also give themselves the benefit of such an environment, whereby each metropolis will be able to boast of its debt to this great engineer in the words of the most famous of all architectural memorials: "If you seek his monument, look around you."

And as few buildings are beautiful unless every line and column of their mass have reference to their foundation, and be suggestive of its existence and strength, so nothing can be beautiful in art which does not in all its parts suggest and guide to the foundation, even where no undecorated portion of it is visible; while the noblest edifices of art are built of such pure and fine crystal that the foundation may all be seen through them...

Ruskin: *Modern Painters* (1843)

NOTES:

Others concerned in the design were: associate architects, Greenspoon, Freelander and Dunne; consulting architect, Jacques Morin; structural engineers, D'Allemagne and Barbacki; consulting engineers, Letendre and Monti; mechanical and electrical engineers, James P. Keith Associates.

1. It is, however, characteristic of the bi-culturism and bi-lingualism which has haunted the Province of Quebec for over a century that the statue—the characteristic central feature of French urban squares—is inscribed "Queen Victoria," whereas the monumental public convenience is inscribed "Vespasiennes."
2. See, for example, the article published in *Architecture d'Aujourd'hui*, No. 99 (December, 1961-January, 1962), of which the following is translated extract: "The fact that art criticism is thought out by non-technicians who, in most cases, are led to examine painting, sculpture and architecture from the same point of view, has certainly contributed in deflecting the analysis and interpretation of the constructive elements of a work of architecture, and in causing such analyses and interpretations to concentrate on strictly formal characteristics."
3. The fact that the forthcoming fifth edition of Giedion's famous book will include a chapter on Jörn Utzon without any mention of Nervi's scathing criticism (published in *Casabella*, July, 1959) of the Sydney Opera House (effusively praised by Giedion, though it will not even be completed, let alone tested acoustically, for at least another four years) would seem to support this assumption.
4. I tried to show in my book on *Auguste Perret and his Precursors* that Perret also simply took Hennébique's system and refined it. But Perret, of course, had no training or mathematical competence as an engineer, and relied entirely on consultants, such as Louis Gellusseau, for structural analyses.

SIGNIFICANT FORM IN CHURCH ARCHITECTURE

According to our research, this article is previously unpublished.

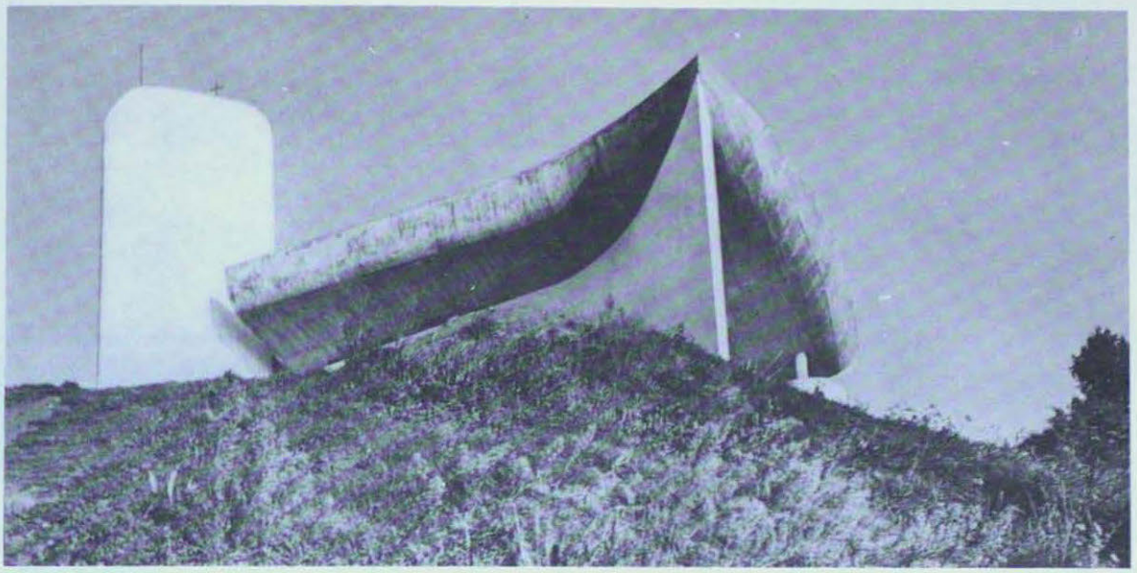
If the term "significant form"—so popular in the language of art criticsm—means anything in architecture (and there is no guarantee that it does, since buildings, unlike painting and sculpture, are a necessity, and thus derive all their essential significance from the mere fact that they are there) it may presumably mean one of four things. Firstly, it may mean that the form is "expressive" of the structural system and materials used. Secondly, it may mean that the form is "suggestive" of the activites which go on inside. Thirdly, it may mean that the form "symbolizes" some spiritual value. Lastly, it may mean that the form "invites attention from a select and initiated group of people." All these meanings of "significant" are implied in the Oxford Dictionary, and I propose to examine each one of them in turn.

Firstly: church architecture as deriving significance from the expression of structure. This might appear to mean that to satisfy the standards of modern architecture, a church should display its structural surfaces internally, and wherever possible externally, and that the structural system and materials should be exploited to the absolute limits of resistance, as ascertained by calculation. But this is not the case. Perret's church at Le Raincy fulfils these conditions admirably, yet in May 1960 issue of the *Architectural Review* (p. 329) it was described as being drenched in historicism, and "certianly not modern." A true example of what orthodox opinion regards as "modern" ecclesiastical architecture, if one can judge from the extent it is published, is the chapel of Ronchamp, where thick rubble walls are covered with stucco, and the shape of the vault was, according to Le Corbusier, inspired by a crab shell he picked up on a Long Island beach.

It may even be questioned today whether the "expression of structure" really means, for practising architects, even the expression of an actual structure, or whether we are not reverting, so help us, to the old and much derided method of imitating "ideal" structural systems in other materials, like McKim, Mead and White, or, if one prefers it, the ancient Greeks. One needs a keen eye to distinguish which of the walls at Ronchamp is of rubble, and which is a two-inch thick sprayed concrete shell on a reinforced concrete frame. Similarly, it is not uncommon to see what appear to be "folded plate" roofs constructed of steel trusses, and on one recent example in Montreal (a synagogue), the steelwork supporting the timber "folded plates" was disguised on the outside by false windows made to apparently butt under the "slab."

This sort of subterfuge stems inevitably from the fact that by "significant," most architects really mean "contemporary," and by "contemporary" they really mean, as regards structural fashions, the forms which engineers like P. L. Nervi are currently constructing. But Nervi and his colleagues are mainly concerned with spans of the order of two or three hundred feet, if not more, whereas except in the most unusual circumstances, (such as the new subterranean basilica at Lourdes), churches rarely need larger spans than St. Peter's, Rome, either in Canada, or anywhere else. As a result, if "contemporary" structural virtuosity is to be explored aesthetically, it must be by imitation and "significant form" then becomes formalism, which is of no real significance at all. Probably the only way today's church architects have any chance of emulating mediaeval feats of structural daring without sacrificing their legitimate desire to do something genuinely contemporary is by using mediaeval materials in new ways, such as by employing laminated wood. There is clearly no structural virtuosity displayed in the roof at Ronchamp, even though Le Corbusier claimed that "the dear faithful concrete was shaped perhaps with temerity but certainly with courage;" for as Nervi has pointed out, the essence of tectonic virtuosity is correctness and economy. Genuine contemporary architecture not only uses every technological advantage appropriate to the circumstances, but excludes both wasteful structural systems, and systems more appropriate to structures of greater spans. The concrete roof at Ronchamp is certainly daring but so is the show at the Folies Bergères.

The second way by which churches can have "significant form" is when their exterior compositions suggest the ceremonies which go on inside. This type of expression, unlike the last, had probably meaning for mediaeval architects (who even seem to have been relatively indifferent towards



Esthétique de l'Architecture

Le Corbusier: Chapelle Nôtre Dame du Haut, Ronchamp

the artistic unity of their church exteriors, as compared with the interior spaces), but it is still very much part of the philosophy of modern design. Some theorists, such as John Summerson, have even gone so far as to suggest that the expression of new planning arrangements is the very essence of modern architecture, and that the revolutionay changes which have occured in architecture since 1920 derive essentially from the changes which have occured in modern planning needs.

The dilemma which this philosophy presents to the contemporary church architect is two-fold. Firstly, since no structural partitions are needed in churches, and their planning requirements are imprecise, it is impossible to draw up any programme which will give an unequivocal lead as to the volumes and proportions needed. There have of course been a number of text-books written explaining the various regulations laid down by Canon Law, but these concern more properly what is called "church furniture," and have little decisive influence on tectonic compositions.

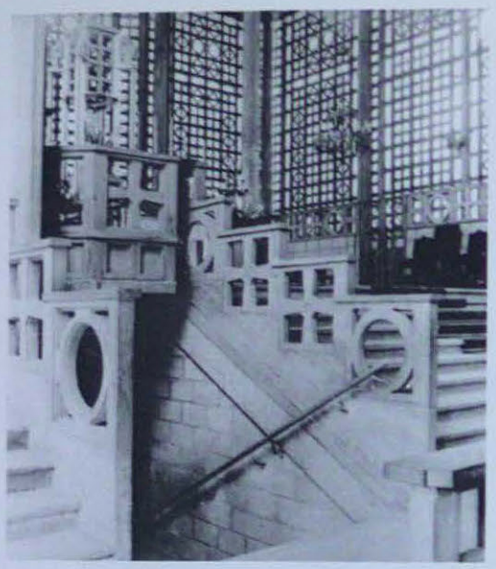
The second aspect of the dilemma is that the function of a church is essentially traditional, whereas the "functionalist" theory is only valid on the assumption that the planning requirements of all buildings has radically changed within recent years. How then can a church avoid being "drenched in historicism," or be unequivocally "modern," when nave and chancel, altar and congregation, have been in the same relative position for fourteen centuries, and the ceremonies performed there are, from the very nature of religious dogmas, always the same?

The architect who wishes not only to be contemporary, but to demonstrate that he is member-in-good-standing of the avant garde, has two choices. Either he can make arbitrary changes in the traditional arrangement, by deliberately disposing the congregation and the altar asymmetrically, or placing both in positions and spaces they have never, for good practical reasons, occupied before. Or he can adopt a Revivalist attitude comparable to that in vogue in the early nineteenth century and revert to a more primitive form of plan.

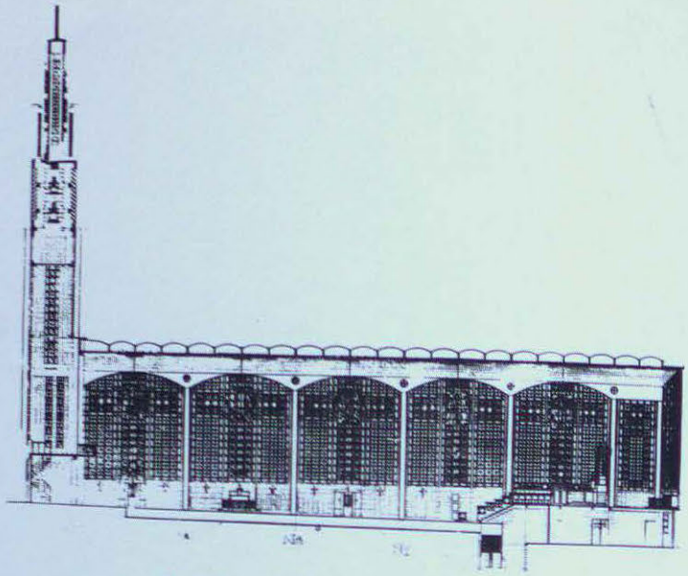
This latter approach is the one most usually adopted because it is supported by many priests and laymen who believe in a return to a more primitive liturgical arrangement so as to intergrate public worship more fully into the mystical life of the Church. Architecturally, it is quite valid, and in several instances (the most notable being the recent competition for Liverpool Cathedral) has provided the opportunity for some novel compositions. It does not, however, solve the problem of how to create "significant form" for congregations which still prefer a way of worship they are accustomed to, and which is in fact "contemporary," in the strict, evolutionary sense of the term.

A third sense in which the forms of church architecture can become "significant" is by symbolically expressing some spiritual value. Symbolism is obviously an important feature in religious painting and sculpture; indeed, according to Susanne Langer, symbolism is the key to all philosophy and all the arts. Moreover, since the iconological researches of Erwin Panofsky have brought to light so many examples it may be thought that symbolism is a key to architecture as well. Yet Mrs. Langer's theory is fully substantiated, and nothing could be further from the truth, for it is a fatal mistake to copy the Renaissance error of treating painting, sculpture and architecture as interchangeable disciplines with common values, or to assume that one can evolve a universal and all-inclusive "theory of art."

Symbolic compositions have no valid architectural significance for the simple reason that they are meaningless in terms of the phenomenological appreciation of space. Symbolic plans are of course of very great antiquity, although the most obvious (namely the cruciform plan) was only used in larger churches and probably originated, not in places of worship, but in sepulchral chapels, such as the tomb of Galla Placidia at Ravenna, or the church of the Holy Apostles in Constantinople (on which St. Mark's, Venice, was based). Symbolic planning was popular in advanced intellectual circles of the Renaissance, when Platonic philosophers, and amateur theorists like Alberti, fosterd the adoption of "ideal shapes" like circles and spheres, irrespective of the function the buildings were to serve. But the real popularity of such plans occured after the introduction of the *Prix de Rome* competitions, when even the most obtuse members of a jury could savour the significance of a symbolic design. McGill



Notre Dame, Le Raincy—Detail of Claustra



Notre Dame, Le Raincy—Longitudinal Section

University recently aquired—as a curiosity—a drawing for "A Temple for the Holy Trinity," which is almost certainly a student project for the French Academy school's design programme of January 1783, and in which three porches are arranged equilaterally around a central rotunda in the most approved Boulléesque manner. Two years ago, one of the thesis designs submitted at McGill was for a star-shaped synagogue planned on the basis of a "shield of David." *Plus ça change, plus c'est la même chose.*

Symbolic detailing, like cruciform planning, is also of very great antiquity, but less of a tradition than might be supposed. During the initial era of persecution, it was not uncommon for christians to adorn the subterranean quarries in which they secretly worshipped with crudely drawn pictorial symbols, but once church architecture began to flourish, isolated symbols vanished, and in no period before our own would it have been thought an act of creative genius simply to scrawl "Mary" on a sheet of glass. During the Middle Ages, and after the Renaissance, symbolic ornament was rare, if by this term we exclude wall-paintings and coloured glass. In the Gothic period, detailing consisted either of mouldings or, (in very lavish churches) carved ornaments of more or less conventionalized natural forms. In the post-Renaissance period, symbolic ornament was rarely feasible except when using the Doric Order (i.e. on the metopes), and this was seldom employed, because of the difficulty of achieving an orderly arrangement of the triglyphs when turning corners, or when using double columns. The one symbol most sedulously avoided by the architects of all periods before 1800 was the cross, which was considered both too sacred and too obvious to be proliferated over the surfaces of walls. Today, the cross is the only decorative motif which architects ever adopt (probably because it can be drawn with a set-square), and is as they say a "must" in patterned brickwork or pre-cast concrete screens. The most valid reproach one can make concerning Notre Dame du Raincy is that instead of emulating the sophisticated abstractions of mediaeval tracery, Perret followed Early Christian precedents by incorporating many cruciform elements in his *claustra*, and even made cruciform assemblages of these elements within the over all pattern of his translucent walls.

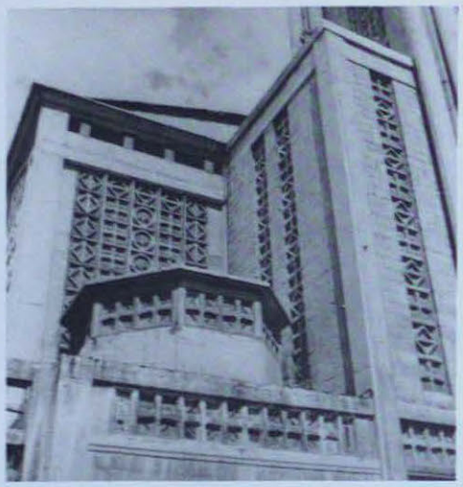
The only symbolic alternative to detailing is to make the composition of the building into some sort of a symbolic abstract ornament in itself. "Abstract Art", wrote le Corbusier, "which rightly nourishes so many passions in these days, is the *raison d'être* of Ronchamp, the language of architecture, the compass needle pointing to that space which is beyond written description." Such justification is intellectually unchallengeable, for as Paul Rudolph pointed out: "The important thing about Ronchamp is that it speaks to many kinds of people, as a chapel should." In other words, it says everything to everybody or anything to anybody, and as some character said to Alice in Wonderland, "means exactly what I want it to mean, neither more nor less." If a church roof has a single tilted pitch, it expresses, as Frank Lloyd Wright said of his last church, "the attitude of the hands in prayer," and if an architect cannot think of a symbolic roof-shapes, he can always introduce a tower which, as everyone knows, "points a finger to God." The Toronto City Hall points two fingers to God.

My own view as regards all this is that if the term "significant form" means anything at all in contemporary architecture, it means that the forms "invite attention from a select and initiated group of people"—namely the editors of architectural magazines. In this sense, "significant form" for architects means the same thing as "style" for the readers of *The Motorist* or of *Vogue:* an arbitrary shape designed by a professional Stylist as the accepted image of how a thing ought to look next year. "Significant form" in house-design corresponds to what the real-estate salesman calls "the House of the Future," just as "significant form" in dress-design means simply "next year's dress." There is no doubt that one has to be a genius to be able to forecast what next year's dresses will look like; but everyone knows what next year's chasubles or copes will look like, because the shapes have remained virtually unchanged for a millennium.

Perhaps the only really profound remark which Le Corbusier ever made about another architect's work was his comment with respect to Notre Dame du Raincy that the section was not simply the section through a church, "but the section through any industrial or sacred hall where economy has been pushed to its limits." In fact the only way architectural form can ever be significant is by being economical: not in the sense of cheap, but in the sense used by Racine when he said that "Style is thought expressed with the minimum of words." "Architecture," wrote the French Academy Professor of Architecture, two centuries ago, "is like literature: the simple style is preferable to an inflated style. Architecture is like poetry; by the beauty of its proportions, and the choices of its arrangement, it is sufficient unto itself."

ON CLASSICISM

THE CLASSICISM OF AUGUSTE PERRET



Auguste Perret: Notre Dame du Raincy

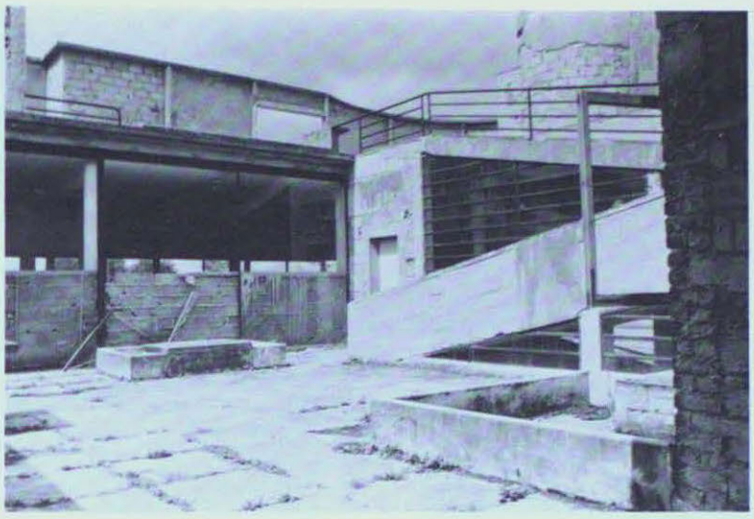
Reprinted from a paper delivered to the Society of Architectural Historians, Washington D.C. on January 30, 1970.

It seems to me that the most useful contribution I can make towards a realistic appreciation of this well-known taxonomical theme is by concentrating on the extent to which the character of Perret's architecture was a synthesis of the concepts of antiquity and mediaevalism developed theoretically in the late nineteenth century i.e. in the era in which he received his formal education. In this way I hope to dispose of the assertion, (implicit in the phrase "dilute classicism") that Perret's reinforced-concrete architecture was "insipid," in the sense that it demonstrated his inability to liberate himself from the stylistic nineteenth century trappings of neoclassicism. It is true that Perret's classicism was never 160 proof by comparison with that of the Bourbons; but it was certainly not watered down into the industrialized monumentality fostered by Peter Behrens. It was in fact an uncommonly potent, if unpalatable tincture, for which the recipe was, roughly, 50 parts of Classical Rationalism, dissolved in a distilled essence of Gothic Rationalism, plus of course the inevitable slice of lemon peel. The lemon in Perret's later architecture was provided by the taciturn acerbity with which he tried to refute, by his example, the volubly propagated apocalyptic theories of Le Corbusier, an acerbity which deepened into calculated antagonism when Le Corbusier's influence, or Amedée Ozenfant's money, gained control of the periodical *l'Architecture Vivante*, then edited by Jean Badovici. When the magazine had been founded in 1923, Perret was at that time regarded as the leader of the progressive architects, and he had supplied the lapidary definition of a "living architecture" which adorned the first page of *l'Architecture Vivante*. The first issue also contained full coverage of Notre Dame du Raincy, which was cleary intended to illustrate that definition: "Living architecture," he had written, "is that which faithfully expresses its epoch. It will be sought in every domain of building. Works will be chosen which, being strictly subordinated to their usage, and built by the judicious use of materials, attain beauty by the harmonious arrangement and properties of necessary elements by which they are composed."

But at the end of 1926, Badovici announced in an editorial that "Le Corbusier, the last of the present generation of young architects, is at the head of the avant-garde movement," and the 1927 issue saw a complete take-over by Le Corbusier and his friends, to the exclusion naturally, of Perret.

Notre Dame du Raincy has been succinctly described by Henry-Russell Hitchcock as an attempt to provide "what the mediaeval builders of St. Urbain at Troyes or King's College Chapel in Cambridge had obviously sought to achieve, namely a complete cage of glass supported by a minimal skeleton of solid elements." This building must have seemed of particular significance at the time it was built, because Julien Guadet had asserted, in his published lectures on the theory of architecture, that it was *impossible* to design a comtemporary church. Now Notre Dame du Raincy has no specific elements of either Gothic or antique reminiscences in the interior. It has, however, obvious mediaeval affinities, whilst many of its features (such as the repetitive use of standardized "claustra," as fenestration units) are also in harmony with the ideals of the late Roman Empire, and hence of the Renaissance. Perhaps it will not be extravagent to compare it to the palace chapel at Versailles, which seems to me to have been a 17th century transmutation of the ideals of the Sainte Chapelle. In this respect it seems worth noting, in paranthesis, that although Perret advised Le Corbusier to visit Versailles, he frequently expressed his disapproval of the palace on the grounds that most of it was shoddily constructed.

As regards Perret's antipathy towards Le Corbusier, this was due essentially to Perret's unshakeable belief—acquired by studying Viollet-le-Duc's Dictionary at an impressionable age—that architectural form is essentially structural form and that, to use his famous aphorism, "architecture is what makes beautiful ruins." This radical difference of viewpoint between the two men is well exemplified by comparing the exterior of Le Corbusier's Villa Savoie, as it appeared in 1966, with the exterior of Perret's church at Le Raincy, photographed in the same year. The comparison is particularly apt in the present context, because it will be remembered that lack of sufficient funds obliged Perret to leave the



Le Corbusier: Villa Savoie (1966)

concrete surfaces untouched after the removal of the formwork—thereby providing the first example of *béton brut* in a monumental building. In this building, we can see exactly what the relationship between construction and architecture implied for Perret and, by contrast with the dilapidated Villa Savoie, what it meant for his erstwhile pupil.

1923 not only saw the completion of Notre Dame du Raincy and the publication of the first issue of *l'Architecture Vivante* it was also the year in which *Vers une Architecture* appeared as a book. And in that book, Le Corbusier vigourously rejected the principles of Gothic architecture as interpreted by Viollet-le-Duc and Anatole de Baudot, by demanding a reversion to the visionary neo-classical principles of Boullée and Ledoux.

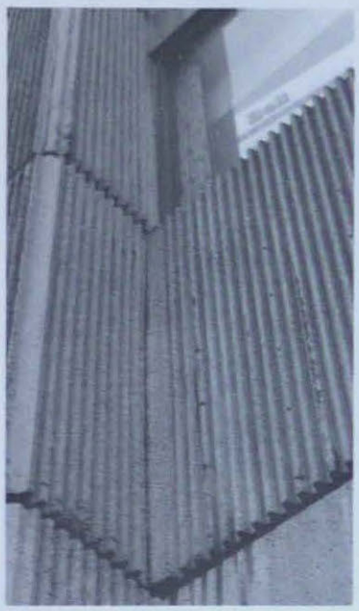
For Le Corbusier, the prototypes of the new architecture were to be found in those buildings of the past designed by sculptors, rather than by architects. The lesson of Rome was to be learnt primarily from Michelangelo—whom Le Corbusier claimed to be the equivalent, in our own millenium, of what the creator of the Parthenon had been in the heyday of Antiquity. Moreover, he asserted that it was Phidias, not Ictinus, who had designed the Parthenon. Ictinus, according to Le Corbusier, had been of little consequence in designing the world's greatest example of *Une Machine à émouvoir*—"a machine for arousing passion." Indeed, he had demonstrated his ineptitude by designing other temples which Le Corbusier describes as "cold and rather insensible"—a phrase which suggests that the Temple of Apollo at Bassae should also be classified stylistically as "frozen classicism."

Le Corbusier's total rejection of Gothic Rationalism is here emphasized because it is not always realized that in attacking the academic establishment, he was attacking the synthesis of Gothic Rationalism and Classical Rationalism (and hence the first victory over 19th century Historicism), which had been the great achievement of Julien Guadet twenty years earlier: "I am firmly convinced," writes Gaudet "that, in everything, and especially in architecture , all basic studies should be essentially classical. To be classical is not to give one's allegiance to a party. It is neither exclusive or prescriptive. It is neither wilful blindness, nor self imposed restrictive prejudice. It is the doctrine that the basis of study should be those elements which have been consecrated by reason, by logical tradition, and by a firm respect for higher principles. The adjective 'classical' implies stable equilibrium..." (It will be noticed that Guadet does not use the noun "classicism" though he had no objection to terms like "liberalism") "But this fine title 'classical' which, in art is the definitive canonisation, is not a matter of origins or of dates, of eras or of geographical locations. Everything is classical which deserves to be so, *without acception of time, of country or of school.*"

It was this doctrine which, in the first quarter of the present century, had been established as the orthodox theoretical basis of instruction at the Ecole des Beaux-Arts. Indeed, 1970 is the first year in which Guadet's famous treatise has ceased to be the standard textbook for French architectural students—thus producing a crisis, not only in French architectural education, but also in the French second-hand book market.

Julien Guadet's great achievement—apart, of course, from the systematic analysis of building-types set forth in his book—had thus been his scrupulous refusal to evaluate architectural merit on a stylistic archaeological basis. For the first time in a century—for the first time since the school was reorganized by Quatremère de Quincy after the French Revolution—the criteria of antique sculpture ceased to be the basis of architectural orthodoxy. Yet it was precisely back to those shackles (from which Guadet had freed Perret's generation) that Le Corbusier seemed evidently intent on leading the avant-garde.

The insistance on a non-archaeological evaluation of architectural merit, and the reconciliation of Classical Rationalism with Gothic Rationalism, is particularly apparent in Volume 3 of Gaudet's Treatise, where he discusses religious edificies. After pointing out the difficulty of dealing with the *theory* (as opposed to the *history*) of church architecture, he expressed the view that, in his opinion, the problem of designing a "contemporary church" was insoluble. One could design, he said, a contemporary hospital or a contemporary law-court, since this involved research into the present and the future. But how, he asked, could one possibly design a



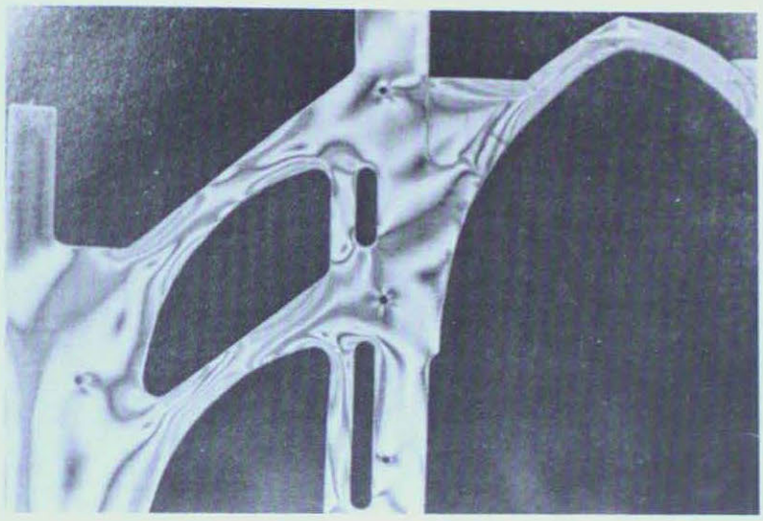
Affleck et al: Place Bonaventure—Detail

Auguste Perret: Mobilier National—Detail

church without falling back into the confusion between architecture and archaeology which had stultified architectural design for a century? Nevertheless Guadet, in accordance with his mandate, proceeded gallantly to give a general analysis of religious architecture, and it is worth noting that he not only devoted most of his analysis to *mediaeval* churches, but that he classified them by reference to the *structural systems* employed to roof them; concluding with a novel design for flying buttresses, which he and his colleagues had calculated in accordance with the most recent techniques of mathematical analysis. The example selected was the church of Saint Ouen at Rouen. Rather than show you his own drawings, I am here showing you the test models made recently by Professor Robert Mark of Princeton, who, at my suggestion analysed both systems by the most up-to-date techniques at the disposal of structural engineers. And though these photoelastic analyses seem to demonstrate that the mediaeval master-masons were as wise as Guadet, the significance of Guadet's academic exercise, and its relevance to the conflict between Perret and Le Corbusier, will be only too apparent.

The nature of the influence of Guadet's theory on Perret's architecture must surely help us to view the latter's work more sympathetically than as simply a superficial manifestation of 19th century Beaux-Arts classicism. Whether or not it is appropriate to describe the Mobilier National, built in the early 1930's, as "dilute classicism," I would certainly challenge the assertion made by our leading lexicographer of 19th and 20th century architecture that: "By 1930, Perret's architecture had definitely begun to date". Surely, the whole significance of Perret's contribution to contemporary architectural theory, at this time, is not that by the 1930's his buildings had "begun to date," but that on the contrary, his buildings had become virtually undateable. If, a thousand years hence, the fragments of a building constructed by Perret or his pupils were to be excavated from the debris of a World War III, would it be possible for art historians or archaeologists to classify them stylistically to within five years? And would there, in fact, be any virtue in being able to date them thus, merely by inspection? Because if not, one may question the whole relevance of such terms as "neo-neo-classical" with respect to the evolution of twentieth century architectural forms in reinforced concrete and steel. The supression of masonry and timber construction by the invention of new structural systems has, I suggest, made the continuity of such historical taxonomy entirely artificial and hence virtually meaningless.

Compare, for example, this detail of the Mobilier National with a detail of the Place Bonaventure in Montreal by Raymond Affleck and his partners. The superficial resemblance of the second building to Paul Rudolph's Art and Architecture Building at Yale is only too obvious; and since this kind of detailing which Paul Rudolph made popular, has now, according to the latest architectural magazines, "begun to date," the Montreal building may presumably be attributed with safety to the period: circa 1966. But if, instead of enquiring as to its date, we enquire as to the logic of using 8" thick solid cast-in-place concrete walls as the infilling of what is clearly a reinforced conrete frame, (rather than using thin pre-cast slabs less than 3" thick, such as Perret used in the Mobilier National) we find that we are dealing not solely with an abstract problem of art-historical taxonomy, but also with the much more realistic problem of technological judgement. Whatever may have been the sub-conscious urges of the *Zeitgeist* which prompted Raymond Affleck and his colleagues to be so art-historically contemporary on their surface, there were several very practical reasons—based on the climatic



Robert Mark: Photoelastic Analysis—Amiens Cathedral

conditions in Canada, and the relative financial economy of poured-in-place concrete in this particular structure which (as compared with pre-cast concrete), made this kind of walling virtually inevitable, whatever the detailing of its modénature. But if economic considerations had dictated the use of lighter infilling elements, recessed within the minimal skeleton, and if the climate of the locality had permitted the structural system of the Place Bonaventure to be exposed to the atmosphere (and hence to view), the result must inevitably have been a building which Mr. Affleck, to his consternation, would have found classified by many architectural historians as "frozen classicism," "pseudo-classicism," "stripped classicism," "dilute classicism," or even "an archaeological reminiscence of the eighteenth century."

I would suggest, therefore, that such problems of classification are more validly studied in terms of the distinction between load-bearing masonry structures, and structural systems which make more effective and more distinctive use of the building materials of the present century. Whatever the stylistic inadequacies of Perret's buildings after 1930 (as compared with "the more revolutionary modern architects of the second generation"), no architectural historian could possibly be so myopic as to confuse Perret's detailing with that of, Charles Garnier, whose Opera House, constructed basically of carved free-stone, achieves, we are told, "a generically Neo-Baroque effect with elements mostly High-Renaissance in origin...despite...a curiously un-Renaissance spikiness and lumpiness." Yet Perret and Garnier had this much in common: they both had a scorn for archaeological classifications when disguised as architectural value-judgements.

Garnier's un-archaeological approach, referred to specifically by Henry-Russell Hitchcock is, I believe, worth emphasizing in the present context, particularly in the light of Garnier's *bon-mot* (here quoted by Pascal in the preface to a posthumous edition of Guadet's treatise) to the effect that "for an architect, everything which has been built merits the title 'classical'." No one could seriously assent to such a broad architectural definition; yet anyone who attends a performance in the Paris Opéra today might be permitted the reflection that this building, which has worn so well for a hundred years, and still fulfills its function so superbly, has acquired an architectural dignity which reduces to trivia the unfashionableness of its ornamental details, whether they may be described as neo-Baroque or Second Empire. This type of classicism has nothing to do with the taxonomical concepts implicit in the terms "neo-classical" and "neo-neo-classicism"; for as Guadet asserted in his treatise: "*Le classique ne se décrète pas, il s'impose*"—"Classicism is not simply an awarded title, it is a quality which compels recognition."

Muarice Besset, in his recent book, *Who Was Le Corbusier?*, states in his preface: "the stage of post-Corbusierism is not yet with us: the challenge, fierce as it is here and there, has not yet resolved itself into a sufficiently coherent movement to mark the opening of a new phase, and with it, to establish for Le Corbusier a definite place in history." This assertion may well be true of Le Corbusier; but one of the lessons of Perret's buildings is that Perret, in his search for that structural immortality which is the essence of true architectural classicism, had already established a definite place for himself in history by the time he was thirty. Hence any phrase such as "the stage of Post-Perretism" can have no semantic significance, because Perret himself was apparently indulging in flagrant Post-Perretism during the last and most prolific decades of his career.

GENIUS LOCI:

The Historic Continuity of Cities

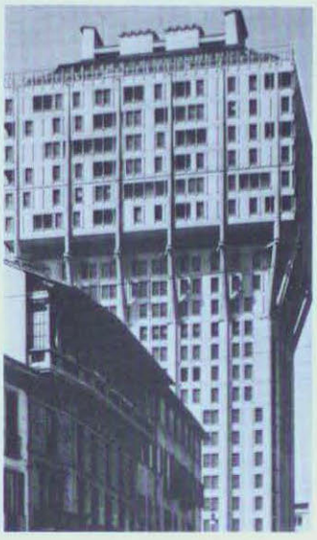
Reprinted from the July, 1963 issue of ***Progressive Architecture,*** *copyright 1963, Reinhold Publishing.*

One of the most striking and perhaps most disquieting paradoxes of modern architecture is that whereas the "Pioneers of the Modern Movement" as Nikolaus Pevsner called them—"that generation of giants who created a new style independent of the past"—considered that their principal victory lay precisely in the overthrow of the 19th-Century concept of *styles*, no generation of architectural historians has ever classified its contemporary architecture into so many stylistic divisions as our own. "The styles," wrote Le Corbusier, caustically paraphrasing Viollet-le-Duc, "are a lie. Style is a unity of principle animating all the work of an epoch." Yet despite this perspicacious definition, and despite Walter Gropius's vehement assertion that "a Bauhaus Style would have been a confession of failure," the works of these men, like those of their contemporaries, are now being classified stylistically by architectual historians with such chronolgical exactitude that Pevsner has detected at least 18 recent examples of what he calls "a Return to Historicism" involving "the imitation of styles which had previously never been revived;" that is to say, of recent buildings constructed in *styles* presumably to be considered authentic only in the first quarter of this century. There is already, he explained in a lecture to the Royal Institute of British Architects, "neo-Art Nouveau (which includes neo-Liberty and neo-Gaudi), neo-de-Stijl, neo-School-of-Amsterdam, neo-German-Expressionism, and finally to a certain extent neo-Perret;" and he hinted darkly at the prospect of a Ronchamp Revival and the imminence of neo-Maison-Jaoul.

It must be said at once that the essence of Pevsner's total argument is an entirely convincing plea for the return to the principles of "form related to function," and as such no practicing architect could possibly quarrel with it. On the contrary, most of those who have read his lecture as published in the April 1961 issue of the *R.I.B.A. Journal* will have fully endorsed his general thesis, especially his tacit admission that Art Nouveau and German Expressionism are not only bad in their revived form, but were bad in their original form, and always will be bad, since neither "share with the early Modern Movement the regard for function." But one may wonder whether some of his examples of "Historicism" really are revivalistic (for that is what "historicism" means for him), or whether these returns to earlier forms are not occasionally justifiable within the principles of modern architecture.

Let us take, for example, one of the most striking buildings included in Pevsner's lecture, namely, the Torre Velasca in Milan by Belgiojoso, Peressutti, and Rogers. Since this building is constructed of reinforced concrete, with an exposed, cast-in-place frame, with intermediate precast mullions spaced at regular intervals, and with precast infilling panels, it might fittingly be included in the category he entitles "neo-Perret," especially in view of its structural similarity to Perret's apartment block in the rue Raynouard, Paris, built 30 years before. Moreover, the fact that one of the three architects responsible for the Torre Velasca published a biography of Perret in 1955 would seem to give weight to such an interpretation. Yet not only does Pevsner not classify it as "neo-Perret" (a term he reserves for Edward D. Stone's Raincid precast tracery); he labels it "neo-Art Nouveau" because it bears a superficial formal resemblance to a metal framed office building constructed by G.P. Chèdanne in Paris in 1903.

The formal similarity between the upper part of the Torre Velasca and the upper part of the Le Parisien office building in the rue Rèaumur is indisputable; but it can be fully justified on on purely functional grounds. The top six stories of the Torre Velasca are apartment floors, whereas the lower part of the building consists of office space, and the enlargement of the upper part corresponds quite rationally to the increased size of floor area demanded. Consider, for example, how the shape of the Torre Velasca was justified by G. M. Kallman, the exponent of "Action Architecture" (and now one of the architects of the Boston City Hall), at the time of its completion. "It is not a self-sufficient structure that could be located anywhere," he wrote in the *Architectural Forum* in February 1958; *"instead it is a valiant essay in the neglected art of fitting modern architecture into a historic continuity of building, within which it seeks its own status.* Unlike most modern architecture, which is displaced, rebellious, and alien to im-



Torre Velasca, Milan

Auguste Perret: rue Raynouard—Apartment Block

mediate environment, the Milan tower shows a definite response to the forms and figuration of its surroundings... The giant mushroom shape of the tower recalls medieval machicolated defense towers. The cagelike appearance of the exterior frame is more reminiscent of Gothic structure than it is of skeleton frame and curtain wall...*But the tower does not have a deliberately historicized silhouette...* The more closely the tower is studied, the more apparent its complex dialectic becomes—between function and form, construction and ornament, new technology and ancient forms." (Italics mine).

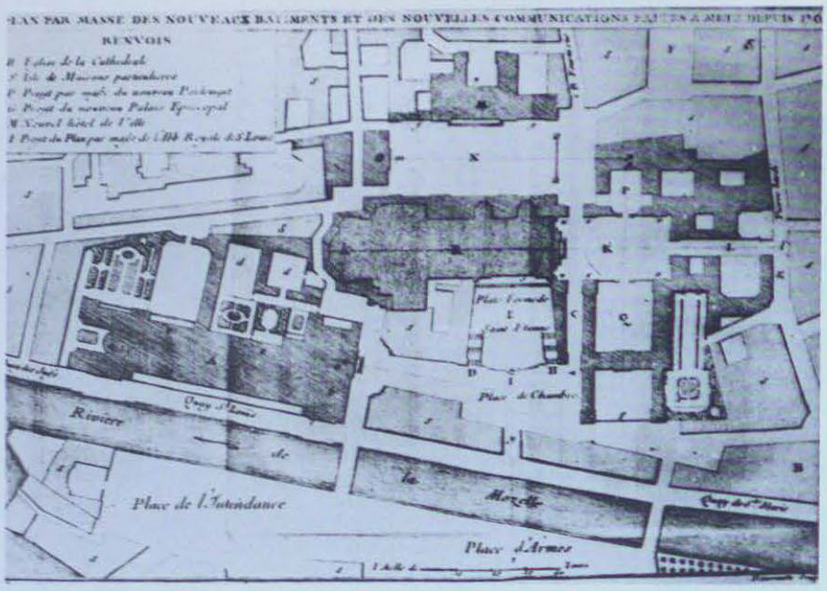
It seems therefore opportune to consider the whole question of "stylistic" imitation in the 20th Century, because it may well be that the depressing conclusions of modern art-historical analysis result simply from a refusal by art historians to distinguish between changes *of* style and changes *within* a style; to distinguish in other words, between what biologists would call mutations and variants. In architecture, this corresponds to buildings which are stylistically of a different species, and to buildings which, though stylistically of the same species, are unfashionable or archaic. I shall try to show that whereas stylistic imitation is as reprehensible as ever, variations within a style (that is, within "the unity of principle animating all the work of an epoch") constitute simply what William H. Jordy aptly calls "the overlapping gamut of expressive possibilties."

First, let us consider the meaning of the word "archaic." The notion that all living styles develop like living organisms, "and have their birth, growth, maturity and death," is at least as old as Vasari (from whom this quotation is taken), and seems a commonplace of every phase of architectural history except our own. Now archaism (birth and early growth) has two meanings in architecture, since architecture is both a science and an art. Either it means that a form has been scientifically or technologically superseded, in which case we say it is obsolete. Or it means that a form has been artistically superseded, in which case we say that it is unfashionable. The first kind of archaism is purely objective, in that what is technologically obsolete can never cease to be so for a given state of society (though it can nevertheless legitimately be employed—indeed, in my opinion should be employed—whenever architects are obliged by circumstances to build with traditional building materials and methods). The second kind of archaism is purely subjective, since what was fashionable 20 years ago may well become fashionable again tomorrow. Thus architects should feel no shame at adopting archaic forms and techniques in order to harmonize new buildings with an existing architectural environment, *provided that they do not betray the contemporary principles of stylistic unity;* a unity which, in the 20th Century, is best defined by what John Summerson calls "obedience to the programme" (or as we usually say—functionalism) but which is also to be defined, to my mind, as the notion of the honest expression of the structural means employed.

This problem of creating environmental harmony with new buildings was the subject of a most interesting lecture given at the AIA Seminar at Cranbrook in 1961 by Dean Holmes Perkins. Why, he asked in effect, can we not learn the lesson of Assisi, of Venice, of Paris, where all the buildings, of whatever age, seem infused by some *genius loci* so as to exist in harmony with one another? Why, he asked, as he projected a sequence of splendid coloured photographs of these cities onto a screen in rapid succession, do we not still consider it our duty to fit new buildings into existing urban patterns and textures, as was done so successfully in the past? He gave no examples of how anyone had achieved such harmony in the 20th Century, and when questioned specifically on this point, with respect to Paris, said he did not know of any work by a reputable 20th-Century architect which fulfilled this condition.

Now it is not surprising that he was unable to give examples of harmonious modern buildings in either Assisi or Venice, since these cities are in no sense modern, and indeed for this reason were poor examples to take. But in Paris there is surely a very striking example of this kind of harmony to be found in all the later works of Auguste Perret, and perhaps in years to come, when architects are more concerned with creating humane environments than with becoming Form-Givers, his achievement in this respect may attract the attention it deserves.

There is no need for me to waste time justifying the 20th-



Metz Cathedral—Blondel's Plan

Metz Cathedral—Blondel's Portal

Library, Venice

Century character of 51-55 rue Raynouard from a structural or a functional point of view, since I have already done this in my book, *Concrete: The Vision of a New Architecture.* I would simply observe that by designing the building in accordance with the absolute limitations imposed by the Municipal Building Code, and by proportioning the fenestration in accordance with local traditions, Perret produced a building which is so unostentatious that those who travel through this old suburb of Paris would hardly appreciate that it was designed by a "Pioneer of the Modern Movement" unless their attention were specifically drawn to the plaque recently affixed to the wall. In this respect, it is vastly different from Perret's earlier and universally extolled apartment building in rue Franklin. Everyone knows the practical reasons why he was led to encase the reinforced concrete frame of the latter building in coloured tiles, and why he recessed the facade in the centre. But though this building is "stylistically" acceptable to the art historians (presumably because it is covered with the Art Nouveau decorations of the era, and possesses spatial qualities shared with some of Victor Horta's houses in Brussels), it is, from the point of view of urban environmental harmony, deplorable, since it is completely alien to the other apartment buildings in the same street.

Perret, who in his later years was accused by Le Corbusier of betraying the Modern Movement, undoubtedly lacked that abstract vision of a New Architecture which enabled Le Corbusier to envisage destroying the whole of Paris north of the Seine, and substituting a symmetrically arranged group of widely spaced cruciform glass prisms, 600 feet high. He was conservative, even prosaic, and he may well have inherited too many inhibiting traits from the parsimonious peasant stock from which he sprang. But he was a Parisian who loved Paris; who delighted in its character, its traditions, its atmosphere, and the way of life of its people; and it was in Paris that he mainly built.

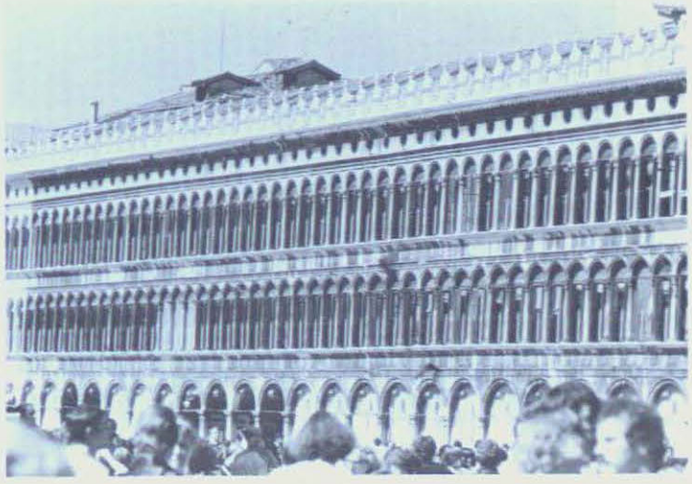
If we return to Parisian architecture of the Renaissance period (the period, that is, which Perret's "frozen classicism" is usually accused of "reviving"), we also find examples of delberate archaism, the most notable beng the successive additions to Lescot's Louvre, and the alterations, made by Fran-

Piazza San Marco, Venice

çois Mansart in the 17th Century, to Lescot's 16th-Century Hotel Carnavalet. When describing the latter building a century later (in 1754), Jacques-François Blondel, the future professor of architecture at the Academy School, wrote: "How many architects inferior to Mansart have buried excellent works in oblivion through fear of comparison with their own products, or through the ridiculous vanity of believing that nothing except that which is produced in their own time, or executed under their own orders, is worth preserving?"

Blondel himself later had practical experience of the same problem, and indeed, one of the most instructive examples of deliberate archaism in the interests of environmental harmony is to be found in the porch he added to the west facade of the medieval cathedral at Metz in 1764 (later destroyed to make way for a pseudo-Gothic porch during the German occupation of Alsace-Lorraine). Blondel's problem was to design a porch which would harmonize not only with the medieval cathedral, but also with the new buildings facing it which he was constructing as part of an urban renewal scheme. Now for anyone familiar with the surviving works of Blondel (who was among the leading French architects of his age), the resultant design must seem at first sight inexplicable, since, although it obeys all the principles of classical architecture, it in no way corresponds to the forms normally used by him, or by his more famous contemporaries such as A. J. Gabriel, the architect of the Petit Trianon. But on careful examination, it will be seen that his strange combination of elements (notably the Corinthian columns combined with a Doric entablature—an arrangement admitted by Vitruvius but never normally used—and the rather archaic pediment) are all attempts to create the impression of what we now call "Early French Renaissance," but which Blondel himself described on several occasions as "semi-Gothic." "Thus in its ensemble and its ornaments," he wrote, "the porch at Metz offers a composition in some way analogous with the upper part of this ancient edifice. My drawings will make clear the means used to conciliate this new structure with the ancient Gothic, as well as with the new surrounding buildings."

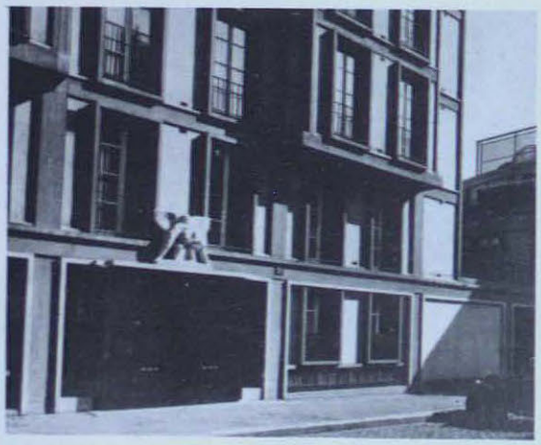
Admittedly, the porch at Metz is an obscure example. I shall conclude therefore, with the best known example of ar-



Procurazie Vecchie, Venice

Procurazie Nuove, Venice

Piazza San Marco, Venice—Early Stages



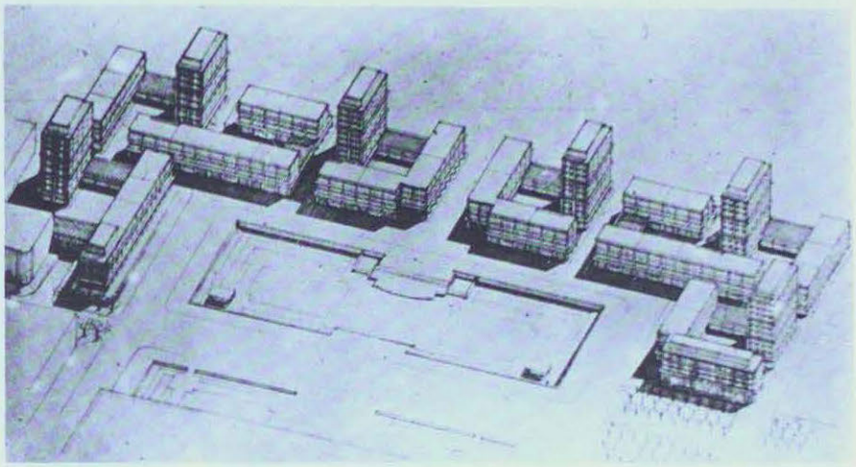
Auguste Perret: rue Raynouard—Detail

chitectural harmony given in the textbooks, namely the group of facades constituting the Piazza and Piazzetta S. Marco in Venice. These plazas are the classical historical examples of successful urban spaces; yet I have never yet seen any precise explanation of how the success was achieved, nor do I know of any author who clearly indicates that the whole sequence of facades is one of the most subtle examples of deliberate archaization ever built.

The basic civic building around which all others were consecutively assembled was naturally the Doge's Palace, built during the Gothic era. The new buildings, as they stand today, were successively the Procurazie Vecchie, 1520; the Library, 1536; and the Procurazie Nuove, 1584. Now if one inspects them carefully, it is obvious that all these later buildings were deliberately modelled on the Doge's Palace, which, it will be recalled, has two superimposed arcades, the upper arcading being provided with twice as many columns as the lower. The facade of the Procurazie Vecchie copies this rhythm exactly, by simply substituting semicircular Renaissance arches for pointed and trefoiled Gothic arches. The facade of the Procurazie Nuove copies the Library (which it adjoins), and substitutes only the upper story (required for functional reasons) in place of the heavy entablature used by Sansovino. It is the Library itself which is the most brillant solution of the problem, for not only does it manage to reflect the Palace's top-heaviness and crenellations by means of a classical entablature of unusually heavy proportions, and by means of classical statues, but it recreates the double rhythm of the Palace's upper story by the introduction of a sequence of "Venetian windows," cleverly syncopated by means of small Ionic columns spaced at half the intercolumniation of the larger Ionic columns within the upper superimposed Order of the main colonnade. Interestingly enough, Sansovino's archaism is never regarded as slavish "historicism" by today's architectural historians; on the contrary, his building is widely regarded as one of the greatest buildings of the 16th Century, and it was so regarded by his contemporaries, such as Palladio, who unashamedly "revived" it at Vicenza 10 years later by adopting the "Venetian window" motif for environmental reasons of quite a different order.

The means adopted in order to achieve harmony at Metz and Venice are thus basically identical with those used by Belgiojoso, Peressuti and Rogers in Milan, and by Perret in Paris. Without in any way compromising contemporary principles (which in the 16th Century were based on the classical Orders, and in the present century are based on rational structures and functional plans) all these architects deliberately disciplined their architectural forms to harmonize with earlier buildings nearby. They did not produce anything which art historians could recognize and classify as a new "style." On the contrary, they produced work so unostentatious as to be positively banal, especially if one uses the word in its strict etymological sense of as meaning as "common to all" the buildings around them. Nevertheless, it might not be a bad thing if more facades in our cities were as banal as the facades of Metz and Venice; for a Perret once remarked: "He who, without betraying the modern conditions of a programme, or the use of modern materials, produces a work which seems to have always existed, which, in a word, is banal, can rest satisfied. Astonishment and excitement are shocks which do not endure: they are but contingent and anecdotic sentiments. The true aim of art is to lead us dialectically from satisfaction to satisfaction, until it surpasses mere admiration to reach delight in its purest form."

STANDARDIZATION IN URBAN SPACE



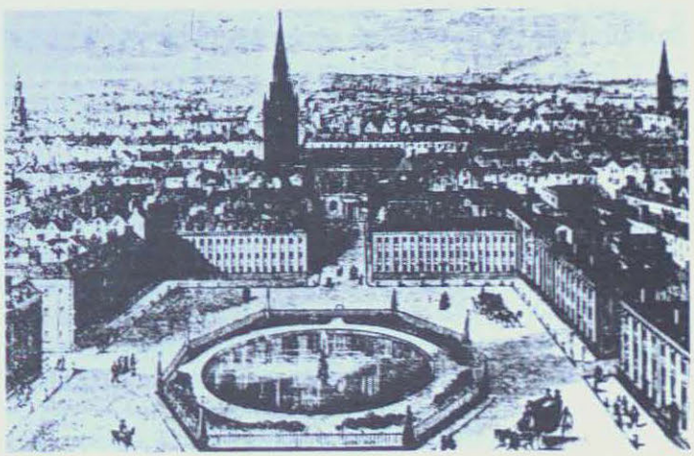
Cité du Havre— City Hall Plaza

Reprinted from a paper delivered as the Preston Memorial Lecture at Cornell University, on February 14, 1978.

Le Havre is the second largest port in France, at the mouth of the River Seine. After the occupation of France in 1940, the Germans used it as their major submarine base for attacking shipping in the Atlantic. For this reason, it was a major target for the allied air forces. The city was bombed 170 times, and the final bombing was an elaborate technique called "pattern bombing," in which waves of bombers went over the town and laid waste half a square mile of the center of the city. They didn't do any damage to the submarines; but they completely obliterated the whole core of the city.

In 1945 this devastation presented one of the major problems of urban reconstruction. The French government asked Auguste Perret, who was over 70 then, to take charge. He formed a team of about half a dozen of his former students to help, and between 1945 and 1947 they elaborated a plan which was based on a grid, with its intersections 21 feet apart. The intersections were to be the axes of the columns. What Perret was trying to do was create an urban environment of a uniform scale; and since the ground was very poor and needed pile foundations anyway, he reckoned that if the columns of the buildings were all spaced on this grid, a uniform scale would be achieved over the course of the years. It was obviously going to take many years to complete this scheme. It involved some very complicated legal manipulations. The old town had contained some areas that were very densely populated and others much less densely populated, so it was decided to disregard the existing medieval street pattern (which had been virtually obliterated) and design a new street pattern based on the grid. This street pattern had as its focus the new city hall with a plaza around it, and it is the area about that plaza and the principles involved that I want to discuss. These principles, as I understand them, are: what historical justification has one for believing that it is possible or desirable to create a plaza in which the structural elements are based on a standard grid? To what extent is this notion of a standard grid compatible with contemporary theories of construction?

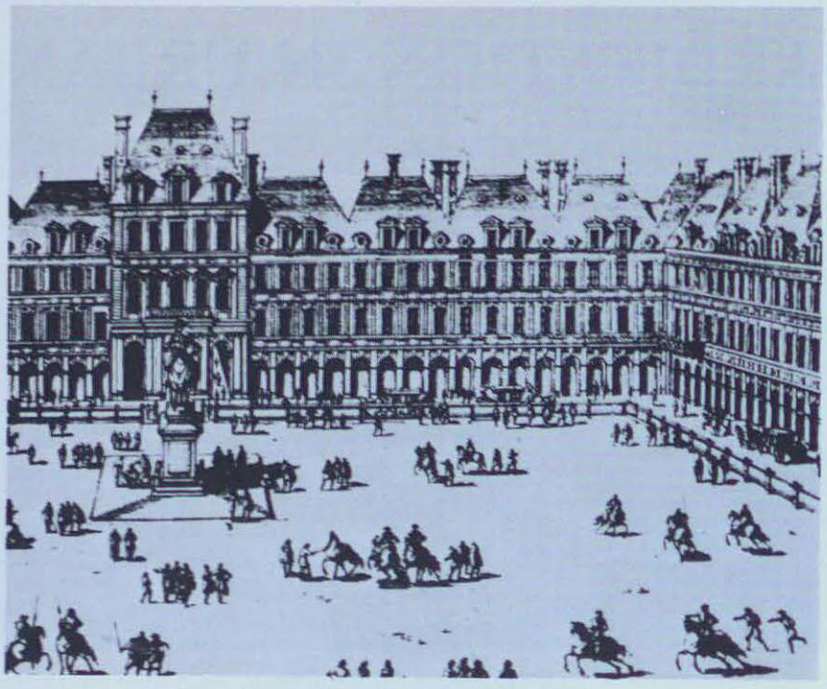
Let us consider first an early drawing for the project for



St. James Square, London

St. James' Square in London, and compare it with what actually exists today. The drawing shows that it was originally thought of as being composed of standardized units. It was envisaged as being completely uniform and is an exact square on plan, about 150 yards by 150 yards. The original idea, which was quite clearly derived from French sources, was to have a uniform, harmonious environment in which housing units would be repeated the whole way around. What actually happened was that the various lots were sold to different people at different times, and these people built according to their individual tastes; sometimes even in different materials. It seems to me that these juxtaposed pictures show that there are four basic questions involved in all urban plazas which are created deliberately. Is standardized organization more desirable than the picturesque kind of building, in which there is no attempt to create uniformity? If we assume, for the sake of argument, that it is considered desirable to build according to a uniform standardized scheme, how can this be accomplished and how can the uniformity be maintained? How logical is it, from the point of view of building technology, to build in a completely standardized way? To what extent does that kind of standardization allow sufficient adaptability to suit the needs of individual plans?

The first issue is purely a matter of taste. This can be



Place des Vosges, Paris

profitably discussed; but I am only concerned with the other three issues: namely, to what extent can standardization be achieved and maintained, to what extent does it conform to the norms of standard building techniques, and to what extent does it allow for flexible planning?

As regards the imposition of controls and their enforcement, this is essentially a legal matter. St. James' Square was built on property that was initially owned by the king. If buildings are on crown land or state land, it is possible to establish all sorts of controls that cannot be introduced if the property is owned freehold by separate individuals. In fact, regulations were indeed made for the control of St. James' Square; but they were not enforced.

One of the buildings was designed by James Stuart, best known as one of the authors of *The Antiquities of Athens*. It displays a giant order that could be classified art-historically as both "Palladian" and "Greek Revival." The proportion of window to wall gives an idea of the kind of proportion which resulted, in those days, when an architect was not obliged to conform to a predetermined plan. These proportions do not conform to those of the façades of the earliest houses in the Square; but they do conform to a standard accepted in the 18th century, namely Palladian standards.

It seems to me that one must begin any study of architectural standardization of urban spaces by considering the fundamental difference between the standardization of structural elements which enclose spaces, and the standardization of structural elements assembled to create objects.

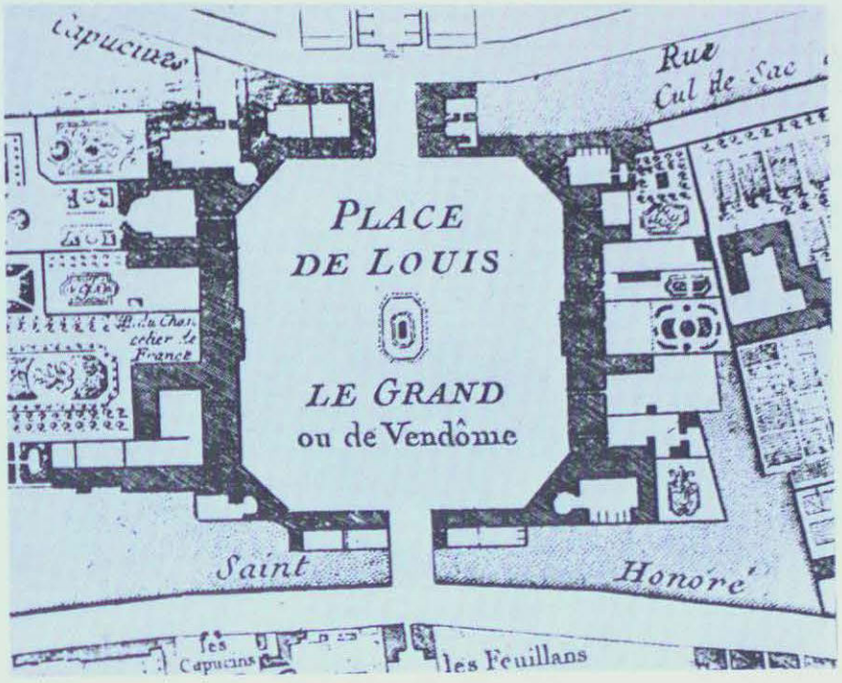
The Palazzo Piccolomini at Pienza does both. It was built according to Alberti's theories, and illustrates very well the reason he was so keen on having pilasters carved on the façades. He called the intervening spaces "false apertures," and went so far as to say in his Treatise that, ideally, each pilaster should be a single stone. Whether they are made of a single stone or carved out of masonry walling (as at Pienza), you can see that they don't have to be there at all. Yet Alberti, and those who followed him, had a very deep sense of their importance as elements of proportion. Proportion in architecture is not just a mathematical abstraction. Something visible has to be proportioned; and what they proportioned here were the spaces between the pilasters: then considered the very essence of architectural order.

When Mies van der Rohe built the Promontory Apartments in Chicago with a reinforced concrete frame, he left the structural concrete pilasters visible externally. But he realized that the effect produced was disastrous (mainly because he didn't know how to deal with concrete), so he decided that in future he would encase the whole of a building in metal elements that merely looked like pilasters and fill the spaces with glass. One can justify these on structural grounds by saying that they hold the glass in place; but we all know that they are much larger than was structurally necessary. He usually spaced the structural columns at 21 foot centers, and divided this grid into 4 bays, giving a module of 5'-3". This particular module may seem arbitrary, but it is not. It is something that was carefully worked out during preliminary studies as the module most adaptable to rooms of various sizes: one, two or several bays wide.

It strikes me as interesting that when Perret and his team were independently working on the reconstruction of Le Havre, designing apartment buildings to house 40,000 people, they also came to the conclusion that the ideal fenestration module was 5'-3". This must have proved itself as being right, because twenty years later, Mies van der Rohe designed a group of buildings in Montreal using exactly the same module.

These examples may seem to justify the notion which was propagated by Le Corbusier and which became very popular after World War I as a result of the mass production of munitions: namely the applicability to architecture of industrial standardization. But when you look at the totality of Mies's Westmount Plaza in Montreal, you can see something which, to me, is a rather disquieting characteristic of the Bauhaus attitude towards architecture in general, and urban spaces in particular. Westmount Square is not an enclosure of space; it is a series of objects in space. The buildings are objects which do not form the plaza, but stand on the plaza. The plaza itself is not defined as a space, but as a podium or mini-Acropolis.

This kind of architecture is no longer universally admired. Le Corbusier's plans for ideal cities, particularly his



Place Vendôme, Paris

project requiring the demolition of two square miles in the center of Paris, is no longer universally acceptable. And we can now understand why Parisians were not sympathetic to his ideas. You will have noted that at Le Havre the demolition had already taken place. Hence Perret's decision to re-design the whole town on a grid did not involve the negative aspects of Le Corbusier's ideals which so many people find objectionable today.

St. James' Square was obviously envisaged as being like the Place des Vosges in Paris, or Place Royale as it was formerly called. This had been built by Henry IV, grandfather of Charles II, in whose reign St. James' Square was laid out. Charles II, and many noblemen who had remained loyal to him, had just returned from 13 years exile in France; so there can be no doubt that the original concept of St. James' Square was based on the Place Royale. Both were built on ground which had been gardens of royal palaces, and Henry IV's plaza was the same size as the one in London.

It should be noted that although the plaza in Paris is square, the configuration of the total area of the land development is not. Originally, a crucial idea in the development of urban spaces was that once you have established the inner perimeter of the plaza you have a great deal of liberty in the development of what happens behind it. In Paris in 1605 (when the country was recovering from civil war and the Treasury was bankrupt), it seemed that the best way to achieve complete uniformity all around the plaza was to build one side, and then, by legal constraints, oblige every purchaser of the remaining lots to make the façades identical. This legal technique is known as a "restrictive covenant." As part of the contract, the purchaser takes the land on condition that he observes certain obligations; and the obligation imposed on property in the Place Royale was that every house had to be identical, that no property could be subdivided between heirs, and so on. A painting done in 1613 shows that still, after 470 years, the appearance of the plaza is unchanged despite all the changes in use and all the changes in social conditions that could have affected its appearance.

Why did people find such pleasure in an orderly, symmetrical space? Do ordinary people experience the same pleasure today? Perhaps psychologists have the answers. But I don't think the merits of symmetry would have ever been questioned in the Renaissance, and during the four centuries which followed it. I think symmetrical space was valued for its intellectual quality. Wherever you moved it, you were always aware of its unity, its geometrical perfection. This was surely the main value attached to the notion of creating certain symmetrical urban spaces within the the network of irregular street-patterns, such as one finds in Paris.

Another example of a symmetrical standardized plaza in Paris is the Place Vendôme. Again, it was built on the site of a garden: property owned by a single person. It was bought by the king, who originally envisaged having a square open space which would be surrounded by government buildings, and would be open on one side to what was then the main east-west thoroughfare. But he ran out of money and sold the land to the city of Paris, which agreed to buy it on condition that the land should be for domestic architecture. The size of the plaza was decreased to obtain larger lots; and the way uniformity was achieved, in this instance, was by building the facade first, and then selling the land behind it afterwards. The first lots were sold in 1699; and it was 20 years before they sold the last. Progressively, a series of houses were added behind the façade, which was built of masonry propped up by buttresses until party-walls could be added at right angles to stabilize it.

Some of the lots were larger than others, and some, especially those in the corners, involved some very tricky planning. I find it fascinating to study these plans and see how ingenious the architects of that time were. These architects managed to create all the space requirements of their wealthy and exacting clients and yet submit to the constraint of the facade. One of the advantages of this "preconstructed" facade is that it is still very easy to maintain the unity of the plaza when changing the accomodation behind it. For example, one corner of it is now the large modern head-office of IBM in Paris. By contrast, the Ministry of Justice established there before the French Revolution retains its original use. Most of the insides of the buildings have been totally transformed; but the public environment remains intact. The legal

Palazzo Piccolomini—Detail

restrictions imposed by the monarchy no longer exist; but successive municipal governments, concerned with the quality of urban life, have maintained the restrictions originally imposed.

In this plaza the most important module was not so much the size of the window, but the size of the ground-floor openings. These arches had to be wide enough for coaches, and span 9 feet. The window module is 5'-6"; only 3" larger than Mies' window module. The module of the pilasters and half-columns is 2'-6". Every single element is governed by one of these modules.

In our own day the great advantage of standardization, as we see it, is mass production. But these earlier standardized facades were not composed of units stamped out by machines, cast in moulds, or extruded: they were carved by hand. The man in charge of the architectural decoration of the Place Vendôme was one of the leading sculptors of his day, a specialist in architectural sculpture. His name was Jean-Baptiste Poultier, and he was a member of the Academy of Sculpture.

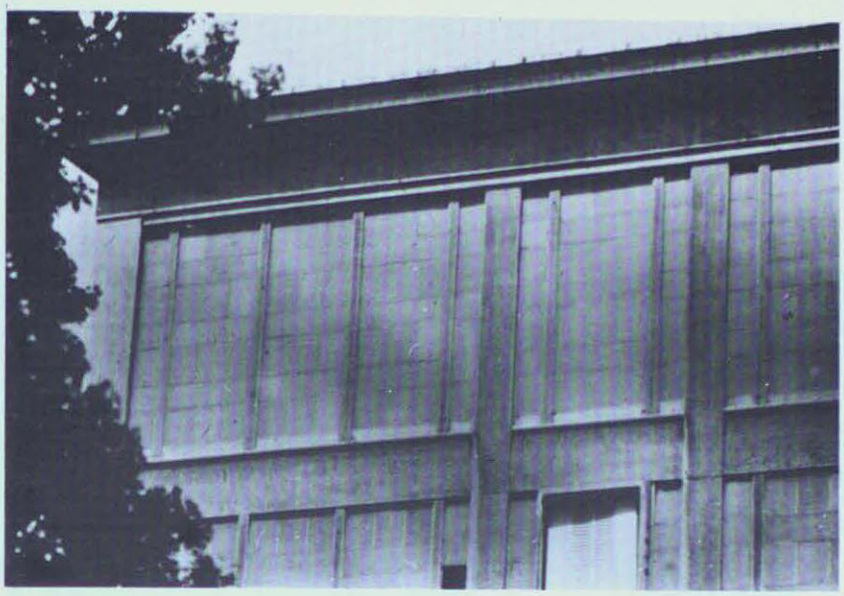
The area of the Place Vendôme is almost the same as the earlier plaza I have mentioned; and I feel certain that the architect who designed it, Jules-Hardouin Mansart, must not only have studied it, but also studied the visual effects of the great courtyard of the palace of the Louvre, a very obvious prototype. The Louvre courtyard was originally planned to be only a quarter of its present size; but it was enlarged in 1624 by adding a pavilion to Lescot's facade and repeating this symmetrically to produce a square, 128 x 128 yards. Its function was different from that of the Place Vendôme; and its third storey was only completed in the mid-18th century. But the heights of both facades were exactly the same in 1699: 58 feet. The main difference at that date was that the height of the masonry facade of the Place Vendôme contained three floors, whereas there were only two stories in the unfinished courtyard of the Louvre. For architects who weren't searching for novelty, but for perfection, the best way to achieve it was to study something which was already done, and see if it could be improved.

During the two centuries after the Place Vendôme was built, the scale of Parisian plazas increased. It increased in the Place de la Concorde, built in 1764. In the plaza built around the great Arc de Triomphe, constructed about 100 years ago by Napoleon III, the diameter of the open space was 240 metres (2.3 times the size of the Place Royale), and the whole significance of standardization tended to change because of the change in scale.

I have tried to explain the concept of standardization in its historical context: to demonstrate the difference between Renaissance notions of standardization, as understood in the 18th century, and the notion of standardization as understood by Mies van der Rohe. I want now to discuss Auguste Perret's ideas, and it will be best to begin by showing you a building that he designed in 1934, the Mobilier National, because this is like the Palazzo Piccolomini, in having an internal courtyard, and being externally an "object in space."

The Mobilier National, perched on a diagonally sloping site, was a difficult problem, because it had to fulfill diverse functions. It was to house all the state furniture (much of which had been confiscated during the French Revolution) still used to furnish embassies, ministries of the state, and so on. It also needed facilities for cleaning and restoring the furniture, for exhibiting parts of the collection to the public, and for administration of all these different operations.

Though with numerous conflicting requirements, Perret decided to adopt a standard column-spacing. Originally the axial spacing was exactly 6 metres (about 20 feet) enclosing a corridor, 3 meters wide, which ran down the middle of the main block. Externally, it was divided very much as Mies would have done it, except that whereas Mies would have used an enclosing skin of glass and metal, Perret used an infilling of precast concrete panelling, and precast window-frames within the visible reinforced-concrete skeleton. As in Mies' multi-storey buildings, everything was standardized. But it must be emphasized that, for Perret, standardization meant something more subtle than "mass production." Everything in the building was "made to measure" and even the precast elements were fabricated on the site.



Mobilier National—Detail

After working on the preliminary drawings, Perret eventually concluded that, with a structural grid of 6m00, the building was slightly too large. He therefore reduced the standard bay by about six inches to 5m84. The resultant standardization only related to this one particular building: a point of particular relevance to the way he was later to develop the plan of Le Havre, especially the city hall square. All his structures, or groups of structures, were thus not merely standardized, but standardized in accordance with each specific problem.

At Le Havre there are also standardized windows and panels of precast elements, and this was the basis for the whole of the plaza in front of the city hall. Perret's office worked it out on the basis of a structural grid of 6m40, with a module of 80 cms (about 21 inches). This again was ultimately modified slightly (to 78 cms) to allow for greater flexibility of the arithmetic multiples. It wasn't a round number; nor was the structural grid (6m24). Everything was finely adjusted to what was required for the internal accomodation. It should be noted that three of these modules make exactly 5'-3", and this was the size of each window.

The plaza was designed to create a focal point: a nucleus for the radiation of the plan. The size of the plaza (46,258 m^2) bears a close relationship to that which was ultimately created around the Arc de Triomphe in Paris. When the plaza at Le Havre was completed in the mid-1950's, there was a tendency at the time (since Le Corbusier's ideas on urban planning were still architectural orthodoxy) to dismiss this design as being merely an insipid version of the town hall square at Nancy. It is certainly a version of it: an essentially French concept, reinterpreted by Perret with a new structural system in another French city. The skeleton frame around the plaza is only three stories above the free-standing columns, with shops on the ground floor and apartments above. The tower blocks were placed in such a position as not to destroy the continous cornice-line of the plaza as seen from within.

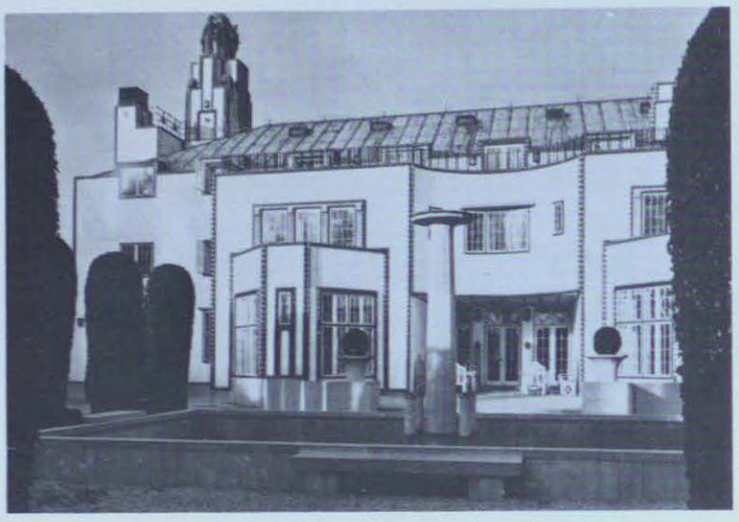
Hence Perret, despite all the pressure on architects at that time to "destroy the street," and to design all buildings as objects in space, persisted in his endeavours, even though he knew he was regarded as a reactionary. Some critics still dismiss this as "frozen classicism;" but he persisted in his belief that urban architecture was something that *enclosed* space; and insofar as he accepted that certain buildings might appropriately be "objects in space," these were the public buildings of the city.

For it should be noted that whereas the facade of the city hall at Nancy is exactly like the facades of the buildings which flank it on each side, the city hall at Le Havre is quite different. It has a different scale from that of the apartment buildings which surround it, and it is to a totally different design.

Perret shared Le Corbusier's belief that the beauty of the Parthenon resides not so much in the use of standardized forms, as in the delicate refinement of those standardized forms. But unlike Le Corbusier (who never seems to have perceived that mass produced standardization precludes such adjustments), Perret introduced Greek subtleties whenever an appropriate opportunity presented itself. In the larger and more important monuments he built, such as the Musée des Travaux Publics in Paris, he took advantage of the properties of the wooden formwork (which is flexible, as compared to the carved marble of the time of Pericles) to introduce entasis to his 42 feet high monolithic concrete columns. Each is adjusted so that it leans slightly to give horizontal and vertical curvature to the superimposed beam.

The prototype for this Museum was the main facade of the Louvre; but the whole structural system was entirely different. Was Perret simply imitating this kind of classicism because he didn't have any ideas of his own? I think he had ideas which may be very important to architects today, such as a profound sense of *place*. The plaza is in front of the Hotel de Ville at Le Havre is indeed called a "Place." It is imbued with French tradition, and with a sense of environmental identity of which the international style robbed us for half a century. A sense of place is now, I think, beginning to regain its rightful priority in our concept of architecture; and for this reason, if for no other, Perret's buildings can profitably be reappraised today.

FORM FOLLOWS FURNITURE



Robert Schmutzler, *Art Nouveau*

Josef Hoffmann: Palais Stoclet, Brussels

Reprinted from the March, 1963 issue of ***Progressive Architecture,*** *copyright 1963, Reinhold Publishing. This article originally appeared under the title "Furniture Givers as Form Givers."*

It was not until about 60 years ago that the ultimate test of architectural genius became whether or not one could design a new kind of chair. There were of course architects in earlier eras who made names for themselves as chair designers, such as Robert Adam. Moreover, as early as 1883, Montgomery Schuyler criticized a building by McKim, Mead & White as looking "less like a work of architectural art than a magnificent piece of furniture." But it was only when the German Arts and Crafts Movement was established at the beginning of this century that the ability to design chairs was regarded as important evidence of architectural aptitude, and the idea of regarding a man like William Morris as the first of the "Pioneers of the Modern Movement" would have been inconceivable before the era of what industrialists call "styling," and what architects (who understandably hate this word) usually term "industrial design."

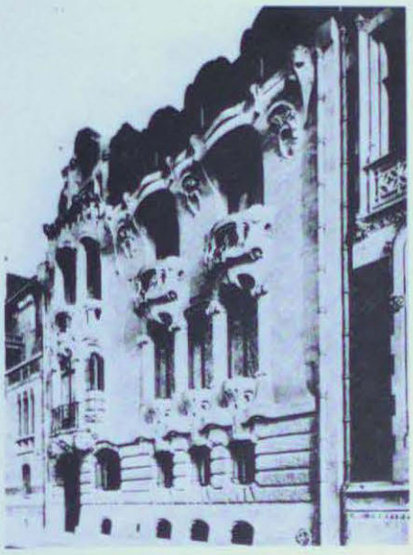
By a curious paradox, it was largely because of the unquestioned belief, in the mid-18th Century, that architecture was the Mother of the Arts that this new idea asserted itself. Immanuel Kant, in his *Critique of Pure Reason* (1781), used "Architectonics of Pure Reason" as the title of the penultimate chapter of his book, because "architectonics" was the best word he could think of to express the notion of a complex system of rationally assembled components in the domain of abstract ideas. But a century and a quarter later, the word "architectonics" came to be used by German industrialists as a synonym for what they also called "pure functional art" (*reine Zweckhunst*)—presumabaly because, in some vague way, they thought that "pure reason" could be equated with "pure form."

It was in this sense that Hermann Muthesius, the Prussian civil servant who was sent to London in 1896 to study British architecture and industrial design, used the word "architectonics" when justifying the establishment of the *Deutscher Werkbund*. Form, he proclaimed, was above all "architectonic," and he cited the Greek temple, the Roman thermae, and the Gothic cathedral. Most significantly of all, he also cited "the princely salon of the 18th Century"—i.e., the decoration and furnishing of luxurious interiors, with which, at that time, industrial design (or, as it was then called, "decorative art") was mainly concerned. Thus, the re-establishment of an "architectonic culture" was for him a basic condition for the improvement of all the products of industry. "Germany's vocation is to resolve the great problem of architectonic form...the whole class of educated Germans, and above all wealthier private individuals, must be convinced of the need for pure Form."

Ideals such as these were responsible for the general philosophy of the Arts and Crafts School founded in Germany at this period, the most influential being the school at Weimar directed by Henry van de Velde, the famous exponent of Art Nouveau.

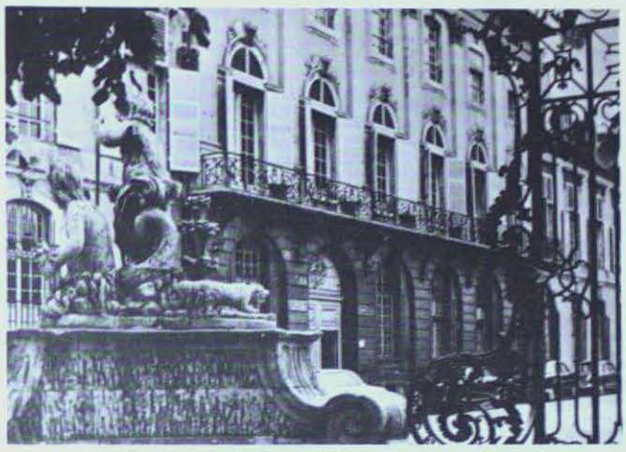
The role played by Art Nouveau in reinforcing the idea that architectural forms are anagolous, if not interchangeable, with those of furniture is only too obvious, as anyone can see by comparing the illustrations of Art Nouveau furniture and Art Nouveau buildings in S.T. Madsen's well-documented monograph. Even Sigfried Giedion has remarked that "in Austria around 1900, the movement was from handicrafts to architecture and from architecture to handicrafts," and that "as late as 1914, in Hoffmann's Stoclet House in Brussels, the influence of the cabinet-maker is still evident"—a fact also remarked upon by Eric Mendelsohn. Now Art Nouveau's principal ancestor was unquestionably the Rococo style of the mid-18th Century, and Madsen very properly draws attention to the fact that the city of Nancy, which contains some of the finest architecture of the Rococo period, is also the city where French Art Nouveau first emerged. What he fails to emphasize, however, is that the characteristics generally described as Rococo were, in France at any rate, specifically confined to the *interiors* of buildings, and that the only Rococo features on the *exteriors* of the buildings surrounding the plazas at Nancy are confined to the ornamentation of the keystones and the vases which surmount the balustrades.

This fact is of considerable importance in the present context. The façades constituting the two main plazas at



Frank Russel, *Art Nouveau Architecture*

Schoellkopf: Hôtel Guilbert



Edmond Bacon, *Design of Cities*

Germain Boffrand: Hôtel de Beauvau—Craon

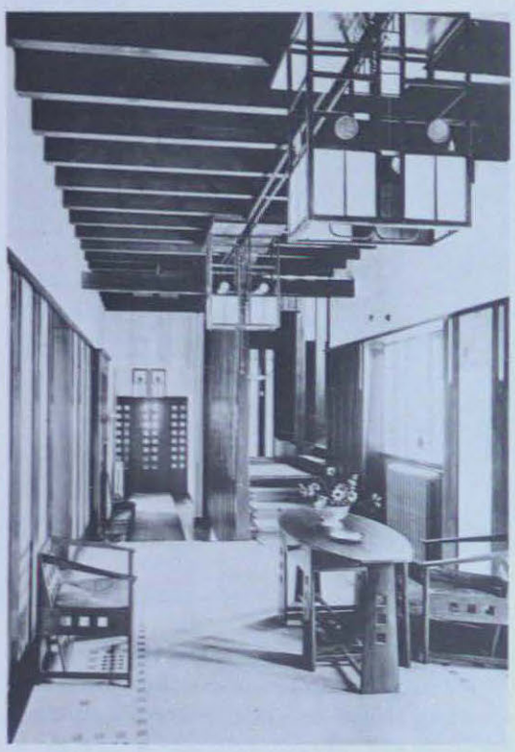
Nancy were by Emmanuel Héré de Corny (1705-1763), who based them on those of two buildings in Nancy by his master, Germain Boffrand (1667-1754). Boffrand was not only one of the greatest architects of his day, but, together with Jean-François Blondel (1681-1756) and Robert de Cotte (1656-1735), was one of the first to estabish himself as an interior designer. His interiors, to which his designs for furniture (such as console tables) were carefully fitted, have been described by one recent author as being among "the great masterpieces of Rococo art." Yet his exterior façades, and those of his pupil Héré de Corny, are as severe and as classical in their use of standardized tectonic elements as those of his own master, J. H. Mansart, and indeed depart little from the French tradition of the previous 100 years.

Boffrand's own views on this matter are quite explicit, and, in view of the popular misunderstanding of the nature of French Rococo, are well worth quoting. "Fashion, at various times (and especially in Italy) has taken pleasure in torturing all the parts of a building, and has often tried to destroy all the principles of architecture, *whose noble simplicity should always be preserved,*" he wrote in his *Livre d'Architecture*, published in 1745. "Ornamentation has (in the work of Guarini and Borromini) passed from the interior decoration of houses, and from the carved woodwork for which delicate work is suitable, to exteriors, and to works in masonry, which require to be worked in a more vigorous and more masculine way."

Since the notions which Boffrand condemned were also popular in Germany, Spain, and the Spanish Netherlands, it is not surprising that a Belgian Art Nouveau decorator should so easily introduce into Germany the idea that architecture and furniture are designed in much the same manner, especially after Muthesius had paved the way. Van de Velde, whose training and experience prior to opening his Decorative Art Workshop near Brussels in 1894 had been that of a painter, naturally showed himself less sensitive than Boffrand to the distinctions between architecture and furniture, or to those between the private, ephemeral interiors of buildings and the public, permanent character of exterior structures. Moreover, not having even been trained as a craftsman in wood or metal, he had no sense of the nature of materials, as Auguste Perret soon demonstrated with respect to his facade for the Théâtre des Champs-Elysées (a commission which van de Velde then resigned in Perret's favor). Thus, when van de Velde's attention was called to the fact that his furniture was constructed in open conflict with the nature of wood, he declared, according to Kurt Behrendt, that for a long time he had been convinced of wood's inadequacy as a material for his designs, and that he anticipated the discovery of a more suitable material which could be cast.

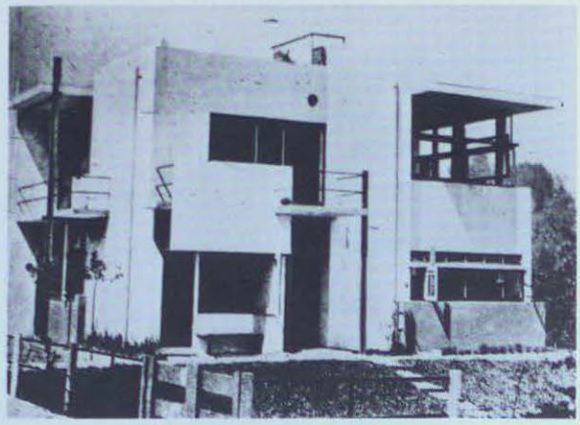
Since cast furniture can be massed-produced with relative ease, few people will regret that the influence of Art Nouveau was so short-lived. Indeed, it would not have lasted as long as ten years had not its reputation been artificially inflated by the energetic enthusiasm of Sigfried Bing, who made a living out of selling its more exhuberant manifestations, and by the sudden appearance of a number of new Decorative Art magazines. What is surprising is that it was succeeded not by something more rational, but simply by something more angular. Thus whereas van de Velde's chairs, though structurally irrational, were at least sufficiently sinuous to accommodate themselves to human posteriors, those designed by Constructivist, and Neo-Plasticists, such as Gerrit Rietveld (who should have known better, since he was a master cabinet-maker), were pure geometric abstractions, and seem to have had no merit except in terms of the Dutch art movement that was known as *De Stijl*.

The *De Stijl* movement was, in general, undoubtedly instrumental in promoting the cause of non-representational art (if by this one means painting and sculpture). But the *De Stijl* chair was not; for all chairs are nonrepresentational, from the most archaic three-legged stool to the more sophisticated masterpieces of fiberglass and foam rubber produced today. Where the *De Stijl* movement was original, as regards furniture design, was in creating the first chair deliberately designed, not for comfort, not for dignity, not for elegance, not for rational assembly according to commonly accepted principles of woodwork, but simply "designed." Even Theodore Brown, Rietveld's biographer, has had to confess, in the five lengthy pages he devotes to this chair, that "the jagged, angular quality of the piece, as well as its hard surfaces, are not



Frank Russel, *Art Nouveau Architecture*

Mackintosh: Hill House—Hallway



G. Rietveld: Own House, Utrecht (1924)

conducive to bodily comfort, and those who have used it, including Rietveld himself, have complained about bruising their ankles on it. Obviously factors other than comfort determined its design."

These factors were, according to Brown, economic, social, and aesthetic, but it seems fairly clear that the aesthetic motive predominated, and it was this which caused the chair to be "determinant" (as Brown calls it) of the much publicized house that Rietveld designed for his friend and collaborator, Mrs. Truus Schröder, in 1924. The historical importance of this house (and this is at least the sixty-ninth time, to my knowledge, that it has been discussed in print) resides essentially in the influence it exerted on the teaching methods of the Bauhaus. But it is also important in being the first architectural monument to be designed by a cabinetmaker; that is to say, by a man whose only architectural training, after working as a cabinet maker for 20 years, was gained during three of those years by studying architectural drafting at evening classes. By 1928, he was sufficiently influential to be a founder-member of CIAM.

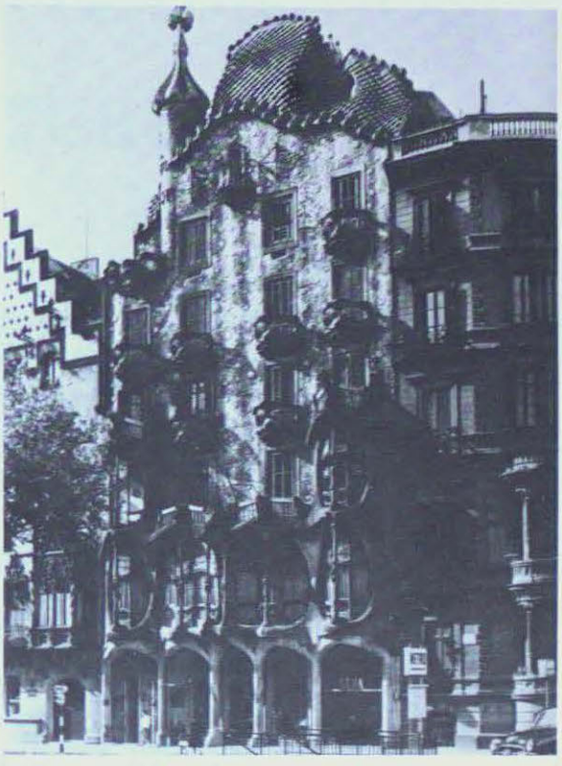
The influence of Rietveld's chair on the work produced by the Bauhaus under the influence of Walter Gropius—the last of the "Pioneers of the Modern Movement"—is only too apparent. Gropius, unlike his precursor at Weimar, Van de Velde, was an architect by training, and has always been an architect to his very fingertips. But after graduating, he went to work immediately for Peter Behrens, a painter, who at the age of 39 had just been appointed industrial design consultant to the German General Electric Company, and who designed not only their trademarks, type-faces and electric kettles, but their factories and probably their furniture as well.

Doubtless because of Behren's influence, Gropius not only accepted Muthesius's interpretation of the word "architectonics" in its totality, but saw the Arts and Crafts Schools as the ideal places in which a New Architecture could be created. He therefore accepted with alacrity the *offer* to succeed van de Velde in 1919, and, by combining the Weimar School of Arts and Crafts with the Weimar Academy of Fine Arts (i.e., the Academy of Architecture, Painting and Sculpture), he was not only able to take responsibility for training designers of furniture, stained glass, pottery, metalwork, weaving, stage-scenery, wall-painting, and typography, but also for training architects, who had never been linked academically to the so-called "decorative arts" before. No machine technology was introduced into the Bauhaus curriculum until 1923, and even after that date, all architectural students were trained essentially as building craftsmen (whereby "the pupil, if proficient enough, obtained his Master-Builder's Diploma from the local Trades Council"). It is therefore evident that, for Gropius, the principal virtue of the Bauhaus (or "School of Design," to give it its official title) was that all these specializations could be treated as variations of the same kind of activity. The world of furniture could be treated not only as a microcosm of the world of architecture, but also as a laboratory for experiments in the organization of urban space.

When Gropius was established at Harvard (where virtually every element of the Bauhaus curriculum, except for the Basic Design courses, or *Vorlehre*, was abandoned), he still contended that "the approach toward any kind of design—of a chair, a building, a whole town or a regional plan—should be essentially identical, not only in respect to their relationship in space but to social aspects as well." In 1947, he was even more explicit, insisting in his essay "Is There a Science of Design?" that "the process of designing a great building or a simple chair differs only in degree, not in principle."

Whether or not Gropius's assertion is true, it is a fact that the only graduate of the Bauhaus to have signally furthered his ideal of "realizing a modern architectonic art" in the

G. Rietveld: Chair Design



A. Gaudi: Casa Battlô, Barcelona

purely architectural sense has been Marcel Breuer, who studied only furniture design there (or rather taught himself, since the carpentry workshop seems to have been virtually unsupervised until he took charge of it himself, on graduation, in 1925). Breuer's architecture is probably no more like furniture than that of the other European "Form-Givers." But it is certainly no less. His UNESCO Secretariat stands on legs; its façades may not unfairly be likened to a filing cabinet with the drawers removed; and its compositional form, though obligatorily curved on one side to relate to the Place de Fontenoy, is curved likewise on the other two sides to look good from the air: i.e., from the point of view from which one normally sees furniture when entering a room.

"Aside from the obvious differences in scale," writes Theodore Brown, in *The Work of G. Rietveld, Architect*, "chairs are as much spatial creations as buildings." But the diference in scale is crucial to the whole problem. Whereas architecture is related fairly directly to structural engineering by techniques of assembly, as well as by other factors and objectives (although here again, it is differences in scale which make the two disciplines essentially distinct), it is related only *analogically* to the discipline of furniture design. Undoubtedly, between 1900 and 1930, furniture design, being both functional and nonrepresentational, and requiring a pleasing appearance, proved to be an analogy of the utmost value in allowing architecture to escape from the more inept aspects of Revivalism, and was heuristically far more successful than the other well-known analogies—biological and mechanical—by which architectural theorists had tried to escape from Revivalism during the preceding 50 years. But the linking of architecture so closely to furniture, pottery, weaving, typography, etc., would seem now not only to be less defensible but in some cases demonstrably harmful. For as Arnold Toynbee has observed in the last volume of his *Study of History:* "Two or more phenomena may have facets which genuinely correspond with each other and between which analogies can therefore be properly drawn; but we may fall into error by failing to abstract the genuinely corresponding features precisely, or by making the unwarrantable assumption that an analogy which holds good just for these facets is also applicable to the phenomena in their entirety."

With Revivalism no longer a living issue, there seems no good reason why architectural students should not simply study architecture from the very beginning of their course, as they did in the days when the art of building evolved steadily and rationally in harmony with the technological and sociological evolution of the people it was intended to serve. Indeed, such is in fact what generally happens in our leading schools, depite the lip-service paid to the Bauhaus ideal. But this is not to say that architectural students should not also study the design of interiors. On the contrary, the architect's role as a co-ordinator of interiors and exteriors is more vital than ever before. But co-ordination, as Gropius has been the first to insist, must be by means of collaboration, and collaboration implies respect for the peculiar skills which each member of the team brings to the task.

The criticism levelled here is thus aimed not at the idea that certain gifted architects are capable of designing good furniture (which would be nonsensical), but at the notion that there is some mystical skill called "design" which, once it has been mastered, entitles one, without further ado, to design anything from a toothpaste tube to an ocean liner, which obviates the need for a prolonged, specialized study of the respective techniques and materials by which various structures and artifacts are made. It is this notion which has produced the "stylist," and it is the stylists, whether they accept the title or not, who are producing today most of the bad architecture and bad interior designs.

A PRIMITIVE AT HARVARD

A Critique of:

The Carpenter Center

Carpenter Center—Entrance

Reprinted from the March 28, 1963 issue of the ***Manchester Guardian.***

Harvard's new Centre for the Visual Arts, the first building to be constructed by Le Corbusier in America, has now been completed, and it has already been described officially as "of historic importance." Needless to say, it has been honoured with the usual flattering display of polite controversy, since if a building nowadays is not controversial it is of no interest at all.

Controversy is considered especially important in a university building, for, as one leading architectural periodical has observed: "To steer clear of the 'safe and familiar' is one of the earmarks of any good university." The safest and most familiar way to avoid being safe and familiar in architecture is to design a building of alien shapes, alien materials, and queer dispositions, and this is what has been done here.

Curiously enough, the shapes have not achieved the shock that was expected, perhaps because the building is almost a replica of one constucted recently by Le Corbusier for a cotton-spinners' association headquarters in India, but mainly because we are now used to seeing Corbusieresque shapes juxtaposed against more traditional buildings in America. Moreover, Harvard's campus has long been a heterogeneous collection of buildings. The only thing that shocks the visitor about this new building is the extraordinary primitiveness of its structure and mechanical equipment.

Disregarding the fact that nearly all the concrete mullions have warped (whereby few of the numerous exterior doors fit), the most disconcerting feature of the building is its air-conditioning equipment. This consists simply of a series of large machines, standing starkly and noisily in the middle of each floor, and looking for all the world like surrealist images of medieval fireplaces. Now the American custom of hiding air-conditioning equipment behind a suspended ceiling may well be reprehensible; indeed, several distinguished architects, such as Louis Kahn, have gone to great trouble to try to integrate this equipment within their structural frames. But Le Corbusier virtually disregards this as a design problem. For him, architecture is simply a matter of abstract sculptural forms, and building technology, one feels, is either left to subordinates or left to take care of itself.

This attitude seems particularily curious for two reasons. One is that Le Corbusier has long taken delight in chiding the Americans on their incompetence and timidity (his most famous *bon mot* being his reply to an American newspaper reporter to the effect that New York's skyscrapers were "much too small"); the other is that his fame as a theorist mainly rests on his plea for technological efficiency, as expounded in *Towards a New Architecture.* But the Visual Arts Centre at Harvard is, technologically, less advanced even than the villas he was constructing 30 years ago, and this must be particularily bewildering to Americans, since mechanisation usually constitutes for them the essential comfort and status symbol of modern life.

Doubtless these artists' studios will function well enough, because their function is so loosely defined. But what of the circulation between them? Access is either by an unobtrusive door on the ground floor or by a flamboyant baroque ramp, which rises to the third-floor level, pierces the building from one side to the other, and leads only to two insignificant studio doorways clearly marked: "Ramp exit closed, use stairway." But perhaps such criticisms will be disregarded as irrelevant for this building is an *objet d'art,* and no future monograph on Le Corbusier (and one's imagination boggles at the thought of how many there will eventually be) will bother to analyse the efficiency of the building, or even to examine how it weathers, since a complete photographic documentation was established while it was still in its pristine state.

The Harvard Centre for the Visual Arts is undoubtedly of historic importance, but at the moment for one thing only, namely as the fulfilment of the primary notion which has dominated all Le Corbusier's earlier work. For him, form has seldom been related to function, but simply to the notion that the ideal building type is that of an artist's studio. His early houses were artists' studios. His Unité d'Habitation, at Marseilles, is a collection of artists' studios. His latest building is distinguished historically in that it is actually designed as an artists' studio, and we can see now that the great architectural advantage of modern artists' studios (which do not even need ideal lighting to illuminate a posed model) is that they can take any conceivable shape the architect likes.

A Review of

Robert Venturi's

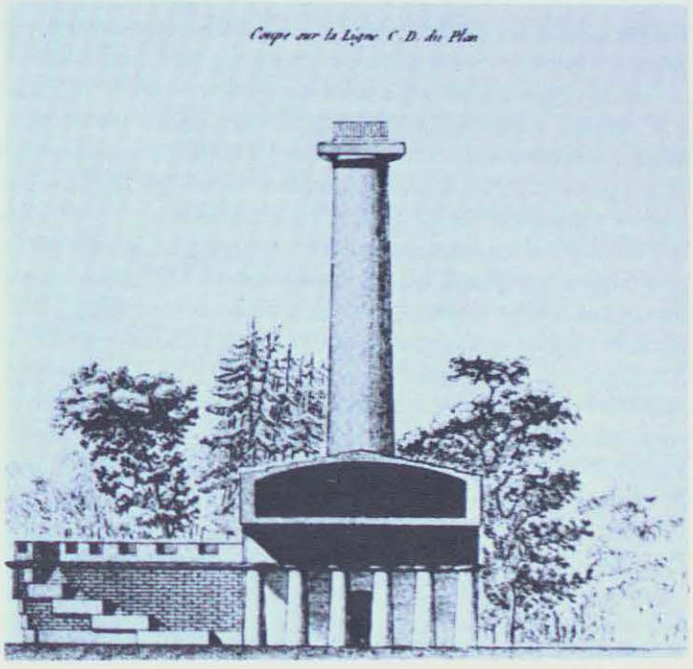
COMPLEXITY AND CONTRADICTION IN ARCHITECTURE

Reprinted from the ***Journal of the Society of Architectural Historians****, Volume XXVI Number 3, October, 1967, copyright 1967 by the Society of Architectural Historians. This article originally appeared under the title "Editor's Postscript" and was the concluding statement to a symposium entitled "Architectural History and the Student Architect."*

It may be appropriate to consider the effect which the development of historical studies in architecture is having on current architectural theory; and in this respect, no recent publication could be more worthy of analysis than Robert Venturi's *Complexity and Contradiction in Architecture*. He is not the first influential architect in the last half-century to expound his theory of architecture by reference to buildings of the past. Indeed, as Vincent Scully observes in his characteristically brilliant preface, a comparison between *Complexity and Contradiction in Architecture* and *Vers une Architecture* is particularly instructive and profitable. Yet whereas Le Corbusier made no pretence of exceptional art-historical scholarship, the recondite and numerous precedents cited by Robert Venturi seem to be a deliberate testimony of the influence which the New Architectural History is having on today's leading practitioners and teachers of architectural design.

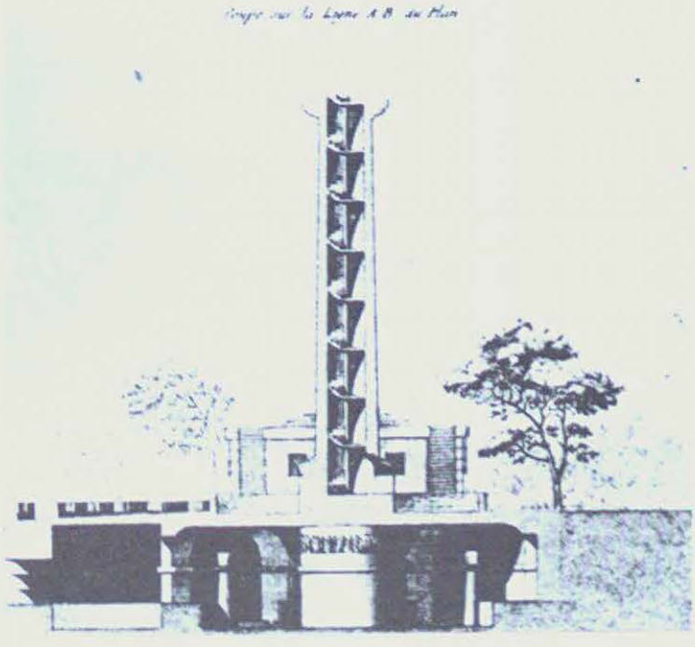
Hence this recent book must inevitably interest all teachers of architectural history; but it should prompt them to evaluate more cautiously the current relationship between history and theory, since it raises the issue of the extent to which creative artists really do need historical support for their ideas. Robert Vènturi's book professes to put forward a philosophy demonstrated by historical precedent. But in fact, this philosophy seems to be supported solely by historical forms, rather than by historical ideas; hence it seems debatable whether the type of validity he claims for those forms is really justified.

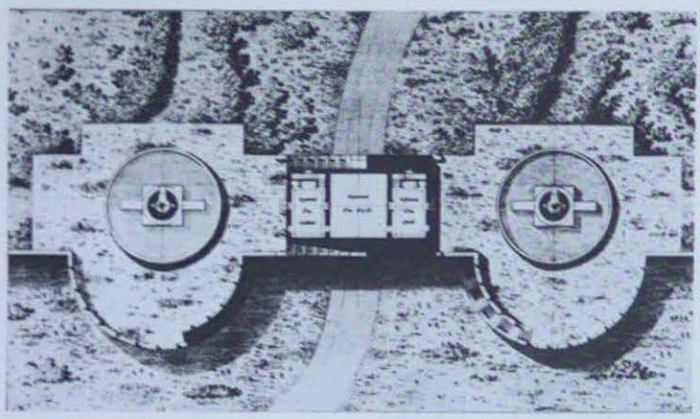
He attempts to justify his thesis by associating it with Mannerism, and defends Mannerism on grounds similar to those employed by John Summerson in *The Classical Language of Architecture* (1964), where Bramante's work is classified as "prose" whilst Guilio Romano's is classified as "poetry." This view of Mannerism is also, of course, at the root of Le Corbusier's panegyric on Michelangelo, though in the 1920's the lack of the necessary art-historical terminology prevented Le Corbusier from stating his case with the same clarity as Robert Venturi. Yet although the latter *seems* to employ a specifically historical scholarship, one may wonder whether he is not, like Le Corbusier, simply exercising the artist's right to be inspired by whatever forms take his fancy, and using history only to illustrate rather than to justify his choice. To put it more bluntly, is the extensive erudition which he crams into seventy-five pages really a historical proof of his

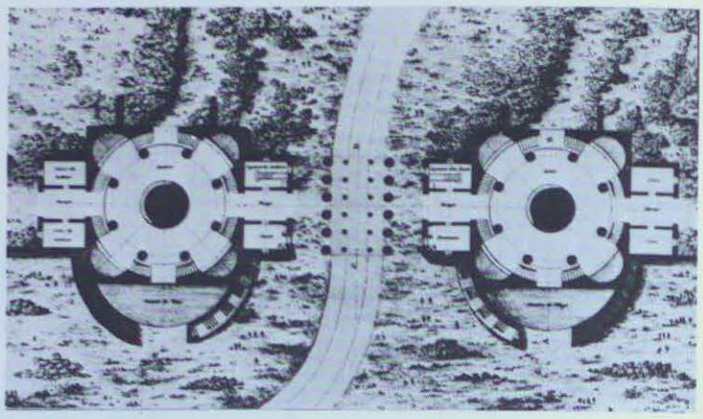


Michel Gallet, *Ledoux*

Bournéville—Park Entrance







thesis, or is it a subtle device for by-passing-historical proof under a smoke-screen of name-dropping *kuntwissenschaft*?

In my opinion his argument needs no historical support; but assuming this to be of value, his argument would have been more forceful if he had selected fewer examples, and given these a fuller historical analysis—though the psychological advantage to be gained by bludgeoning his readers with historical monuments at the average rate of seventeen per page should not be underestimated. But architectural historians and architectural critics would probably find his arguments easier to assess—though far less stimulating—if the many controversial examples (such as the chapel at Fernes) had been weeded out, and more space devoted to the structure, planning, and sociological context of the examples which remained. Indeed, some examples are only relevant if one ignores completely their historical and even their literary context.

For example, figure 58 shows the facade of Ledoux's "Gateway at Bourneville."[1] No plan is reproduced, but the accompanying text on pages 44-45 states; "In the project for a gateway at Bourneville by Ledoux, the columns in the arch are structurally rhetorical if not redundant. Expressively, however, they underscore the abstractness of the opening as a semicircle more than an arch, and they further define the opening as a gateway." Now an inspection of the plan shows not only that the columns are far from being structurally redundant (since the monumental "arch" is subdivided internally to contain rooms for two guards and gardener); it also shows that the giant flanking columns, which are even more "rhetorical," stand on windowless cylindrical substructures which in fact house a dairy and a laundry respectively. In other words, although Robert Venturi's theory seems (and unquestionably is) extraordinarily pertinent and valid, Ledoux's theory was the complete antithesis of the ideals which he is urging.

It may be said, then, that although (as Eduard Sekler points out above) architects may well derive the essence of their theory of arhitecture from a study of architectural history, they will presumably only do this if they derive it from total history rather than from the forms which constitute its visible photographable records. Le Corbusier considered the curve of the echinus to be "as rational as that of a large shell." Whether the analogy was with a sea-shell (like the ceiling of Ronchamp chapel) or—as the original text of *Vers une Architecture* makes clear—with an artillery shell, is as immaterial as the analogy with the Parthenon. The important fact is that he was not inspired by the history of obsolete artifacts, but by the artifacts themselves; and it is only by emphasizing this fundamental distinction that the appropriate character of history courses in schools of architecture can be established, and their validity assessed.

NOTES:

1. Christ refers to it as the gateway to the park of Bénouville; but despite the omniscience associated with the author's name, there seems no evidence that the engraved title was misspelt.

BIBLIOGRAPHY

1953

"The De Wailly Affair," *RIBA Journal*, 60 (June): 334.

"The Doctrine of Auguste Perret," *Architectural Review*, 114 (August): 90-98.

1954

"Modulor," *Architectural Review*, 116 (July): 5-8.

1955

"Architectural Education 200 Years Ago," *RIBA Journal*, 62 (April): 263-264.

1957

"The McGill Leoni," *RAIC Journal*, 34 (January): 3-4.

1959

"In Search of a Flaw in Architectural Education," *RAIC Journal*, 36 (January): 24-25.

"Uglification and Derision," *RAIC Journal*, 36 (August): 282-283.

"Biological Analogy," *Architectural Review*, 126 (December): 303-306.

"The Place of Arts in the City," *Manchester Guardian*, December 10, 1959.

"Not With Steel and Cement," *Manchester Guardian*, December 10, 1959.

1960

"Tectonics," *Journal of Architectural Education*, 15 (Spring): 31-33.

"Transparency in Transition," *Manchester Guardian*, April 14, 1960.

"On the Verge of Decadence," *Manchester Guardian*, May 5, 1960.

"Retreat from the Bleakness Within," *Manchester Guardian*, May 26, 1960.

"Historicism," *Architectural Review*, 126 (August): 101-105.

"After Frank Lloyd Wright," *Manchester Guardian*, November 10, 1960.

"The Form Givers," *Manchester Guardian*, December 29, 1960.

Reviews

"Pier Luigi Nervi (Ada Louise Huxtable)," *SAH Journal*, 19 (December): 178.

1961

"Architectonics of Pure Taste," *RAIC Journal*, 38 (May): 46-48.

"Aspects of Ornament," *Architectural Review*, 129 (June): 375-378.

"Whither Paul Rudolph," *Progressive Architecture*, 42 (August): 130-133.

"Voss Pickett: A New System of Architecture," *Architectural Review*, 130 (October): 267-268.

"The Form Givers," *Perspecta* 7: 91-96.

"A Tower in New York," *Manchester Guardian*, October 19, 1961.

"The Shape of Architectural History," *Manchester Guardian*, September 7, 1961.

"Where the Twain Shall Meet," *Manchester Guardian*, March 9, 1961.

1962

"The New Obedience," *Manchester Guardian*, January 4, 1962.

"Absolute Architecture," *Manchester Guardian*, April 5, 1962.

"Action Architecture," *Manchester Guardian*, September 13, 1962.

"In Place," *Manchester Guardian*, September 25, 1962.

"Lesson of Coventry Cathedral," *RAIC Journal*, 39 (September): 61-68.

"Canadian Imperial Bank of Commerce...An Appraisal," *RAIC Journal*, 39 (November): 48-49.

"Total Theatre," *Manchester Guardian*, November 15, 1962.

"Orthodoxy," *RAIC Journal*, 39 (December): 65-68.

"The Origins of Graph Paper as an Influence on Architectural Design," *SAH Journal*, 21 (December): 159-162.

"Parallax," *Architectural Record*, 132 (December): 387-390.

Reviews

"Anonymous-20th Century (Leonardo Ricci)," *Progressive Architecture*, (July): 202-206-208.

"Enlightened Mumfordism: Architecture and the Aesthetics of Plenty, (James Marston Finch)," *Progressive Architecture*, 43 (October): 212-216-220.

"Distinguished Collection of Architectural Views: American Architecture and Other Writings (Montgomery Schuyler)," *Montreal Star*.

"Development of the Architectural Profession in Britain (B.Kaye) & Architects & Patron (Frank Jenkins)," *SAH Journal*, 21 (October): 148-149.

1963

"Historicism and the Lincoln Centre," *Manchester Guardian*, January 17, 1963.

"Blank Walls," *Manchester Guardian*, February 7, 1963.

"A Primitive at Harvard," *Manchester Guardian*, March 28, 1963.

"Furniture Givers As Form Givers: Is Design an All-Encompassing Skill?" *Progressive Architecture*, 44 (March): 121-125.

"Squared Paper And The SAH Assailed," *SAH Journal*, 22 (May): 107.

"Genius Loci: The Historic Continuity of Cities," *Progressive Architecture*, 44 (July): 100-106.

"Central Technical School Art Centre: An Appraisal," *RAIC Journal*, 40 (August): 51-54.

"Appraisal (Massey College)," *RAIC Journal*, 40 (October): 39-40.

"Home For Scholars (Massey College)," *Manchester Guardian*, November 28, 1963.

Reviews

"Architecture Parlante: Eero Saarinen On His Work (Aline B. Saarinen)," *RAIC Journal*, 40 (January): 17-18.

"The Earth, The Temple And The Gods (Vincent Scully JR.)," *SAH Journal*, 22 (March): 108.

"The Space Struck Archeologist: The Great Ages of World Architecture," *RAIC Journal*, 40 (March): 10.

"A History of Civil Engineering: An Outline From Ancient To Modern Times (Hans Straub)," *Journal of Architectural Education*, 17 (March): 104-105.

"The Greek Trinity (Vincent Scully JR.)," *Manchester Guardian*, March 7, 1963.

"Modern Architecture: The Architecture of Democracy (Vincent Scully JR.)," *SAH Journal*, 22 (May): 108.

"Marcel Breuer: Buildings and Projects 1921-1961," *Canadian Art*, 20 (May/June): 193.

"Skidmore Owings & Merrill 1950-1962 (Intro. by H.R. Hitchcock, Text by Ernst Danz)," *Canadian Art*, 20 (September/October).

"The Enjoyment of Modern Architecture: Guide to Modern Architecture (Reyner Banham)," *RAIC Journal*, 40 (September): 9-10.

"A Monument to Human Aberration: The Architecture of Fantasy: Utopian Building and Planning in Modern Times (Ulrich Conrads & Hans G. Sperlich)," *Progressive Architecture*, 44 (December): 154-160-164-172.

1963/1964

"Changing Ideals in Modern Architecture," *Canadian Architect*, 8 (May): 64-68; 8 (June): 76-78; 8 (July): 57-60; 8 (August): 68-72; 8 (September): 67-69; 8 (October): 78-81; 8 (November): 76-78; 8 (December): 57-59; 9 (January): 52-53; 9 (February): 69-71; 9 (March): 62-64.

1964

"Winnipeg, Edmonton, Toronto—Three New International Air Terminals: An Appraisal," *RAIC Journal*, 41 (February): 44-48.

"A Retrospective View of the P/A Design Award Program 1954/64 (Jury's Comments)," *Progressive Architecture*, 45 (July): 151.

Reviews

"The English Tradition in Architecture (John Gloag)," *Canadian Art*, 22 (January/February): 53.

"Candela: The Shell Builder (Colin Faber)," *SAH Journal*, 23 (May): 116.

"Imitators in the Noblest Sense: SOM: Architecture of Skidmore, Owings & Merrill 1950-1962," *Progressive Architecture*, 45 (June): 212-216.

"The Genius of John Ruskin (John D. Rosenburg, Editor)," *Progressive Architecture*, 45 (September): 262-266-270.

1966

"Stock Exchange Tower, Montreal," *Architectural Review*, 139 (June): 433-438.

"Architectural Criteria and the French Traditions," *Journal of Architectural Education*, 21 (August): 1-5.

"Expo-and After," *Canadian Architect*, 11 (October): 47-48.

Reviews

"From Cosmic to Cosmetic in Fourteen Lessons: Structure in Art and in Science (G. Kepes, Editor)," *Progressive Architecture*, 47 (May): 210-218-228-236.

"C.R. Villanueva and the Architecture of Venezuela (S. Moholy- Nagy), Alvar Aalto, Complete Works (A. Aalto), The Concrete Architecture of Ricardo Morandi (G. Bragat)," *SAH Journal*, 25 (October): 227.

"Frankleudreit: Frank Lloyd Wright—A Study in Architectural Context (Norris Kelly Smith)," *Progressive Architecture*, 47 (October): 262-268.

"The Search for Environment: The Garden City Before and After (Walter L. Creese)," *Progressive Architecture*, 47 (November): 202-214.

1967

"Oecodomics," *Architectural Review*, 141 (March): 176-177.

"Teaching Architectural History, Written with Denise Scott Brown," *Arts & Architecture*, 84 (May): 30.

"College of Fellows: New Members, 1967 Convocation," *RAIC Journal*, 44 (June): 7-9.

"Clapboard Masonry," *Canadian Architect*, 12 (August): 62-64.

Reviews

"A Peculiar Pansophism: Twentieth Century Architecture: The Middle Years 1940-1965 (John Jacobus)," *Progressive Architecture*, 48 (January): 176-180.

"Symbolism and Architectural Theory: Intentions in Architecture (Christian Norberg-Schulz)," *Journal of Architectural Education*, 21 (March): 8-10.

"Neo-Butterfield: The New Brutalism: Ethic or Aesthetic (Reyner Banham)," *Progressive Architecture*, 48 (March): 198-202.

"Whither Earthly Paradise: Utopias and Utopian Thought (Frank E. Manuel, Editor)," *Progressive Architecture*, 48 (June): 210-224.

"Urban Retrospection: The Historian and the City (Oscar Handlin & John Burchard, Editors)," *Progressive Architecture*, 48 (July): 194-198-203.

"Order in Complexity: Complexity and Contradiction in Architecture (Robert Venturi)," *Landscape*, Autumn 1967: 36-37.

"Editor's Postscript," *SAH Journal*, 26 (October): 199-200.

"Sounding Design or "Dionysianesque": Modern Architecture and Expressionism (Dennis Sharp)," *Progressive Architecture*, 48 (October): 206-214.

1968

"The Philosophy of Architectural Criticism," *AIA Journal*, 49 (January): 46-49.

"Paradigmatics," *Architectural Review*, 143 (March): 179-180.

1969

"Architects' Architecture Versus Lawyers Law," *Architectural Review*, 145 (February): 117-120.

"Bauhaus Era – Origin and Atmosphere," *RAIC Journal*, 46 (December): 10.

1970

"The Classicism of Auguste Perret," *SAH Journal*, 29 (October): 272.

1971

"Sibyl Moholy-Nagy," *RAIC Journal*, 48 (March): 3.

"Architectural Judgement," *Canadian Architect*, 16 (June): 55-59.

1972

"Pictorial Criticism," *Canadian Architect*, 17 (July): 36-37.

1974

"Architectural Education in France," *Canadian Architect*, 19 (January): 36-48.

"The new Brutalism of the 1920's: The Effect of Economic Restraints at Notre Dame du Raincy," *SAH Journal*, 33 (October): 233.

1975

"Architectural Education: McGill," *Canadian Architect*, 20 (March): 46-51; (April): 49-50; (May): 49-51.

1979

"Thoughts About Architectural Education," *AIA Journal*, 68 (October): 60-61.

"The 18th Century Origins of Our System of Full-time Architectural Education," *Journal of Architectural Education*, 33 (November): 2-8.

1981

"The Historian as an Artist," *The Fifth Column*, 1 (Spring): 10-13.

"Architecture Through the Looking Glass," *History In, Of and For Architecture*, John E. Hancock, editor, Cincinnati School of Architecture and Design.

BENEFACTORS/BIENFAITEURS

Alcan
Centre Canadien d'Architecture, Montreal
School of Architecture, McGill University
Architectural Undergraduate Society, McGill University
The Royal Architectural Institute of Canada
Centre Canadien d'Architecture, Montreal
School of Architecture, McGill University
Architectural Undergraduate Society, McGill University
Ontario Association of Architects

SUPPORTING INSTITUTIONS / INSTITUTIONS PARRAINANTES

Alberta Association of Architects
Alberta Housing Corporation
Architectural Institute of British Columbia
Association des Architectes en Pratique Privée du Québec
Carleton School of Architecture
Ordre des architectes du Québec
Faculty of Architecture, University of Manitoba
School of Architecture, University of Waterloo
Architectural Undergraduate Society,
Technical University of Nova Scotia

SPONSORS/PARRAINS

George Baird, Toronto
Ballenford Architectural Books, Toronto
Crang and Boake, Architects, Don Mills
Gilles S. Bonetto, Montreal
Derek Drummond, Montreal
Peter Lanken, Montreal
Mill & Ross, Architects, Kingston
Doug Reed, Ottawa
Joe Sartor, Don Mills
Subsurface Systems, Inc., Don Mills
Murray & Murray, Griffiths & Rankin
Gordon and Lyn Stratford, Toronto
Wood & Gardener Architects, Edmonton

PATRONS/AMIS

Georges Adamczyk, Outremont
Ray Affleck, Montreal
Bruce Anderson, Montreal
Maureen Anderson, Montreal
Joseph Baker, Quebec
W. Kirk Banadyga, Regina
Ron W. Basarab, Winnipeg
Claude Beaubien, Montreal
Arthur Beitel, Montreal
Ojars Biskaps, Halifax
John Bland, Montreal
Stephen Bleyer, Montreal
Patrick Blouin, Outremont
Trevor Boddy, Vancouver
Robert Bourdius, Montreal
R. David Bourke, Montreal
Frances Bronet, Montreal
Susan Bronson, Montreal
Georges Bulette, Montreal
Sebastiano Campanella, Montreal
Joe Carter, St. Johns
Philip Carter, Toronto
Naomi Caruso, Montreal
Cameron Charlebois, Montreal
James KM Cheng Architects, Vancouver
Raymond M. Cherrier, Montreal
Iris Contogouris, Montreal
David Mario Covo, Montreal
Roger Cusson, Montreal
Dawson and Szymanski, Mount Royal
Joseph L. De Stein, Lachine
Leslie Doelle, Montreal
Patricia L. Falta, Montreal
Gerald W. Farnell, Montreal
Robert P. Fleming, Montreal
Masahary Fukushima, Saint-Laurent
Daniel Gaito, Toronto
Julia Gersovitz, Montreal
Blanche L. van Ginkel, Toronto
Jim Girvan, Montreal
Barry Graham, Calgary
Grolle, Architect & Engineer, Regina
Duncan Harvie, Toronto
Klaus Hempel, Mississauga
Edward Hercun, Montreal
Richard G. Henriquez, Vancouver
Tim Holt, Montreal
Orest Humennyj, Montreal
Cecilia K. Humphreys, Ottawa
Anthony Jackson, Halifax
Julian Jacobs, Toronto
Ron D. Keays, Westmount
Jean Lague, Saint-Bruno
Marc Laurendeau, Montreal
Roy Emile Lemoyne, Montreal
Seymour Levine, Montreal
Mirko J. Makalic, Halifax
Peter McCleary, Philadelphia
Brian McCloskey, Ottawa
Rene Menkes, Montreal
Michael Morris, Edmonton
Martin V. Mueller, Zurich
Michel G. Nadeau, Laval
R.K. Nelson, Vancouver
Alan E. Orton, Westmount
T. Otsu, Agincourt
Morty and Sonia Pearl, Hampstead
Anthony B. Pearson, Ottawa
Dennis Peters, Oakville
Mr. & Mrs. C.L. Pimlott, Dorval
Victor Prus, Montreal
Pye & Richards, Architects, Ottawa
Larry Richards, Waterloo
Dr. & Mrs. Colin P. Rose, Nuns' Island
Max W. Roth, Montreal
Sankey/Wertleman/Guy, Montreal
Santo Construction, Greenfield Park
Norbert Schoenauer, Montreal
John Schreiber, Montreal
Charles R. Scriver, Montreal
Peter Scriver, Montreal
Richard Seaton, Vancouver
David A. Selby, Montreal
Adrian Sheppard, Montreal
Norman Slater, Montreal
Harold Strub, Yellowknife
Mr. & Mrs. J. Telgarsky, Winnipeg
David Thane, Saskatoon
Gentile Tondino, Montreal
Alan J. Tregebov, Toronto
France Van Laethem, Outremont
Joe Wai, Vancouver
Barry M. Wexler, Montreal
Stefan Wisniowski, Ottawa
Jeanne M. Wolfe, Montreal
Francis Essem Wood, Bethesda, Md.
Peter Woolven, Westmount
Ted Yudelson, Montréal
Tony Zinno, Montreal
Jozef Zorko, Montreal
Radoslav Zuk, Montreal

We would like to thank The Canada Council for their generous support.
Nous aimerions remercier le Conseil des Arts du Canada pour son encouragement.