

The Mathematics of the
Ideal Villa and Other Essays

Colin Rowe

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Chicago Frame

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The skeleton of the steel or concrete frame is almost certainly the most recurrent motif in contemporary architecture, and is surely among the most ubiquitous of what Siegfried Giedion would have designated its *constituent elements*. Perhaps the role of the frame is most aptly summarized in the drawing by which Le Corbusier illustrated the structural system of his experimental Domino House (Plate 12), but, while its primary function is evident, apart from this practical value, the frame has obviously acquired a significance which is less recognized.

Apparently the neutral grid of space which is enclosed by the skeleton structure supplies us with some particularly cogent and convincing symbol, and for this reason the frame has established relationships, defined a discipline, and generated form. The frame has been the catalyst of an architecture; but one might notice that the frame has also *become* architecture, that contemporary architecture is almost inconceivable in its absence. Thus, one recalls innumerable buildings where the frame puts in an appearance even when not structurally necessary; one has seen buildings where the frame appears to be present when it is not; and, since the frame seems to have acquired a value quite beyond itself, one is often prepared to accept these aberrations. For, without stretching the analogy too far, it might be fair to say that the frame has come to possess a value for contemporary architecture equivalent to that of the column for classical antiquity and the Renaissance. Like the column, the frame establishes throughout the building a common ratio to which all the parts are related; and, like the vaulting bay in the Gothic cathedral, it prescribes a system to which all parts are subordinate.

It is the universality of the frame and the ease with which it has apparently directed our plastic judgment which has led to the focusing of so much attention upon the Chicago commercial architecture of the eighties and early nineties (Plate 38). In Chicago, seemingly, our own interests were so directly anticipated that if—as we apparently sometimes conceive it to be—the frame structure is the essence of modern architecture, then we can only assume a relationship between ourselves and Chicago comparable to that of the High Renaissance architects with Florence, or of the High Gothic architects to the Ile-de-France. For, although the steel frame did make occasional undisguised appearances elsewhere, it was in Chicago that its formal results were most rapidly elucidated.

For some ten years the architects of Chicago devoted themselves to the solution of typical problems of the frame; and, before the end of this time, they had achieved results which are still today unsurpassed for their elegance and economy. But, admiring these results and acknowledging this great achievement, one is still disposed to ask of these Chicago buildings whether they are indeed representatives

of a 'modern' architecture. Certainly the process of their design was as rational and as direct as that of any modern building is supposed to be. Certainly these buildings are lacking in both rhetoric and sentimental excess; but, also, there is about them a quality of rudimentary magnificence, a flavor at once more heroic and more brutal than is to be found in any building of the present day. These structures make no compromise with the observer; they are neither capricious nor urbane and they display an authenticity so complete that we are disposed to accept them as facts of nature, as geological manifestations rather than as architectural achievements. "In Chicago," says Louis Sullivan, "the tall building would seem to have arisen spontaneously in response to favourable physical conditions . . . The Future looked bright. The flag was in the breeze. . . ." ¹ In Chicago we are led to believe that the slate was at last wiped clean, the break with 'the styles' was made, and the route of future development defined.

The alleged debacle which overwhelmed these Chicago architects of the eighties is common knowledge. The World Columbian Exhibition cut short their development; public taste no longer endorsed their decisions; and, although for some few their principles remained luminous, it was not until comparatively recently that their figures reemerged, sanctified and established in the Pantheon of architectural progress.

But the disaster was never quite so complete as our sense of myth requires that it should have been; and, as we know, pockets of resistance survived which eclecticism could not obliterate, so that it was again in Chicago that a second and equally decisive contribution to present-day architecture was made. Montgomery Schuyler, one of the most devoted apologists of the Chicago School, writing of the city in the nineties, noticed that its architectural expressions were twofold only—"places of business and places of residence." The image of Chicago which remained in the mind he found to be "the sum of innumerable impressions made up exclusively of the skyscraper of the city and the dwellings of the suburbs. Not a church enters into it," he says, "Scarcely a public building enters into it . . . Chicago has no more a Nouvel Opéra than it has a Notre Dame." ² It was a relatively uncomplicated situation which Schuyler recognized, a situation dominated by two building types—the commercial structures of the Loop and their suburban complement. And, with the nineties, the spirit of experiment may be said simply to have transferred itself from one of these types to the other, so that it became in Oak Park that Frank Lloyd Wright was to conduct those researches into architectural form whose results now seem to have been preeminently superior to any other achievement of that day. The much publicized contributions of van de

Velde, of Horta, Olbrich, Hoffmann, Loos, Perret, McKintosh, and Voysey can only appear as irresolute and undirected when compared with the astonishing finality of these early works of Wright's, which, although less implacable than the office buildings of the Loop, are every bit as conclusive. These houses are the monuments of an unerringly consistent development; and to informed observers of the time it was apparent that here a plastic statement of the very highest relevance was in process of delivery, that here a definite answer had already been given to those questions which many of the most advanced buildings of the day seemed to exist merely to propose.

The international impact of this early phase of Wright's career is a matter of history; and, if the exact influence which the publication of his work exerted in Europe may remain a matter of dispute, it can scarcely be denied that in such a building as the Gale House (Plate 39) of 1909 Wright had already defined principles of form which at least very closely parallel those enunciated ten years later by van Doesburg, or by Rietveld in *De Stijl's* major architectural monument, his Schröder House (Plate 40) of 1924. In each case the vision of an architecture as a composition of sliding planes predominates; and Wright's anticipation of this idea seems to have been as complete as Chicago's earlier anticipation of the formal role which the frame structure was destined to play.

This priority of Chicago's contribution need not imply a dependence elsewhere upon it. Obviously both van Doesburg and Rietveld could claim a legitimate descent from the innovations which Cubism had introduced; obviously too, Le Corbusier's preoccupation with problems of the frame structure derives not from the steel skeleton of Chicago but from the reinforced concrete frame of Auguste Perret. But neither of these observations can obscure the apparent evidence that Chicago did seem to experience a prevision of two of the major themes of twentieth century architecture—the frame structure and the composition of intersecting planes.

This apparent insight of Chicago's is widely recognized; but its recognition has created certain acute critical problems. Wright's achievement was scarcely likely to pass into oblivion; but the renewed consciousness of Chicago's earlier contribution which has been stimulated by the later work of Mies van der Rohe is responsible for a conspicuous interpretative embarrassment. Thus, although we know it to be different in kind, we are apt to feel that Mies's campus of the Illinois Institute of Technology is the polished culmination of a rationalism identical with that displayed by Jenney in the Second Leiter Building (Plate 41); but, equally, we are obliged to believe that at least a partial explanation of the intuitive certainty

which so early distinguished Wright's work was provided by his own personal relationship with the older masters of the Chicago School. We can understand that his own audaciousness was reinforced by their daring, his own sense of order by theirs, his own precocity by those qualities which have led so many observers to see in the commercial buildings of Chicago the most complete adumbration of contemporary forms.

But it is at this point that the judgment of the present day discovers its dilemma. Although we may assert that the architects of the office buildings in the Loop clarified a basic disposition of twentieth century architecture, yet for the structural skeleton which their achievement exposed, it can only be said that Wright (who might be considered their most illustrious pupil) seems to have shown a most marked distaste.

With the exception of the Larkin Building in Buffalo and the S. C. Johnson Company's Administration Building at Racine, Wright has, of course, built no large office buildings; and it might therefore be claimed that he had no reason to employ the frame structure. But even in the Larkin Building the cathedrallike internal space suggests a certain aversion to those conclusions of the Chicago School whose relevance is so enthusiastically acclaimed today; while in the Johnson Administration Building an entirely different conception of structure is entertained. Admittedly a number of early skyscraper projects—e.g., the Luxfer Prism Skyscraper (Plate 42) and the Lincoln Center—are for steel frame buildings; and, in 1912, the Press Building for San Francisco (Plate 43) shows a concrete frame; but in all of these designs a Sullivanian influence is to be detected, and in none of them are we made aware of that inimitable world of Wrightian form which characterizes the domestic designs of the same years. We can believe that, in all these instances, Wright was struggling with a problem which he felt to be intractable and found to be unsympathetic, and it is not until the National Life Insurance Company Skyscraper project of 1924 (Plate 44) that this problem seems to become clarified and we find the sharp revelation of the differences in outlook which identify Wright's development as something apart from that of his predecessors in Chicago.

The classic Chicago office buildings, like the classic palaces of Renaissance Italy, were conceived as single volumes, or when situation did not permit the appearance of a volume, as single facades. Like Italian palazzi they overwhelm the observer by their economy of motif and consistency of theme; while, as architectural expression, they present no more than an unmodified surface exhibiting a rationally integrated and well-proportioned structure. But Wright's building is

distinguished by the observance of quite contrary principles; and, rather than a single structurally articulated block, it displays a highly developed composition of transparent volumes, while rather than the 'static' structural solution of the frame it presents the more 'dynamic' motif of the cantilever which had already been employed in the Imperial Hotel. Thus, while conceptually this building is radically distinct from Chicago's earlier contributions to skyscraper design whose architects had attempted neither such elaboration nor such openness, technically also it is distinct, since both its construction and its curtain wall constitute an innovation in the Chicago tradition.

According to Henry-Russell Hitchcock, "Wright has likened the special construction used in the (Imperial) Hotel to the balance of a tray on a waiter's fingers";³ and the structural members both in that building and the 1924 project do seem to have been conceived in that way—as a series of nuclei generating around themselves intelligible volumes of space. This preference, already presumed by Wright's old preoccupation with the central chimney stack, must explain some of his reluctance to use a regular skeletal frame which scarcely permits such an interpretation of structure; but the indivisible fusion of structure and space which Wright has designated 'organic' is scarcely realized in either the Tokyo building or the National Life Insurance Company project, and it is not until the St. Mark's Tower scheme of 1929 that it first becomes explicit at a major scale (Figure 7, Plate 45).

The spaces created by the St. Mark's Tower are at last of an unmistakably Wrightian order and, understandably, the tower has been the prototype for all the tall buildings by him which have followed. Aggregations of St. Mark's Towers are the basis for the 1930 apartment house project and again for the Crystal Heights Hotel (Plate 46) design of 1940; while the tower appears in condensed form as the laboratory building at Racine, Wisconsin, before being finally transcribed as the Price Office Building at Bartlesville, Oklahoma.

Conceptually all these structures present the nucleus of a gigantic mushroom column supporting a series of trays which, as shown by the apartment house and hotel projects, is implied to be systematically extensible by approaching column to column until the circumferences of their trays impinge or even overlap. Like the central core of the chimney and the real mushroom columns of the Johnson Administration Building, the idea of the St. Mark's Tower may seem to derive from the 'organic' demand for the integration of space and structure; and, as fulfilling this demand, the building becomes a single, complete, and self-explanatory utterance.

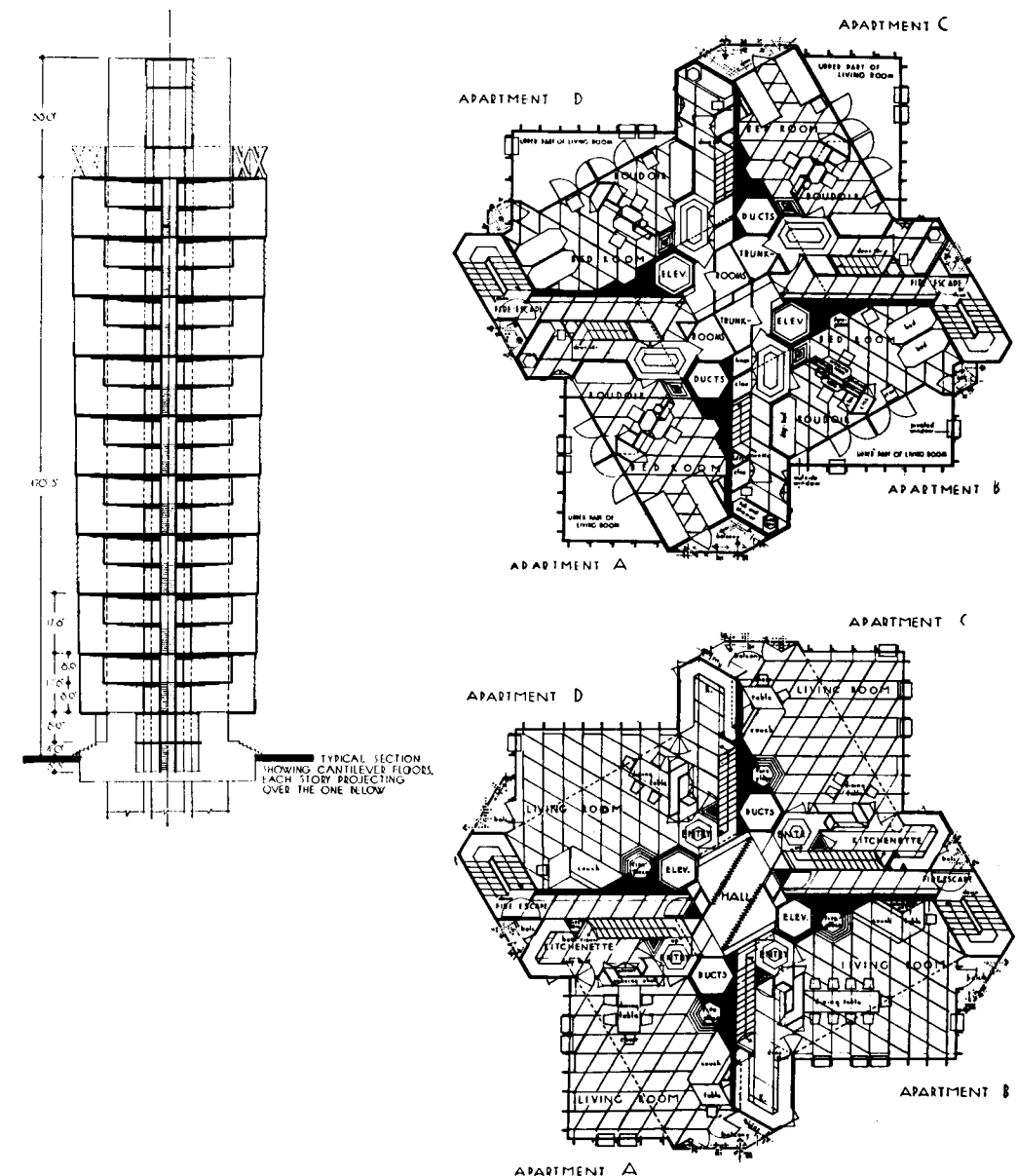


Figure 7 Project, St. Mark's Tower, New York City. Plan and section. Frank Lloyd Wright, 1929.

As an extension of the domestic theme the St. Mark's Tower is among Wright's most brilliant and ingenious achievements, and the virtuosity with which it is organized can only arouse the greatest admiration. Its vitality and coherence are undeniable, its plastic control little short of awe-inspiring—admitting the basic premises upon which its inspiration depends, the tower is a superbly logical development; but for very many observers both it and its derivatives can only stand as a series of enlarged question marks. Admiring it as an individual achievement, recognizing it as a highly suggestive exception, these observers are still disposed to ask whether after all it is not a most elaborate evasion of a normal and standard structural fact. The frame, by so many modern architects, has been received almost as a heaven-sent blessing. Why, one inquires, has it been so distinctly rejected on the part of Wright? Did he consider it a merely adventitious shortcut to unimportant solutions? Did he consider it too great a restriction of a 'creative' freedom? Just why did he remain so very unbeguiled by Chicago's first great architectural discovery?

The question is so pressing that one may be justified in proceeding with speculation, and a number of immediate answers suggest themselves. But the answer that Wright's career has been largely in the field of domestic architecture considers the problem only superficially. The use of the steel or concrete frame in domestic architecture may not be necessary, but many conspicuous monuments of the modern movement survive to prove it not abnormal. The answer that America had already discovered an alternative structure in the balloon frame is more convincing, but not completely so. Economy in America recommended the balloon frame, but in Europe economy equally recommended a brick or masonry structure, and by the more significant innovators economy's recommendations were frequently disregarded.

A partial answer has already been suggested in the notice of Wright's highly developed and individual demand for 'organic' space, and here one of the most obvious differences between him and his predecessors in Chicago may be found. Louis Sullivan, for instance, was by no means typical of the Chicago School in general; but a major and unnoticed distinction between Wright and Sullivan, as also between Wright and his other Chicago predecessors, may be found in their feeling for the plan.

For Wright, as for Le Corbusier, the plan has always been a generator of form; and, if the plans of his earliest buildings are in no way remarkable, already in the Blossom House of 1892 (Figure 8) it is quite clear that a disciplined orchestration of spaces had become one of his primary interests, while almost any of his houses

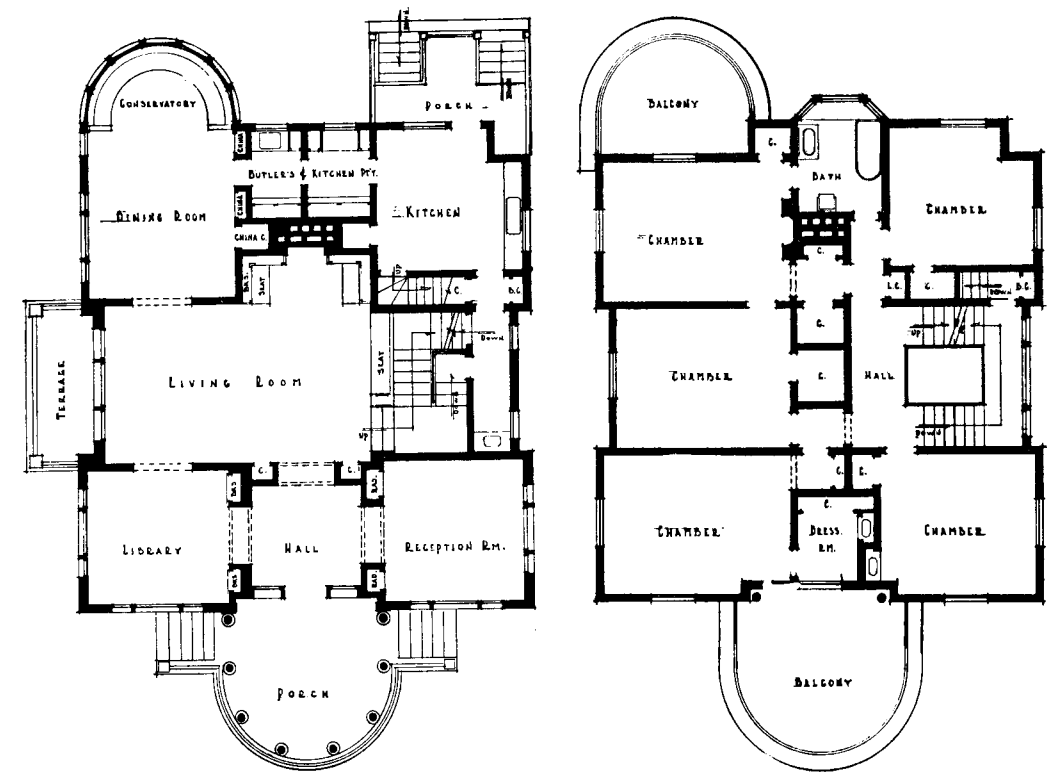


Figure 8 Blossom House, Chicago. Plan.
Frank Lloyd Wright, 1892.

of the next thirty years will reveal how intensively this interest was sustained. Wright's *partis* develop without apparent effort. There are few lapses in his plans, few volumes where his basic rhythms are not experienced; and, in all this he is very definitely to be distinguished from Sullivan, whose most ardent admirers have never claimed for him any highly developed interest in the formal possibilities of the plan. Sullivan's buildings may often be superb assertions of the primacy of structure, but one finds it hard to believe that for him the significance of their plans was other than a negative one. The plans of the Wainwright and Schiller Buildings, for instance, are hardly those of a master, while such a plan as that of the National Farmer's Bank at Owatonna, Minnesota, will scarcely bear analysis.

Sullivan was not primarily a planner. Indeed there was little in his practice which could prompt him to any sophisticated evaluation of the plan. Sullivan was primarily an architect of commercial buildings; and, of all buildings, the office block is obviously that without the need of any but the minimum of planning. It requires elementary circulations and a well lit floor area; but apart from these, it neither can nor should present any spatial elaboration. Thus, the unobstructed evenly lit floor and the indefinite number of floors which it permitted, recommended the steel frame to the architects of Chicago as the answer to a practical dilemma; but also, by the nature of the context in which they explored it, they were necessarily inhibited in the exploration of its spatial possibilities.

With a lack of stylistic prejudice and with a discretion which seem remarkable to us today, the Chicago architects projected on to their facades the neutral structure which they felt to be the reality of the frame behind; and if, as was the case with Sullivan's Wainwright Building in St. Louis and his Guaranty Building in Buffalo, it was considered aesthetically desirable that the frame should be modified, this process was rationalized in terms of the need for psychological expressiveness in the facade rather than in any need for internal spatial excitement.

With little occasion to use the frame for any other program than that of the office building, it is not surprising that the Chicago architects remained unaware of certain of its attributes, so that some explanation of Wright's unwillingness to employ it may possibly be found here. To repeat: unlike Sullivan, who had approached architecture primarily with the object of realizing an expressive structure, Wright was from the first abnormally sensitive to the demands of an expressive space. These demands (one might surmise) he was *compelled* to satisfy, and it was only later (one might believe) that his Sullivanian training reasserted itself to demand a rationalization of this spatial achievement in terms of a generating

structure. The monumental construction of the Hillside Home School suggests that a rationalization of this kind was already under way around 1902; and, by 1904, in the Martin House (Figure 9), this process had taken on unmistakable definition. But by then, and supposing Wright to have wished a predominantly structural rationale, his space compositions were already of a richness which would scarcely permit their accommodation within any system so austere as that provided by the Chicago frame.

However, an answer along these lines, suggesting that a cause for Wright's rejection of the frame may be discovered exclusively in the nature of his formal will, can at best provide only a partial explanation of the problem, and a further reason must be offered which may, perhaps, be found to lie in the varieties of significance with which the frame has been endowed.

At the present day, Chicago's failure to arrive at any statement of the frame as a vehicle of spatial expression—when we think about it—seems to be curious. We are now completely accustomed to regard the skeleton structure as a spatial instrument of some power, since it is—after all—some considerable time ago that a formula was evolved permitting the simultaneous appearance of both structural grid and considerable spatial complexity; and most of modern architecture, the so-called International Style, may be said to have been dependent on this formula.

But, in order to arrive at an equation of the demands of space and structure, Le Corbusier and Mies van der Rohe had been led to postulate their functional independence, i.e., the independence of partitions from columns, so that unlike Wright's development—which may be said to proceed from a conviction as to the 'organic' unity of space and structure—the International Style may be seen to issue from an assumption of the separate existence of both according to distinct laws. Wright's structure creates space or is created by it; but in the International Style an autonomous structure perforates a freely abstracted space, acting as its punctuation rather than its defining form. There is thus in the International Style no fusion of space and structure, but each in the end remains an identifiable component, and architecture is conceived, not as their confluence, but rather as their dialectical opposition, as a species of debate between them.

That a solution in these terms was possible for European innovators of the twenties derives, among other reasons, from a particular concept of the frame which they entertained; that such a concept was neither possible, nor to be envisaged, in Chicago of the nineties must be partly explained by a different significance which was there attributed to the skeleton structure. In Chicago it might be said that the frame was convincing as fact rather than as idea, whereas in consider-

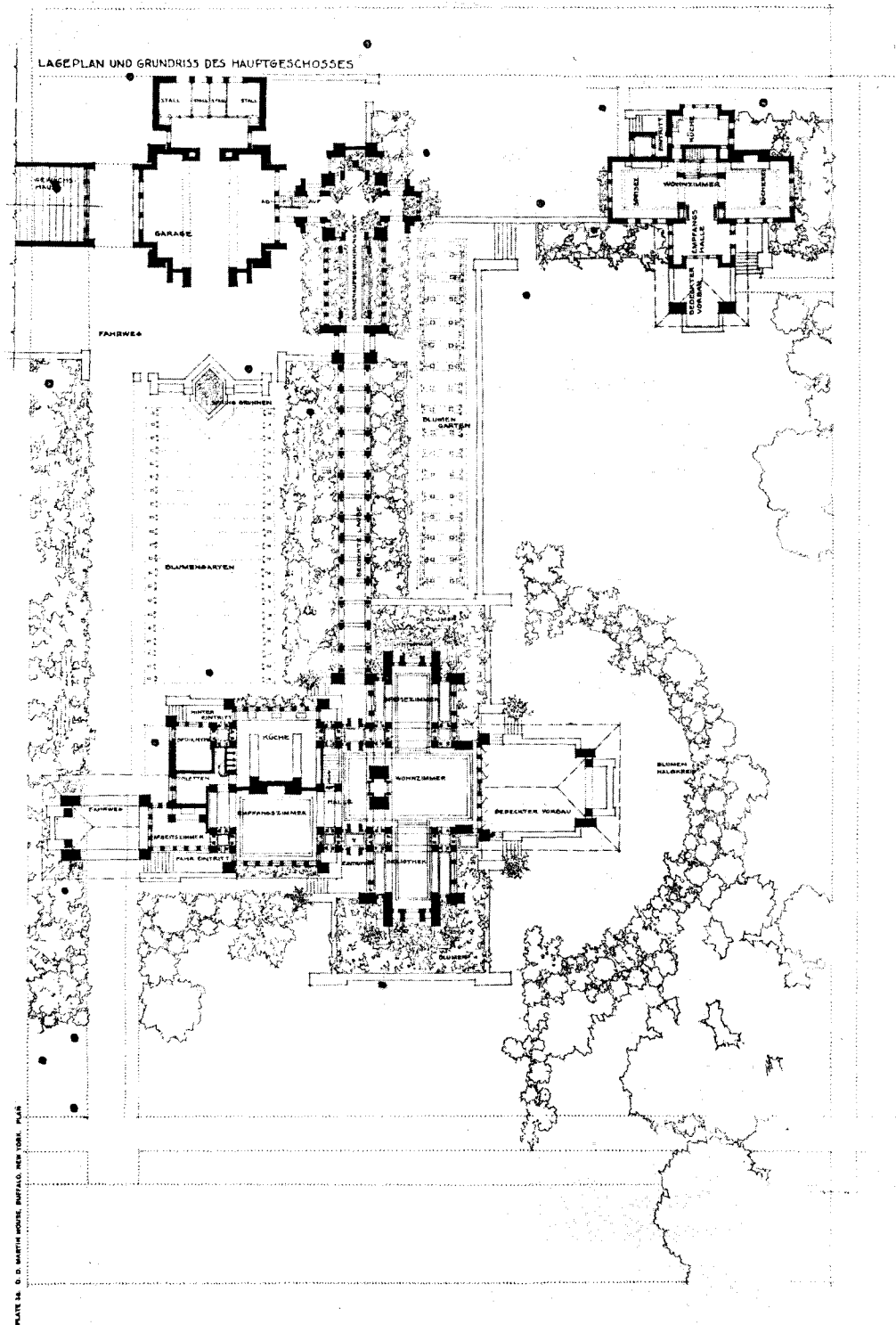


Figure 9 Martin House, Buffalo. Plan.
Frank Lloyd Wright, 1904.

ing the European innovators of the twenties one cannot suppress the supposition that the frame to them was much more often an essential idea before it was an altogether reasonable fact.

In order to clarify these too general observations a classic Chicago building, Holabird and Roche's McGlurg Building of 1899-1900 (Plate 47), might be paralleled with an almost contemporary European building of 1897, Horta's *Maison du Peuple* in Brussels (Plate 48)—both of them, though different in function, comparable as advanced buildings of their day. Both of them show preoccupation with problems of the frame; but it is the contrast between the rather quiet elegance of the first and the frenetic restlessness of the second which is immediately apparent. The McGlurg Building is a subtle and uncomplicated statement. The *Maison du Peuple* is an oblique and a highly involved reference. In the McGlurg Building it is possible to suppose that certain practical requirements have been accommodated; in the *Maison du Peuple* it is impossible not to deduce that certain theoretical desiderata have been stated. In the first, the steel frame presents itself as the solution of a specific problem; while, in the second, *a cast iron provision of the steel frame* is exposed apparently as the manifesto of an architectural program. Holabird and Roche's structure is primarily a building; Horta's is predominantly a polemic.

There is little doubt that Horta's building cost the greater aesthetic effort; but there is almost complete certainty that Holabird and Roche's is more generally pleasing to the taste of the present day. Of Holabird and Roche's self-consciousness, however, the McGlurg Building offers no assurance; while of Horta's sophistication the *Maison du Peuple* is indisputable evidence. In Horta's case one can guess at a hyperawareness of the response his building was likely to evoke. One can sense the anticipation of extended controversy, critical explanations, avant-garde delight, conservative horror. The *Maison du Peuple* is a building offered to a society; and, whether society will accept or reject it, Horta still assumes its participation as an audience. That is, Horta invites reaction; and, accordingly, the *Maison du Peuple* exhibits a humanity which the McGlurg Building does not display. For there, rather than any subject for the discussion of a coterie, Holabird and Roche have attempted to provide no more than the rational envelope for the activities of their clients' tenants.

Indeed, if the methods followed by Holabird and Roche at this time were in any way typical of the Chicago School in general, it might safely be assumed that they were definitely not anxious that their building should involve them in any of the excitements of artistic notoriety. In the word of the French novelist, Paul Bour-

get, whose appreciations of the Chicago School have been constantly quoted, the Chicago architects had “frankly accepted the conditions imposed by the speculator”⁴—they had limited themselves to producing buildings which should be no more than the logical instruments of investment. In other words, being in no position to make manifestos in the cause of rationalism, they were simply obliged—and within the strictest terms—to be as rational as they might.

This distinction between two styles of argument (it is really a question of the idea of mechanization versus the fact), would seem to crystallize the basic differences of approach signified by the two buildings; and it is a distinction which might be extended further. “I asked one of the successful architects of Chicago what would happen if the designer of a commercial building sacrificed the practical availability of one of its floors to the assumed exigencies of architecture as has often been done in New York,” writes Schuyler. “His answer,” he continues, “was suggestive. ‘Why the word would be passed around and he would never get another one to do. No, we never try tricks on our businessmen, they are too wide awake.’”⁵ The businessmen of Chicago, then, were not prepared to make sacrifices for the idea, did not require the overt architectural symbolism which was apparently necessary in New York, did not even require those fantasies upon mechanistic themes which could be obtruded upon the citizens of Brussels; but the Chicago architects (or some of them) were still quite aware that symbolic meaning has ever been among the necessary attributes of architecture; and if, as Schuyler infers, they were compelled to be utilitarian, they were not always unconscious of the social significance of their utilitarianism. John Root, for instance, required that the modern office building should by its “mass and proportion convey in some elemental sense an idea of the great, stable, conserving forces of modern civilization.”⁶

But, even in this demand, one might continue to notice a difference between Chicago and Brussels. In Belgium, Siegfried Giedion tells us, it had been discovered that architectural *forms* were impure, that the atmosphere was “infected,” and that, in consequence, architectural “progress” was there conceived as a kind of “moral revolt.”⁷ But the Chicago architects had been scarcely allowed to subject *forms* to so detached a scrutiny; and, had they enjoyed the leisure to do so, if their conclusions had conflicted with the requirements of the speculator, it is to be doubted whether they would have been enabled to put them into practice. “The great, stable, conserving forces of modern civilization” (The great, expanding forces of a *laissez-faire* economic system?) represented for Root a power which it was desirable to express. But for Horta? One must doubt if Horta recog-

nized any such imperative. He, one suspects, had arrived at certain critical conclusions as to the nature of contemporary society and had come then to envisage his work as the architectural manifestation of these judgments.

In Belgium, it is evident, the *art nouveau* was one of those revolutionary movements essentially dependent on a highly developed program; but in Chicago, it should be clear that the structural revolution was largely without any such theoretical support.

“The Chicago activity in erecting high buildings (of solid masonry) finally attracted the attention of the local sales managers of Eastern rolling mills,” Sullivan tells us, and it was *they*, he says, who conceived of the idea of a skeleton which would carry the entire weight of the building. From then on, he continues, the evolution of the steel frame “was a matter of vision in salesmanship based upon engineering imagination and technique”; and, in this manner, *as a product for sale*, “the idea of the steel frame was tentatively presented to Chicago architects.”

“The passion to sell,” Sullivan asserts, “is the impelling power of American life. Manufacturing is subsidiary and adventitious. But selling must be based on a semblance of service—the satisfaction of a need. The need was there, the capacity to satisfy was there, but contact was not there. Then there came the flash of imagination which saw the single thing. The trick was turned and there swiftly came into being something new under the sun.”⁸

The Chicago structural revolution therefore was the result of a certain combination: of ruthless open-mindedness and imaginative salesmanship. On Sullivan’s admission, the architects of Chicago did not *demand* the frame; it was rather *presented* to them; and this simple fact may explain both the rapid and dispassionate manner in which they contrived to rationalize the frame structure and also the way in which so many of them were able to abandon their method for another and different one. “The architects of Chicago,” Sullivan adds, “welcomed the steel frame and did something with it. The architects of the East were appalled by it and could make no contribution to it.” But from Schuyler we learn the opposite—that the architects of Chicago were not very different from architects elsewhere. “They are,” he writes, “different on compulsion.” They have “frankly accepted the conditions imposed by the speculator, because they really are imposed, and there is no getting away from them if one would win and keep the reputation of a ‘practical’ architect.”⁹

Taken together, these two statements are confusing; but they are not perhaps as contradictory as at first they may appear. They describe a situation. They suggest a lack of theoretical awareness. They indicate a responsiveness to the new. They

illustrate a willingness to defer to the client. And the clients, Schuyler continues, “the men who project and finance the utilitarian buildings” are not “the most private spirited (but) they are the most public spirited body of businessmen of any commercial city in the world.” They are, he says, “the same men who are ready to incur expenditures for public purposes with a generosity and a public spirit that are elsewhere unparalleled.” “They are willing to make the most generous sacrifices for their city to provide it with ornaments and trophies which shall make it more than a centre of pig sticking and grain handling. They are willing to play the part of Maecenas to the fine arts, only they insist that they will not play it during business hours.”

The candor of these contemporary observations goes a long way to dispose of a critical scheme to which nowadays we pay our respects. It disposes of the dichotomy between the virtuous Chicago of the Loop and the depraved Chicago of the Fair. Magnificently undisguised, the office buildings of the Loop owe something of their authenticity to their being no more than the rationalization of business requirements; but, although they are social documents of the highest importance, in spite of Root’s endeavors they are scarcely, in any deliberate and overt sense, cultural symbols. They were conceived as the means to achievement; and, for what was thought to be that achievement itself, it is necessary to look elsewhere, presumably both to the suburban residential development, and to “the ornaments and trophies,” the unparalleled expenditures, and “the generous sacrifices,” of which those lavished upon the World Columbian exhibition can only appear the most outstanding.

Thus, seen in terms of the admirable pragmatism which actually reared the buildings of the Loop, which was responsible for their directness and lack of gesture, both these and the structures of the Fair, like opposite sides of a coin, come to appear as complementary phenomena. Because business and culture were conceived of as distinct activities, because the commercial magnates of Chicago were not willing “to play the part of Maecenas to the fine arts during business hours,” it was possible for the architects of Chicago to proceed with the most audacious innovations; and, because in doing so they offended no expressed social or artistic preference, no check was offered to their remorseless evolution of a basic structural logic. As Schuyler tells us, this rationalization could not have been effected in New York. It could not, as we know, have been effected in Europe. It was possible in Chicago because there *business* was without inhibition; but unhappily, as the World Columbian Exhibition proves, *business* was not for this reason irresponsible.

Thus, what to us appears to have been Chicago’s success and Chicago’s failure were implicit in the same conditions. A primary architectural achievement was determined by the urgency of a physical need; and, by the lack of a specifically architectural program, an apparently complete architectural revolution was made possible.

But just this lack of program in the end made it not possible for this revolution to become decisive. The office buildings of the Loop were undoubtedly admired by contemporaries; but, however rational their structure and however immaculate their form, it is hard to represent them as the response to any very adequately acceptable notion of society. They invoked no completely receivable public standards; they stipulated only private gain; and for the taste of the time, which had not yet sufficiently expanded—or contracted—to be able to envisage the *machine* with a poetic bias, they were not so much architecture as they were equipment. Stimulating facts they might be; but they were scarcely to be received as facts of culture.

Distinctions such as these which go some way to clarify the other than technical and formal differences between a McGlurg Building and a Maison du Peuple necessarily elicit questions of attitudes and mythologies; and such questions might possibly be brought into sharper focus by the brief analysis of a further pair of buildings which, in *Space, Time and Architecture*, Siegfried Giedion was led to compare: Daniel Burnham’s Reliance Building (Plate 49) of 1894 and Mies van der Rohe’s Glass Tower project (Plate 50) of 1921.

It is the similarity of these buildings with which Giedion is concerned; and, in terms of a Wölflinian background such as his which tends to ignore problems of content (implying that roughly identical forms suppose roughly approximate meaning), it is the common likeness of the American building and the German project which will command attention. But, if we have here, very obviously, two extensively glazed office towers, it is fundamentally not their similarity but their unlikeness which should most seriously involve us—and particularly so since to emphasize their unlikeness need not involve any great exercise of critical acuity.

Thus, we have a building and a would-be building; the concrete result of a particular problem and the abstract solution of a general one; a building which services an existing requirement and a proposal which relates to a possible future need. We have something which answers and something which anticipates. The Reliance Building rises above the streets of a commercial capital; the Glass Tower soars against a background of wooded hills and above an agglomeration of Gothic roofs; and, if we can scarcely believe the Glass Tower to be a necessity in this toy

city of an older Germany, then also we may know it to be not only the project for an office building but also the advertisement for a cause. For, if the Reliance Building, very largely, *is what it is*, the glass tower, like the Maison du Peuple, very patently, *is something which it does not profess to be*—a highly charged symbolic statement. While the Reliance Building is almost devoid of ideological overtones, the Glass Tower is not only a presumptive building but also an implicit social criticism.

From these differences of innuendo both building and project derive their weakness and their strength; if the one lacks poetry, the other lacks prose. Burnham, one might guess, is someone, optimistic about the present, who accepts the prevailing ethos and who envisages the future as its continuance; while Mies, one could suppose, is someone, not able to collaborate with the existing, who is constrained to reject the established and who insists only on the justifications of time. Which is, of course, grossly to simplify. But, if Burnham's complicity and Mies's protestation may be equally respectable, they do impose upon their respective products a quite different significance; and, while the Reliance Building remains a direct answer to a technical and functional problem, the Glass Tower, by inferring an altruistic order of society, continues to be both much less and much more than this. For, unlike the Reliance Building, the Glass Tower engages both the moral and the aesthetic interests of our Utopian sentiment.

In Europe in the 1920s it might be said that the tall building such as Mies had here projected presented itself primarily as a symbol rather than as any object for use. It was a symbol of a technologically oriented future society and, to a lesser degree, a symbol of an America which seemed to anticipate that future development; and thus, by circumstances, the idea of the tall building in Europe became imbued with an ultimate persuasiveness which in America it could not possess. In Europe the idea of the tall building was apt to be the substance of a dream; but, in America, the idea become fact was prone to be little more than an aspect of a too emphatic reality. "The American engineers," writes Le Corbusier, "overwhelm with their calculations our expiring architecture." They are not, he asserts, "in pursuit of an architectural idea"; rather they are "simply guided by the results of calculation";¹⁰ and, although this may have been as true of the Chicago architects of the eighties as Le Corbusier felt it to be of the engineers of a later date, it is only too obvious that the skyscrapers of the ville radieuse are *not* the results of any comparable calculation. Rather they betray a mind preoccupied with the ideal order of things. They exude what Dr. Johnson described as "the grandeur of generality." They are rational abstractions upon the theme of the American sky-

scraper rather than what the American skyscraper itself was—a rational calculation (with trimmings if necessary) as to the worthwhile investment in a given speculation.

We are here at the place where different conceptions as to what is real, rational, and logical exist side by side; and to stigmatize any as being radical or conservative, irrelevant or relevant is not to be very useful. Simply, it is best to say that, while in Chicago certain things (the culmination of an unbridled empiricism?) were done, there was an incapacity and/or refusal to conceive of them in other than specific terms; that they were, therefore, construed without any regard for their proper enormity; that, thus, one has to look to those European skyscrapers which existed only in the imagination to discover any even slightly plausible, public rationale for what Chicago had produced; and that, just as the European innovators of the twenties related the skyscraper not simply to commerce but to a notion of society as a whole—even implying that the skyscraper might be an agent of social salvation—so these same innovators also ascribed an ideal, a general, and an abstract function to the structural frame. In America, the skeleton structure, conceived to be of utilitarian value, had been rationalized by the predominantly utilitarian tone of a Chicago business community; but, in Europe, where simple issues of utility could not assume such prominence, it was given a logical form only by the sustained volition of an architectural intelligentsia. And, for these avowed protagonists of revolution, the frame became something other than what it had been for Chicago. It became an answer not to the specific problem, office building, but to the universal problem, architecture.

Le Corbusier's drawing for the Domino House represents precisely such an evaluation; and is perhaps the perfect illustration of the meaning of the frame for the International Style. What we have here is not so much a structure as an icon, an object of faith which is to act as a guarantee of authenticity, an outward sign of a new order, an assurance against lapse into private license, a discipline by means of which an invertebrate expressionism can be reduced to the appearance of reason.

Disposed to accept the frame as much for reasons of dogma as utility, the International Style was therefore led to envisage it as enforcing a system with which the architect was *obliged* to come to terms; and, for this reason, the exponents of the International Style felt themselves under the necessity of evolving an equation between the demands of space and the demands of the skeleton structure. In Chicago, a comparable obligation could not exist and, therefore, no comparable equation could be reached. There, where the frame served as no more than empirical convenience, it was scarcely to be invested with ideal significance. It could predi-

cate no city of tomorrow. Indeed, by the nineties, it predicated a city of yesterday. Its overtones were not so much prophetic as they were historical; and, since it soon became increasingly possible to see the frame structure as the nakedly irresponsible agent of a too ruthless commercialism, so it became, not around the office building conceived as paradigmatic and normative, but around the alternative program of the residence that idealist and progressivist sentiment was able to effect a coherent expression.

It is by such inferences that Wright's continuous unwillingness to use the frame may possibly be explained. He was too close to it to be able to invest it with the iconographic content which it later came to possess; too close to the Loop to feel other than its abrasiveness and constriction; and too undetached from Chicago to see the city as the idea which it so nearly is and which the reforming mind of the 1920s might have wished it to become.

To attribute an iconographical content to the frame was, for better or worse (and unknowingly) the prerogative of the International Style; and if one can understand how for Mies, preoccupied with anonymity—again with the idea and not the fact—his own self-willed and classical anonymity could be equated with the empirical anonymousness of the Chicago School, one may also perceive how for other exponents and apologists of the International Style, unacquainted with the sociopolitical detail of the Loop, its technical and formal effects must often have been seen as derived from the same details as had comparable effects in Europe. That is, because structural renovation was unconsciously associated with the will to complete social reform, the Loop could be seen as some surreptitious adumbration of a ville radieuse and that therefore an intention could be ascribed to its architects which they did not possess.

But in the Loop, unlike the ville radieuse, the world was accepted as found; and, while it remains ironical that, in terms of forms, this mid-Western acceptance should be so comparable to the discoveries of European protest, it should not be curious that for Wright the forms conceivable as representing protest should have to be sought elsewhere.

Notes

1 Louis H. Sullivan, *Autobiography of an Idea*, New York, 1924, p. 314.

2 Montgomery Schuyler, "A Critique of the Works of Adler and Sullivan," *Architectural Record*, 1895. Reprinted, William Jordy and Ralph Coe, eds., in *Schuyler, American Architecture and Other Writings*, Cambridge, Mass., 1961, pp. 377-79.

3 Henry Russell Hitchcock, *In the Nature of Materials*, New York, 1942, p. 68.

4 Quoted in Schuyler, p. 381.

5 Schuyler, p. 381.

6 Harriet Monroe, *John Root*, New York, 1968, p. 107.

7 Siegfried Giedion, *Space, Time and Architecture*, Cambridge, Mass., ed. 1941, p. 215.

8 Sullivan, pp. 312-13.

9 Schuyler, p. 382.

10 Le Corbusier, *Towards a New Architecture*, London, 1927, p. 33.

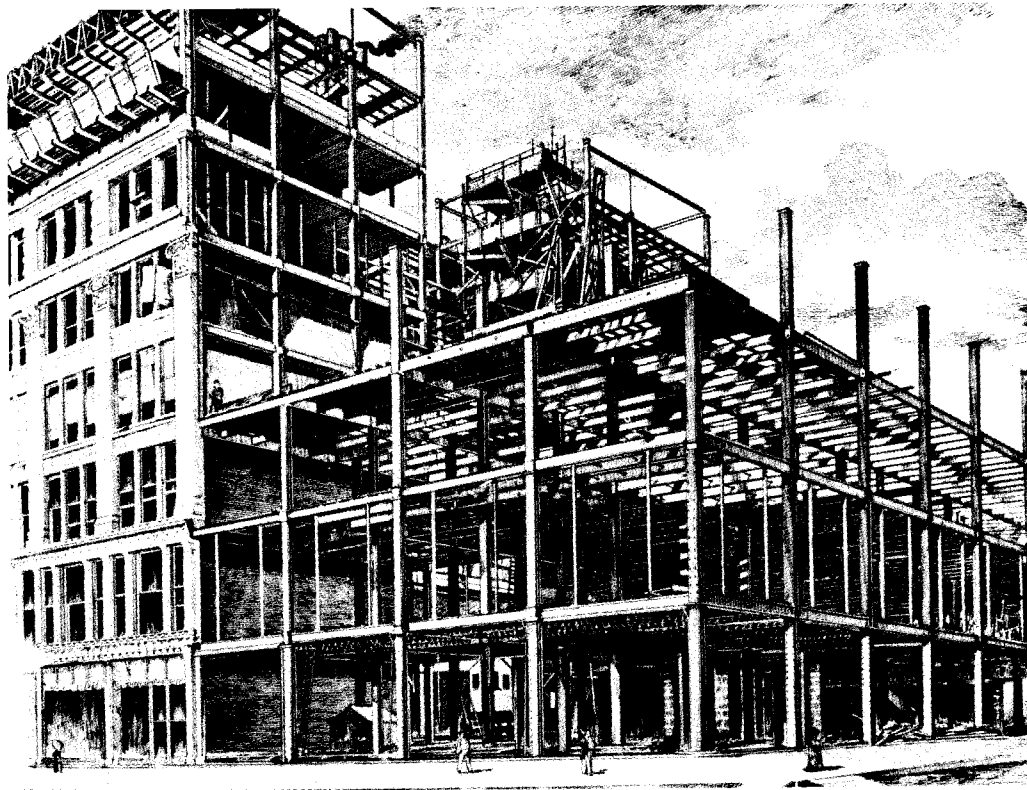


Plate 38 Fair Store, Chicago. William Le Baron Jenney, 1889-90.

Plate 39 Gale House, Chicago. Frank Lloyd Wright, 1909.

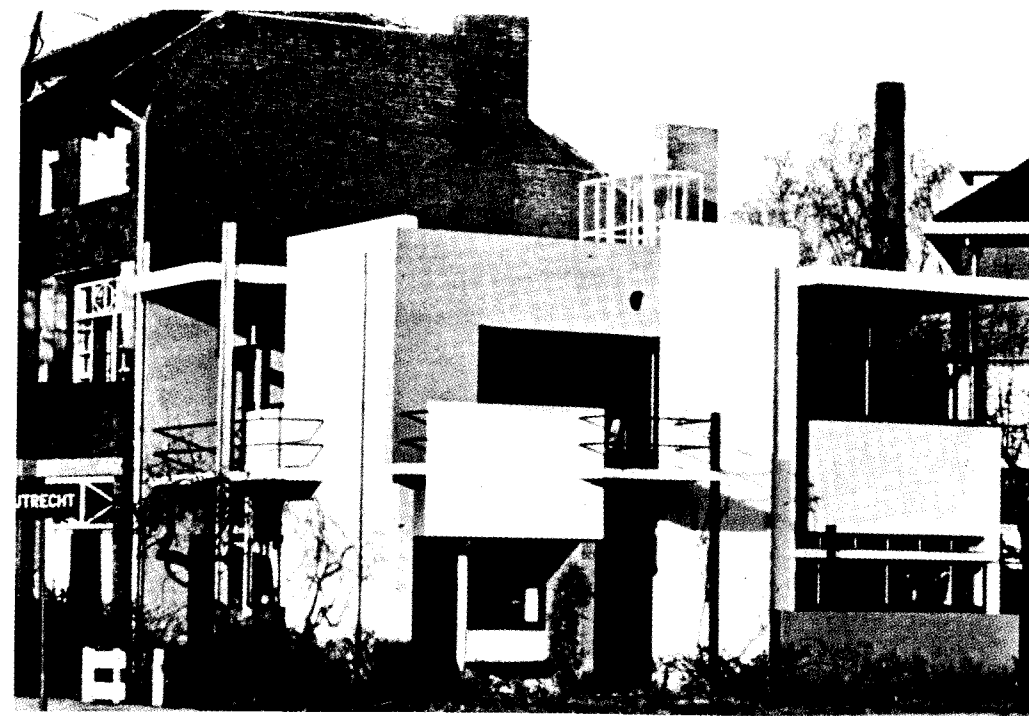


Plate 40 Schroeder House, Utrecht. Gerrit Rietveld, 1924.

Plate 41 Second Leiter Building, Chicago. William Le Baron Jenney, 1889-90.

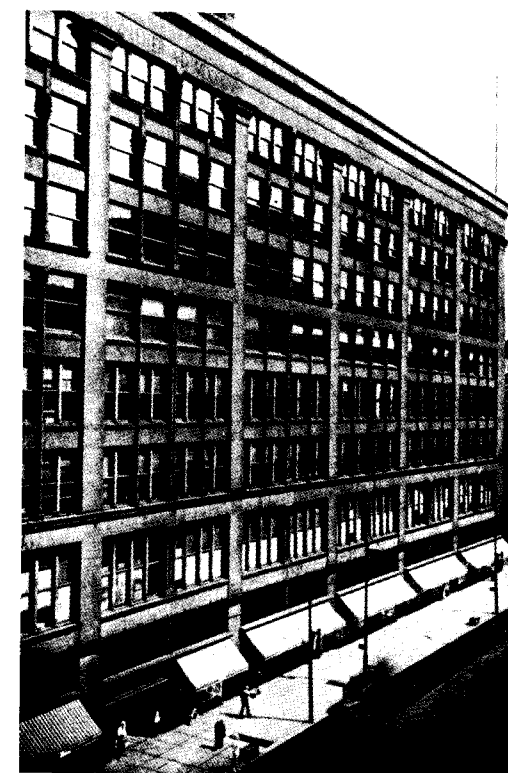


Plate 42 Project, Luxfer Prism Skyscraper.
Frank Lloyd Wright, 1895.

Plate 43 Project, Press Building. Frank
Lloyd Wright, 1912.

Plate 44 Project, National Life Insurance
Skyscraper. Frank Lloyd Wright, 1924.

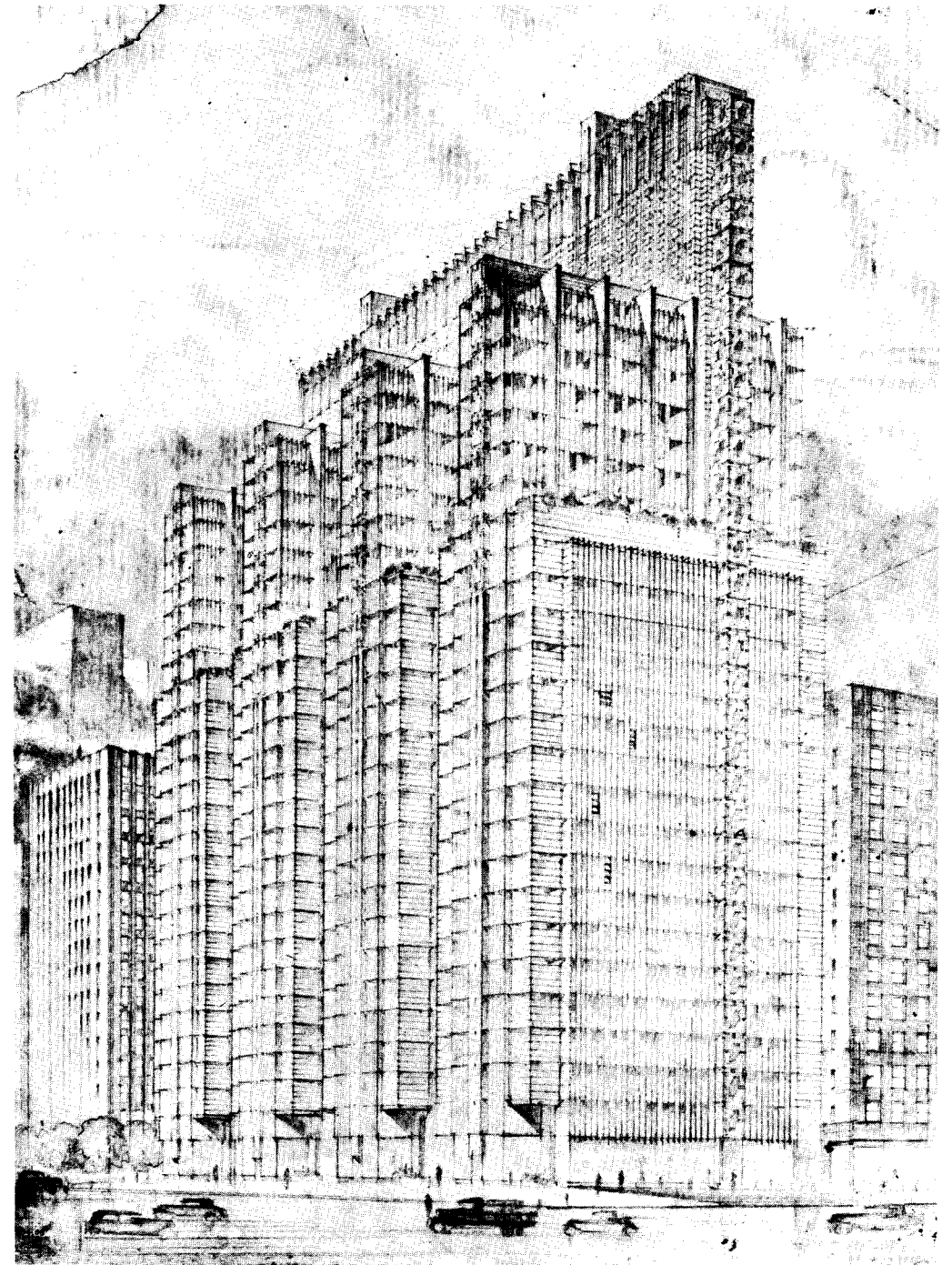
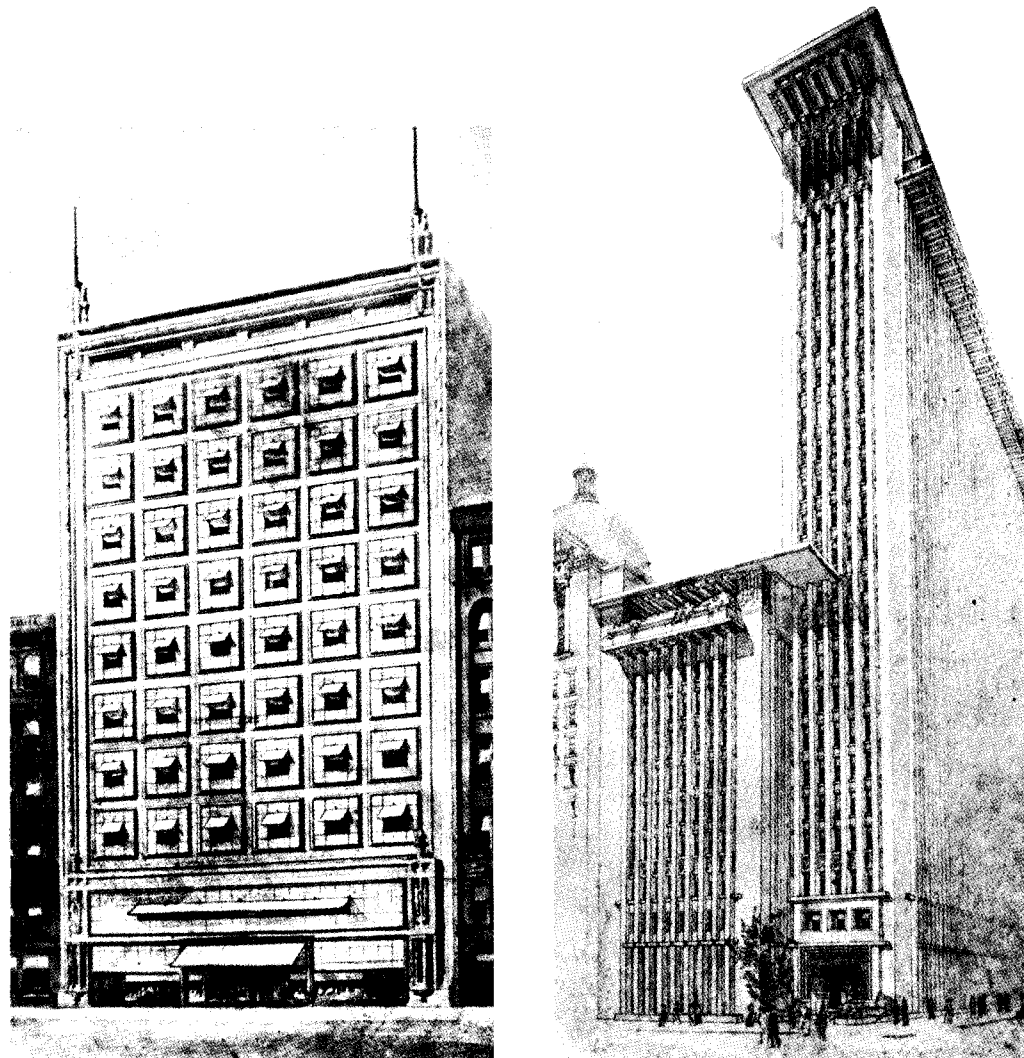


Plate 45 Project, St. Mark's Tower. Frank Lloyd Wright, 1929.

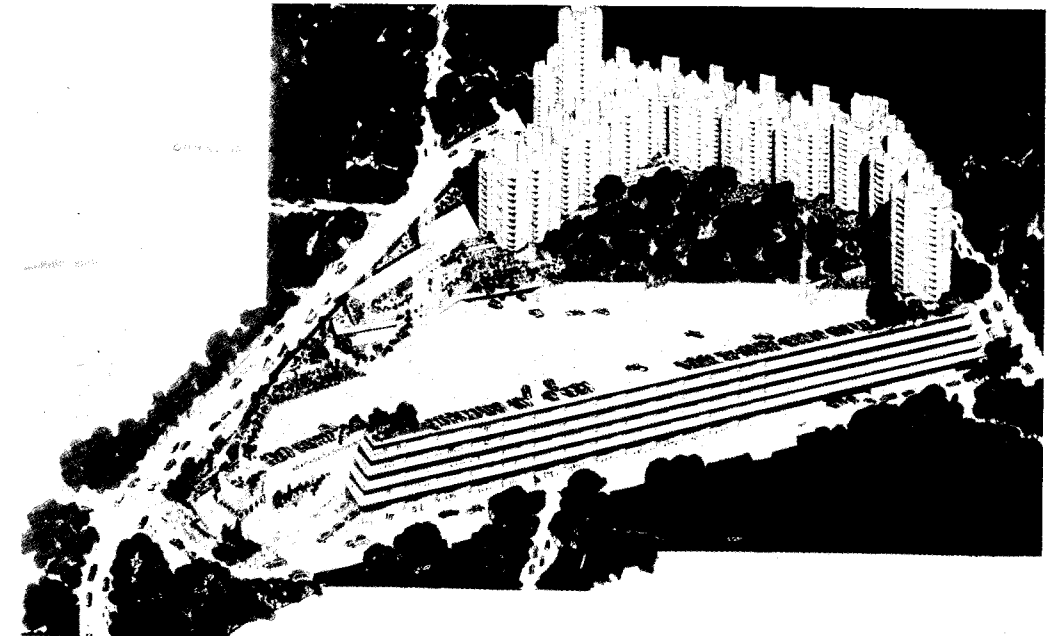


Plate 46 Project, Crystal Heights Hotel. Frank Lloyd Wright, 1940.

Plate 47 McGlurg Building, Chicago. Holabird and Roche, 1899-1900.

Plate 48 Maison du Peuple, Brussels. Victor Horta, 1897.

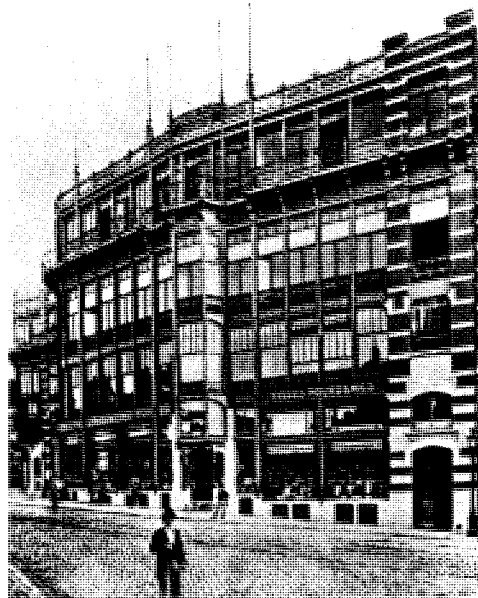
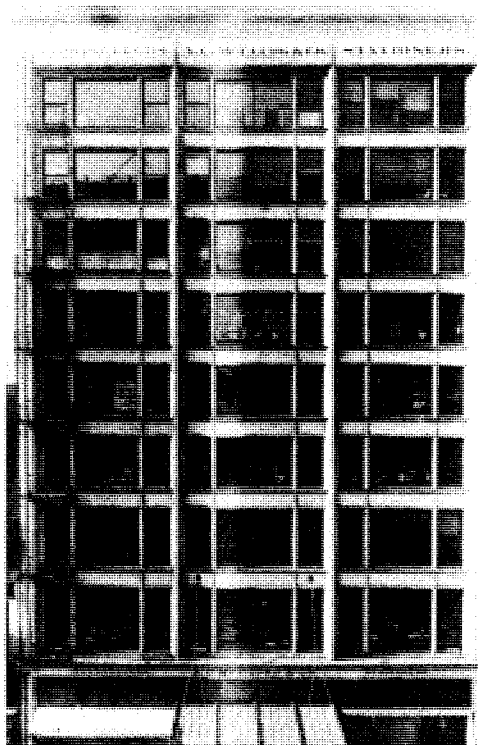


Plate 49 Reliance Building, Chicago. D. H. Burnham and Company, 1895.

Plate 50 Project, Glass Tower. Ludwig Mies van der Rohe, 1921.

