Skyscrapers
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1 Richard Morris Hunt. Tribune Building, New York, 1875.

2 William LeBaron Jenney. Home Insurance Building, Chicago, 1884.

It is appropriate to begin an article on skyscrapers with a few words about the significance that the subject holds for me. First, a great number of very tall buildings are being commissioned. My office is involved with some of those commissions, most notably the tower for the Museum of Modern Art and the Battery Park City Commercial Center, both in New York City. We have also been asked to design very tall structures in Pittsburgh, Houston, Los Angeles, and Indianapolis.

Secondly, there has been a continuous development of my attitude toward skyscrapers that has resulted in an increased understanding and a new position. Much of my experience was gained designing high-rise buildings in the 1960s and 1970s. Then, it was clear to all architects that a high-rise building was not a skyscraper. Buildings such as the Seagram Building were never called skyscrapers. On the other hand, we all knew that the Empire State and the Chrysler buildings were real skyscrapers. There were commonly recognized formal and ideological differences between skyscrapers and high-rise buildings, but the importance of these differences may have been exaggerated. I believe that the skyscraper represents an important building type and that the high-rise building is a branch of this type.

A third reason for my current interest, as well as that of the profession at large, is due to the fact that design solutions to the architectural problem of the tall building are not as obvious now as they were a few years ago. Ten years ago, the answer to the tall building was fairly simple—it involved the development of an efficient rectangular floor plan following a modular grid and a structural system that was on the same grid. The resultant building form was that of a vertical rectangular prism sitting, if at all possible, on a plaza. Some architects were not satisfied with the limitations of the type, particularly with its formal and functional disconnection from the surrounding city. Today this dissatisfaction has become widespread and it has motivated a new exploration and repostulation of the skyscraper problem.

I am sharing personal observations that provide a base for my own work. Thus, I am writing as an architect, not as a historian, and not as a critic. I am writing as one who looks to the past for useful conceptual material—material that I use in developing my architecture and that, therefore, I feel others may find of use in their own work.

I am concerned with the skyscraper in both formal and pragmatic terms. The two are intricately related and affect each other. The technological, economic, and legal constraints are considerable in a building of this type, and therefore, its form can never be far removed from these and other pragmatic considerations. Nevertheless, requirements by themselves do not give or make form; for this an aesthetic intention or architectural theory is needed. I am primarily interested in these changing intentions and theories as they can be of use to us in understanding and developing adequate answers to this still new and important building type.

Skyscraper is a word used to describe a very tall building, and the "very" is a comparative adverb dependent on time and place. The first very tall buildings were those made possible by the invention of the elevator and the development of cast iron, and soon thereafter by the use of steel and concrete structures. Thus ten-story struc-

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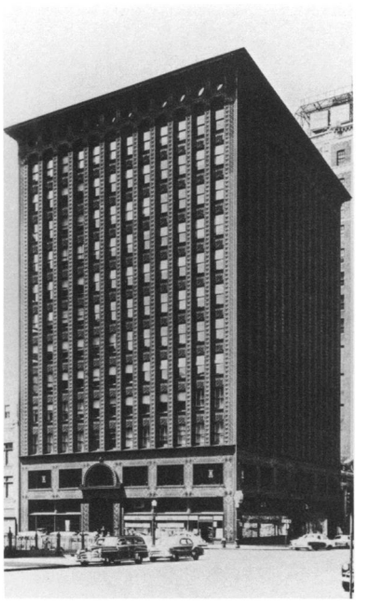
3 Louis Sullivan. Wainwright Building, Saint Louis, 1891.

4 Louis Sullivan. Guaranty Building, Buffalo, 1895.



5 Burnham and Root. Monadnock Building, Chicago, 1891.

tures such as the Western Union Building by George Post (New York, 1875) or the Home Life Insurance Building by William LeBaron Jenney (Chicago, 1884) were once skyscrapers. Today they are skyscrapers no longer. This points to a peculiar quality of this building type: its dependence on its relationship with its surroundings. This relative quality certainly makes it a building type of our time.

Although it was influenced by European models and theory, the skyscraper type developed almost completely in two American cities: Chicago and New York. Today the skyscraper remains a preeminently American building form; nowhere else is its presence as natural and its type as well understood.

Looking at the development of the skyscraper, I discern four main periods: the first period began with the invention of the elevator in 1853 and lasted until 1908–1909. During this period, architects tried to adapt existing building types, most notably the palazzo, to the new heights that were allowed by elevators. The second period, which started with the Singer and Metropolitan Life buildings, was characterized by exuberant explorations of the possibilities inherent in the skyscraper type. This period lasted until the mid-thirties and was brought to a close by the Great Depression. The third period, which started after World War II and lasted until the mid-seventies, saw the emergence of high-rise buildings as a dominant variation of the skyscraper type. The fourth period started in the late seventies and its ideas are dominant today.

The first period took place primarily in Chicago. The first "skyscraper" may have been built in New York, but it is in Chicago where the great buildings of this period were built or designed. None of the very high buildings of this period still play the role of skyscraper in today's context.

When the problem of designing very high buildings arose, there were few historical traditions, aesthetic theories, or even formal devices for its resolution. In the earliest designs for tall buildings, we can see the effort to adapt other building types to this new problem. The most commonly used model, because it had already given form to the low office building (and because it had the proper connotations of power and grandeur), was the Renaissance palazzo. As buildings became taller, the palazzo got taller through the use of two devices: one was that of piling palazzi on each other, as in Richard Morris Hunt's Tribune Building (New York, 1875) (Illus. 1); and in the Home Insurance Building by William LeBaron Jenney (Chicago, 1884) (Illus. 2). In both cases one can clearly perceive the horizontal layers of almost complete palaces. In the case of the Home Insurance Building, the top two floors were added years after the building was completed, yet because of the formal system used, they fit just as well as any of the intermediate layers. The other device was to stretch the middle portion of the palazzo (that between the base and top) until the required height was achieved as in the Wainwright, Guaranty, and Monadnock buildings (Illus. 3, 4, & 5).

The Wainwright Building (St. Louis, 1891), by Louis Sullivan, is important to us not only because of its extraordinary architectural quality, but also because Sullivan used it as an example of the ideal skyscraper in his writings on architecture. He called a skyscraper "a proud

6 Holabird and Roche. Tacoma Building, Chicago, 1888.

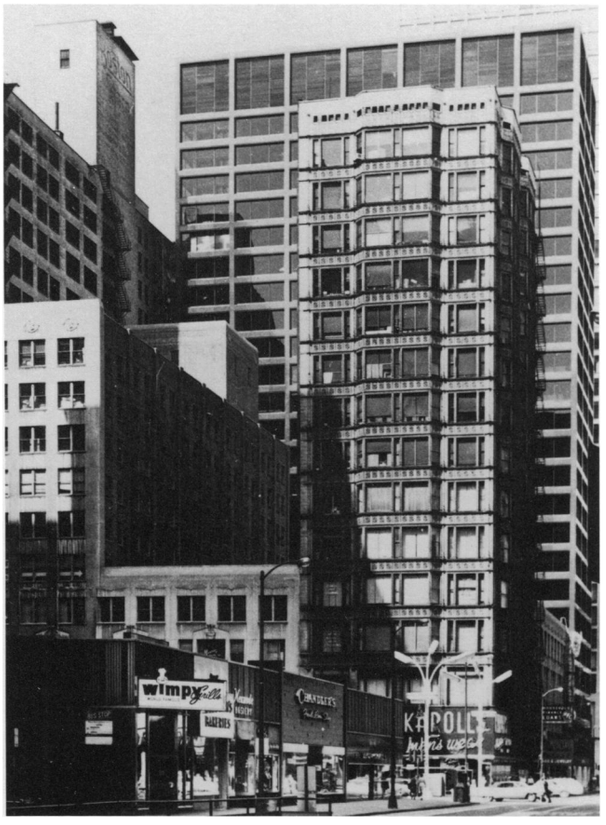
and soaring thing" and went on to say that this effect is accomplished by providing the building with a base, middle, and top. This formula applies as well to his Guaranty Building (Buffalo, 1895), an even more beautiful structure. There is no doubt that these two buildings were skyscrapers when they were built. What is important to us now is that, if built today, they certainly would not be thought of as skyscrapers. For me there is more than relative height at issue here; it is that matter of the skyscraper as "a proud and soaring thing." The model of the palazzo, with its base, middle, and top in equilibrium with each other and with its demand for a heavy horizontal cap in the form of a cornice that echoes the horizon line, is a statement about the close relationship of a building with the ground and not with the sky. It is a static composition that can be "proud" but it does not "soar."

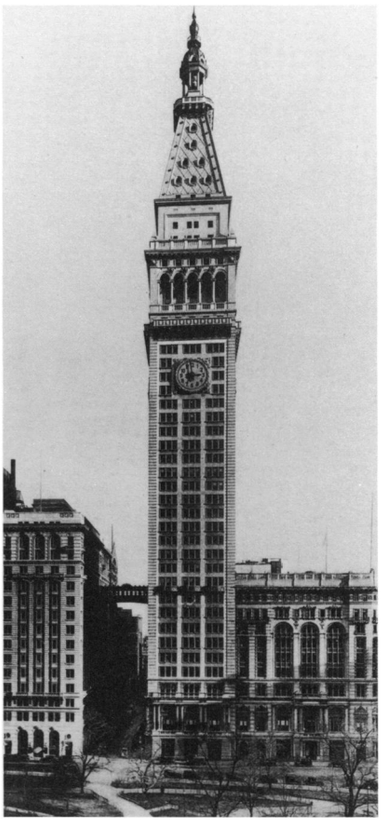
The Monadnock Building, designed by John Wellborn Root of Burnham and Root (Chicago, 1891), uses the palazzo model as a departure point for a more radical design. The mass of the building rises from a base that is implied only by the outward splay of the wall, then it takes off with a sharp, uninterrupted edge, which is subtly ended by the same wall that curves out to barely suggest a cornice. This produces a clean unified form with a contained but definitely upward thrust of considerable verticality. It is one of that era's most successful celebrations of height.

The Monadnock Building is also the last serious attempt to build a skyscraper using load-bearing walls. It pushed this technology close to the farthest possible limits of height: sixteen stories. The building used "cage construction" with internal columns of cast iron and beams of steel. While the bearing wall is expressed by means of traditional devices such as inset windows and the thickness of its base, there is a plastic quality to the design of the wall that allows it to also be perceived as a skin.

An important aspect of the first period of skyscraper design was that there were several very successful attempts at designing high buildings with modern intentions. By modern, I mean the effort of those architects in Europe and the United States who realized that a new architecture was required in order to respond directly to new functions, new materials, new social systems, and new technologies. They saw that the historical styles, primarily the classical tradition as represented in the Ecole des Beaux Arts, had run out of life and were unsuited to deal with new problems and opportunities. This modern attitude had roots in the very early nineteenth century and produced its first flower in London in 1851 with the Crystal Palace. It was, and is, an undogmatic, searching, vital modernity of which the International style and its ideology was an offshoot, a very important one but nonetheless just an offshoot.

The Wainwright, Guaranty, and Monadnock buildings are good examples of modern explorations, but clearer still are the Tacoma and the Reliance buildings. The Tacoma Bulding by Holabird and Roche is probably the first of the very high buildings that resolved its aesthetic problems in its own terms (Illus. 6). Built in Chicago in 1888, it is composed of horizontal layers, but in contrast to the palazzo type, each layer is a functional floor. Although the main compositional elements are





7 Burnham and Root. Reliance Building, Chicago, 1894.

8 Napoleon Le Brun. Metropolitan Life Insurance Company Tower, New York, 1909.

these horizontal bands, large projecting bay windows are repeated on all floors, creating vertical extrusions that serve to give the building considerable vertical movement. This vertical uplift is contained by the top floor, which acts like a giant cornice making the whole composition more static than it would have been without such a termination.

The Reliance Building by Burnham and Root (Chicago, 1894) was designed using similar devices as the Tacoma Building, but the horizontal bands are almost completely glass (Illus. 7). The Reliance Building has as much glass as a building of the '70s, very well used and delicate in its detail. The crystalline and lightweight enclosure of the Reliance make it a beautiful building, one much of our time. The aesthetic explorations of the Tacoma and Reliance buildings lead directly to Mies van der Rohe's designs for the Friedrichstrasse and to much that is still happening in architecture.

The second period is when skyscrapers came into full bloom. This took place primarily in New York. There was a marked increase in the understanding of the skyscraper problem and in the completeness of the solutions. I should note that the change, although marked, was evolutionary. There was no discontinuity and much overlap in the design of skyscrapers in these two periods.

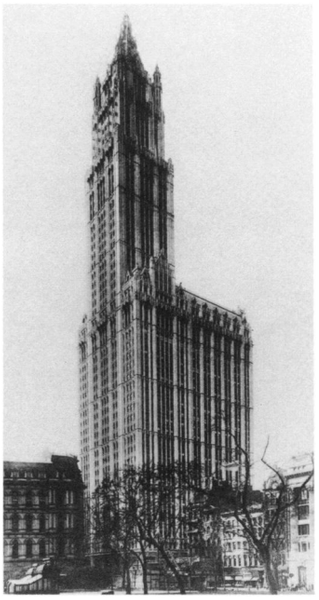
There are two buildings that, for me, mark this change. These are the Singer and Metropolitan Life buildings. The Metropolitan Life Insurance Company Tower by Napoleon Le Brun (New York, 1909) is important because it introduced a new model for skyscraper design, one chosen for its image and symbolic qualities (Illus. 8). Rather than the traditional palazzo form, the architect selected a tower as his model: the campanile in the Piazza San Marco in Venice. While the palazzo was the historic type whose spaces could be most readily adapted to the functions of an office building, the Metropolitan Life Insurance Building suddenly shifted to a model of a building type that had no functional relationship to an office building. A campanile which contained no usable space was used by Le Brun as a model for a building packed with floors of office workers. He did this because the tower-campanile expresses another important aspect of the skyscraper: the celebration of the ability to build a vertical object so tall that it becomes the dominant element on the skyline. At this moment, high buildings started becoming what we perceive today as skyscrapers. There was a new recognition that in achieving greater building heights the aesthetic problem changed. These buildings are not of the ground but of the sky; as such, they are most often seen at a distance, above the roofs of other buildings.

This attitude represents an appropriate response to a new condition. The skyscraper, by being much taller than the average construction, began to assume (whether or not it was wanted) a public role, that of primary contributor to the silhouette and the image of the city of which it was part. During the second period, many skyscrapers successfully answer this problem.

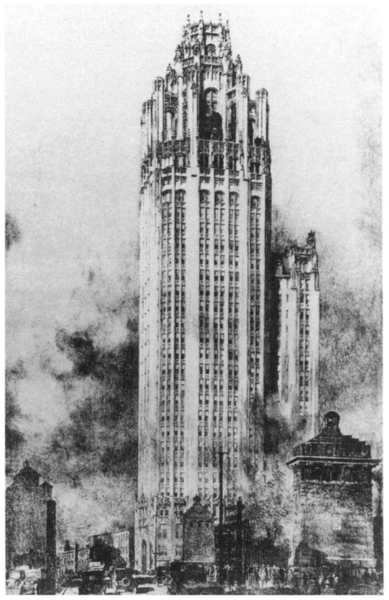
With the new understanding that skyscrapers are buildings of the sky, architects started looking for appropriate precedents and models. All architectural elements of the past with this quality were carefully studied: clock towers, watch towers, campaniles, obelisks, and spires. No architecture can ever be invented. Only gradual or

9 Ernest Flagg. Singer Building, New York, 1908.

10 Cass Gilbert. Woolworth Building, New York, 1913.



11 Raymond Hood. Chicago Tribune Building, Chicago, 1922.



radical development is possible starting from viable models. Because recent and related precedents were lacking, it was necessary to look at more distant examples.

The Metropolitan Life Tower marks a turning point in the development of the skyscraper type, but it is not itself a true skyscraper. This is because the real building is in the base. The tower is important as an architectural gesture but not for the square footage it contains or the major functions it houses. This is why it was reasonable to make it thin and inefficient.

The Singer Building by Ernest Flagg (New York, 1908), built a year earlier than the Metropolitan Life Insurance Building Tower, had a very similar approach; it was a slender tower on a bulky body that housed most of the required functions (Illus. 9). It was very tall (614 feet high), the "tallest building in the world" until the Woolworth Building (1913). It would still be tall and a skyscraper if it had not been demolished.

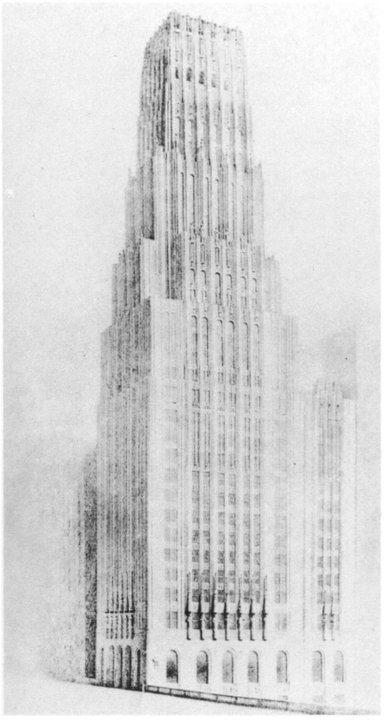
The Woolworth Building by Cass Gilbert (New York, 1913) is in some ways the first of the true skyscrapers (Illus. 10). The tower has floors of reasonable size for its time and it houses a significant proportion of the total area of the building. The Gothic details are part of the quest for an appropriate image for this new building type, away from functional precedents and very concerned with the appropriate resolution of verticality, upward thrust, and a proper crown or silhouette. The Woolworth Building not only soars, but it also manages a more unusual feat: to bring its visual weight down to the ground, fully resolving its architecture. It is still a major skyscraper in a city of skyscrapers.

The Chicago Tribune Competition of 1922 enticed arhictects from all over the world to attempt to interpret and answer the problem of building a prestigious skyscraper in Chicago, the city traditionally perceived as the birthplace of the skyscraper. The competition entries serve as an unusual and important record of the state of development of the skyscraper type and its theories. The winning design of Raymond Hood was a handsome building finished in 1925 and clearly influenced by the Woolworth Building (Illus. 11). While it was not very adventuresome, the Hood design possessed a clear understanding of what a skyscraper was and needed to be at that time. Raymond Hood came up with a solution that gave the Chicago Tribune everything it sought in terms of image, tradition, function, and economy.

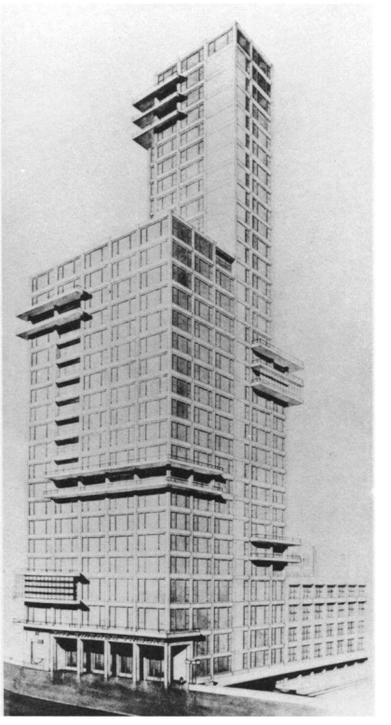
Among the other designs that deserve comment is the design of Eliel Saarinen that won second prize (Illus. 12). It is interesting to me that, although Saarinen's design was intended to be the tallest building in Chicago, in reality he ended up producing an extremely good prototype for medium tall skyscrapers. Medium tall skyscrapers are buildings of substantial height, higher than most surrounding structures, but not the highest in their area. They play an important but different role from that of the tallest skyscrapers within a group formed by masses of buildings, such as those in downtown Manhattan. Such skyscrapers may be minor spires, but for me they are most successful when the upward movement is somehow arrested so that it is in closer balance with the downward movement to the ground. These medium tall skyscrapers are more like high buttresses of the total massing of a city.

The Saarinen building has a strong upward thrust,

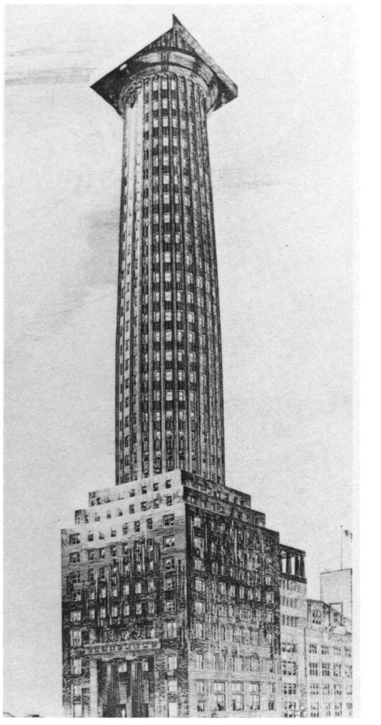
12 Eliel Saarinen. Competition entry for the Chicago Tribune Building, 1922.



13 Walter Gropius. Competition entry for the Chicago Tribune Building, 1922.



14 Adolph Loos. Competition entry for the Chicago Tribune Competition, 1922.

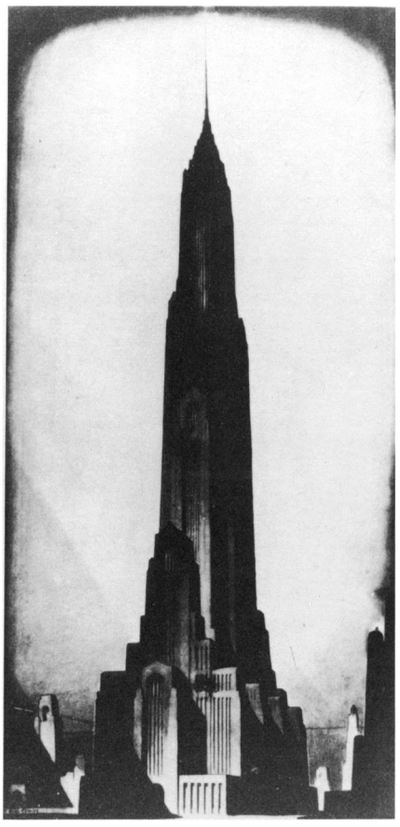


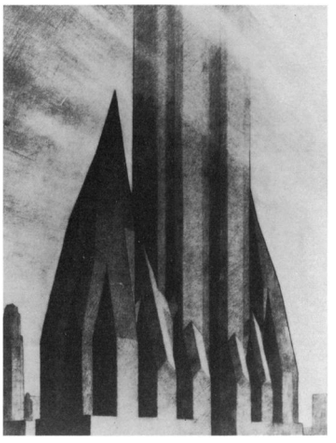
but it remains grounded. As opposed to the soaring spire of the Woolworth Building, it is like a high mountain with a solid base. There are affinities between Saarinen's building and tall Mayan temples such as those at Tikal and Palenque. Saarinen's building can certainly be read as streams of windows cascading over a core of solid rock. Of all the designs of the Chicago Tribune Tower Competition, his was the most influential and a great number of later buildings can be traced directly back to Eliel's design.

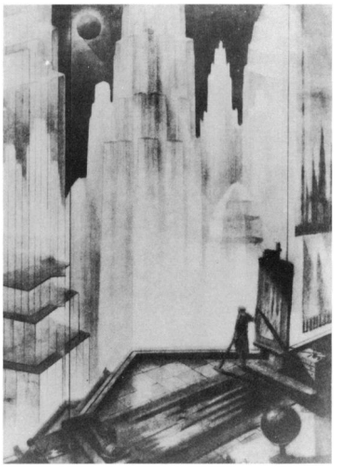
Walter Gropius's Chicago Tribune entry brought the theory of the International style to bear on the problem of the skyscraper (Illus. 13). The structural and functional qualities of the design were pre-eminent so that the building was primarily a container of office space. This design was an early manifestation of the high-rise office building as it developed after World War II.

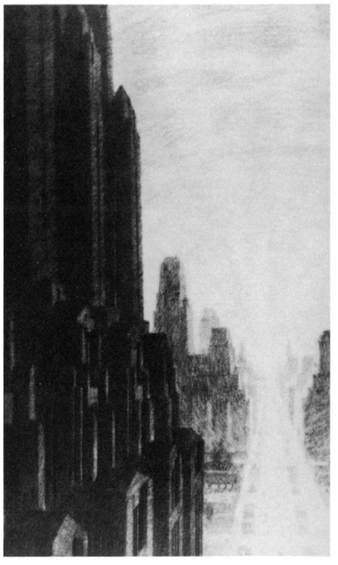
The entry submitted by Adolph Loos adopted the shape of a Doric column in a captivating image much used today as a banner for the new historicism (Illus. 14). It is a charming answer to a problem he did not understand very well and one for which he probably did not have much sympathy.

In the period following the Tribune Competition, there was much give and take between aesthetic theories and pragmatic needs, with theory eventually adjusting to the realities of function, construction, and economy. In the skyscraper, the desire to soar, to reach the sky with a great gesture, was balanced against the need to develop an efficient building with maximum high-quality office space. As a result of these experiments, a considerable









15 a, b, c, d. Hugh Ferriss. Drawings, 1929.

body of information accumulated and laid the ground for the great skyscrapers of the early thirties.

The essence of the skyscraper in that period was best captured in the images developed by Hugh Ferris (Illus. 15a, b, c, d). He was perhaps the first architect to see the skyscraper as its own building form. Ferris's skyscraper drawings combined sober power with great optimism. There was a subtle change of emotional and formal content from the base that sat on the ground to the tower that soared up into the sky.

Although Ferris was most eloquent in expressing the artistic potential of the skyscraper, I believe that Raymond Hood emerged as the best skyscraper architect of his era. He had a clear understanding of the pragmatic issues presented by the skyscraper problem as well as considerable artistic sense, resolving well those hard problems and transforming them into great pieces of architecture.

The New York Daily News Building, designed by Hood in 1930, was an elegant and tough synthesis of previous explorations (Illus. 16). He produced a very efficient, usable building at a minimal cost. At the time the external wall made of brick was probably the most economical enclosure that could be built.

The McGraw-Hill Building was designed a short time after the Daily News and is more assured, more developed, more beautiful, but just as tough-minded (Illus. 17). Verticality is achieved with simple extruded setbacks. The ribbon windows and the tightness of the wall make the building feel very light so there is no need to carry the weight down.

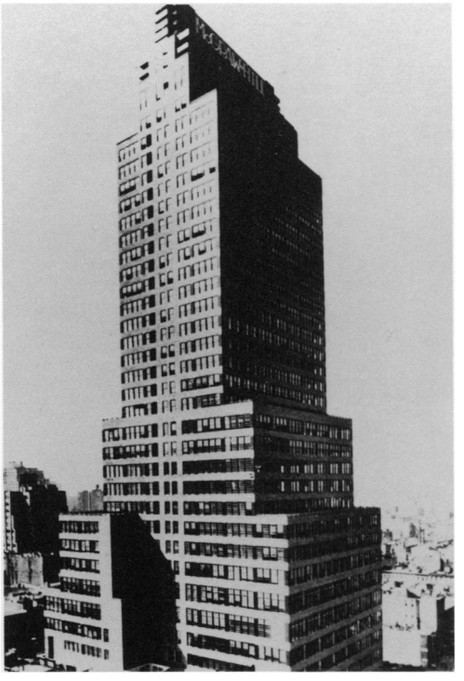
Developed at about the same time, the designs for the Daily News and the McGraw-Hill buildings are different answers to a similar problem. Both are intelligent and beautiful. These buildings are resolved as architecture and as skyscrapers without depending on models or aesthetic systems borrowed from other building types or from other historical conditions. Hood obviously took pleasure in exploring the possibilities of the skyscraper type without distorting its requirements. He made great architecture by capitalizing on the strengths of the problem itself.

The RCA Building, focal point of Rockefeller Center and collaborative effort among Reinhard and Hofmeister, Harrison and MacMurray, Hood and Fouilhoux and H. W. Corbett is without a doubt Hood's design and his most visible achievement (Illus. 18). The logic of the RCA Building evolved from the pragmatic qualities of the project. The aesthetic theory grew out of the correct understanding of the needs of the problem. Built in 1934, the RCA Building does not have a pure skyscraper form because it is a slab rather than a point tower. However, it transcends the quality of a slab through a masterful use of setbacks. The thin articulated edge, seen from the set viewpoint of Fifth Avenue between the two flanking lower buildings across the Promenade, enables it to soar up as proud and as thin as any skyscraper. The building is not only beautiful, but it is also fresh and logical, a modern masterpiece.

When we hear the word "skyscraper," the image that immediately comes to our minds is most likely that of the Empire State Building or the Chrysler Building (Illus. 19 and 20). These are the buildings that say "skyscraper" most forcefully and unambiguously. The

16 Raymond Hood. New York Daily News Building, New York, 1930.

17 Raymond Hood. McGraw-Hill Building, New York, 1931.



18 Hood and Fouilhoux; Reinhard and Hofmeister; Corbett, Harrison, and MacMurray, RCA Building. Rockefeller Center, New York, 1934.

Chrysler Building by William van Alen (New York, 1930) and the Empire State Building by Shreve, Lamb and Harmon (New York, 1931) are not great architecture, but they certainly are wonderful skyscrapers. What makes them so? Both were, when built, "the tallest building in the world," and the Empire State maintained this position for some thirty years. Both are point towers, with the vertical dimension completely dominant and with an almost identical image from all directions. Both buildings develop considerable upward thrust that culminates in a great crown that resolves and continues this thrust up into the sky itself. These are "proud and soaring things." Their silhouettes are easily recognizable, even when seen in the New York fog and from many miles away. These are works of architecture that glory in their optimism and celebrate in their verticality the extraordinary achievement of their construction.

Of these two skyscrapers, the Empire State Building has the purest image; a pre-eminent object filling its block in the center of Manhattan. The Chrysler Building shares its block with other buildings, thus it is not possible to perceive its entire height from all sides. The tower does not grow well from its base and from nearby it is an unexceptional building. Yet when seen at some distance the tower becomes detached from its base and with its stainless steel crown it is all that a skyscraper ever wanted to be, exhilarating in its beauty, soaring and majestic against the sky.

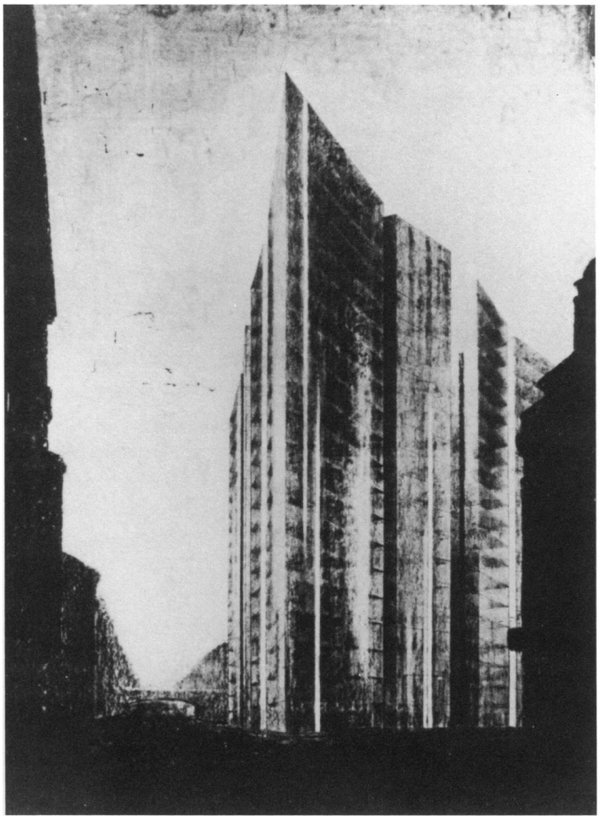
The Chrysler, Empire State and RCA buildings mark the maturity of an architectural search that started some sixty years earlier. This exploration produced several masterpieces and collectively gave form to Manhat-

19 Shreve, Lamb and Harmon, Empire State Building, New York, 1931.

20 William van Alen. Chrysler Building, New York, 1930.

21 Mies van der Rohe. Lake Shore Towers, Chicago, 1951.

22 Mies van der Rohe. Project for an office building for the Friedrichstrasse, Berlin, 1919.



tan and several other American cities. The most complete and succesful urban form was that of downtown Manhattan as it existed from the late twenties until the early fifities. The skyscrapers made Manhattan into one of the great city forms of the world with the most powerful and uplifting silhouette.

This healthy development was arrested and ended by a combination of circumstances. The first and most far-reaching of these events was the Great Depression. Building construction ceased and so did the practice of architecture. This condition was extended by World War II and by the time architects were required again, most architectural firms had ceased to function.

The third period in the history of the skyscraper began with the postwar commissions. They came when the natural chains of architectural development had broken. Most firms had closed their doors so that the apprenticeship process had ceased to function. The training of clients had also ceased. Those that awarded the new architectural commissions after the war had no building experience and were very unsure of themselves on architectural matters.

During those years of building inactivity architectural ideas kept on being produced. Normally these ideas are assimilated by practicing architects who transform them to adapt them to practical conditions. This was the case with Raymond Hood, for example, and in the RCA Building he took advantage of ideas of the International style (and the forms of Art Deco) but used them in a free and undogmatic manner. During the Depression and World War II the teaching and diffusion of untested architectural ideas continued to such an extent that when commissions for new buildings started again, the only ones prepared with an architectural theory were those architects who had immigrated from Europe with an artistic or intellectual reputation but no tall building experience. The new commissions went to them or their disciples.

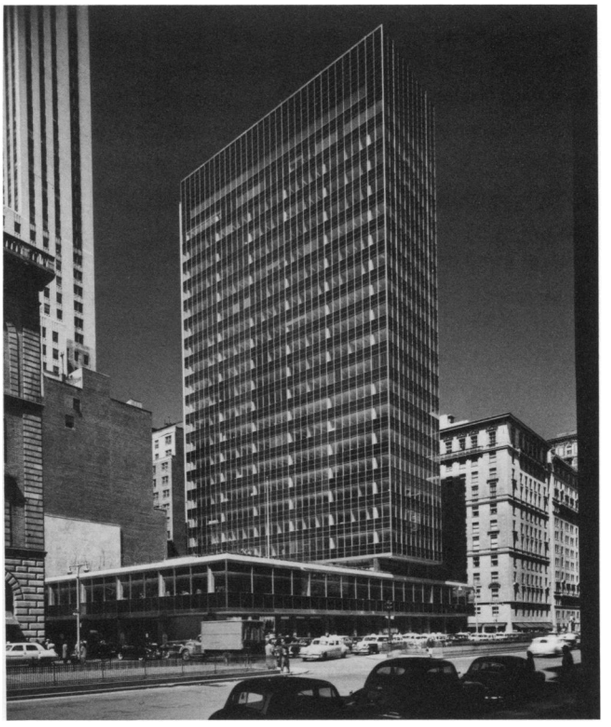
The new buildings were based on what architects had learned from books and not on previous responses to similar problems. The skyscrapers of the thirties were forgotten and an answer for the type was sought in new terms. These terms conformed to an architectural theory that had not been developed with very high buildings in mind. Tall buildings were seen as a special case of a general condition, as normal, low buildings that happened to have grown tall. The name skyscraper was abandoned and eventually it was replaced with "high-rise building."

In the development of the high-rise building, no architect equals the importance of Mies van der Rohe. Mies's towers at 860 Lake Shore Drive (Chicago, 1951) were designed as residential apartments, but they became the prototype for thousands of high-rise office buildings all over the world (Illus. 21).

The architecture of the Lake Shore Towers is primarily derived from theory so that their architectural expression is pre-eminently intellectual and ideological. The buildings clearly look like containers of indistinct functions. The structure of these containers is important not only because it refers to how the buildings were built, but because in Mies's hands the structure became the repository of ideal order. Therefore, the expression of a regular spatial grid was what really mattered; not the display of the skeleton.

23 Harrison and Abramovitz. United Nations Secretariat Building, New York, 1950.

24 Skidmore, Owings and Merrill. Lever House, New York, 1952.



The spatial grid is expressed in steel, the pre-eminent building material of our times and the symbol of advanced technology (at least in 1951). The plan is a wide rectangle with a central core. All four sides are equivalent.

Because the building was designed as a container of equal floors of undifferentiated space, it did not need to change from the first to the last of these floors (only the ground floor is different); and because the clarity of the orthogonal grid was pre-eminent, it dictated that it be resolved within a contained rectangular prism form.

The work of Mies in America differs substantially from his earlier design for an office building for the Friedrichstrasse, Berlin, that took its form from its site. With its tight faceted glass walls it proposed a perceptually rich image rather than an intellectually satisfying one and created a strong and complex silhouette against the sky (Illus. 22). This design was done in 1919, but it did not become well-known until the late 1940s when Mies's reputation reached its highest level. Because of this, it joined and affected the mainstream of skyscraper development in the third period.

The United Nations Secretariat Building by Harrison and Abramovitz (New York, 1950) was based on Le Corbusier's scheme for the same project (Illus. 23). As in most of Le Corbusier's designs for high buildings, the form is derived from lines of movement. Offices (or dwellings) are organized along these lines or corridors. The blank walls at the ends of the building result from this system of organization and give the building its expressive quality. The structural system is secondary to other intentions.

The third high building of importance in the immediate postwar era is Lever House designed by Gordon Bunshaft of Skidmore, Owings and Merrill (New York, 1952) (Illus. 24). It is a slab, like the U. N. Secretariat, but its narrow sides have the same windows and curtain wall as the long sides, letting us know that the enclosed space is undifferentiated and, therefore, flexible.

In these and in other characteristics, Lever House represents an excellent pragmatic American response to a building sits on pilotis, regaining the ground floor for public use. The surface over the lower volume is also regained with a roof garden. The enclosure is the lightest of curtain walls: all glass with minimal mullions in order regained with a roof garden. The enclosure is the lightest of curtian walls: all glass with minimal mullions in order to accent reflections. Because a true transparent glass wall was impractical, Bunshaft intelligently clad the spandrel portions of the wall with opaque glass, achieving the desired perceptual effect without sacrificing pragmatics. The building does not bring its visual weight to the ground; instead it signals (but does not express) its independent structural system and lightweight enclosure. This is a very good building, remarkable by the assurance and looseness with which it used the theoretical and aesthetic principles of the International style.

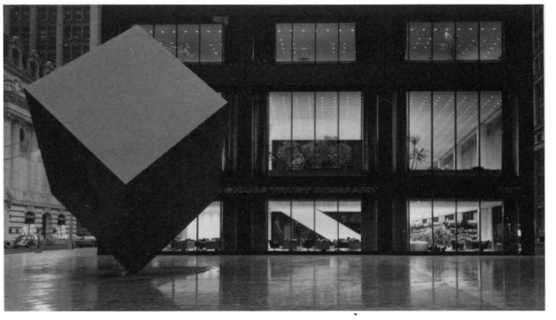
These three postwar projects show a complete disinterest in the main aesthetic problem of the skyscraper designers of the thirties: how to bring a building up into the sky. These new buildings were also visually disconnected from the ground and they look as if they could be picked up and placed on any other site of adequate size.

Mies van der Rohe's high-rise building design, as

25 Mies van der Rohe with Philip Johnson. Seagram Building, New York, 1958.

26 Skidmore, Owings and Merrill. Pepsi Cola Building, New York, 1968.

27 Skidmore, Owings and Merrill. Marine Midland Bank Building New York, 1960.



exemplified in his Lake Shore Drive apartments and restated with minor variations in the Seagram Building (New York, 1958, with Philip Johnson) and in the Toronto Dominion Bank Center (Toronto, 1970), became the model that all architects learned from and measured their design against (Illus. 25). Although it is in the midst of Manhattan, the Seagram Building reads as a freestanding object because the front of the site was emptied to create a plaza. This building has two different conditions: from Park Avenue the building is perceived as an isolated object, whereas at its back there are intermediate elements that ease and resolve the transition between that freestanding object and the rest of the urban fabric. The purity of the implied rectangular prism is marred by a projection that makes the plan T-shaped at its back. Mies was forced to compromise because of site conditions and he resorted to a pragmatic resolution of the problem. This is perhaps Mies's most impure building, but it remains one of his most beautiful.

In the next twenty years, Skidmore, Owings and Merrill (SOM) was the achitectural firm that built by far the most high-rise buildings based on Mies's prototype. They developed many adjustments to pragmatic reality and built some handsome buildings in the process. They were very influential in spreading the Miesian point of view around the world and in educating a whole generation of clients in this school.

In addition to Lever House, SOM requires mention for the beautiful walls of the Pepsi Cola Building (New York, 1960) and the Marine Midland Bank Building (New York, 1968) (Illus. 26 and 27). In Chicago, SOM designed the latest "tallest building in the world," the Sears Tower (1974), and also the John Hancock Building (1970), which is almost as tall (Illus. 28 and 29). Both buildings derive their design and expression from their structural systems. Although the legitimacy of their approach goes back to Mies van der Rohe, I believe that SOM's interpretation was based on a mistaken reading from the master's pages. Mies was not concerned with real but with the ideal structure of the archetypal post and beam as giver of order and beauty.

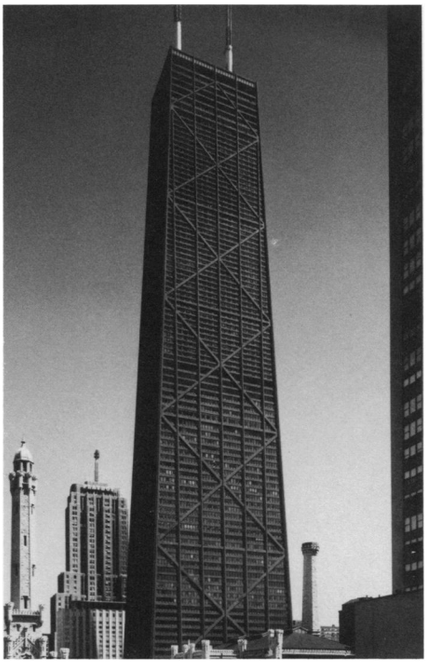
The Sears Tower had the obligation of being a great skyscraper giving shape to a new Chicago, but it is not. The John Hancock Building is more successful; its truncated pyramid form is capable of gathering other buildings around itself and it suggests a reaching upwards. The Chase Manhattan Building (SOM, New York, 1959) is an important example because it was the result of applying the lessons learned from Mies to a major structure right in the middle of the most beautiful grouping of buildings and skyscrapers in the world (Illus. 30). This single blunt mass of the Chase Manhattan Bank was sufficient to take the magic away.

A heavier blow to that skyline was dealt by the World Trade Center buildings (Illus. 31). Their huge but scaleless forms remain as alien intruders, unbalancing and distorting the scale of downtown Manhattan. These towers by Minoru Yamasaki (New York, 1962) are a variation on Mies's Lake Shore Drive Tower scheme, although they are much larger and designed with a different aesthetic sensitivity.

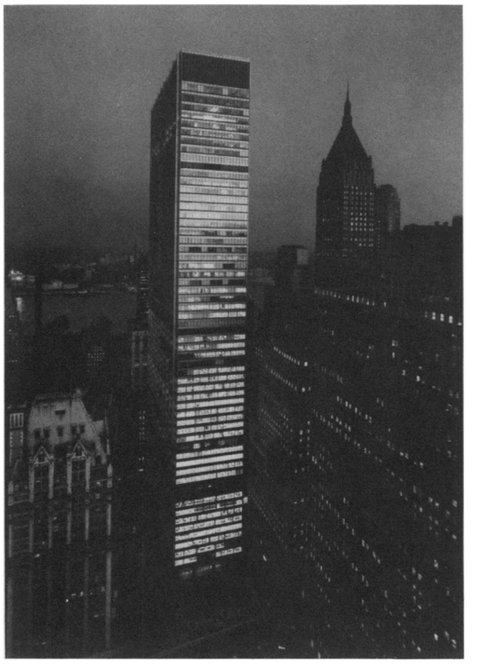
It is important to remember that these buildings were designed by talented and earnest architects working within the parameters of their time. The now obvious

28 Skidmore, Owings and Merrill. Sears Tower, 1974.

29 Skidmore, Owings and Merrill. John Hancock Tower, 1970.



30 Skidmore, Owings and Merrill. Chase Manhattan Bank, New York, 1959.



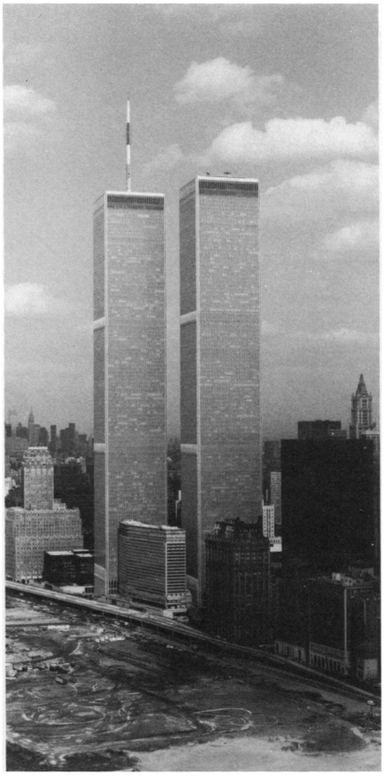
failure of these buildings was due not to the lack of skill of their designers but to the limitations inherent in the ideology of the International style. The architect's share of the responsibility was in not recognizing the unsuitability of the ideology to the task at hand.

The CBS Building (New York, 1965) was designed by Eero Saarinen with Mies and the Seagram Building in mind as his competition (Illus. 32). The objective was to get the most with the least. Whereas the Seagram Building suggests a single prism of bronze, CBS is a single prism of black granite. Saarinen, though born in Finland, was an American architect concerned more with results than theory, and the presence of the building was what mattered to him. CBS is an unmodulated and uncapped vertical extrusion. With this, as in the Hugh Ferris drawings, the form continues up into the sky after acquiring considerable velocity. At the same time, it looks like a block of granite that will sit forever there on Sixth Avenue. This building's intentions and design point toward very different routes than those prescribed by Mies van der Rohe.

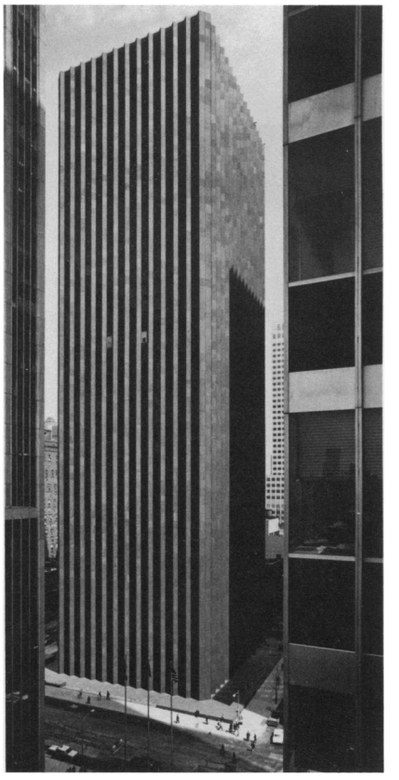
Also departing from Mies, but on a different road, is the John Hancock Building, a beautiful and thoughtful design by I. M. Pei and Partners (Boston, 1976) (Illus. 3). Mies's grid has become minimal and the architecture is about enclosure. The artistic accent has shifted away from logic and order and it pursues sensual pleasure in its surface reflections.

The John Hancock Building does not serve as an anchor for other structures but it separates itself from its surroundings, appearing to have just landed amongst them. The effect is surrealistic and most successful in its low Boston context.

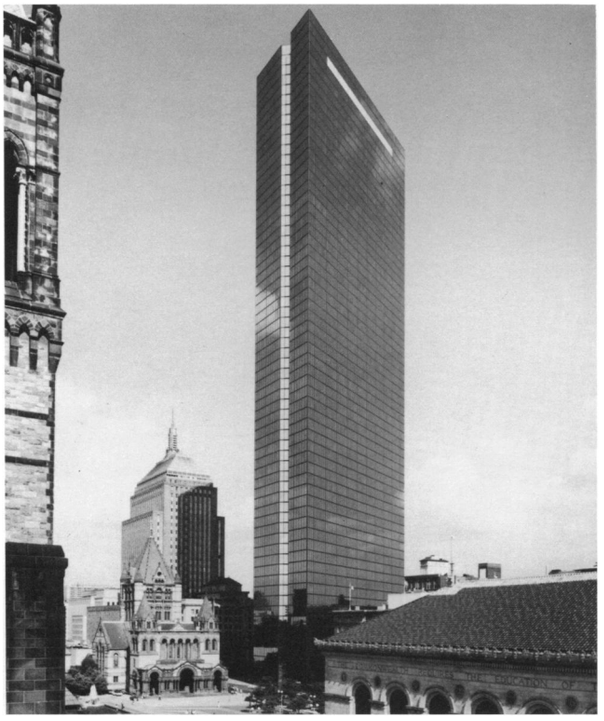
31 Minoru Yamasaki. World Trade Center, New York, 1962.



32 Eero Saarinen. CBS Building, New York, 1965.



33 I. M. Pei and Partners. John Hancock Building, Boston, 1976.



34 Philip Johnson. I.D.S. Building, Minneapolis, 1974.

The I.D.S. building by Philip Johnson (Minneapolis, 1974) has similar qualities as it also enjoys the position of being a very tall building in a city with a rather low skyline, and its aesthetic qualities are centered on perception (Illus. 35). It makes a suggestion of moving toward the top with the folds of the skin, and a crown terminates the building against the sky. The tower is an object, a vertical extrusion sitting on the ground, but the site is filled with lower structures that maintain the form of the streets. Pedestrian movement is strengthened with four skyways and its Crystal Court is a magnificent and most successful hub of activity.

The United Nations Plaza by Kevin Roche and John Dinkeloo (New York, 1975), like the John Hancock building in Boston, is a minimal form wrapped in a tight-gridded skin of mirror glass, but here the form adjusts to its complex functions (offices and hotel) and to its site, maintaining the form of the street (Illus. 35). It is a sensitive and beautiful resolution to a complex problem.

I.D.S. and the U.N. Plaza, as well as Citicorp (by Hugh Stubbins, New York, 1975), are buildings that mark the ending of the third period of skyscrapers with their concern about accommodation and, in the case of Citicorp, with creating a distinctive silhouette (Illus. 36). At the same time, the belief in a strict ideology had weakened, opening the way for a new attitude that for me marks the fourth period in the development of the skyscraper.

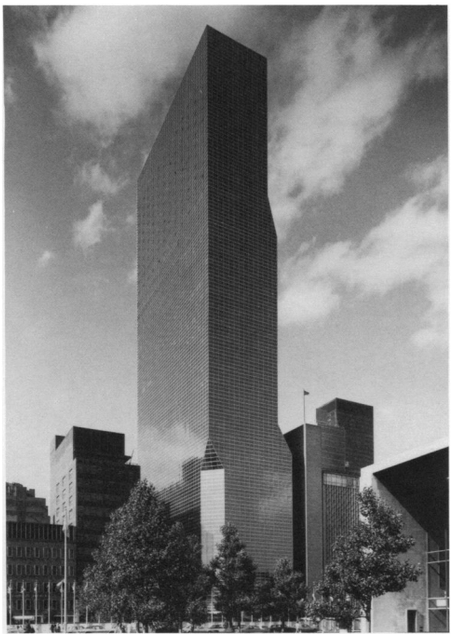
But before I enter on that subject, I must say a few words on Frank Lloyd Wright, who has not appeared in my sequence because his work was not in the mainstream of skyscraper development. However, some of his designs are important and should be noticed.

I have always admired his design of 1929 for the St. Mark's on the Bowery Towers for its organizational system. As it is not well-known, I will describe it. It is best appreciated in comparison with Le Corbusier's diagram for high-rise organization as exemplified in his Unite d'Habitation. Le Corbusier proposes a main vertical trunk of elevators leading to a secondary system of horizontal corridors, one of which is the public concourse. St. Mark's scheme has a main horizontal circulation on the ground level that is also the public concourse with secondary vertical cores of elevators leading directly to dwelling units. Wright's system is flexible, as it is possible to add another tower or to extend or widen the concourse. The towers can be of different heights or house different functions. The life of the concourse is real because it leads to all elevators and is on the ground; therefore, it can connect with the city and its streets. My design for the U.N. City complex for Vienna owes much to this project and its organizational diagram.

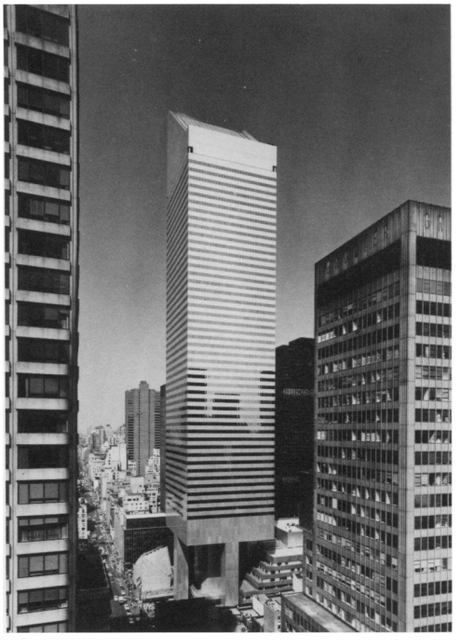
Wright's Price Tower (Bartlesville, Oklahoma, 1954) is a minor version of one of the St. Mark Towers and it is an attempt to make a real skyscraper (Illus. 37). Unfortunately, it was not one of Wright's best buildings; it was built at a time when architects were concerned with other issues and it was too small to have any influence.

Wright's design of 1957 for The Illinois, a mile-high building for Chicago, was a beautiful and powerful design for a great skyscraper. It was meant to be the highest building ever built and Wright assumed this responsibility seriously and discharged it successfully. As in his other buildings, his skyscraper designs were very personal and not prototypical. They are difficult to use as

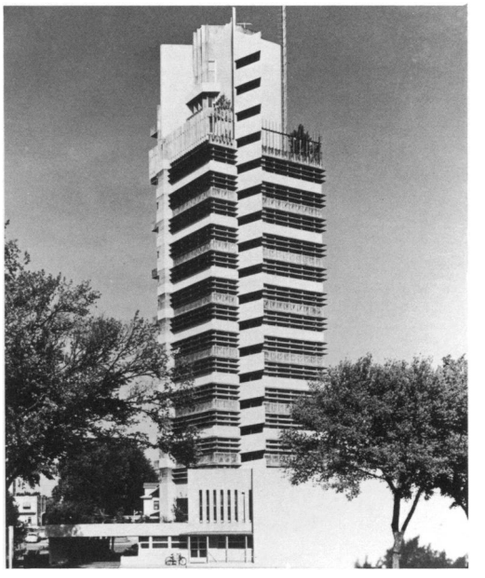
35 Kevin Roche and John Dinkeloo. United Nations Plaza, New York, 1975.



36 Hugh Stubbins. Citicorp, New York, 1975.



37 Frank Lloyd Wright. Price Tower, Bartlesville, Oklahoma, 1954.



models, but there are many useful lessons to be learned from his work if one looks at it with care.

With this necessary digression, we come back to the present and fourth period. At the beginning of any artistic tradition there are a few practitioners that define its direction with their work. I will be referring to these architects and myself in my discussion of the fourth period.

There are no finished high-rise buildings or skyscrapers that represent the fourth period; therefore, it must be discussed in terms of intentions and attitudes. This is not inappropriate because artistic traditions are defined primarily by the problems their creators choose to address.

These are the attitudes and concerns that mark our time: we want to reconnect ourselves with the history of architecture and with the whole skyscraper tradition. At the same time, we recognize that we can learn most from those who dealt with problems like our own and this means, as always, our immediate predecessors, the architects and buildings of the third period.

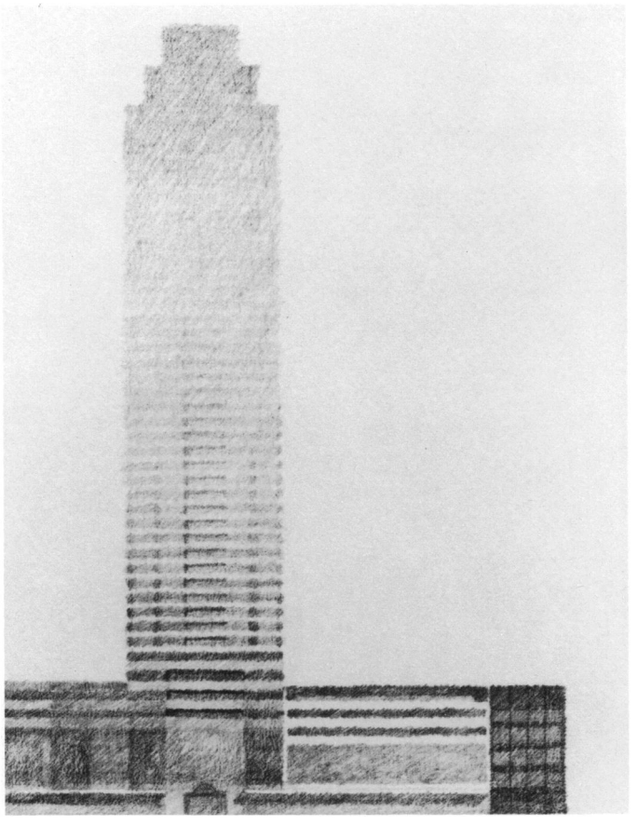
We are now almost free of the dogmas of the third period, but we treasure the knowledge acquired at this time, not only in the development of structural, mechanical, and life safety systems, floor layouts, modules, leasing depths, and core plans, but just as importantly in the development of aesthetic attitudes and formal devices and in the design and detailing of lightweight enclosures using the materials and the production systems of our time.

These new designs, which in my own work are best represented by the Museum of Modern Art expansion and tower and by the Battery Park City Commercial Center, are more pragmatic than ideologic (Illus. 38 and 49). That is, they are more concerned with making the building answer its real demands and opportunities than in using it to change reality to fit an ideal image.

These designs are less concerned with pure forms or ideal order than with responding to pragmatic needs and with maintaining a healthy street form and life. Therefore, we try to make the bases of our skyscrapers appropriate to their site, adjusting to different edge conditions. As the skyscraper rises from the ground, we design its lower floors so that they respond to and strengthen the form of the streets. We welcome multiple uses as they are part of the variety and richness of urban life.

The tower or shaft of a skyscraper houses office space and here our knowledge about office layouts, cores, modules, and structural, electrical, and mechnical systems is put to use. We know how to design efficient and economical floor plans and, more important, how much they can be shaped or distorted for artistic purposes without jeopardizing their efficiency or economy. We know that a lightweight enclosure is required, and we are learning how to make it rich and expressive without having to resort to aesthetic devices expressive of a different construction system or historical tradition.

In the fourth period we are not interested in ideal prisms but in balancing internal with external, or public, needs. Therefore, the ability to shape or give form to these towers is very important. As the tower moves up into the sky, it becomes a public architectural element with civic responsibilities, and it requires civil gestures in response, particularly as it terminates against the sky. We understand that we are engaged in the process of making cities and we take this responsibility very seriously.



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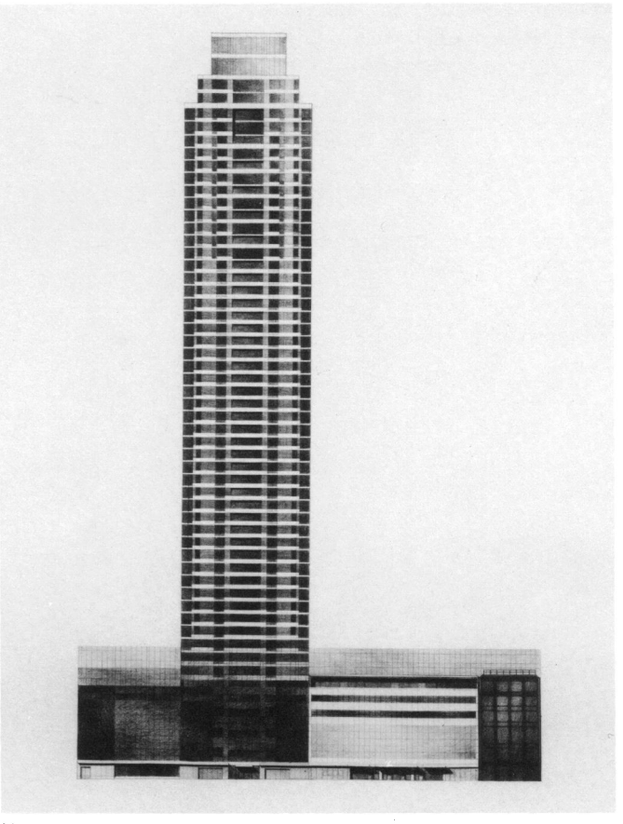

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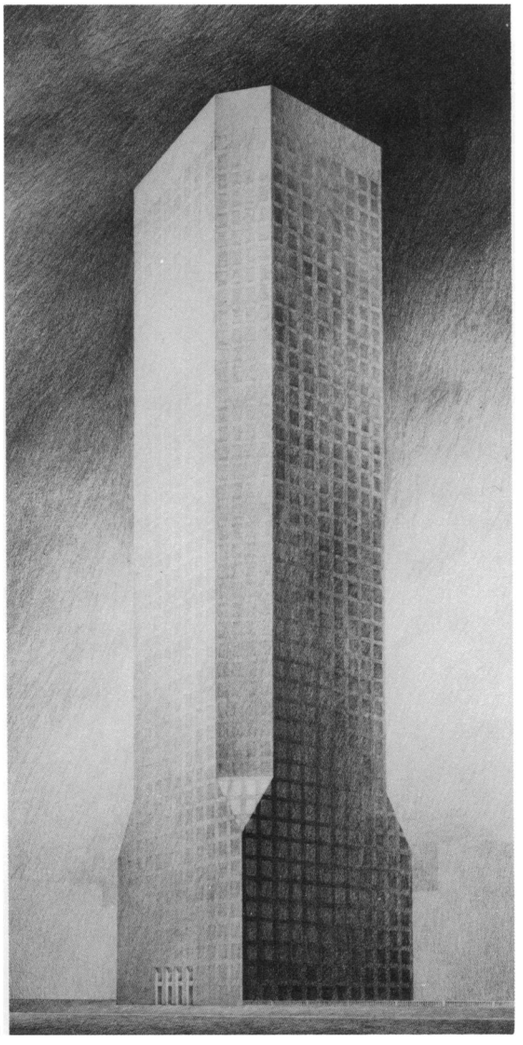

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38 Cesar Pelli and Associates. Museum of Modern Art Tower, New York, addition to the Museum of Modern Art, early sketch, 1977.

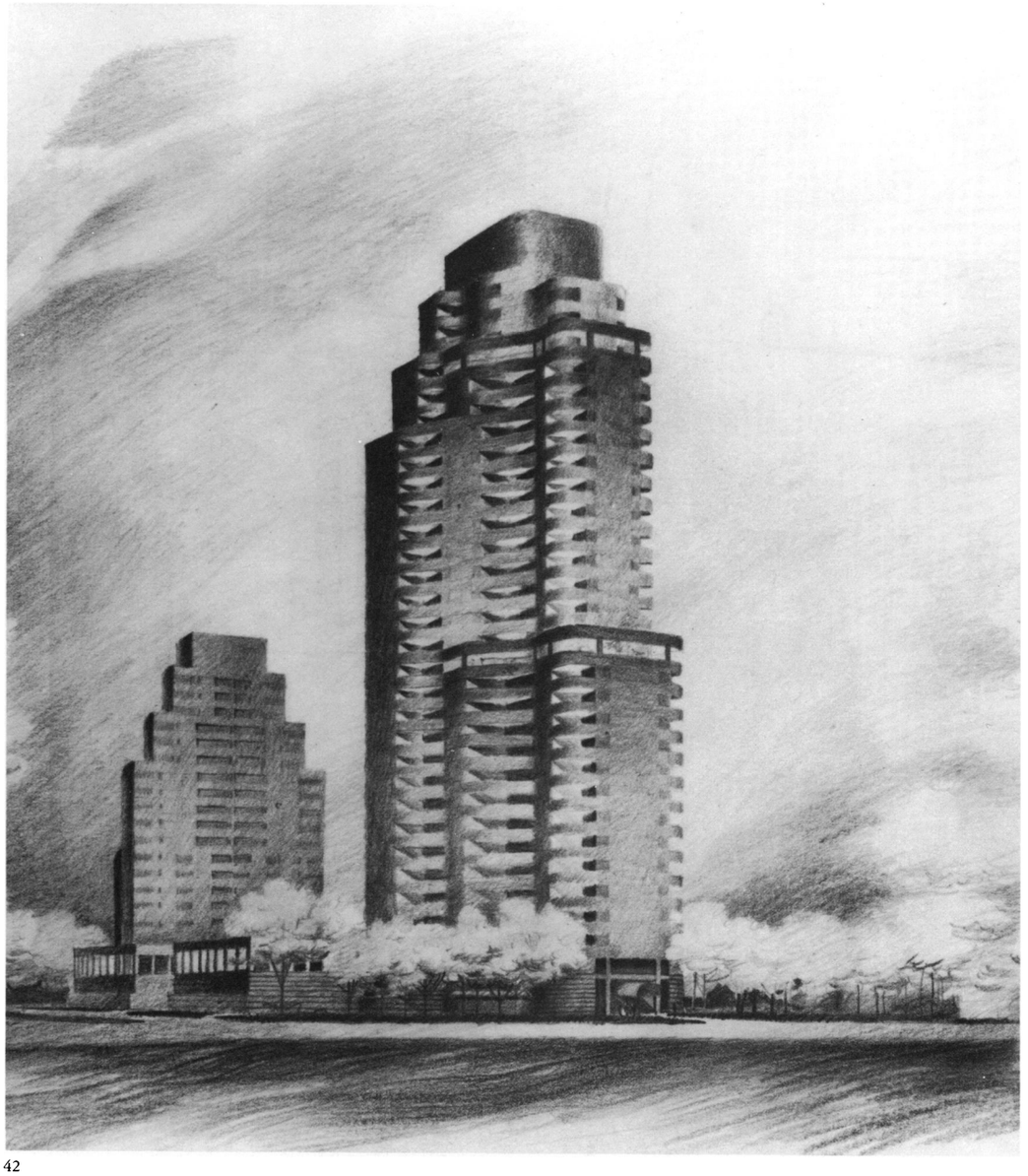
39 Museum of Modern Art Tower. Elevation.

40 Four Leaf Towers. Houston, perspective, 1979.

41 Late Entry to the Chicago Tribune Competition, 1980.

42 Herman Park Towers. Houston, 1979, perspective.

43 Herman Park Towers. Site plan.



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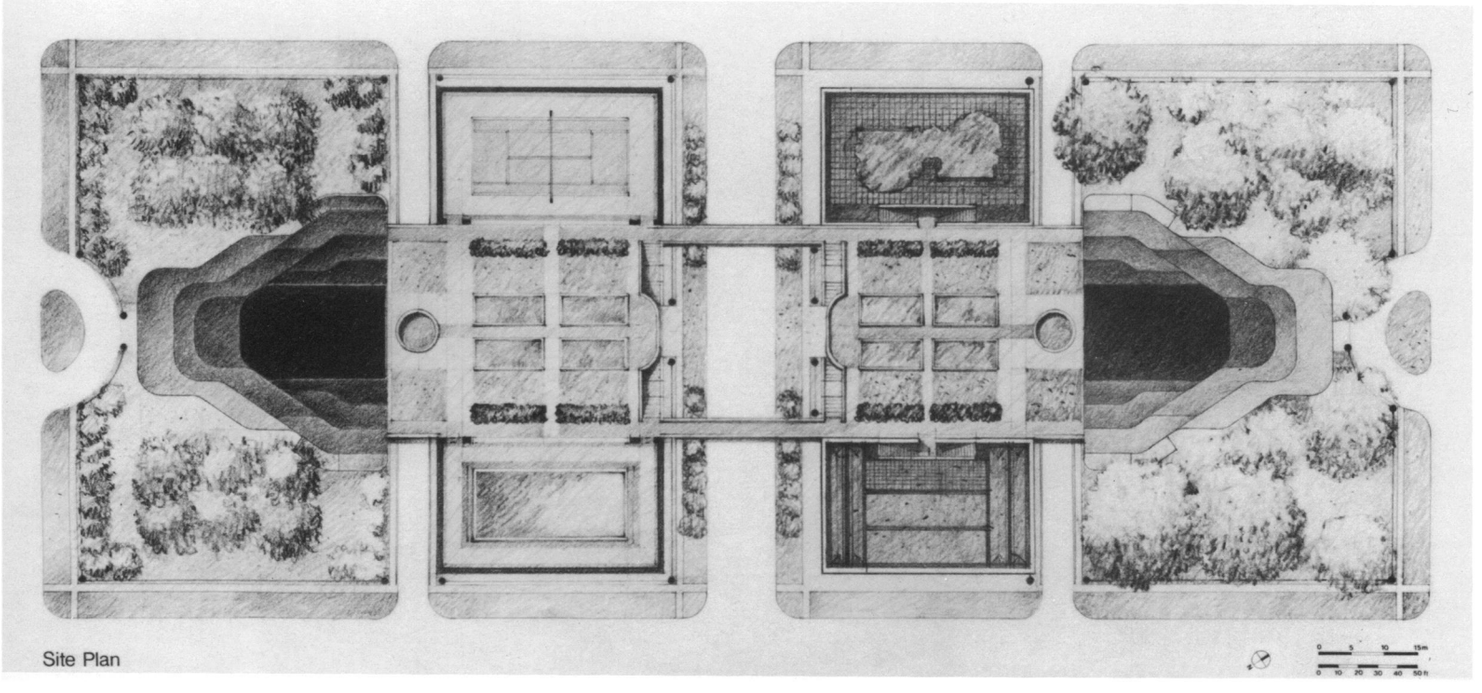

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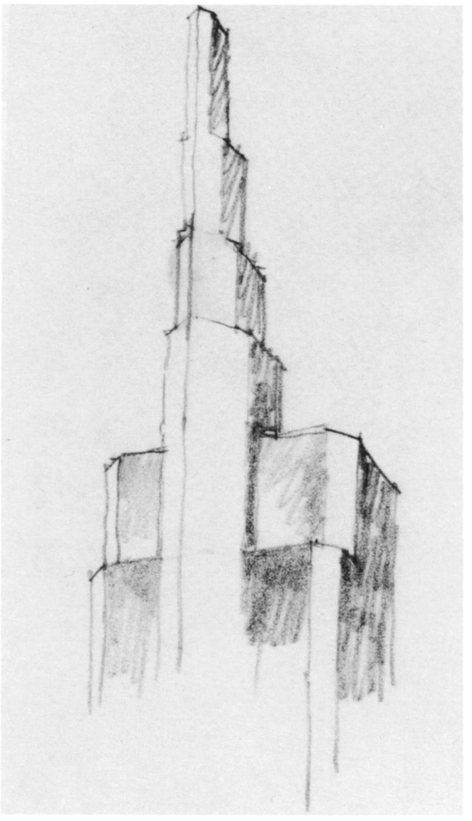
44 Oliver Tyrone Building. Massing study, 1979.

45 Oliver Tyrone Building. Perspective.

46 Bunker Hill Building. Perspective, 1980.

46a Bunker Hill Building. Massing study.



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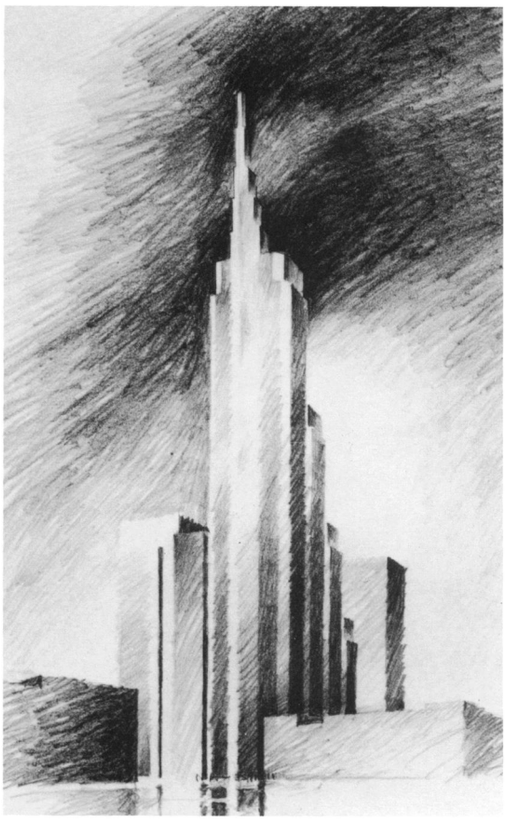

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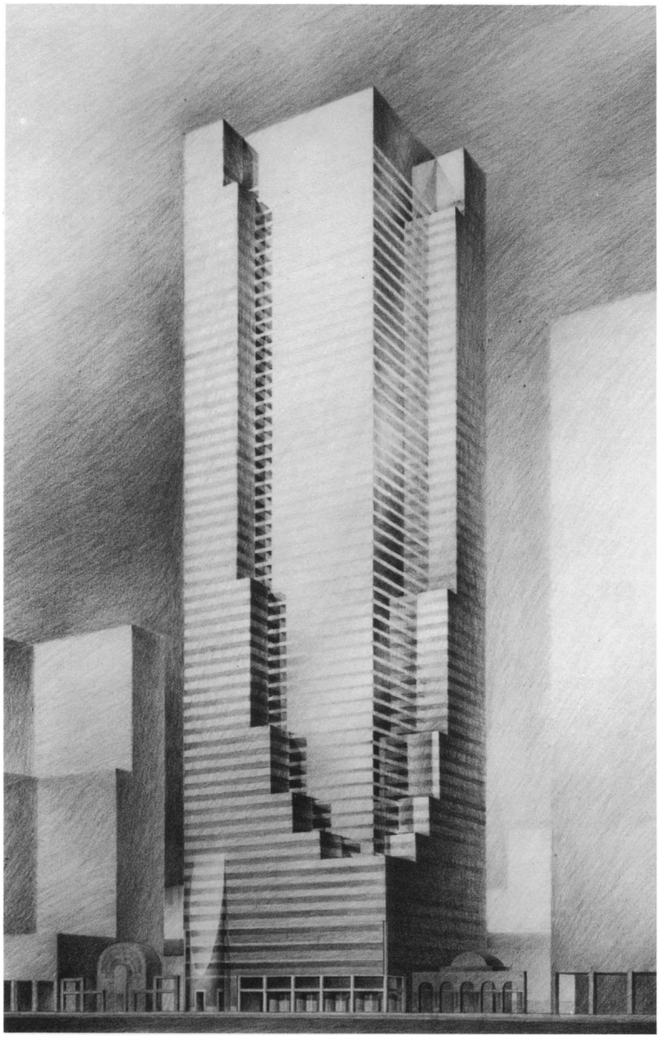

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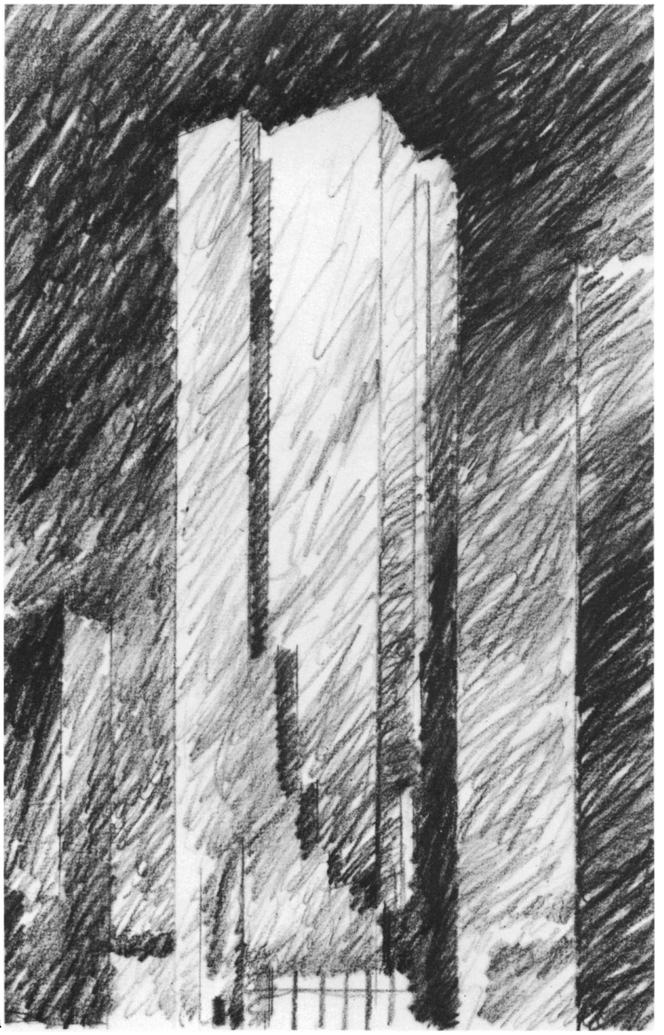

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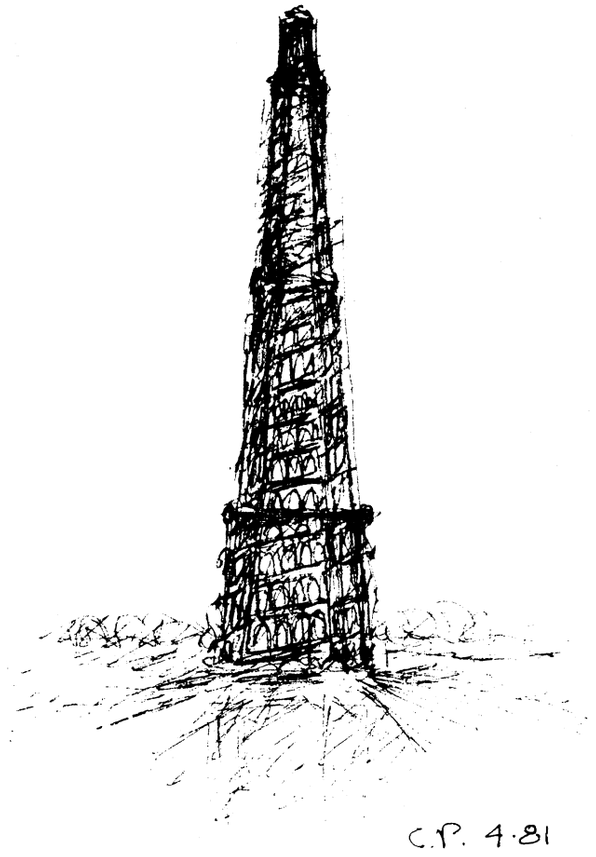
47 Indiana Tower. Sketch, 1981.

48 Indiana Tower. Perspective.

49 Battery Park City. Perspective with the World Trade Center Towers beyond.

50 Battery Park City. Site plan, 1981.



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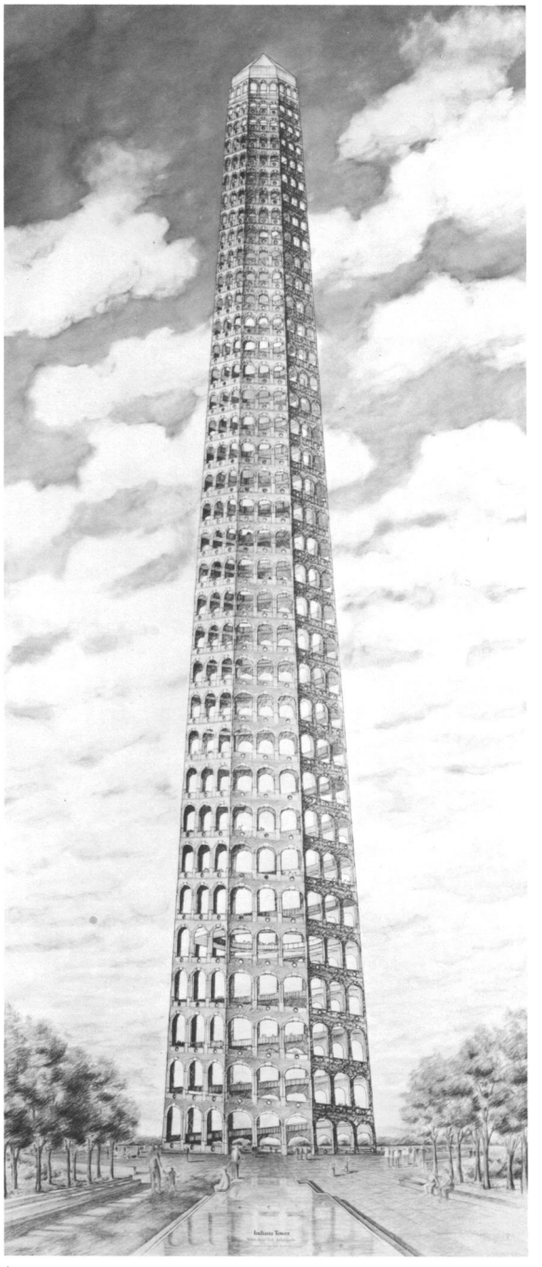

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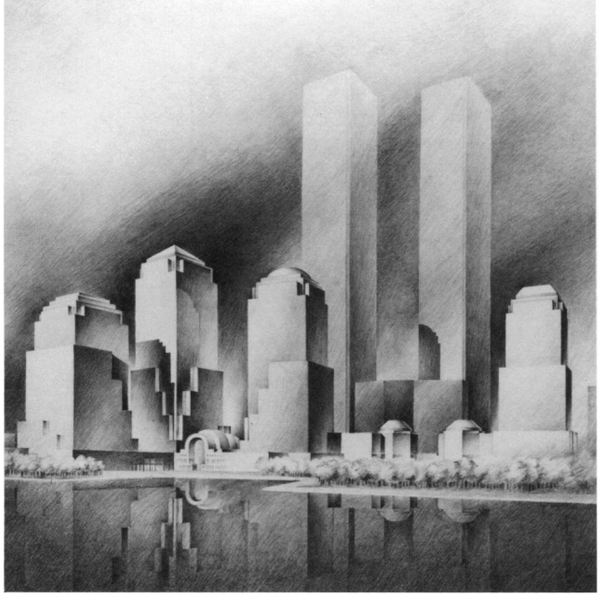

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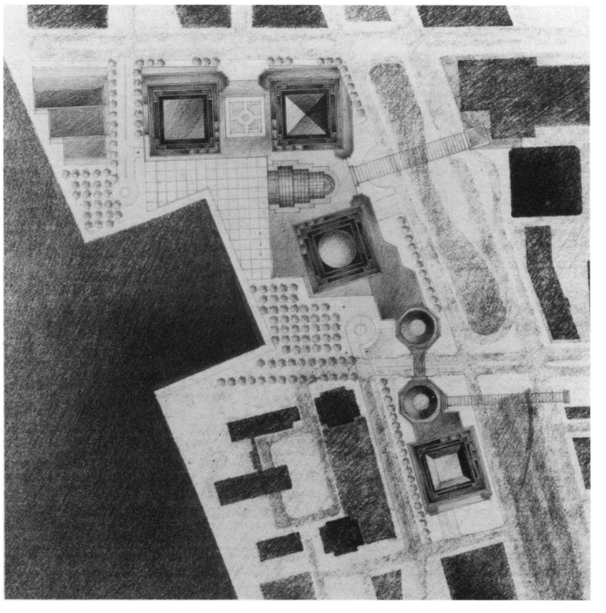

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