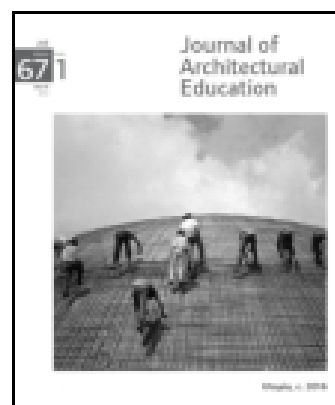


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The Towers of Frank Lloyd Wright

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We are witnessing a new boom in skyscraper building that parallels the great eras of the 1920s and 1960s. Yet the current work still leaves unattended the formation of meaningful concepts of the city and the tower. Fundamental questions of the city and the tower considered together are left unaddressed in the current speculative craze: (1) Should the tower dominate or be subordinate to the city, (2) Should it organize the city and/or its parts or should it be organized by it, (3) How can a city of many independently sited towers create a viable urban realm ("a living city"), and (4) How can the tower and the city create a work of art of the twentieth century?

An interesting model for an analysis of these issues can be found in the work of our greatest American architect, Frank Lloyd Wright—particularly his work in the 1920s for the National Life Insurance Building in Chicago and St. Mark's in the Bowlerie in New York City. In addition to these two specific projects, the architecture and construction of the tower in his work was a *leit-motif* of his personal struggle for a new way of thinking about architecture. His lifelong search for a new architecture based upon natural form, innovative structural technique and modular design was reflected in his work on the tall building. Each project was part of a theoretical development that extended throughout his long career, symbolizing his constant battle for 'organic' architecture. There are lessons then, of urbanism, construction and design in the towers of Frank Lloyd Wright.

The National Life Insurance Project of 1920–24 stands at the midpoint of his career and as well, at a certain balance point in his thinking of the city and tower. It fused a revolutionary architectonic vision of space, structure and form with a concept of an urban realm that was an active and vibrant city.

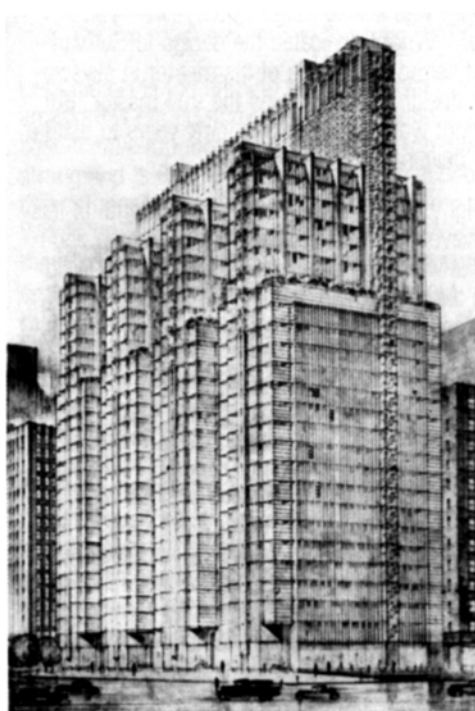
Wright's earlier work on the tower accepted given and constricted urban sites, as we shall observe later. The National Life project allowed him to go beyond the prefatory work in many important ways.

The National Life Insurance Company group was to be located in Water Tower Square in Chicago. The cornerstone of the Water Tower was laid on March 25, 1867, the year of Wright's birth. W. W. Boyington, the architect, created a Gothic fantasy of massive stone that has lasted to this day—outliving both the Great Fire and the rampant growth on Michigan Avenue that A. W. Johnson, Wright's patron of the '20s, saw coming and that was fully achieved in the 1970s with the gigantic Water Tower Place shopping, hotel, office and residential complex. Of course, Wright's 1920s project was not built. That this is so is a great tragedy, for as we shall see, it was designed at the time when Wright's architectural and urbanistic impulses considered the city as a dense, built-up place of buildings, blocks, and streets and squares.

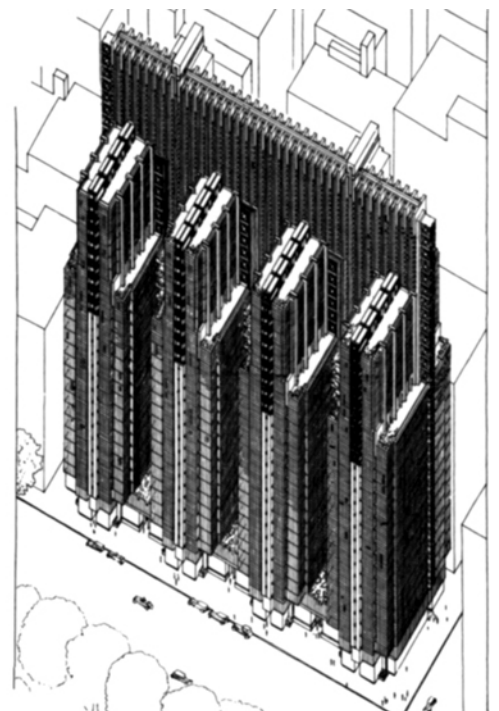
Wright's strategy at this time can be reconstructed. If we observe together the ground level perspective, Fig. 1, and the axonometric, Fig. 2, we can consider Wright's volumetric and urban idea. The building consists of four rectangular volumes—set in parallel series with the short faces toward the Square. They are linked at the back third point by an interconnecting corridor service and vertical circulation element. This cir-

ulation-service element rises higher than the two part rectangles fronting on it so that they see to grow out of it. Each rectangular part is slab-like in shape and is similar to his Press Building of 1911. In fact the National Life solution sets four Press-like buildings alongside each other to form a larger figure.

This act of grouping to form a new *configured tower pattern* is an original contribution to the dilemma of city and tower. It solves the absolutely essential problem of office work and light which constantly influenced this type by positing a maximum width dimension; while grouping these necessary individual elements into a new building type. This larger, crenellated form¹ faced the green Square and its Water Tower, and preserved a solid edge to the space. It went beyond the earlier Press Building solution which had simply fitted a tall building on a given city lot. While the National Life is admittedly a much larger block scale proposition, it too accepted the constraints of block and street essential to the continuity and spatial definition of an urban place. Its layering in shallow revetments on the tower faces and the towers to back wall massings allowed the space of the square to penetrate deep into the building, and yet, be bound



1 Project: National Life Insurance Co. Chicago, Skyscraper, Chicago, Illinois, 1924. Ground level perspective. (Hitchcock, #263)



2 Project: National Life Insurance Co. Chicago, Skyscraper, Chicago, Illinois, 1924. Axonometric. (Wright, *An American Architecture*, p. 117)



3 "Skyscraper properly related to streets," 1931 Sketch.
(Wright, *An American Architecture*, pp. 130–131)

by it. On either end of the block the slab side preserved the street spaces as well.

Thus a subtle interactional balance occurred between the scale of the slab, the scale of the configuration and the urban setting. Neither city nor building dominated, they coalesced into a new entity. The height was kept relatively low as well, leading to a denial of point reference, eliminating the tower as a dominating distant focal point in the city. By creating a configuration of linked individual elements Wright hinted at the resolution of the anarchy that results from the simultaneity of independently conceived and competitive tower elements.

After the configured tower invention of 1920–24 Wright twice later attempted to achieve this synthesis of building, height, street and open space. The first was in 1926 (and updated in 1931) in a series of hypothetical drawings of two urban blocks, Fig. 3. Two general types were shown: a perimeter block pattern that created an inner court, and a street-alley-street pattern. In both cases the ground plan was created by buildings of six to ten stories which formed a base. Two towers were placed on diagonal corners of each block. Shops were placed at the second level, served by an arcade. The arcades bridged the streets at the corners. Vehicular traffic was restricted to ground level. A subway-train system was placed underground forming a three-level movement system.

This urban vision extended the 1920–24 proposition of National life to a generic level. It addressed the urban congestion problem as well with the tri-level scheme of separated movement modes. This proposal of Wright's is remarkably similar to Harvey Wiley Corbett's schemes for the development of Manhattan with the Regional Plan Association of 1923. A similar tri-level traffic scheme was offered in Corbett's proposal. However Corbett left unaddressed the issue of the tower and the resultant street space.

If we consider the architecture of the National Life Building in more detail we note that each 'slab' of the configuration was supported by six hollow pylons running to the full height of the building to reveal itself on the upper floors. The floor slabs were extensively cantilevered from the pylons. Wright used the stairs and elevators also as pylons to stabilize and carry the surrounding floor loads on a similar strategy of cantilevering. The cantilevering allowed the massing of configured slabs to be manipulated

at a middle scale (the lower scale being the window module) to shape the faces and corners of each 'facade.' The result was completely three-dimensional in feeling. The bottom floors were carved away under the cantilever to create a sense of the street and of entry to shops. The slabs stepped back into two great masses along their own sides while remaining constant on the Water Tower Park front to create a dynamic volumetric sense. Finally, the great core of the structure rose above all, with a treatment of structural relief at the top.

Wright's grasp of the spectrum of architectonic development from detail to whole was carried through completely at National Life. The 'building' was no longer a bunch of elements, nor a base-middle-top formula, nor a mass enlivened with detail. It was a three-dimensional space-web that fused inner and outer skin and mass into what would have been a shimmering, somber work of art.

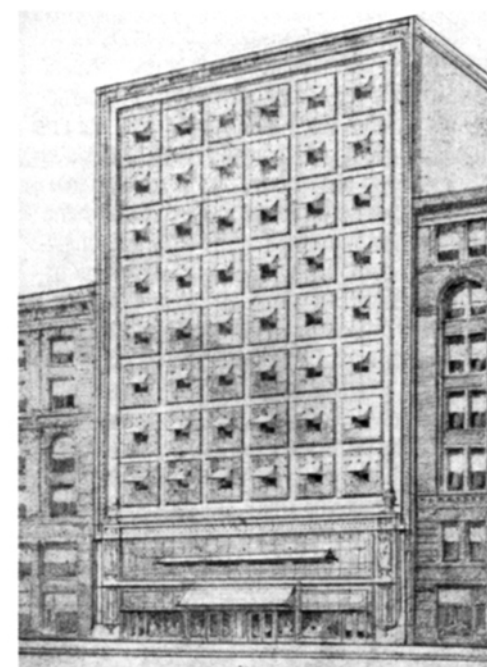
Wright may have sensed this achievement and the extent to which it went beyond all prior work on the tower—he showed it to 'Lieber Meister' Louis H. Sullivan shortly before he died. As Wright recalled, "*Gratefully I remember—and proudly too—that Sullivan said: 'I had faith that it would come. It is a work of great art. I knew what I was talking about these years—you see?'*" Wright dedicated the design to Sullivan and seized the mantle of his mentor in skyscraper design—Sullivan was the true master. But Wright would have to wait thirty years to build a tall building.

Wright's earlier work had hinted at some of this achievement. The structure at his Romeo and Juliet windmill, the massing at the Press Building and the exterior skin at the Luxfer Prism project all led up to this design.

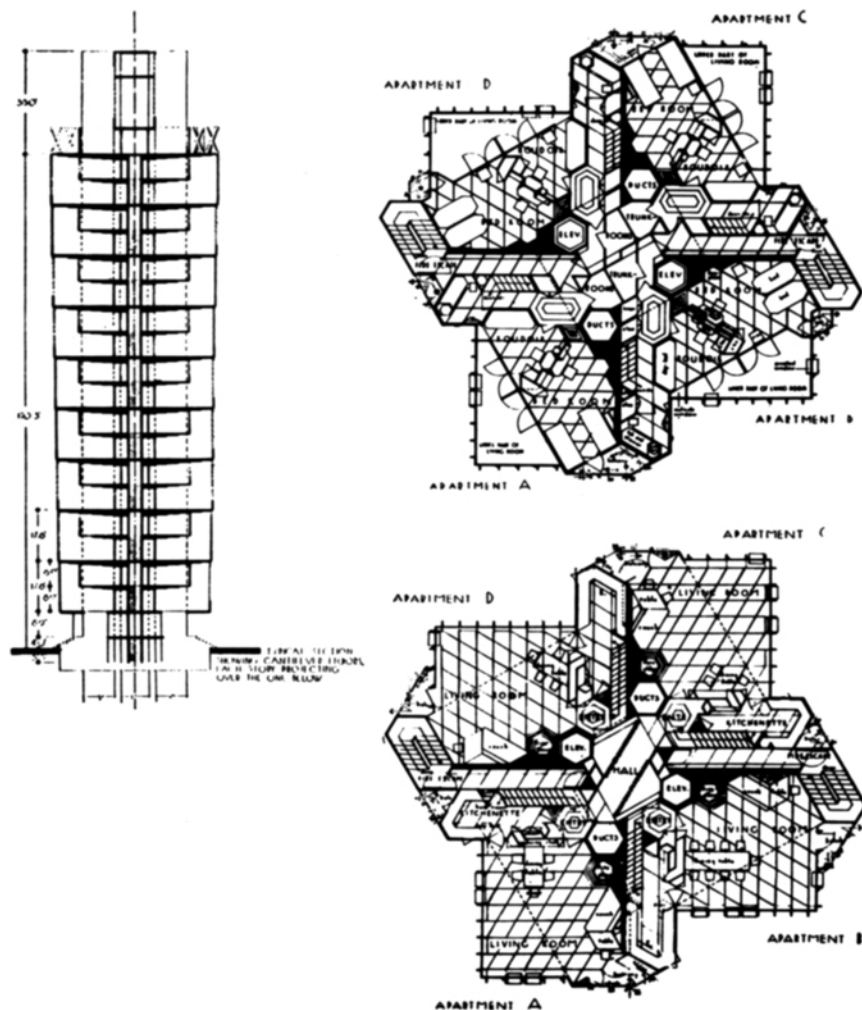
Wright's commission for his first tower came from his Mother's family in 1896. It was simple enough: to erect a windmill on the new reservoir for the Hillside School run by Aunts Nell and Jane. As he noted, "*This was decided upon by a family gathering which the clan . . . held . . .*" It would sit above the school he had designed earlier (1887), on a "white sand-rock hill" visible from the surrounding farms of his five 'patriarchal' uncles, his aunts' brothers. The school itself sat on his Grandfather's old homestead.



44 Romeo and Juliet windmill for Misses Lloyd Jones, Hillside, Spring Green, Wisconsin, 1896 Photo (Wright, *A Testament*, p. 31)



45 Project: Luxfer Prism Co., Facade, Chicago, Illinois, 1897 Perspective. (Wright, *A Testament*, p. 30)



6 Project: St. Mark's Tower, New York City, 1929 Plans, section. (Hitchcock, #305-307)

The twenty-nine year-old architect's first designs for the tower were criticized as being expensive and foolish by his uncles, who wanted steel or a more traditional timber construction. The aunts, however, approved, liking its 'dignity.' The new design featured a unique hollow shell construction, with two *interlocking volumes*—a 'diamond shaped part' and an 'octagon shaped part,' Fig. 4.

Telegraphed by Cramer the local builder that the tower would fall—if built as designed—FLW replied by Western Union, "BUILD IT." Remark—on the mutually supporting, hollow forms, Wright later stated:

It was all simple enough. You see, the wooden tower was rooted as the trees are. Unless UPROOTED it could not fall for it would not break. . . . Try, sometime, yourself to break a barrel.

The tower rode out its first big storm, and it lasted out many more.

The Luxfer Prism facade of 1897 was of great professional importance to Wright. Not only did it open up a world beyond the private client, it took him into a concern with the urban scene and the place of work. It also, as usual, challenged Wright to rethink the nature of the problem—in this case an office facade. He used modern materials and non-classical compositional procedures.

The facade of the Luxfer Prism is certainly provocative, Fig. 5. Its gridding into squares and the slightly projecting glazing set within this grid lend an air of geometric precision and abstraction that no other tall building of the era offered. It is almost a complete glass wall, yet it stops short of being a curtain or screen as the two elements of glazing and the structural grid interlock. But we must remember, this was 1897!

Less radical is the framing element drawn around this glazed grid and the delineation of a base-middle-top formula (although the top is not strong and is flat). However, certain aspects of this composition have appeared everywhere, as Wright claimed later in *A Testament*. For Wright the 'Romeo and Juliet' tower signified a discovery of a principle of structural form and volumetric mass, as well as a personal triumph of will. With the Luxfer's concentration on the problem of skin and facade, the windmill and office building together provided the beginnings of Wright's Towers.

Strangely, while Wright had been eager to assume succession to Sullivan's mastery of the paradigmatic urban type—the tall building—he also began a series of attacks on 'skyscraperism' in the 1920s. He saw, particularly in New York, a new form of vertical building that marked "the milestone and gravestone—our skyscraper—in the potential cemeteries that our proudest cities are to become"² Giorgio Ciucci has succinctly analysed this paradox:



7 Project: Grouped Apartment Towers, Chicago, Illinois, 1930 Perspective. (Hitchcock, #308)

In 1921 while designing (National Life) Wright began a 'direct continuous' study that took preliminary form in two unpublished attacks on the city, "In Bondage" and "The Usonian City" and reached a first conclusion in 1932 in his book The Disappearing City. Thus, curiously, Wright produced his most decisively urban designs at the same time as he defined his unequivocal opposition to the urban phenomenon in its totality.³

Giorgio Ciucci, 1979

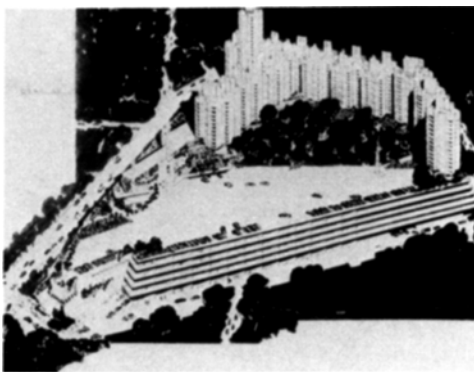
Wright's second great tower project of the '20s reflected this changing attitude.

Wright's St. Mark's represented both a continuation and denial of the work on the National Life Insurance project. It developed further the ideas of structure and skin first used in Chicago in 1920 but denied the urban idea of building on Water Tower Square.

Wright clearly meant St. Mark's to be a total and complete statement of the tower as a *new architecture*. It would exemplify all his work, because of the unique solutions to structure, skin, space and urban place that it posited.

The structure was again the hollow central core supporting cantilevered slabs from which "wallscreens" were hung, Fig. 6. The tree-like structural system and light skin would deny the 'senseless feudal masses' of 'false masonry' that he saw New York City architects putting up around light steel frames. Even the steel frame system was denied and surpassed in Wright's use of steel in tension where it operates most efficiently, rather than in bending in moment connections, where it works least efficiently.

The ensemble was planned on a triangular module similar to designs for a barge on Lake Tahoe in 1922 and the camp Ocatillo Wright built in 1927 while working on Dr. Alexander Chandler's resort for millionaires—San Marcos in the Desert. At St. Mark's each apartment was planned exactly the same, using this module. Most furniture was built in, following the geometry and some of the beds even have chamfered corners. This was Wright's first use of the triangular module-unit as the overall generating discipline for a major project. It was also used to develop the central element at San Marcos where the two legs of the project met at an angle. A three-dimensional rectangular grid had been used at National Life but Wright now wanted to go further in the statement of the dif-



8 Project: Crystal Heights Hotel, Shops and Theater. Washington, D.C. 1940 Bird's-eye view. (Hitchcock, #411)

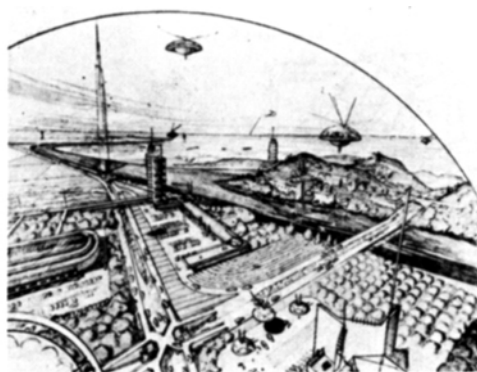
ference of *his* work from that of the rest of 'architecture.' The triangular grid emerged in the desert from the forms of mountains and cacti. Wright justified its use in human habitations, in *The Architectural Forum* in January 1938, claiming it facilitated and accommodated human movement better than the rectangular grid.

However, this functional issue should not disguise the philosophical one that was paramount in Wright's use of the triangular grid at this time. Wright believed this grid brought the building and its occupants into a total harmony with natural law, not cultural and technical dictates.

On another level, that of the concept of the urban place appropriate for a tall building, Wright's St. Mark's constituted a rejection of the urban space-making and space-defining characteristics of National Life. His new tall building was now a singular point, or as charted on an aerial perspective sketch of the ensemble and church, a group of points. The shape was now an obelisk-tower, not a slab. The proportions were roughly three times as tall as wide, the general side-on proportions as of the Romeo and Juliet windmill. It was meant to stand in space, not create it. As Wright stated, "*this skyscraper was planned to stand free in an urban park and thus fit for human occupancy.*" This new freestanding character of an integral whole dominated Wright's thinking from then on. The vision of the freestanding block would soon dominate modern architecture as the work in the thirties in Europe attests. Wright's St. Mark's can therefore be seen as typical in urban terms with other 'avant garde' work while innovative in its architectonic language.

Wright attempted to extend the St. Mark's model onto a larger scale—the Chicago Apartments of the following year, 1930, and the Crystal Heights Project in Washington, D.C. of 1940.

In the Chicago Apartments, Fig. 7, a doubling recurred twice to create a linear cluster form, not unlike the National Life's crenellated slab, but using the geometry and shape of St. Mark's in the Bouwerie. First Wright linked two of the square pin-wheel towers of St. Mark's together to form basic "building block." He then linked these together by balconies to form a continuous chain. At Crystal Heights, Fig. 8, a similar procedure was followed. The chain furthermore



9 Project: Broadacre City, 1934–1938. Aerial perspective. (Wright, *Drawings*, #221)

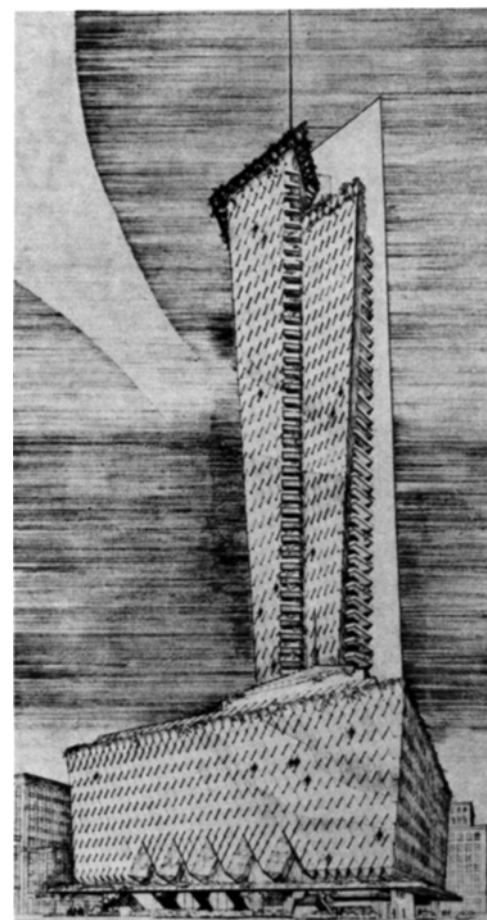
bends and a taller tower was introduced. In the Chicago project the perspective indicated an urban intensity—cars in profusion, a dirigible in the sky—but the grouped towers themselves sit in total greenery. The Washington project, done in 1940, is as Hitchcock hints, a brilliant premonition of post-World War II urban construction—a great assembly of apartments and hotel rooms, a shopping center, and theaters all set around a giant parking garage. We now also know however, that what Hitchcock saw as "*urbanism at the proper scale for the twentieth century,*" is not urbanism at all. It was *sub-urbanism* at best.

In the decade from the beginning of National Life to the Depression and the demise of the St. Mark's Project, Wright finally settled his ambiguous stand towards the city as good or evil. Twentieth century "skyscraperism"—the city of tightly packed towers—became the symbol of cultural decadence. Only by returning the tower, as well as man, to open country land, could "civilization" survive.

Was this the result of his experience in the desert during the design of St. Mark's? Certainly the intensity of the desert geography confirmed Wright's propensity to prefer nature to society. The clamorous vilification of his person in the twenties must also have contributed to his rejection of the urban place. But, finally the subsequent Broadacres vision of the thirties was an extension of his Taliesin concept to the entire society. Like the remains of St. Mark which were stolen from the ancient city of Alexandria by the Venetians in 828 and taken to Venice to start a new urban order in their lagoon, so Wright's New York tower of St. Mark's would be placed on the *new* ground of his suburban Broadacre City. In his version of the 20th century "City in the Park" he wrote,

Towers of prismatic materials; steel, concrete and glass; shafts rising above greenery, each on its own private green. . . . Advantages of the countryside—fresh air, beautiful views, freedom from noise and the traffic jam, growing acquaintance with nature . . .

While the tall building is antithetical to a life devoted to the land Wright seemed to comprehend that there could be stages of life when a dramatic apartment in a tower overlooking good views would be a suitable home. He also carefully placed them in his landscape as markers of important civic events—the stadium, the town



10 Project: Roger Lacy Hotel, Dallas, Texas, 1947. Perspective. (Wright, *An American Architecture*, p. 134)

center, etc., Fig. 9. In this once again Wright's thinking conforms with other architectural notions of a city of towers being formulated then, Le Corbusier's *Ville Radieuse*, being the most prominent.

Later, in 1946, Wright experimented with a variation on his county building-skyscraper regulations type of mounted tower in the Roger Lacy hotel project in Dallas, Fig. 10. Its atrium-court space and curtain wall were far ahead of its time and have now become universal and ubiquitous. A similar solution was reached from the necessity of adding to an existing mid-height building in the famous Johnson's Wax tower of 1947. It managed to meld into one concept, the major ideas of St. Mark's and the mounted tower type of the regulations studies.

The original Johnson's factory had been constructed as a great hypostyle hall, with dendritic columns of Wright's design. The research tower, constructed ten years after St. Mark's, confirmed his intuition of the organic structural concept of the tower. He again used the hollow core with suspended slabs—the slab alternating to form double height interior spaces, Fig. 11. The effect was "diaphanous, streamlined and feminine," influencing other great works of this century—the Engineering Building at Leicester by James Stirling and Richards Laboratory at the University of Pennsylvania by Louis I. Kahn.

If Johnson's Wax fulfilled the generic principle of Wright's tower concepts, the Price Tower in Bartlesville, Oklahoma was the sign of conclusive proof: "the tree that escaped the crowded forest," Fig. 12. The building's complex exte-

- 1 New York work of the teens, including the infamous Haverly Building, also adopted the crenellated form, but failed to use it to create a new type and allowed it to remain merely and expedient to achieve maximum square footage on a block.
- 2 Wright, Frank Lloyd. *The Living City*. New American Library, 1958.
- 3 Ciucci, Giorgio. *American City: From the Civil War to the New Deal*. et al tr. by Barbara L. La Penta from Italian. MIT Press, 1979, p. 328.

11 Research Tower, S. G. Johnson and Son, Inc. Racine, Wisconsin, 1947. Perspective. (Wright, *Drawings* #165)

rior, enlivened by the mixture of offices and apartments, the several and varied sun control devices, the interpenetrating volumes, the appearance at the base and the top of the carrying concrete core, and its copper-glass skin confirms Wright's organic vision in the tall building today, one we could all reconsider as an architectural solution. Its aspect and silhouette are different from all sides. Its color is bold and soft at the same time. It does not rely on academic formulas but achieves a base-middle-top perception. Compared to either contemporary standard curtain wall structures (wall screen), or avant garde decorated boxes, Wright's tower seems extraordinarily lively and up to date. On the other hand it remains urbanistically inferior to the project for National Life and even an early study for St. Mark's that included three towers. That neither were built can be attributed to economic factors, the Depression of course cut off St. Mark's and the developer of National Life never found the courage to proceed, according to Wright.

While the Price Tower was being built Wright proposed a taller version of it in the 1950s for the Chicago Lake front called, the "Golden Beacon." But the Golden Beacon, an extension in height of his earlier concept was literally dwarfed by his last experiment with the city and tower. Wright presented us with the tower that was the city.

Cantilever Sky-City—528 stories—tripod in plan—one mile high from grade to top floor; divided into four sections—exposed members aluminum or stainless steel—elevators especially designed tandem-cabs ratchet-guided type, atomic power—escalator service basement and first five floors—four quadruple land approaches to each of the four entrances—one entrance at each corner—parking lot for about 15,000 cars and landing decks for 150 helicopters.

With much hoopla, Wright unveiled his Mile High Illinois, Fig. 13. It rose, four triangles around a tripod core, forming an odd rectangle, like an arrowhead. It sat like a 'rapierblade handle' in the ground with a framework like a tree. Its great base for parking was similar to the Crystal Heights base. Rising from this giant pad the obelisk twisted on itself several times as it rose, each prow of the odd rectangle disappearing upward into an opposing form until a single 25 foot triangle remained at the top. Each floor was surrounded by a gold colored metal bal-

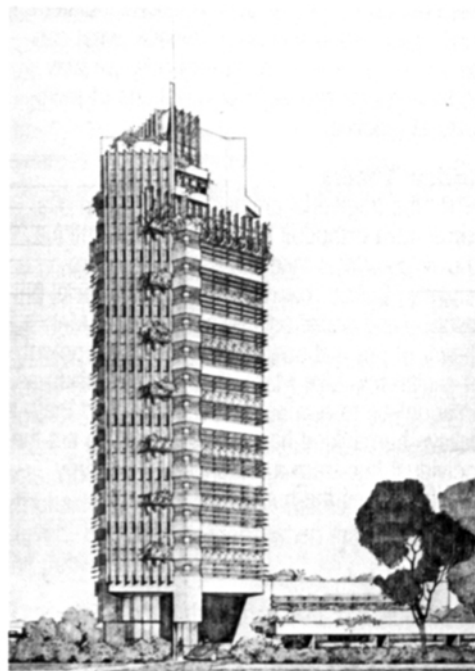
cony that shielded the floor below from sun. Suspended window walls of plastic hung from the hollow slabs behind each balcony. The colored rendering shows a great gleaming golden obelisk dwarfing the Golden Beacon and the towers of Chicago in the background. It was a proposal so stupendous that one still does not know now how to react. The Mile High, his last tower, is a great final symbol of the paradoxes of Wright's attitude towards the city. On the one hand he believed in democracy, on the other he called its manifestation a 'Mobocracy.' In his early work he believed in a collective urban form of tall and low buildings, in his last works he absorbed the city totally into a giant structure. As an architect committed to creating an image of an emerging modern society his architecture, while of unquestioned greatness, remained intensely personal and never passed into the general language of architecture. In addition Wright's Broadacre City rejected the basic fact that the emerging modern society was urban and suburban, not rural. The Mile High, or the ten Mile Highs that Chicago actually needed might, thought Wright, resolve this dilemma, if his City of Towers could replace the traditional city.

Like a myth that, with the wave of a magic word-wand, dissolves contradictions, the Mile

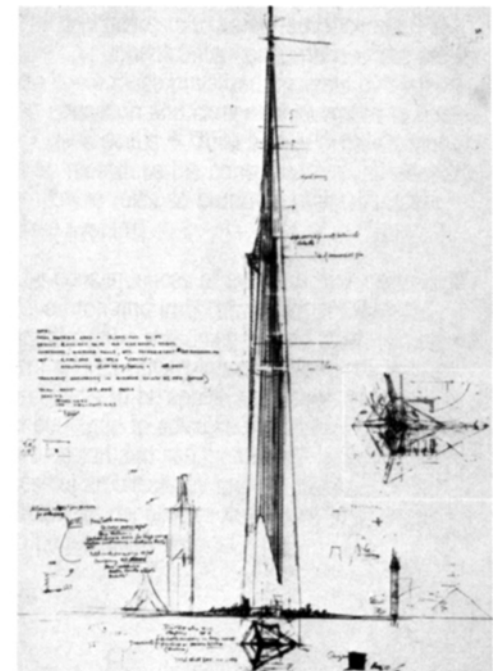
High was Wright's last curtain call as the century's greatest 'affirmative protestant.' The Mile High *was and is* a great protest against the scrabbling heap of 'anarchic individuals' (Tarfuri's term) trying to reach the top of the city. Wright despised the commercial world and its representation in the skyscraper city. The city of towers was not, to Wright, a tenable answer to centralization. Only a supreme act of *building* could save the world that wants to build high—the erection of a tower 'more permanent than the Pyramids,' that housed 130,000 people, a city unto itself, a tree that became the forest. ■

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12 H. C. Price Company Tower, Bartlesville, Oklahoma, 1953–1956. Perspective. (Wright, *A Testament*, p. 196)



13 Project: The Mile High Illinois, Skyscraper, Chicago, Illinois, 1956 Preliminary Sketch. (Wright, *A Testament*, p. 238).