EMPIRE STATE BUILDING

Monarch of the Sky

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Part 1

Peerless

"Make no little plans, they have no magic to stir men's blood and probably themselves will not be realized. Make big plans, aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing."

Daniel Burnham, Architect

"I was to build the world's tallest – not only the tallest one but one which expresses most completely and honestly the skyscraper idea, whose beginnings I had seen fifty years earlier…The Empire State Building is truly an epitome of all that has preceded…all the spirit, the imaginative and technical daring, and even some of the frenzy, that animated the decade of which it was the culmination"

Paul Starrett

RE: Excerpt from his book: *Changing the Skyline*

"Empire State seems almost to float, like an enchanted fairy tower over New York. An edifice so lofty, so serene, so marvelously simple, so luminously beautiful, had never before imagined…it will gleam in all its pristine beauty for our children's children to wonder at."
Architectural Critic, 1931

"As I stood there 'twixt earth and sky,' I saw a romantic structure wrought by human brains and hands that is to the burning eye of the sun a rival luminary. I saw it stand erect and severe in the midst of storm and the tumult of elemental commotion. I heard the hammer of Thor ring when the shaft began to rise upward. I saw the unconquerable steel, the flash of the testing flames, the sword-like rivets. I heard the steam drills in pandemonium. I saw countless skilled workers welding together that mighty symmetry. I looked upon the marvel of frail, yet indomitable hands that lifted the tower to its dominating height."

Helen Keller

RE: Excerpt from a letter to City College Pres. Dr. John Finley who asked her what, as a blind person, she had "seen" after a picture of her on the ESB observation deck appeared in the newspaper

"Here it was, at last, in all its iron and agate glory, and I viewed it as an eagle might have viewed it. You cannot speak at first. You simply stand, like an automaton, waiting for the spectacle to sink into your consciousness. I strove to locate all the other skyscrapers, the towers of which I had eagerly climbed, as each had outdone the other; and they looked like dwarfs, and I wondered why I ever had considered them anything at all."

C.H. Towne, 1931

RE: Visit to ESB's 86th floor observation deck

"The sun was setting when we got there. Everywhere you turned, Manhattan was agleam; the Hudson was golden lava; cool winds that never whisper at street level brought relief to body and soul; and there stirred within me a long-dormant pride, almost a boastful pride, of THE CITY. Not pride exactly, but something tingling, that was yet peaceful and warming."

J.D. Kerkhoff, 1936

RE: *New York Journal* columnist and one-time critic and mocker of tourists to the ESB. All changed upon a visit to the 86th floor observation deck.

"To celebrate the completion of an enduring monument, a towering milestone on the road of human progress. For above the sidewalks of New York soars the Empire State. To the public it is a mighty symbol: a supreme expression of Man the Builder. To those who have participated in its making, it has been a great adventure; an adventure made possible by the vision and scientific knowledge that can turn dreams into stone and steel. The makers of the Empire State are here tonight; the owners, whose faith was an inspiration; the architects, whose boldness and simplicity of design was the solution of unprecedented problems; the builders, who brought skill, speed and unselfish co-operation to their task. To each comes the thrill of participation. To each comes the pride in accomplishment."

RE: Celebratory dinner held on April 16, 1931. Attended by 62 dignitaries and about 60 subcontractors.

"Never before in the history of building had there been an architectural design so magnificently adapted to speed in construction"

Paul Starrett

"Nobody should be misled by the lot of worthless stuff recently put on the architectural market. It has not been done by real architects, but by men who mistook novelty for beauty, who, scorning everything traditional, have used lightning strokes, acute angles and bizarre geometric patterns ad-nauseam. All this has been copied and duplicated because it is supposed to express modern art. Modern expression in architecture that has real and enduring artistic value is exemplified in the Empire State."

William Orr Ludlow, 1931 – Chairman of the *Committee on Industrial Relations* of the AIA

RE: Overt praise for the design of the ESB and covert disdain for architect William Van Allen's *Chrysler Building* (1930)

"A milestone marking the beginning of modernism, with no attempt at novelty, no tendency to welcome the bizarre"

Philip N. Youtz, Architect, 1931

RE: ESB design style. Wiliam Lamb referred to the ESB's design as *The Little Nemo School of Architecture* (*Little Nemo* was a popular "fanciful & fantastic" comic strip).

"Probably no building in the history of the world has brought about such universal interest in its progress"

Herbert Hoover, President of the United States
RE: ESB

"In the monumental design of a great office building they have made a genuine contribution to architecture. The noble simplicity of this outstanding structure makes it an inspiring landmark in our city."

New York City Chapter of the *American Institute of Architects*
RE: 1931 Medal of Honor citation to *Shreve, Lamb & Harmon* for the ESB. Typically, the citation was for a firm's body of work; not an individual work, the ESB broke with this tradition. William Lamb was most responsible for the overall aesthetic design, but insisted he share all credit with his partners.

"Its appeal to the layman is palpably enormous. In spite of Frank Lloyd Wright's characteristically sweeping statement that our modern skyscrapers are all the same, we claim that this one is distinctly different, its difference and distinction lying in the extreme sensitiveness of its entire design…Architects Shreve, Lamb & Harmon endowed it with such clean beauty, such purity of line, such subtle uses of material, that we believe it will be studied by many generations of architects, a hazardous prophecy in these days of change"

***The New Yorker*, 1931**

"The Empire State's ambitious mass is, take it from the critics, class"

Price Day, 1932

RE: Comments about the ESB in *The New Yorker* magazine

"Such a union of beauty and strength in a great building makes of it a valuable possession for the whole community. Men and women, boys and girls who have occasion to gaze daily at the splendid lines and massive structure of the Empire State Building will not easily reconcile themselves to architecture that is cheap or mean or even extravagantly whimsical."

***New York Times*, 1931**

RE: Editorial comments praising the ESB's functional design devoid of embellishments and criticism of the ornate *Chrysler Building*

"It is about height, it is about commerce, it is about entertainment, it is about views, it is about the very meaning of the skyline itself"

Paul Goldberger, Architectural Critic

RE: 50th Anniversary of the ESB (1981)

Part 2

The Poetry of Democracy

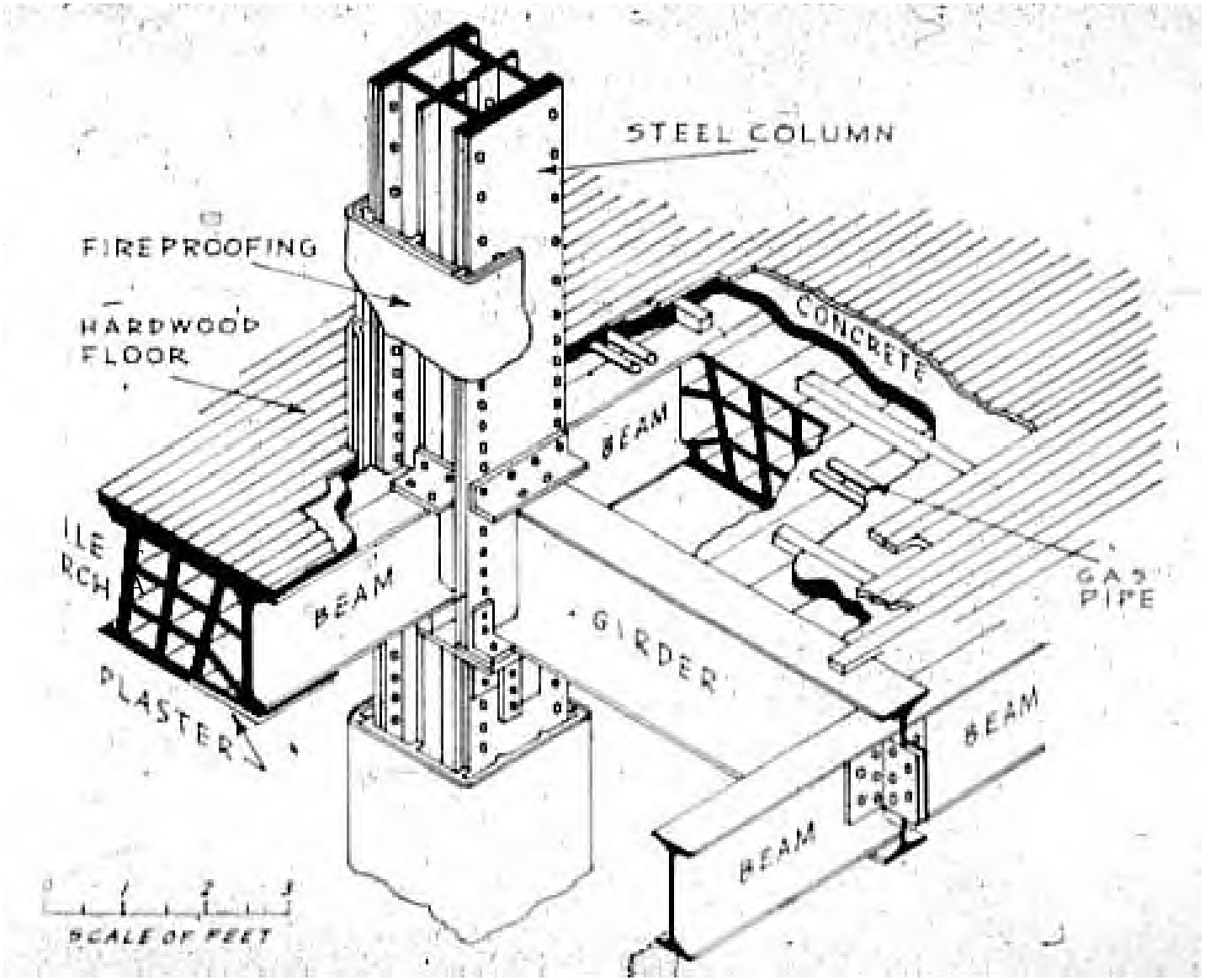
"…high growths of iron, slender, strong, light, splendidly uprising toward clear skies…"

Walt Whitman

RE: Excerpt from his poem: *Manhattan* (1881)

"By skyscraper is meant a building that exceeds in height the practical limit of masonry construction…The absolute and first essential in the structural creation of a skyscraper is the metal (ferrous) skeleton"

RE: 1939 report on the origins of skyscrapers



Terra-Cotta “Flat-Arch” Floor Construction

"He reached a snag early one afternoon and found himself looking out his office window in frustration. Rather than continue to torture himself he went home for the day. His wife was startled to see him so early and thought he might be ill. Getting up suddenly from her chair where she was reading, she looked around for the most handy place to set down her book, and accordingly laid it on top of a bird cage…Jenney jumped with surprise when he noticed that this lightweight birdcage could support a heavy load without the slightest difficulty. Back to the office Jenney went with the clue to the skyscraper; cage design."

George Douglas, Historian

RE: Relating how architect William LeBaron Jenney "discovered" the iron framework which would make the skyscraper possible. He used wrought iron for the world's first skyscraper; the 10-story *Home Insurance Company* building in Chicago (1883).

"A practical architect might not unnaturally conceive the idea of erecting a vast edifice whose frame should be entirely of iron, enclosing that frame and presenting it by means of a casing of stone"

Viollet-le-Duc, French Architect; mid-19th Century

RE: Forerunner to American architect William LeBaron Jenney's idea to use a cage-like iron structure for Chicago's *Home Insurance Building* (1883)

Tacoma Building
(Chicago)

Masonic Temple (Chicago)

"As an unabashed New York booster, I find it hard to admit something, but Chicago was the cradle of the American skys-craper"

Harvey W. Corbett, Architect

"To recognize that in steel-frame construction lies the basis for an entirely new, effective and beautiful style of architecture…an architectural character that is effective, beautiful, expressive of the purpose of the building, of our method of construction and of the spirit of the times…History will record this age as the greatest of all so far as building is concerned"

William Van Alen, Architect

"It must be tall, every inch of it tall. The force and power of altitude must be in it, the glory and pride of exaltation must be in it. It must be every inch a proud and soaring thing."

Louis Sullivan, Architect

RE: Skyscrapers

"Like a human being in its organizations…it has its skeleton of steel, its arteries through which courses heat; its soil pipes for the elimination of wastes; its veins which supply its water; its tingling electric nerves of sensation and communication which make possible the stream of pulsing life. It has in its outer walls of masonry its clothes, on which are its details of decoration and adornment."

Alfred Bosson, British Architect

RE: Analogous description comparing the human body to skyscraper design

"…the increase in the value of the land rendered a large number of the old buildings, which were of four to seven stories in height, unprofitable"

R.P. Bolton, Author

RE: By the 1890s, urbanization, the elevator and structural steel made existing low buildings unprofitable in central cities such as Chicago & NY

"The results of bacteriological investigation show that the evil microbes flourish and increase in damp, dark places, but that sunlight destroys their life; Our narrow streets, when lined with tall structures, will become unhealthy alleys…"

NY Chapter of the AIA, 1896

RE: Report concerning perceived health risks of tall buildings

"Before the development of the method of steel skeleton construction, extreme height was impractical, but after its success was demonstrated in 1889, in the Tower Building of ten stories, a great impetus was given to increase height"

R.P. Bolton, Author

RE: The *Tower Building* (a.k.a. *The Idiotic Building*) is considered NYC's first skyscraper

"It may stand a short gust of wind blowing very hard, but if this were to keep up for any length of time, the cage might begin to sway. Then matters would be serious. The rivets would be cut off and the oscillations would increase with each swing backward and forward, soon wrecking the building."

George B. Post, Architect – ca. 1890s

RE: His doubts expressed to a *NY Times* reporter concerning the viability of skyscrapers in sustained high winds. Because of it's great height (160-feet) and narrow width (21.5-feet), it was referred to it as "The Idiotic Building." Crowds would gather (at a safe distance) on windy days waiting for the building to be blown down (they were always disappointed).

"When the actual construction of the building began, my troubles increased tenfold. The mere suggestion of a building 21.5 feet wide, rising to the height of 160 feet above its footings, filled everybody who had no particular concern in the matter with alarm that the building would blow over…One Sunday morning, when the walls of the building were ready for the roof…the wind was blowing a hurricane. I secured a plumb-line and began to climb the ladders that the workmen had left in place when they quit work the previous evening…When right, I crawled on my hands and knees along the scaffolding and dropped the plumb-line. There was not the slightest vibration. The building stood as steady as a rock in the sea."

Bradford Gilbert, Architect, 1890

RE: His 13-story *Tower Building* at 50 Broadway

"American vision, daring, restlessness, engineering skill have all been properly read into this marvelous transformation from Brownstone into Babylon…As for building for eternity, the need does not exist. Thirty years from now they will be tearing up the city once more."

New York Times

RE: The vertical city NY was becoming by the late 19th century

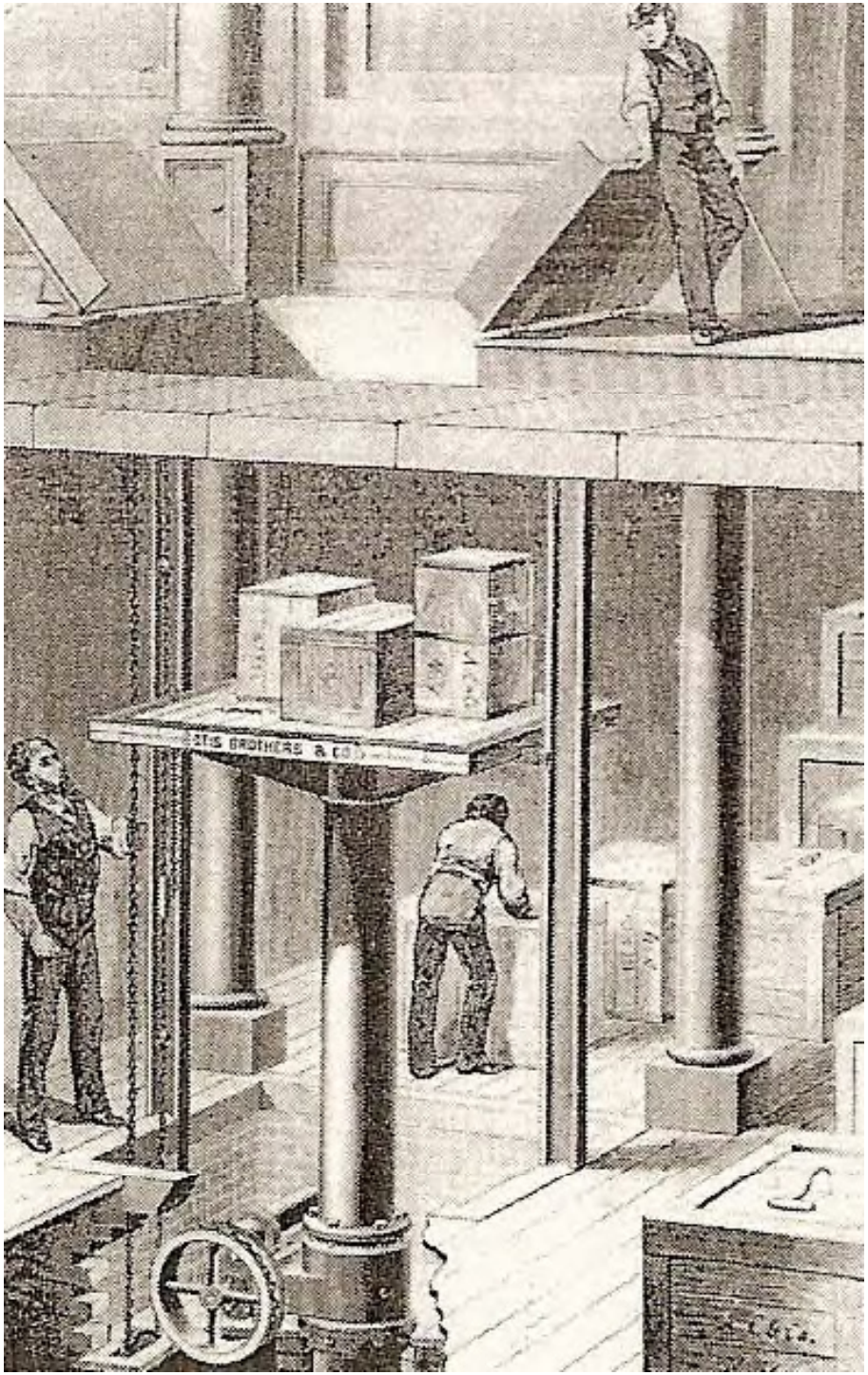
"Architects said nothing would be higher; engineers said nothing could be higher; city planners said nothing should be higher, and owners said nothing higher would pay"
Harvey Wiley Corbett, Architect
RE: *World Building* (a.k.a. *Pulitzer Building*) of 1890 beating out the *Sun & Tribune Buildings* (adjacent) at a height of 309 feet

World Building
(with dome & flag, at center)

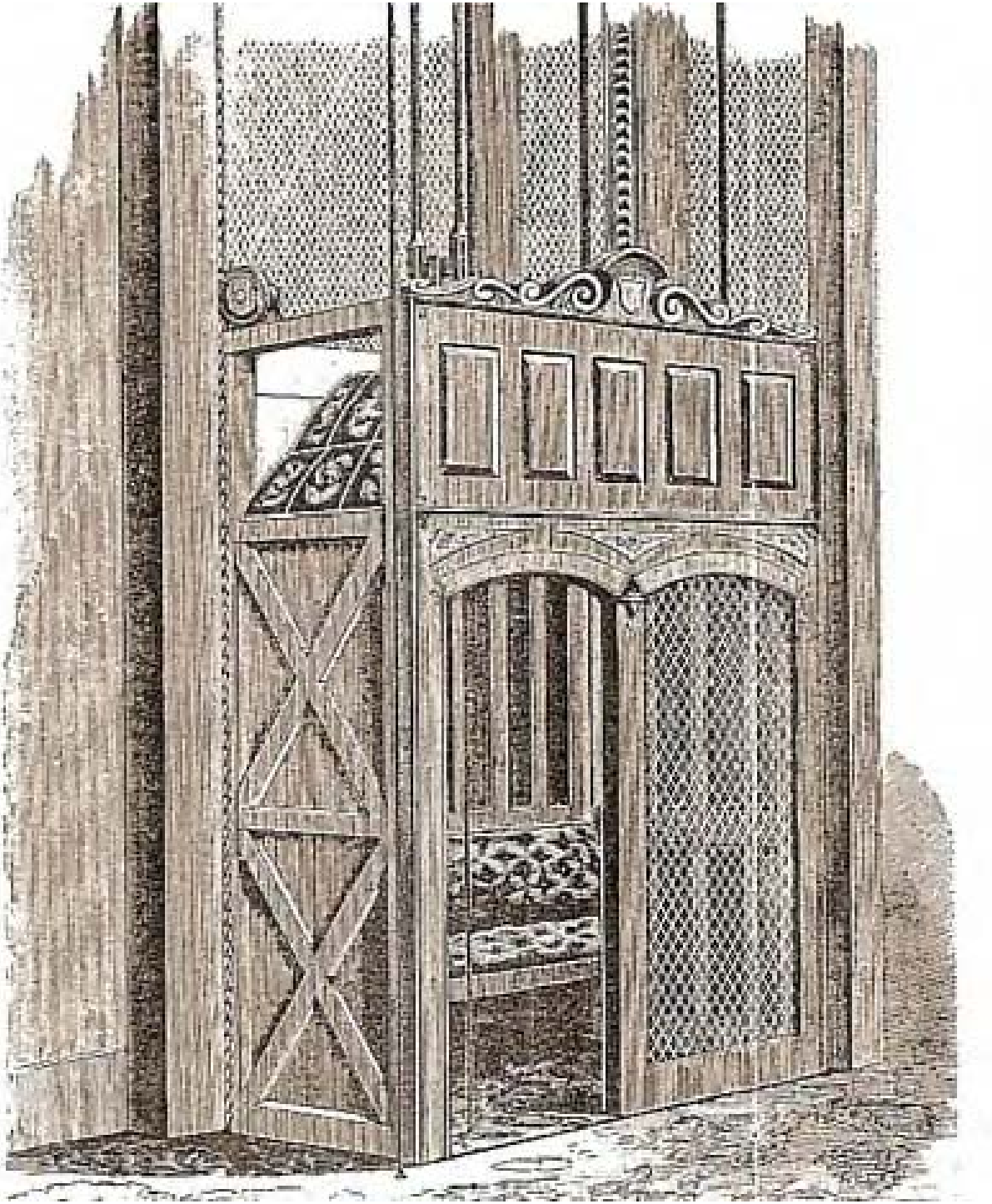
"Elevators became an essential part of office building construction. This new means of vertical transportation brought about a complete reversal of building operations and rental policies. The lower floors were no longer as desirable as they were in non-elevator buildings because the demand now shifted to the upper stories which were removed from the noise and dust of the street. The upper floors actually commanded higher rents."

William T. Hogan, Author

RE: By the 1870s, Elijah Otis' elevators began to be installed in tall buildings



Hydraulic Elevator (Warehouse)

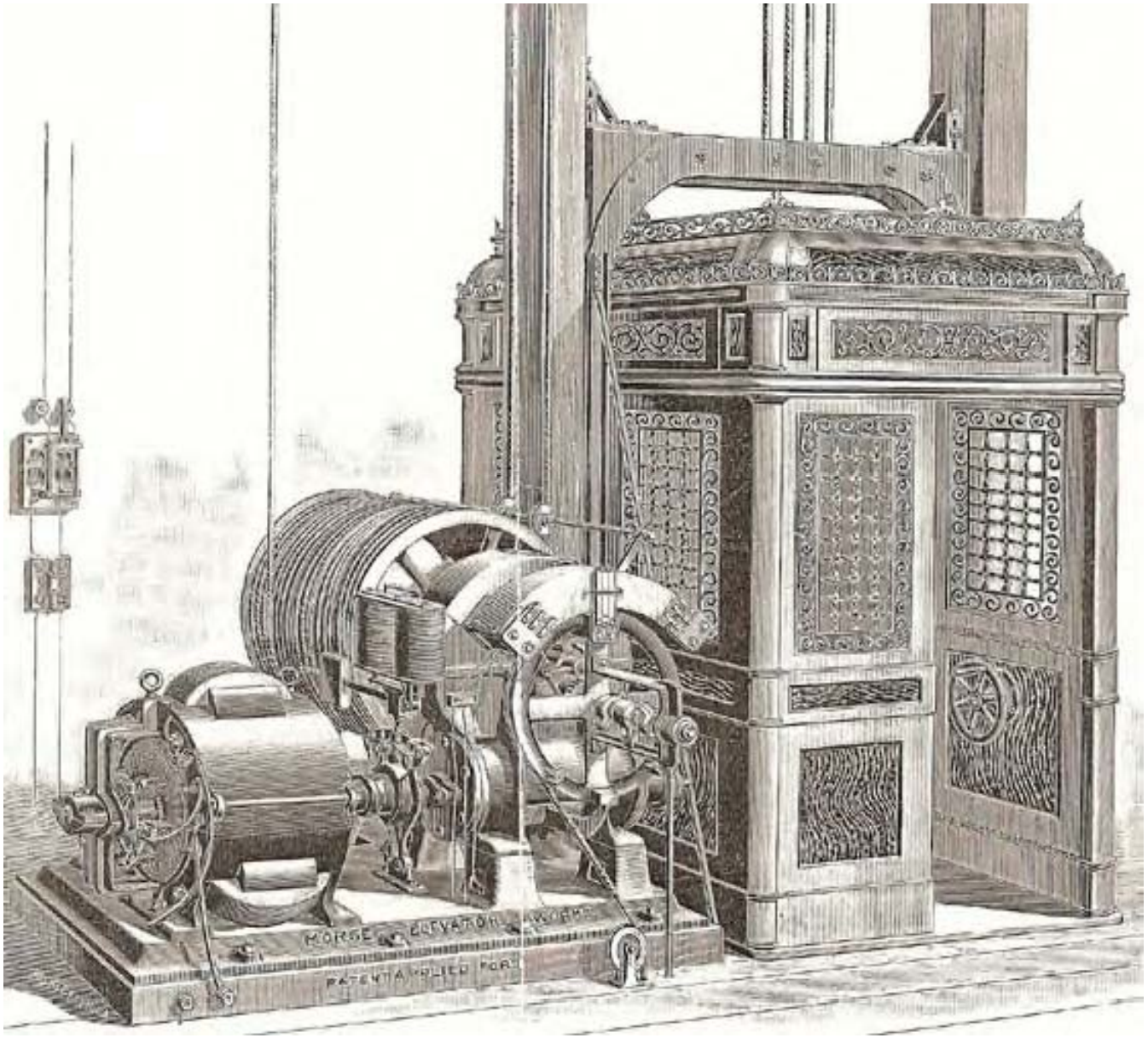


Comfortable seats were provided in early elevators since the ride up to the higher floors could take some time

"Elevator service to the upper floors of the very high buildings has proved insufficient, so that the present practice has settled down to the erection of buildings of 200 to 250 feet in height, containing fifteen to eighteen stories"

R.P Bolton, Author

RE: The *Geared Hydraulic* elevator was introduced by Otis in 1872 and was dominant until 1904. They were slow, but faster than *Geared Electric* elevators introduced in the late 1880s. *Gearless Electric Traction* elevators were introduced by Otis in 1904, making geared hydraulic elevators obsolete for use in tall buildings. This innovation in elevator design allowed buildings to rise higher than ever before. Gearless Electric elevators remain the standard type used in mid & high-rise buildings.



Gearless Electric Traction Elevator

"They wait for nothing and obey no precedents in the building of the express skyscraper. The skyscraper is altogether an American institution. Its express speed of construction is also exclusively American, an expression of American enterprise, American inventiveness, American impatience and dare-deviltry."

***Harper's Weekly*, 1910**

"This going up at a story a day interferes with me social life. On that 13th Street building there was a hotel within arm's reach, and one day I got to talking with a pretty maid through a window. Next day I had to talk down to her, and the next day I had to yell to her, and in two days more I had to say good-bye. 'Good-bye', says she, 'sorry to see you go; but I'll introduce you to my friend, Katie who works on the 19th floor.'"

RE: An early 20th century ironworker's lament over the speed of skyscraper erection

"We are only too well justified by the facts in making the statement that a man, on the day he starts in the structural iron industry, signs his death warrant. It is a sad, gruesome, and only too truthful fact that no ironworker is considered to die a natural death unless he gets killed. One of our members that lives to be old and dies in his bed is looked upon as a curiosity by the vast majority whose crushed and mangled remains are laid beneath the sod before the hand of time has had a chance to touch one hair with silver…All we are asking of those candidates is to give us enough money for decent interment."

Robert Neidij, President - Ironworkers Local Two (NYC), 1903
RE: Describing the dangers of ironwork and the union's requirement for a $100 initiation fee to cover funeral costs if need be. Since the skyscraper was born in Chicago, Chicago's union ironworkers were given the designation *Local One*.

"The men are fully aware of the risks they run when they undertake the work. If the man has not a cool head and is subject to giddiness in working at dizzying height, he takes an unjustifiable risk in accepting such a job…It would be a benevolent and philanthropic thing, no doubt, for employers to provide for families of their workmen who are killed as a result of their own carelessness, but on the other hand I don't see it would be just to compel them to make such provisions."

NY Builder, 1901

RE: Response to a *NY Times* reporter concerning settlements for ironworkers killed on the job. Before workman's compensation laws were passed, builders were notoriously ungenerous to the families of ironworkers killed on-the-job.

"For many reasons this building is unique. It is the cumulative result of all that is known in the art of building, and is equipped with every conceivable convenience that human ingenuity could devise. From a structural standpoint, it is the strongest building ever erected. Situated in the very heart of New York City, its accessibility is exceptional; It is in close proximity to all the leading hotels, theaters, railroad stations and ferries."

RE: Excerpt from the *Fuller Building* (a.k.a. *Flatiron Building*) sales brochure. George A. Fuller was the builder and Daniel Burnham its architect.

"With the trees of Madison Square covered with fresh snow, the Flat Iron impressed me as never before. It appeared to be moving toward me like the bow of a monster ocean steamer; a picture of the new America still in the making…The Flat Iron is to the United States what the Parthenon was to Greece."

Alfred Steiglitz, Photographer

RE: *Fuller Building* (a.k.a. *Flat Iron Building*) at 23rd Street & Broadway; 285-feet high and completed in 1903

"Looking straight down through the brisk little puffs of smoke and steam, the whole mighty tangle of Manhattan Island drew close in one vivid picture: Fifth Avenue crowded with carriages, motors and cabs, was apparently only a few yards away from tenement roofs, which were dotted with clothes out to dry. Police courts, churches, schools, sober old convents hedged close round with strips of green, the Tenderloin district, the Wall Street region, the ghetto, the teeming Italian hive, lay all in a merry squeeze below: a flat bewildering mass, streets blackened with human ants, elevated trains rushing through with a muffled roar."

Ernest Poole, 1908

RE: View from atop the 50-story (700 feet) high *Metropolitan Life Tower* (1908)

"You and your directors were well advised in the choice of your symbol. For a tower, with its light and its belfry, has always been a source of inspiration…Thus your tower partakes of the character of the ancient towers of refuge and defense…Your high tower should, therefore, be a symbol of God to you and others, standing out boldly and erect as a plea for righteousness and purity in business corporations, and as a monumental protest against the exploitation of the poor"

RE: Correspondence to Metropolitan Life Insurance Company stockholders concerning their new skyscraper: *The Metropolitan Life Tower*

Architect Ernest Flagg's design for the *Singer Tower* (1908) at Broadway & Liberty Street allowed light & air into the street without compromising the building's height potential. He suggested (and NYC approved) that on 25% of the plot area, a building should be allowed to rise in height unrestricted provided proper setbacks on all sides were included. This became the basis of the NYC Zoning Law of 1916. The *Equitable Building* (1916) was *the straw that broke the camels back*, casting a giant shadow for blocks in all directions. The 1916 NYC zoning law was enacted to prevent another such building blocking light and air into the streets below.

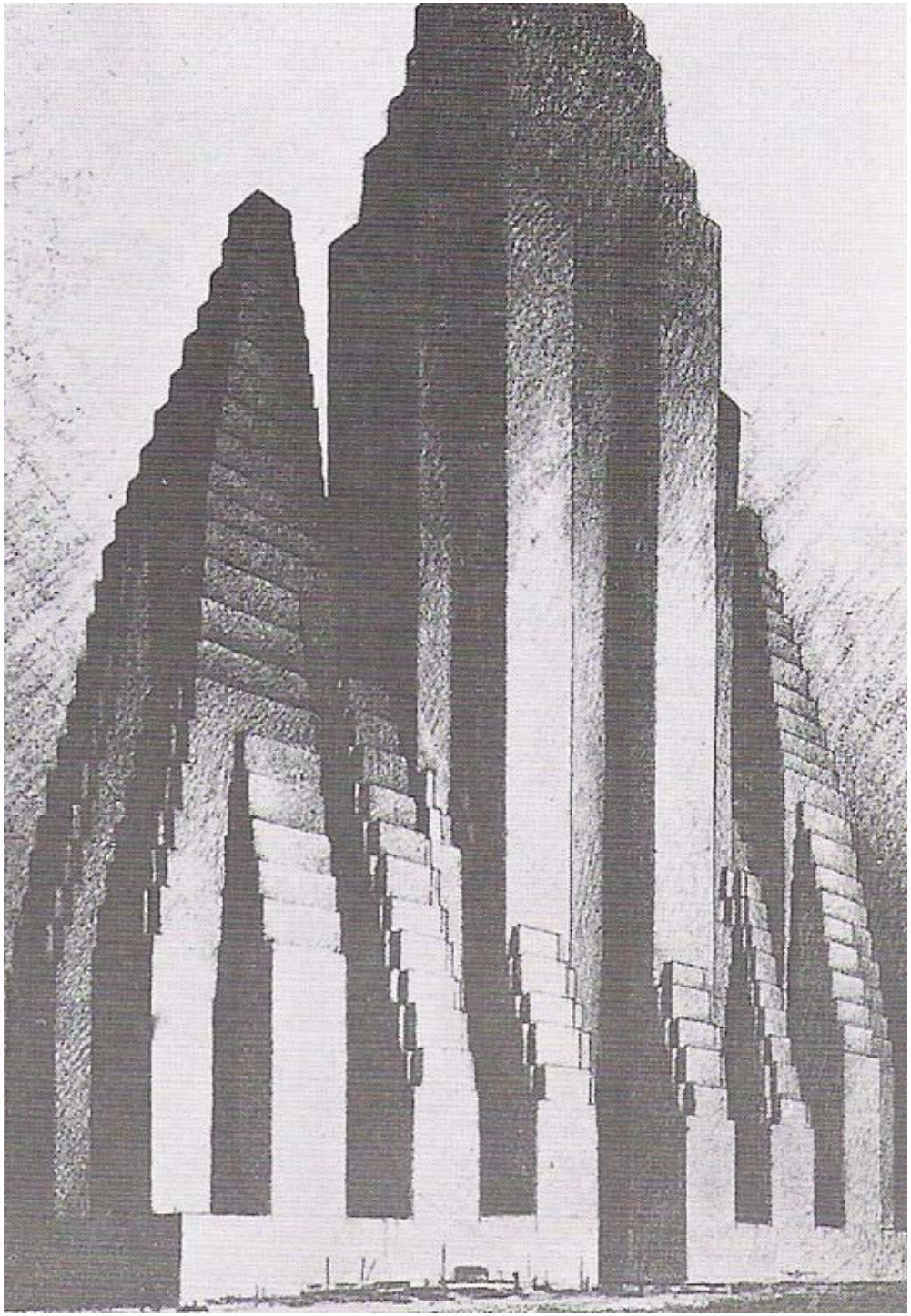
"…our street façade would assume the appearance of order and subriety which comes of a uniform height and a continuous cornice line…the high part of the building occupies only about one-sixth of the area of the plot on which it stands. It depends on its own land for its light. It casts a shadow, to be sure, but it seriously interferes with the light of no surrounding property. It presents a finished face to all points of view. It adds to the picturesqueness of the skyline of the city, and its bulk rises well back of the street façade. It is certain, that the city cannot be built-up solidly with high buildings of the kind we now have unless we are to live in darkness."

Ernest Flagg, Architect

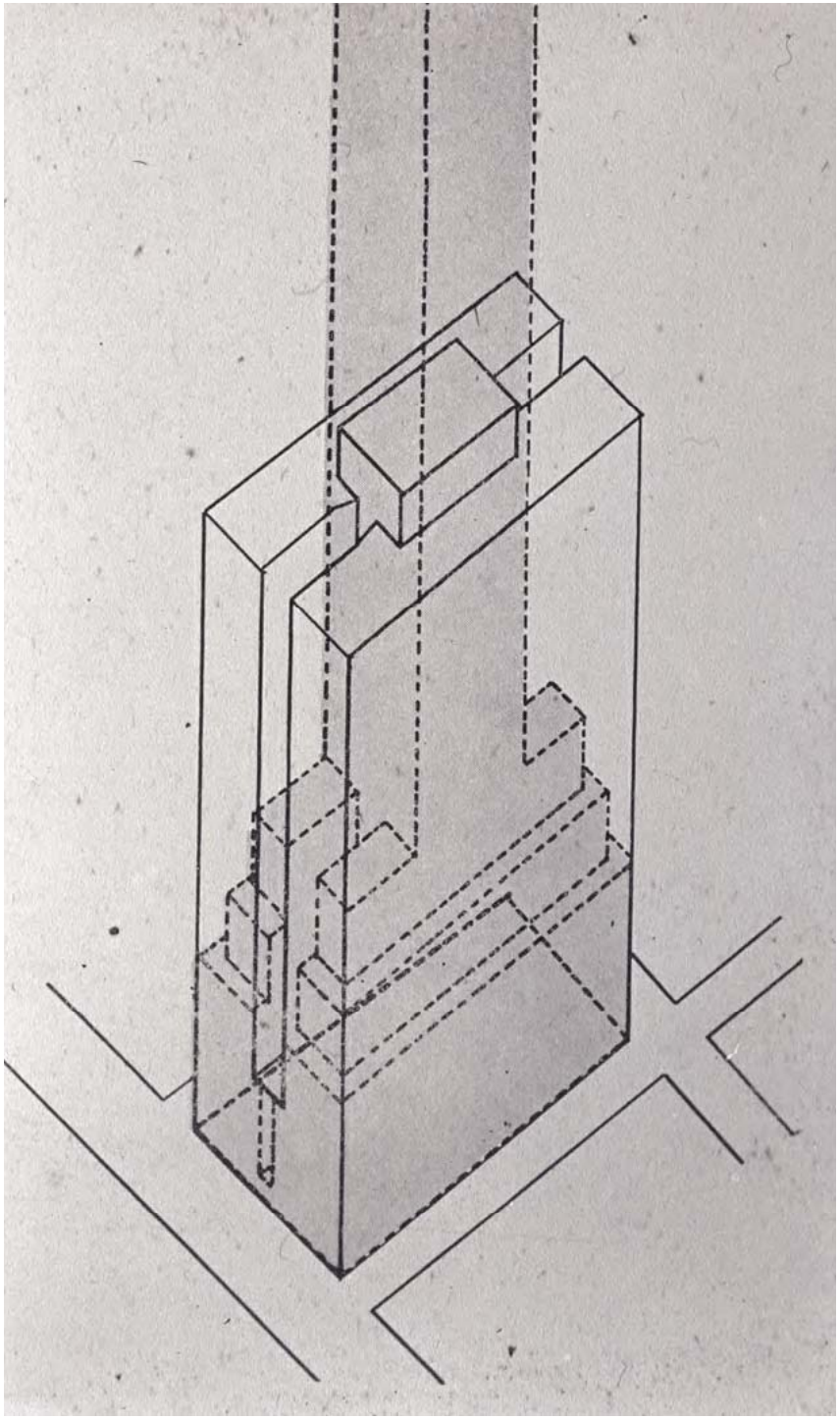
RE: *Singer Building/Tower* (1908)

Equitable Building
(1916)

The *Equitable Building*
(casting its giant shadow)



Architect Hugh Ferris' abstract interpretation of the 1916 New York City Zoning Law



Superimposition (dotted lines) of how the *Equitable Building* (solid lines) would have looked had it been built to the setback requirements of the 1916 NYC zoning law it inspired

The effect of the setbacks required by the 1916 NYC Zoning Law came to be known as “Wedding Cake Architecture”

"If the building were a landmark, we would have to find a buyer for it. The commission doesn't have a big enough staff to be a real-estate broker for a skyscraper."

Alan Burnham, Executive Director *Landmarks Preservation Commission* – 1967

RE: Failed effort to prevent the demolition of the historic *Singer Building* in whole or part by the newly formed *LPC*. In 1968 it was demolished to make room for *One Liberty Plaza*.

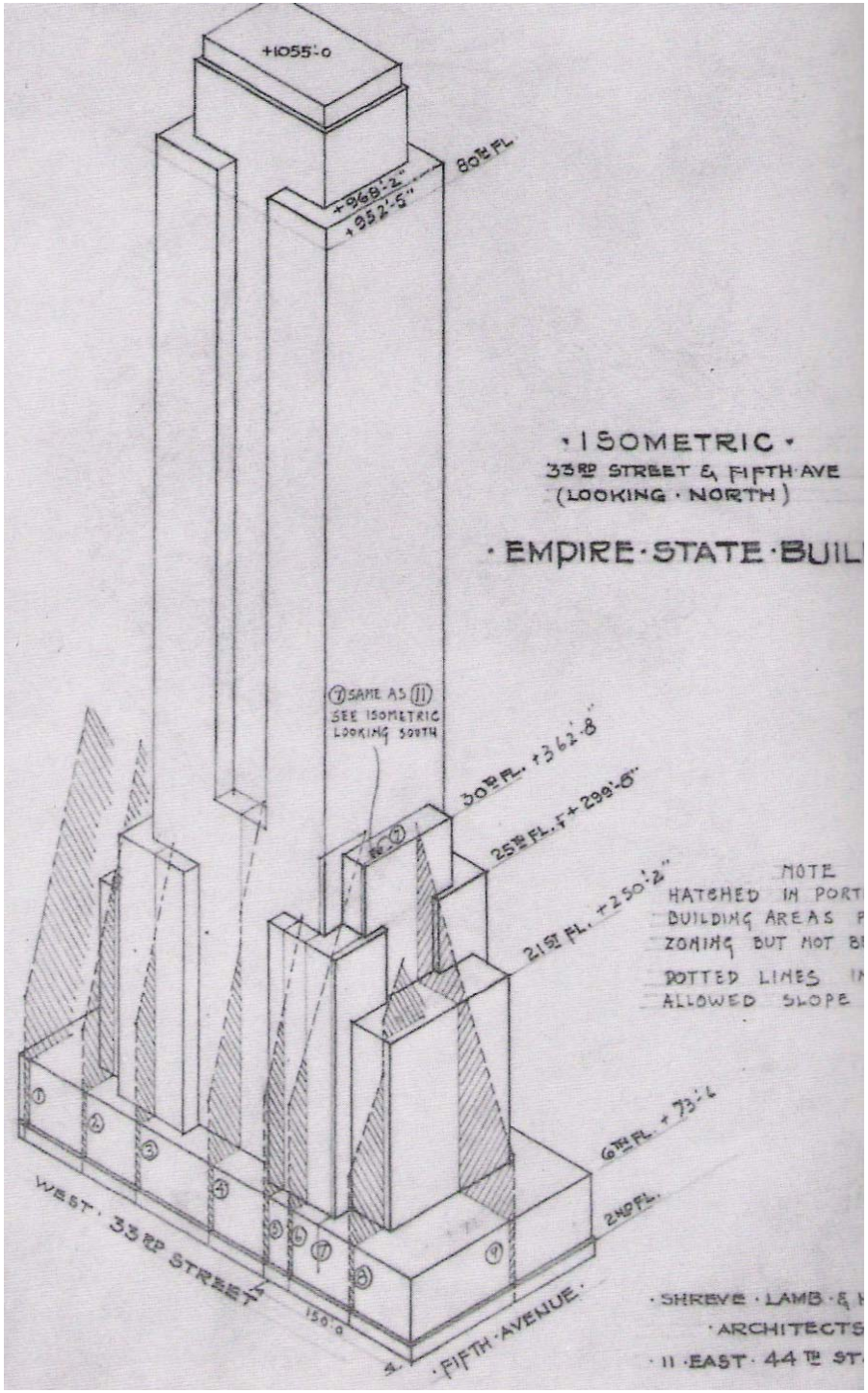
Singer Building Entry

Singer Building Lobby

"…a five-story base covered the plot. At the sixth floor was a major setback – sixty feet from the Fifth Avenue line and twenty and thirty feet from the building lines of Thirty-third and Thirty-fourth Streets…The lower part of the tower was set back from the street lines well within the limits of the zoning envelope, and extended upward about 350 feet, or twenty-nine stories, above the street level. The east and west faces of the shaft were about 135 feet long, and the north and south faces, 185. The tower's rectangular floor plan was set on an east-west axis, rising with a minimum of setbacks from the low base…By the thirtieth floor, the building only occupied 25% of the entire site…there the major setbacks ended, and the seven-hundred-foot-high tower rose unbroken to the eightieth floor…"

John Tauranac, Author

RE: Concerning the ESB's setbacks. The 1916 NYC Zoning Law allowed buildings to rise as high as technology & economics would permit on 25% of the plot.

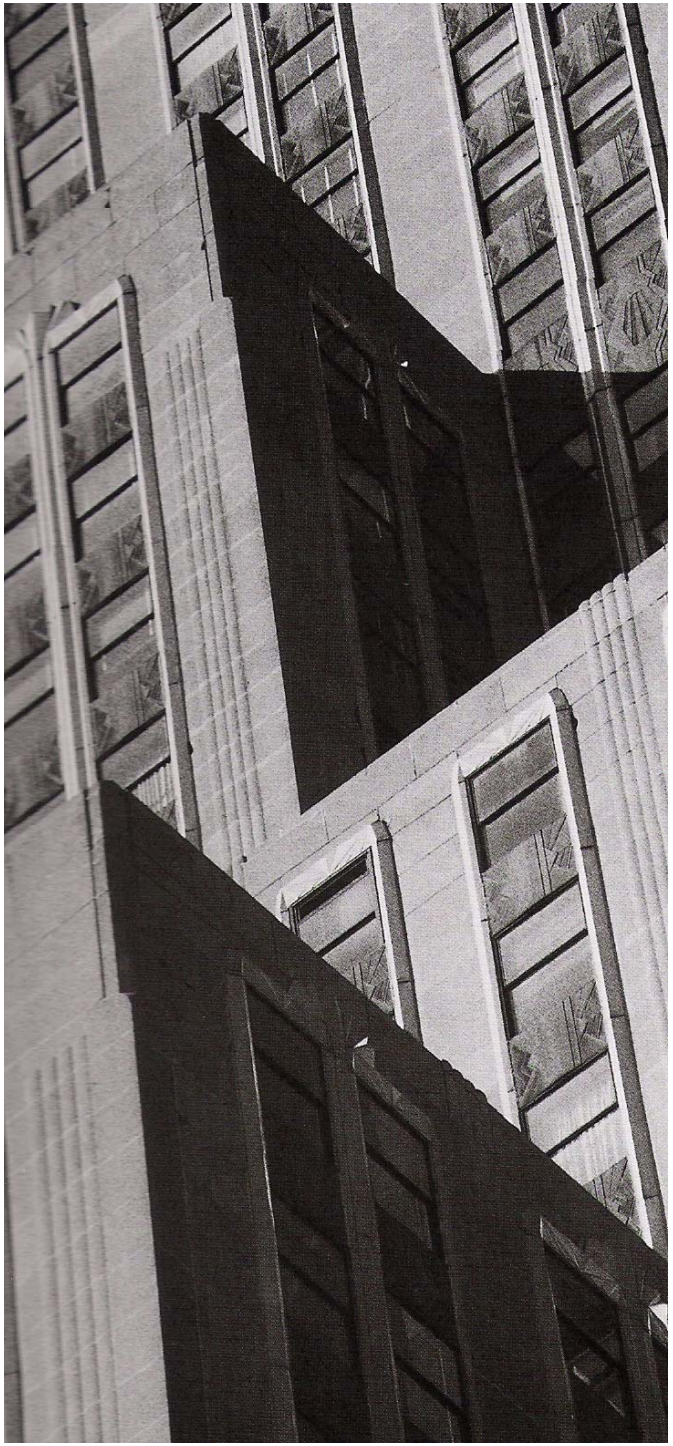


Original SL&H drawing describing the ESB's "Sky Exposure Plane" (a.k.a. "setbacks")


FEDEX

"…the developers of the Empire State Building were willing to sacrifice rentable space to achieve their goal of providing sunlight and air, as well as freedom from street noises. That was why a set-back was provided on all sides of the sixth floor. Although the building would contain three million square feet of rental space, the developers were taking about 300,000 square feet less than the amount permitted under the zoning laws for a building plot of its size."

John Tauranac, Author



Al Smith referred to the set-backs that allowed light & air for adjacent buildings and the ESB's tenants as: *The Empire State Formula.*
He encouraged other developers to follow its principles but, in general, they declined the invitation.

The longest shadow cast by a building is measured at 3:00PM on the winter solstice (Dec. 21st). At that time, the shadow is 4.4x the height of the building on the latitude of NYC. The shadow cast by the 1,250' high ESB on December 21st is more than a mile long.

"Sunrise at the top of the Empire State Building occurs on an average of about half an hour earlier, and sunset about half an hour later than on street level. The actual difference in time varies with the seasons."

Everett, Washington *NEWS*

RE: *Factograph* column; October 24, 1931

"It is not easy to imagine the feelings of a New Yorker exiled for a period of 10 or 12 years who is returning to his native land by one of the ocean steamships. As he looks about from the deck of the vessel as it steams up the bay, the first glance that he obtains of the lower part of Manhattan Island will probably be, if he has not been forewarned, the greatest surprise of his life."

William Birkmire, Engineer

RE: By 1901, three-hundred buildings rose nine stories, some to twenty stories

"The bravest thing in New York is a blade of grass. This is not prize grass, but it has moxie. You need plenty of moxie in this man's town, or you'll soon find yourself dispersed hither and yon."
Damon Runyon

"How high do you want the tower now?" **asked Mr. Gilbert**

"How high can you make it?" **Mr. Woolworth asked on reply**

"It is for you to make the limit" **said Mr. Gilbert**

"Then make it 50 feet higher than the Metropolitan Tower" **responded Mr. Woolworth**

RE: Exchange between Frank W. Woolworth & Architect Cass Gilbert concerning the height of his new building. Met Life had denied FWW a much needed loan years before thus, he had a score to settle.

"A machine that makes the land pay"

Cass Gilbert, Architect

RE: Skyscrapers

"There would be an enormous profit outweighing any loss…The Woolworth Building was going to be like a giant signboard to advertise around the world my spreading chain of 5 & 10 cent stores"
Frank Winfield Woolworth

Frank Winfield Woolworth dismissed his Architect Cass Gilbert's maxim that the purpose of a tall building was "to make the land pay." FWW was indifferent about costs & return on investment; he understood the power of the "tallest building in the world" for promotional purposes. Begun in 1908, the *Woolworth Building* was completed in 1913. The terra-cotta façade did not stand up very well to NYC's "sulfurous atmosphere" requiring it to be continuously repaired and replaced. SL&H rejected the suggestion of using terra-cotta tile for the façade of the ESB knowing its shortcomings. With his office on the 54th floor; 700-feet above the lobby, FWW requested of Gilbert a maximum of one minute to travel to his lofty abode. Henceforth, 700 fpm set the standard for high-speed elevator service.

"It is a European city no longer. It is America. It is itself Imperial New York. Plenty of time yet. Men and machines. We are all so young yet. Wait and see. Wait and see what New York will do."

Sherwood Anderson

Part 3

Boom & Bust

"A fresh picture of life in America began to form before my eyes – America was going on the greatest, gaudiest spree in history and there was going to be plenty to tell about it. The golden boom was in the air."

F. Scott Fitzgerald, 1919

RE: The start of the "Roaring '20s"

"The statement of the 19th Century capitalist who said that anyone who sold the United States short was a fool still holds good. And if it can be said of the United States it can be said of New York and New York real estate, for if the country is prosperous, New York prospers."

William J. Demorest - VP *Cushman & Wakefield*, 1929

Have you $1,000.00 to invest? You want to invest your dollars where they will be safe – where they will grow – will work steadily to earn a consistent and generous income for you. Consider then, these facts: Land is the most permanent form of wealth known to man. The steady growth of population in your larger cities results in a constantly increasing demand and an inevitable increase in the value of well-located real estate. Large scale real-estate development in NY City has established a record for generous and consistent profits not equaled by any other type of investment. Certainly you should consider NY real estate with its inevitable increase in value as the first field in which your dollar should be put to work for you… Invest in the French Plan, which enables you to make a temporary investment that gives you a permanent income.

RE: 1920s advertisement for the *Fred French Real Estate Corp.*

"Never. It would be difficult for any man to put his finger on a single piece of real estate in the City of New York that is not worth more today than it was ten years ago, and that will not be worth more ten years hence than it is today."

Joseph P. Day, 1925 – respected real estate agent & auctioneer
RE: Response to a *NY Times* reporter's question: "*When will Manhattan stop being rebuilt?*"

"Progressive businessmen are not going to remain indefinitely in antiquated and time-worn structures and pay high rents. As they prosper and their business expands, they are going to keep pace with the progress and move into more sanitary and better lighted, better situated and more modern and up-to-date buildings as they are erected."

Nathan L. Ottinger – Realtor, 1927

"Always a safe and profitable asset, if there is not too much of it seeking tenants…the great prosperity of New York real estate, the greatest it has ever known, is certain to receive a serious setback"

Walter Stabler, Comptroller of the *Metropolitan Life Insurance Company*

RE: Moderate surplus of office space at the end of 1925 would be increased significantly by May 1, 1927 (May 1st being the traditional date for lease renewals)

"A continuation of the high rate of building in the last few years might result in over-production with a sequence of a depression"

Ethelbert Stewart - Commissioner of Labor Statistics, December, 1926

"…those who continued boosting and working when selling was hard work have found profit and success. They are the men who know that the average real estate investment is far more sound than the average stock investment."

Al Smith, 1931

RE: Stagnant NYC real estate market at the height of the depression

"It is becoming clear that it will take longer than expected for all the King's horses and all the King's men to put Humpty-Dumpty together again"

***Business Week* magazine, 1931**

RE: The widening depression

"The rate of new construction in the metropolitan area in October 1930 had fallen off almost 15% from the month before, and a full 50% from October 1929. The workers stood half as much chance of finding a job as they would have the year before…The workers had little to cheer about"

John Tauranac, Author

Part 4

The Center of the World

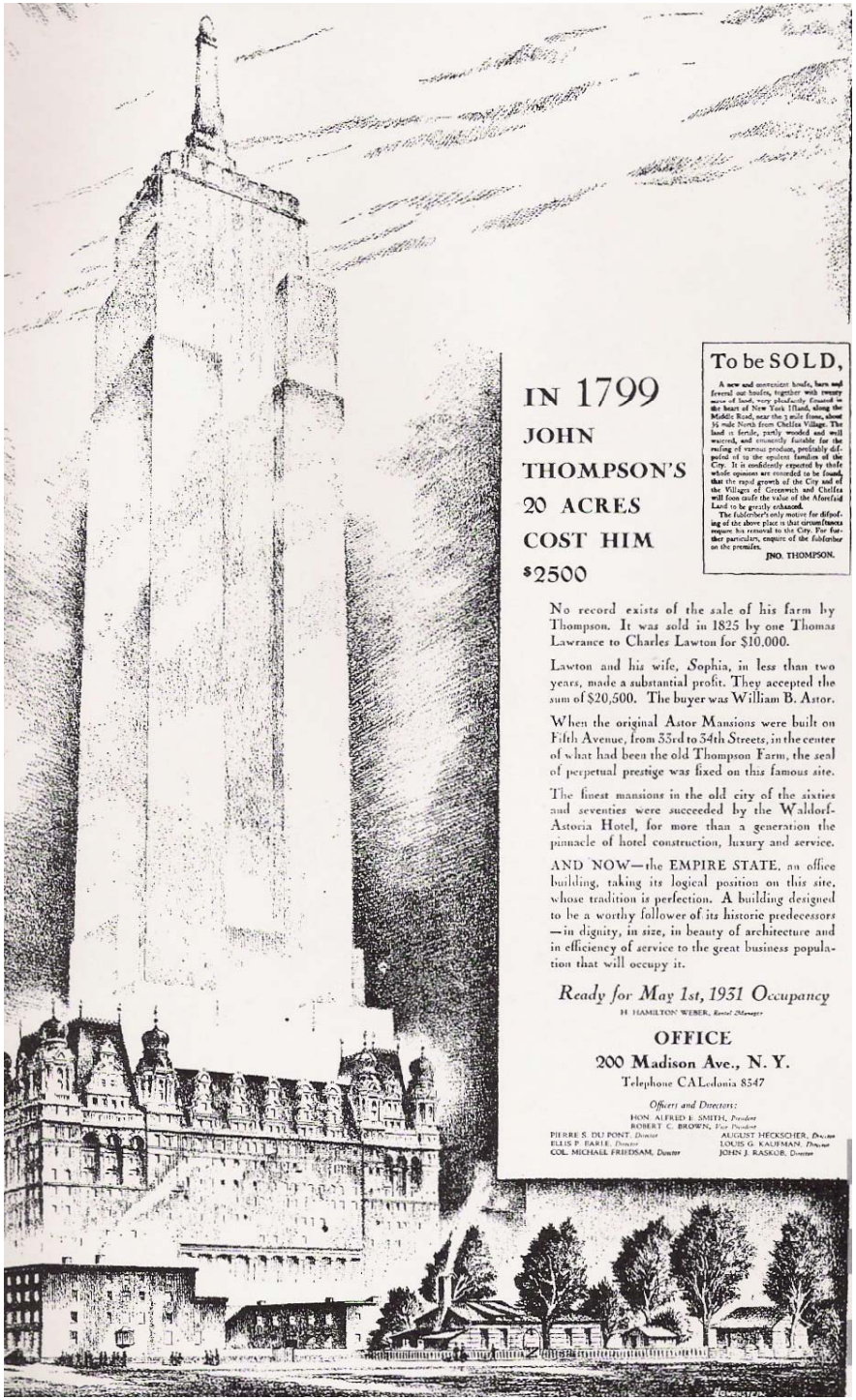
"…While it is a fact that a sizable volume of office space was rented in the Empire State from plans long before a finished office unit could be shown…a trite statement to make at the present time that the Empire State Building was not erected for the sake of more business, even though its dimensions equal the total of a dozen ordinary large sized office structures, but because the logic of events pointed to the region from 40th Street to Madison Square and from Broadway to Park Avenue as the compelling new office zone. A large percentage of the space in many new office buildings within this area is rented."

Al Smith, 1930

"Eighty years ago, a very short time when one stops to think, this land was part of a farm. More recently it was the site of one of the great hotels of the world; and soon it will be the location of the tallest structure ever built by man."

Al Smith

RE: Excerpt from his Sept. 9, 1929 cornerstone-setting speech



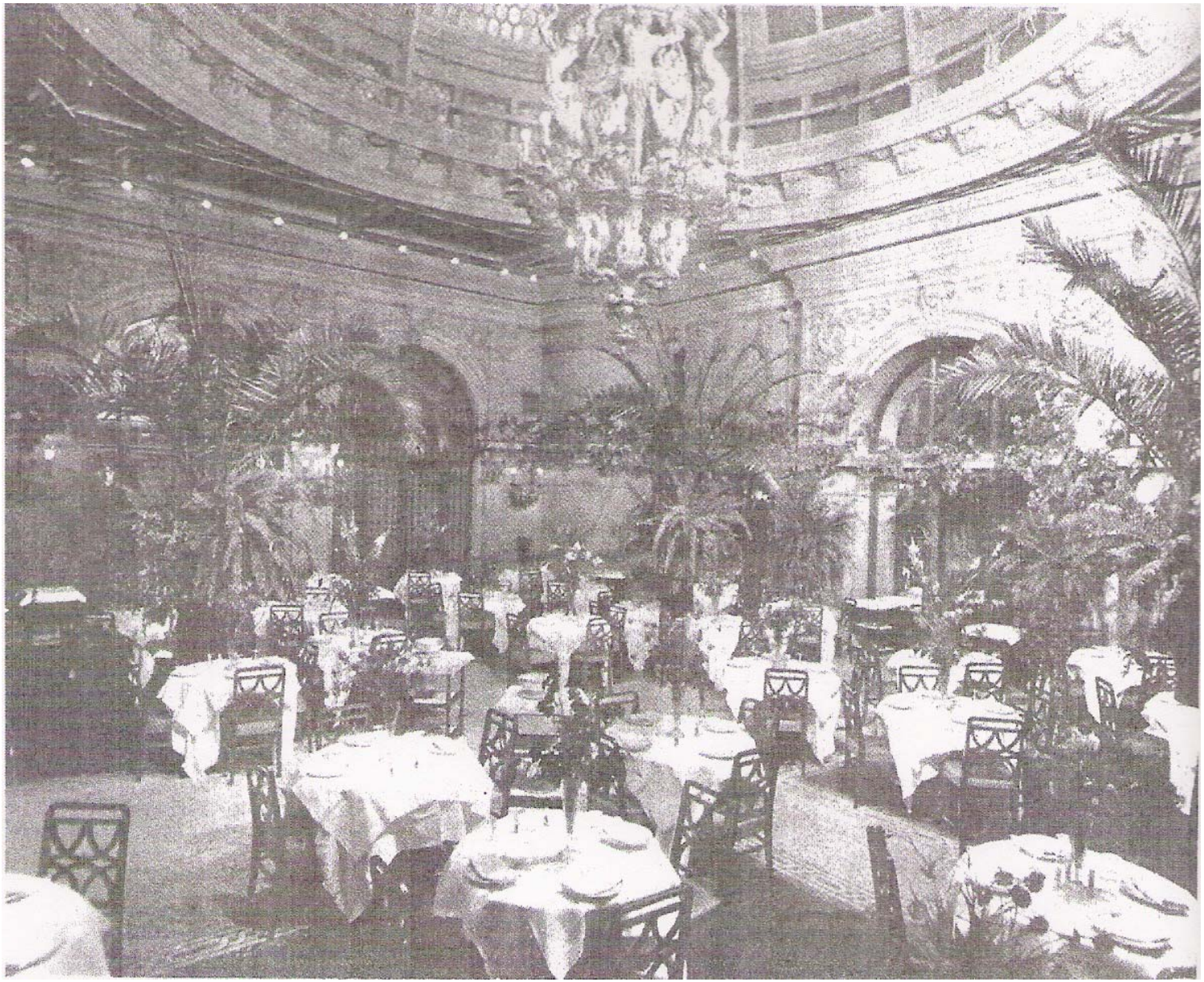
To be SOLD, A new and convenient house, barn and several out-houses, together with twenty acres of land, very pleasantly situated in the heart of NY Island, along the Middle Rd., near the 3-mile stone, about ½ mile North from Chelsea Village. The land is fertile, partly wooded and well watered, and eminently suitable for the raising of various produce, profitably disposed of to the opulent families of the City. It is confidently expected by those whose opinions are conceded to be found, that the rapid growth of the City and of the Villages of Greenwich and Chelsea will soon cause the value of the aforesaid land to be greatly enhanced... Jno. Thompson

End of an Era

"Instead of having the feeling that something near and dear is dying, another interpretation is that something very much like a great personality is retiring after many years to a peace to which it is entitled"

William Pendergrast, Chairman - *Public Service Commission*, 1929

RE: Eulogy at the final ballroom dinner for 500 prominent NY'ers in the *Waldorf-Astoria Hotel*, just prior to its demolition to make way for the ESB



Palm Garden

Octagon Room

The Waldorf Hotel (left) & 350 Fifth Avenue (right) which was the home of Caroline Schermerhorn Astor (William Waldorf Astor's "Aunt Lina" with whom he was engaged in a family feud). Her home would make way for the "Astoria" portion of the *Waldorf-Astoria Hotel.*

"It is seldom, except when some old and large holding comes onto the market, that an operation involving an entire block of property is at all possible. This is due mainly to the fact that the last property owner always holds out for the ultimate dollar, for which he cannot be blamed under the present system – or he flatly refuses to be drawn into negotiation of any kind."

Irwin Chanin – Real Estate Developer, 1930

RE: The increasing difficulty and expense of obtaining large plots in urban centers

The New *Waldorf-Astoria Hotel*
(1931)
(Park Avenue & 49th Street)

"Great caution should be exercised in selecting sites for and in the designing and planning of new office buildings during the next few years, particularly in the midtown section"

Loring M. Hewin – Realtor, 1929

Midtown Business District (foreground)
(a.k.a "42nd Street Corridor")

"…chosen a lot where no large office building had ever grown before, a section which the 42nd Street development and the general march northward had overlooked. If they were right they might succeed in domesticating the migratory real estate operators of Manhattan within the present uptown frontiers."
***Fortune Magazine*, 1929**

"If the owners are right, they may fix the center of the metropolis. If they are wrong, they will have the hooting of the experts in their ears for the rest of their lives."

***Fortune Magazine*, 1929**

RE: ESB's risky location in neither the downtown or midtown business districts

See for yourself what practicable layouts they make. They are far above the noise and dust of the street – with superb outlook and assured light. The partitions are of heavy steel and glass, finished with a special rich walnut graining. The quality and tone are far more than you would expect in such moderately priced offices. Three-office suite, each with a window, $2,500. Three-office suite, two offices with a window and reception hall without, $2,400: This year it's the RCA Building!

RE: Commercial space advertisement in newspapers, 1931

"…great apex of office occupancy, as a structure so high that its sheer personality brings an influx of office population to a district that was changing to an office status…34th Street is the midway thoroughfare of the region between Madison Square and 42nd Street. As the Waldorf-Astoria emphasized a great trade and hotel center, so, now, under the changed condition, does the Empire State emphasize the growing prestige of the region along office lines."

Al Smith, 1929

RE: ESB site; Fifth Avenue, between 33rd & 34th Streets

EMPIRE STATE: ON A SITE INTERNATIONALLY FAMOUS…The outstanding addition to the great group of modern uptown office buildings. Convenient to all points of transportation…Thoughtful business leaders see in the selection of this site the broad scope of the development of modern office facilities in the city's most accessible area…a building that evokes admiration…a Board of Directors that inspires confidence…

RE: May 7, 1931 newspaper advertisement for the ESB

"Governor, I've got some news for you. I hope this will please you. I can understand your feeling the way you do. Some friends of yours and myself have assembled a plot at the corner of 34th Street & Fifth Avenue. There we are going to build the tallest building in the world – you're going to be the president – and it's your job for life."

J.J. Raskob to Al Smith
RE: Conversation in the men's room of the *Lotus Club* celebrating FDR's victory in the 1928 NY State gubernatorial race

Part 5

EXCELSIOR

“Ah, but a man’s reach should exceed his grasp or what’s a heaven for”

Robert Browning

“*What floor, please?*” said the elevator man
“*Any floor*” said Mr. In
“*Top floor*” said Mr. Out
“*This is the top floor*” said the elevator man
“*Have another floor put in*” said Mr. Out
“*Higher*” said Mr. In
“*Heaven*” said Mr. Out
F. Scott Fitzgerald
RE: Excerpt from *May Day*

"The skyline of Manhattan soars into view, its towers and citadels shooting skyward in anarchic and bewildering profusion, overwhelming in their sense of power and their gargantuan beauty, looking more than ever like some unearthly fantasia out of a fairy tale. It is one urban view in all of the world which sings at a journey's end like a public triumph."

Clair Price – Journalist

"Where for the eye, is the felicity of simplified gothic, of noble pre-eminence, that once made of this highly pleasing edifice the pride of Broadway? The answer is, as obviously, that these charming elements are still there, just where they ever were, but that they have been mercilessly deprived of their visibility."

Henry James – Writer, ca. 1900

RE: Lament over the "lost city" of the 19th century to tall buildings crowding them out

"Ten years ago such a building would have been the gossip of the architectural world, today, it is a mere incident"

Harvey Wiley Corbett – Architect, 1929

RE: In view from his nearby midtown office, a 40-story office building was rising on East 40th Street. Fascinated by it, a visiting German architect inquired about it. Embarrassed, Corbett had to admit he knew nothing about it. By the late 1920s, such buildings were commonplace in New York City.

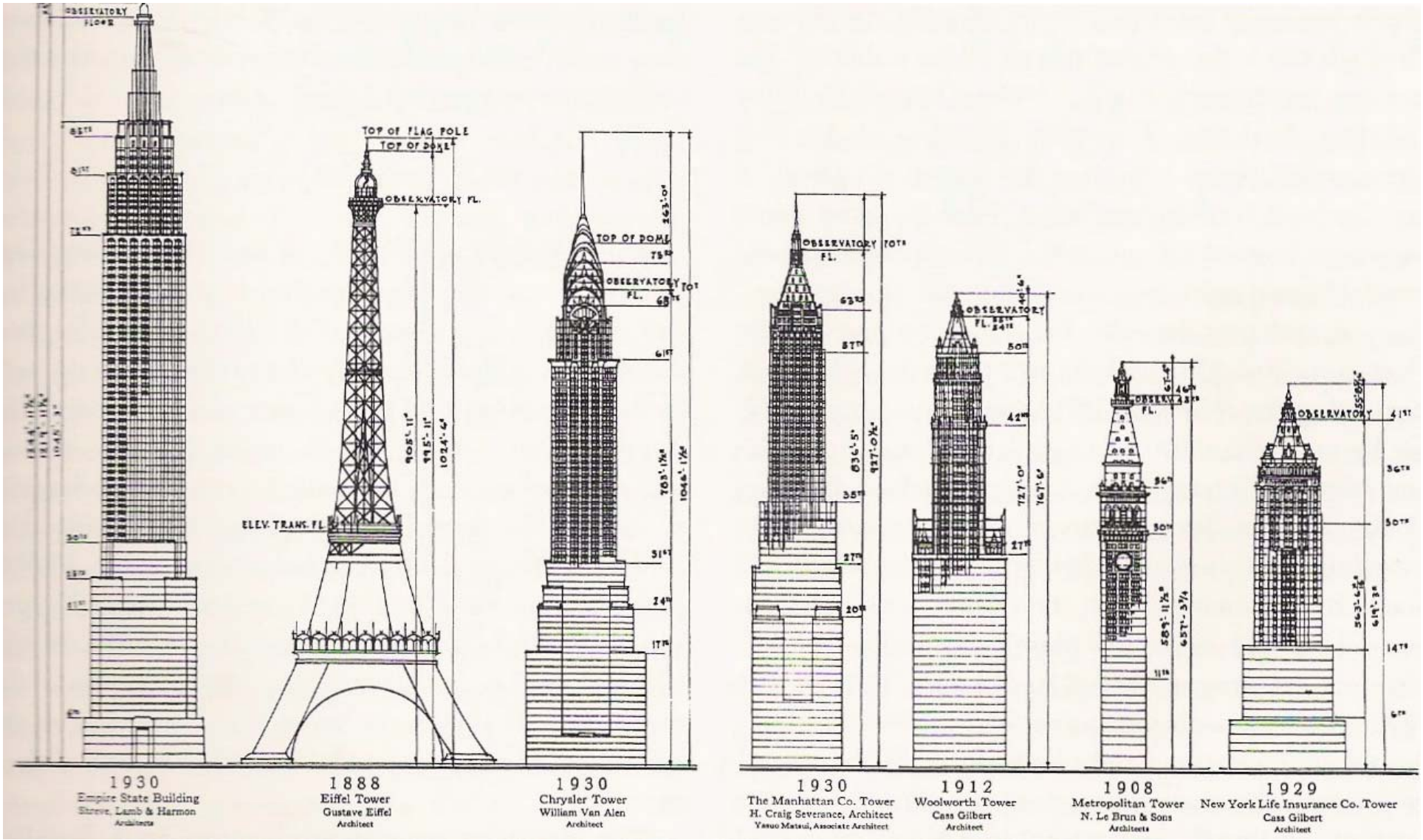
"Perhaps it might seem to the layman that $22,500 a year is a lot of money to pay for the use of a bit of emptiness, but the truth is that Manhattan's skyline is becoming so solid that breathing space is at a premium"

Douglas Gibbons, Attorney at Law - 1929

RE: Peak price paid by the developers of the 38-story *Harriman Building* a 39 Broadway for a 33-year lease for the air-rights over the adjoining five-story building at 31 Broadway. This arrangement allowed light & air for the new tower by preventing a tall tower being built right next to it and earned the owner of 31 Broadway $742,500 over the term of the lease.

"Sometime ago I got our engineers to figure up just what would be the theoretical maximum height for a skyscraper. It is 7,000 feet…I proposed a tower 2,500 feet and nobody batted an eye"

Raymond Hood, Architect



1930
Empire State Building
Shreve, Lamb & Harmon
Architects

1888
Eiffel Tower
Gustave Eiffel
Architect

1930
Chrysler Tower
William Van Alen
Architect

1930
The Manhattan Co. Tower
H. Craig Severance, Architect
Yasuo Matsui, Associate Architect

1912
Woolworth Tower
Cass Gilbert
Architect

1908
Metropolitan Tower
N. Le Brun & Sons
Architects

1929
New York Life Insurance Co. Tower
Cass Gilbert
Architect

"Men are only as great as the monuments they leave behind"

Napoleon Bonaparte

“ I want a taller building of a finer type of construction and its your job to give the best that’s in you. Improve upon them to the best of your ability, spare no effort or time.”

RE: Walter P. Chrysler’s directive to Architect William Van Alen for the design of the building to bear his name

"I was well aware that a rich man's sons are likely to be cheated of something. How could my boys ever know the wild incentive that burned in me from the time I first watched my father put his hand to the throttle of his engine? I could not give them that, but it was through this thinking that I conceived the idea of putting up a building."

Walter P. Chrysler

RE: His motivation for the *Chrysler Building*. He was also competing with GM for supremacy in the auto industry. The *tallest building in the world* would help this cause as it had for Singer, Met Life, Woolworth etc.

"Art Deco architects in America took the squares, circles, and triangles of plane geometry to create their own sacred geometry…They created a bizarre new iconography that ran the gamut from Egyptian and Greek to Assyrian, Aztec and Mayan, complete with ziggurat pyramids and wild jungle plants. They created cubistic birds that never flew and stylized lightning bolts that no Zeus ever threw…"

John Tauranac, Author

RE: By the mid-1920s, the *Art Deco* style was prevalent in skyscraper design and adornment

Chrysler Building architect William Van Alen at the *Beaux-Arts Ball* of 1931.
The parabolic top of the Chrysler Building was influenced by the Aztec culture of Mexico.

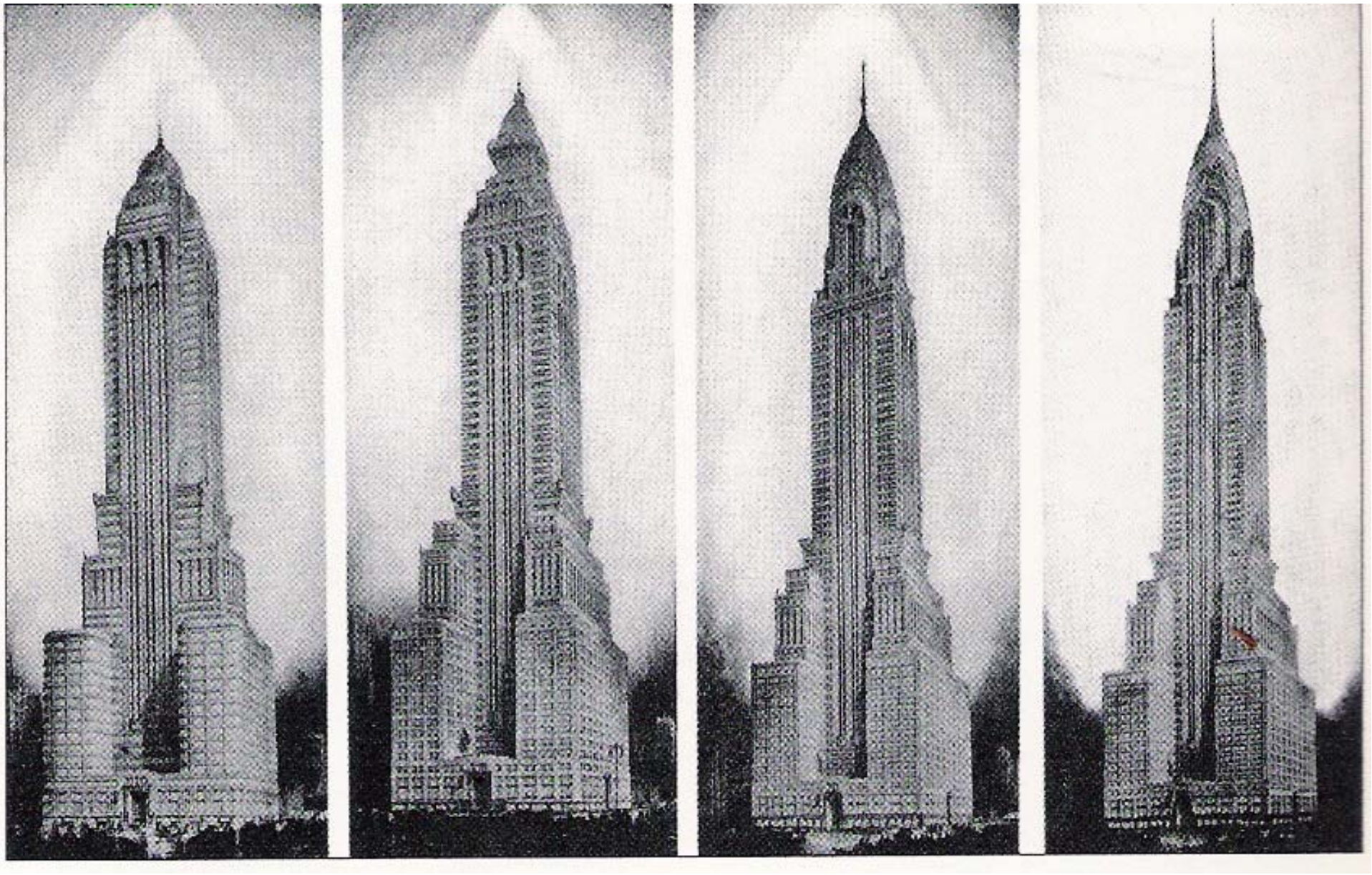
"In designing a skyscraper there is no precedent to follow for the reason that we are using a new structural material, steel, which has been developed in America and is different in every way from the masonry construction of the past…Structurally, and in their purpose, our tall buildings are wholly unlike any buildings of an earlier day. To apply to our tall office buildings, apartment houses and hotels the familiar architectural features characteristic of the comparatively low palaces, temples and churches that were built before the advent of steel as a building material, is not economical or practical, and it is artistically wrong since it is not truthful."

William Van Alen, Architect

RE: Skyscraper design

"The tower should grow out of the lower masses surrounding it, and it should terminate in a crowning feature that is a natural and logical development of the tower itself, not merely an ornament placed on top of the tower. All parts of the design should be tied together in a closely knit composition, each part not only belonging to the whole but accentuating the effectiveness of the other parts."

William Van Alen, Architect
RE: *Chrysler Building* design



Design development of the *Chrysler Building*
(left to right)

"Yes, here it is that real battles are being waged, and here is where the romance of the skyscraper is being worked out. Up there in his habitation of height and steel the ironworker heaves himself from one beam to another, upward, always upward – his shoulders bulging, his knees tense, but his face as placid as the blue sky only an arm's reach beyond him."

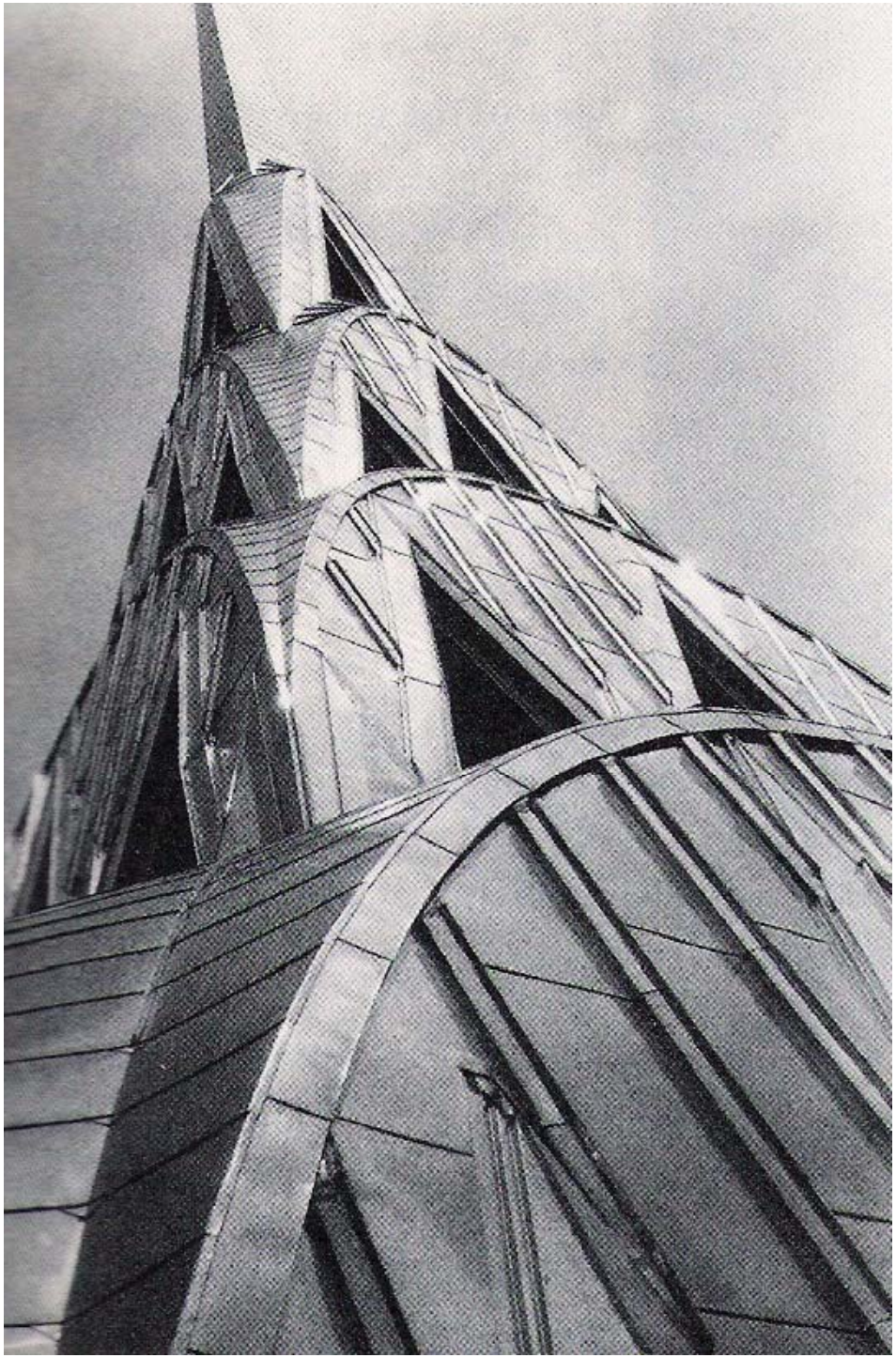
Edmund Littell, 1929

RE: *Chrysler Building* vs. *40 Wall Street* "Race for the Sky"

"…he examined his plans and right in the center of the tower he found a fire tower which, to the untutored mind, is nothing more or less than a large hole in a building. And there he went secretly to work. He and his engineer evolved a modernistic flagpole of latticed steel – they named the thing a 'vertix', because the name hadn't been used before, and they had it made in three pieces. They hoisted it up in the fire tower and there riveted it together."

Kenneth M. Murchison, Architect

RE: Chrysler Building Architect William Van Alen's stainless steel spire built in secret to exceed the height of *The Bank of the Manhattan Company Building* (a.k.a. *40 Wall Street*)



"America is vindicated, and our national passion for biggest, the tallest, the most stupendous, may gratify itself in the thought that at last we are supreme"

RE: Newspaper editorial upon the completion of the *Chrysler Building* in 1930 surpassing the *Eiffel Tower* (1889) as the world's tallest man-made structure

"Chrysler's only sixty-eight stories, we're seventy. They put that flagpole, or whatever they call it, on the top, and it goes up higher, but you can't put offices in a flagpole, can you? We've got more construction. Clear up to the penthouse, right under the pole, we've got space for things you have to put in a building like this."

Starrett Bros. & Eken

RE: *40 Wall Street* (a.k.a. *Bank of the Manhattan Company*). SB&E were the General Contractors for the building that "lost" the race with the *Chrysler Building* in 1930. It was built in record time and was the construction forerunner to the ESB.

40 Wall Street
(1930)

"…The legitimate height of skyscrapers should be considered of the building only, in accordance with the Building Code, and shouldn't include the flagpole or the radio needle, so the Eiffel Tower still holds the crown for the highest structure, its observatory being 905 feet, 11 inches above grade. The Bank of the Manhattan Company's tower on Wall Street ranks second, its observatory being 836 feet, 5 inches above Wall Street grade. A good third is the Chrysler Building, its observatory being 783 feet, 1&1/2 inches above Lexington Avenue grade, or 53 feet below that of the Bank of the Manhattan Company Building…"

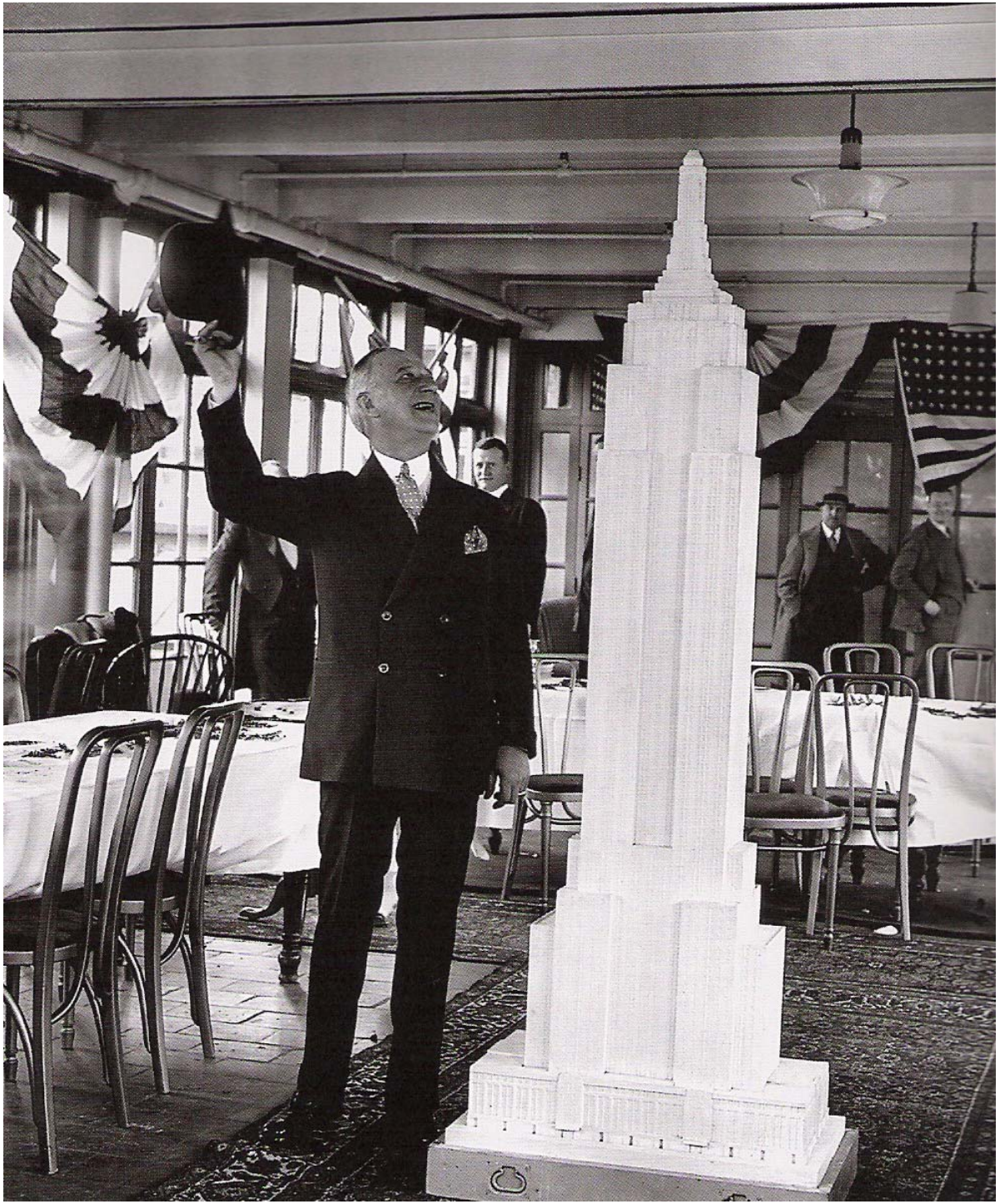
Yasuo Matsui – Design Architect for *40 Wall Street*

RE: The "Race for the Sky"

"Don't worry Al, I'm going to build a new skyscraper – biggest in the world, and you're going to be the president of the company"

J.J. Raskob, 1929

RE: Raskob's intentions to build the world's tallest building and have his friend; Al Smith, be president of *Empire State, Inc.* and chief proponent. After losing the 1928 presidential election, Smith's political career was over and his fortunes were diminishing rapidly; ESB changed all that.



"I feel honored by the request and will do my best to make the venture a success"

Alfred Emmanuel Smith, 1929

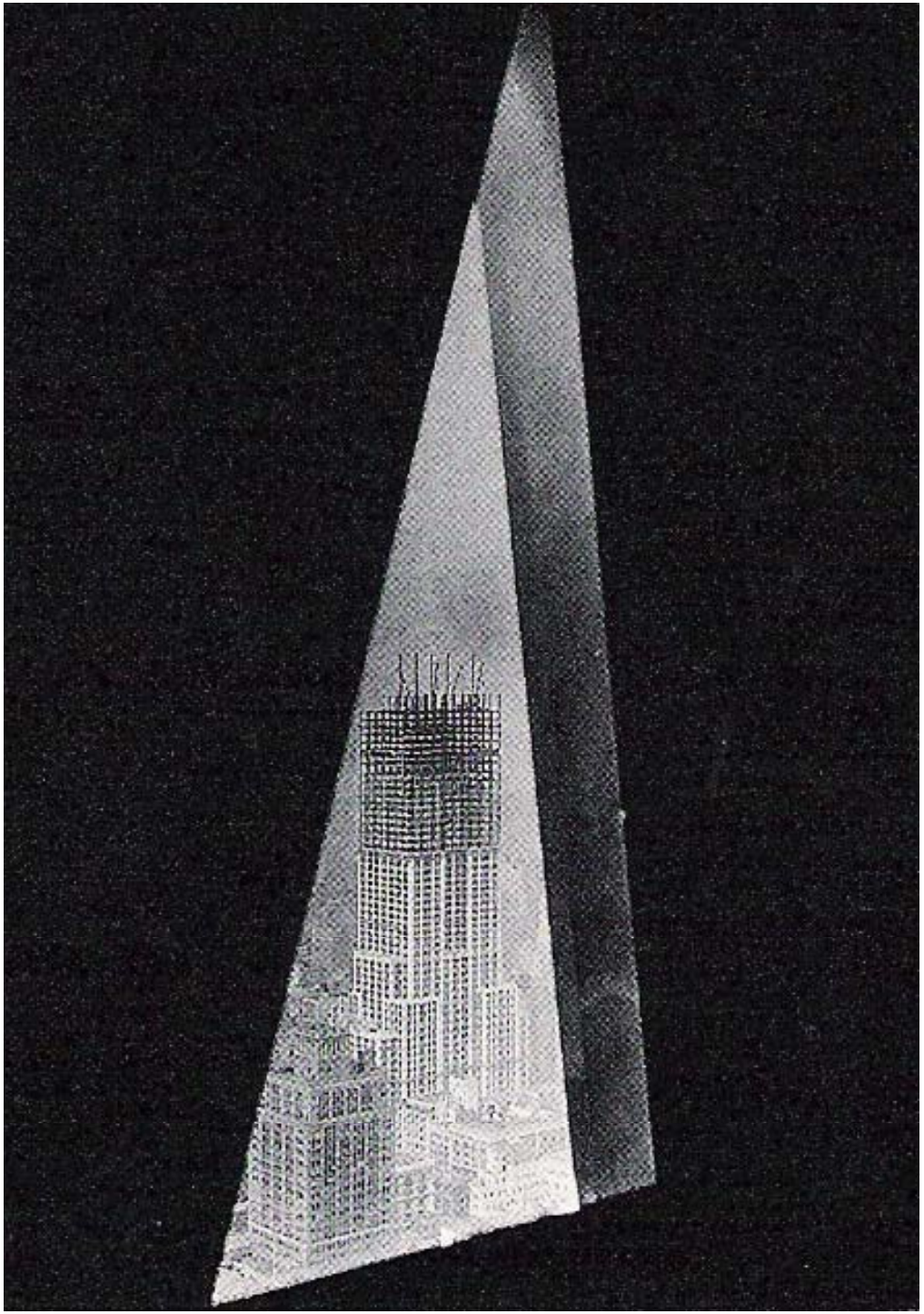
RE: His appointment as president of the *Empire State Corp.*

"Bill, how high can you make it so it won't fall down?"
J.J. Raskob, 1929
RE: Question posed to Architect William Lamb of *Shreve, Lamb & Harmon* concerning the potential height of the ESB. Ideally, 65 stories would work best, but 85 stories was the outer limit for profitability.

"The building will be close to 1,000 feet high, the equivalent of the length of five city blocks. It can house at one time more than 60,000 people, which is half the population of the city of Syracuse…It will tower over the busiest section probably in the world. It will contain three million square feet and 64 million cubic feet. From the roof of the building on a clear day looking to the south you can see Sandy Hook, to the north the hills of Westchester County, to the west the Orange Mountains of New Jersey and to the east part of Long Island."

Al Smith, 1929

RE: ESB's height & capacity



ESB under construction (as seen from the *Chrysler Building's* observatory)

"I would not. If anyone can have more fun building a structure taller than any in the city, I wouldn't deprive him of the fun."

William Lamb, Architect

RE: Response to a question regarding whether or not he was in favor of limiting the height of buildings

ESB completed
As seen from the Chrysler Building Observatory.
After the observation decks opened in the ESB, the Chrysler Building's observatory was closed for lack of business.

“Skyscraper”

The term originated in sailing ships days. The top-most sail on a fully-rigged ship sailing out of Liverpool was referred to by sailors as *The Skyscraper.* Since many ex-sailors were recruited as ironworkers in the late 19th century (for their ability to work at great heights without fear), the term was adapted to their new venue (tall buildings).

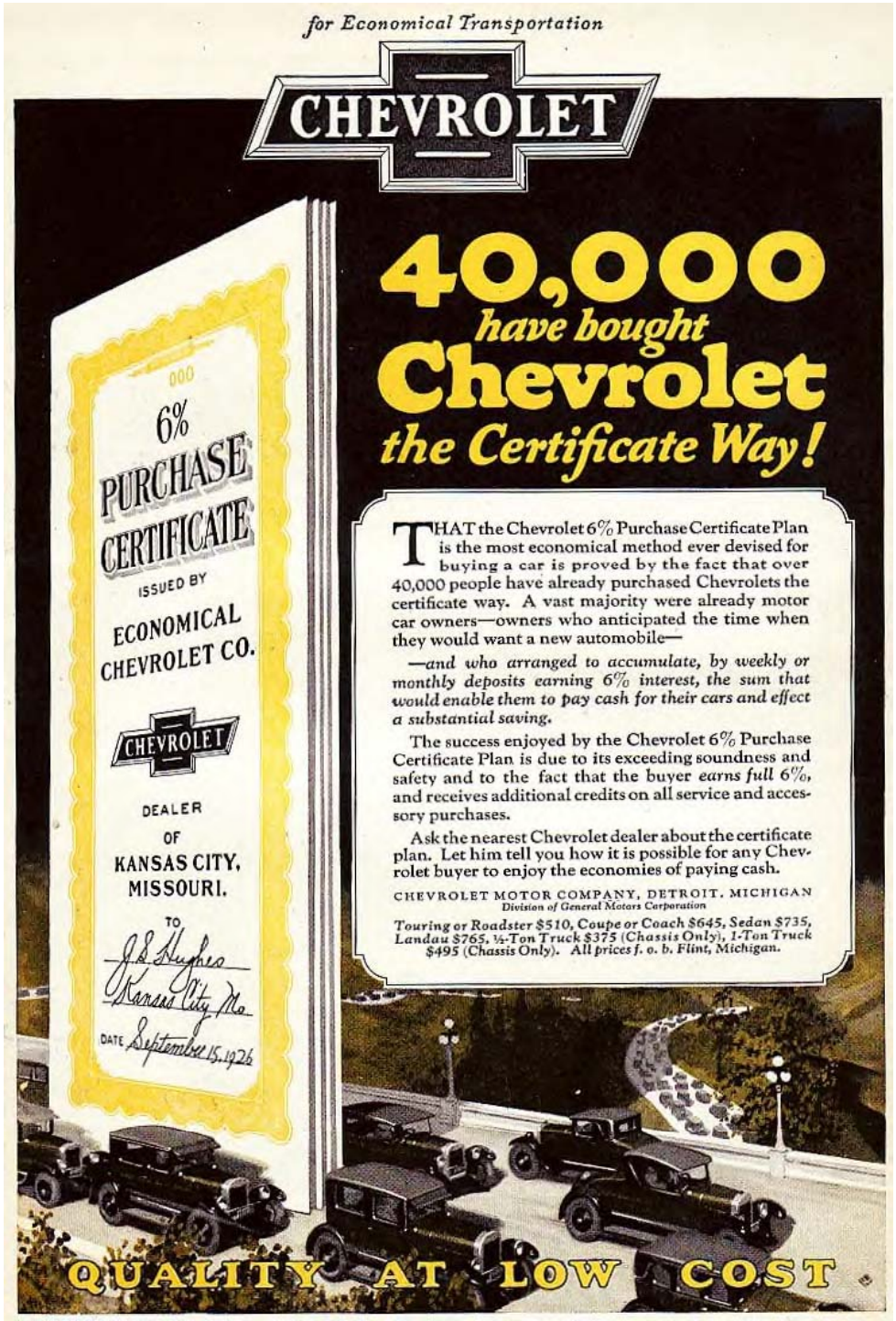
Part 6

Everybody Ought to Be Rich

"If a man saves $15 a week and invests it in good common stocks, and allows the dividends and rights to accumulate, at the end of twenty years he will have at least $80,000 and an income from investments of around $400 a month. He will be rich. And because income can do that I am firm in my belief that anyone not only can be rich but ought to be rich."

John Jakob Raskob – Summer, 1928

RE: Excerpt from his article: *Everybody Ought to be Rich*



As a General Motors executive, J.J.Raskob pioneered the purchasing of automobiles on credit (GMAC)

"The attitude of many successful men who have come up from the ranks, men whom I have known for years, men who drink now and who have always drunk…These men, many of whom at one time wore overalls – and in many cases they were more appropriate than the plus fours or dinner coats that they wear now – set themselves as arbiters of the poor man's actions and with champagne glasses in their hands say 'Oh, we must vote for prohibition; it is good for the fellows in the shop.' It is all hog-wash. I have never seen any workman the worse for a glass or two of beer, while now that he cannot get it he is discontented."

John Jakob Raskob

RE: Prohibition. JJR was a spokesman for the *National Association Against Prohibition*. Prohibition ended in the spring of 1933.

“Go ahead and do things, the bigger the better, if your fundamentals are sound. Do not quibble for an hour over things which might be decided in minutes. However, if the issue at stake is large, stay as long as the next man, but go ahead and do things.”

John Jakob Raskob

Part 7

Favorite Son

"Mr. Speaker, I have just heard that Cornell won the boat race"
"That doesn't mean anything to me I'm a Yale man."
"It doesn't mean anything to me. I'm a Harvard man."
"It doesn't mean anything to me. I'm an F.F.M. man"
"What's that, Al?"
"Fulton Fish Market. Let's proceed with the debate"
RE: Exchange between Republicans & Al Smith in the NY State Legislature

Alfred E. Smith
(as N Y State Governor)
Many *New Deal* policies instituted by his rival FDR (as POTUS) were first implemented in NY State while Al Smith was Governor of NY

(cigar box cover)

"Al entered with his family. His chin was up and his indomitable heart was high. At the sight of his jauntiness in defeat, men and women workers burst into tears. Deeply touched, Smith barked out a few words of thanks to hide his own mounting emotions, clasped loyal hands, and was gone. Perhaps never in political history was there so much distress among the rank and file of the party as there was over his defeat."

James A. Farley, DNC Chairman

RE: Presidential election defeat of Al Smith to Herbert Hoover on election night, 1928. Smith lost almost every state (including NY), but did well in urban areas. The high level of hostility towards him in rural America – as both a Catholic and a New Yorker, was disheartening. Effectively, his long political career was over (though it took him some time to realize this fact).

"So that there will be no mistake or misunderstanding about it, I declare, and firmly, that I have a right to use this trowel as a member of the union. My dues are all paid and I have my card in my office at 200 Madison Ave."

Al Smith

RE: Excerpt from his Sept. 9, 1929 cornerstone-setting ceremony speech

"…certain articles of value indicating the trend of the time. If this building is ever demolished to make way for a greater building the people of that day can read pretty accurately the history of this day. Since the advent of the movie camera, the radio and other means of communicating sound, the laying of a cornerstone of a public building today becomes somewhat of a photographic gallery performance."

Al Smith

RE: Laying of the 4,500 lb., semi-circular Swedish granite block cornerstone (2&1/2' thick x 6' dia.) on September 9, 1929; to the right of the 5th Avenue entrance.

“Articles of Value” serving as a time capsule for posterity included:

*** History of the ESB & Starett Bros. & Eken**

*** Photographs of;**

*** Shreve, Lamb & Harmon**

*** Starrett Bros. & Eken**

*** 9/9/29 NY Times (on rag paper)**

*** Coin/paper money from one-cent to a $100.00 bill**

Opened on the 50th Anniversary of ESB (in 1981), the “Articles of Value” were found to be ruined by water infiltration. The same articles were hermetically sealed and replaced in the cornerstone for posterity.

"Al could sell the Brooklyn Bridge to the Atlantic Ocean"

RE: Al Smith's ability as a promoter for the ESB. His salary of $50K/year was well worth it to the ESB's owners. He convinced NY State to give the owners a $60,000 tax break in 1929 due to the fact that no building stood on the property between the dismantling of the *Waldorf-Astoria Hotel* and the start of the ESB's construction.

"…had taken place in this country, there is some certain kind of foreign 'ism' crawling over this country. What it is I don't know. What its first name will be when it is christened I haven't the slightest idea. But I know that it is here."

Al Smith – Fall 1936

RE: Growing disillusioned with the Democratic Party, Smith endorsed republican Alf Landon for President rather than FDR in the 1936 presidential campaign. FDR had referred to Smith as; *The Happy Warrior*, but by the mid-1930s he became known as; *The Unhappy Warrior*.

PART 8

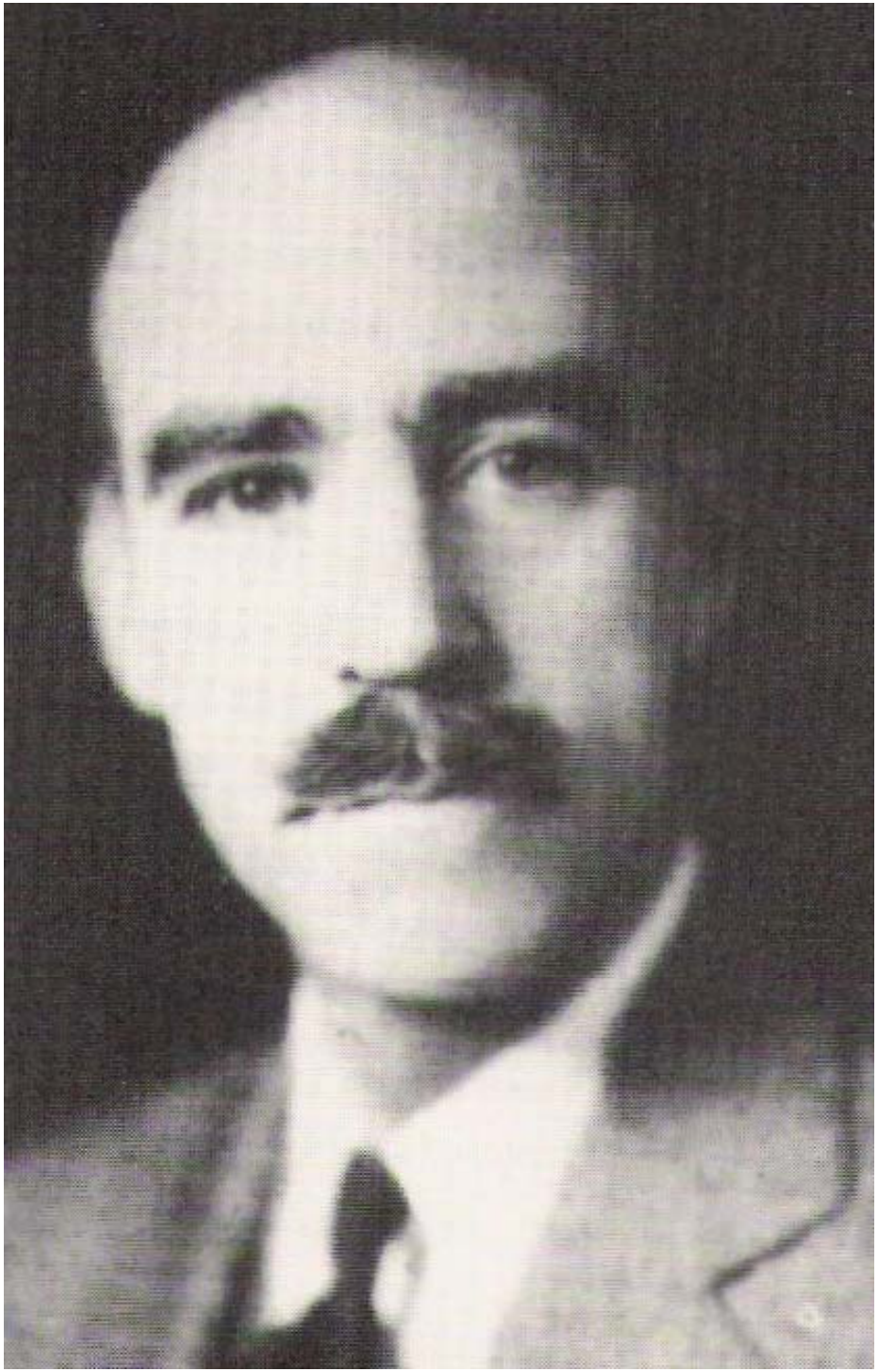
The Firm

"The profession of architecture calls for men of the highest integrity, business capacity and artistic ability. The architect is entrusted with financial undertakings in which his honesty of purpose must be above suspicion; he acts as a professional advisor to his client and his advice must be absolutely disinterested; he is charged with the exercise of judicial functions as between client and contractors and must act with entire impartiality; he has moral responsibilities to his professional associates and subordinates; finally he is engaged in a profession which carries with it grave responsibility to the public."

RE: ***American Institute of Architects Code of Ethics*****, 1927**

Based on their previous experience with GM executive J.J. Raskob - as the architects of the *General Motors Building* (Broadway & 8th Avenue, between 57th & 58th Streets) in 1928, and their reputation for cooperative effort (forerunner of modern *integrated design*) rather than authoritarian rule, the architectural firm of *Shreve, Lamb & Harmon* was chosen to design the ESB

"We understand that you are to boss the job."
"No. An architect has a better chance of keeping out of trouble if he works with the other directors in his task. Our plan is to find the best available brains in the real estate field, in various branches of engineering, in architecture, building and labor. Then we will put all our ideas on the table. The best of these ideas we develop in this fashion are the ones we will use."
Richmond H. Shreve, Architect
RE: Exchange between reporter & R.H. Shreve upon announcement in early 1929 of plans for the ESB and SL&H to be its architects



"The program was short enough – a fixed budget, no space more than 28 feet from window to corridor, as many stories of such space as possible, an exterior of limestone, and completion date of May 1, 1931, which meant a year and six months from the beginning of the sketches."

William F. Lamb, Architect
RE: ESB. Twenty-eight feet from office window to corridor was a real estate standard at the time providing maximum sunlight to offices.

1) Build no deep spaces, only shallow ones. Ill-lit spaces are second-class spaces; they cost as much to build and operate as first-class space, but the returns are smaller. The office building that gives up the most for light and air is the best investment.

2) Make no interior space permanent. Build interior space that can be easily modified, and lay it out for intensive use. A large number of tenants occupying small spaces is far more desirable than a few tenants occupying large spaces. Smaller offices can command a higher rate, and if one tenant moves, the owner is not stuck with a large vacant space.

3) Build only first-class public space for public areas. To simplify maintenance, use only proper materials and details. Operating expenses can make the difference between success and failure, and the upkeep of an office building is as important as its construction.

Owen F. Aldis, premier late 19th century commercial office developer in Chicago

RE: His three tenets for commercial development

Typical early 20th century office

"The day that an architect could sit before his drawing board and make pretty sketches of decidedly uneconomic monuments to himself has gone. His scorn of things 'practical' has been replaced by an intense earnestness to make practical necessities the armature upon which he molds the form of his idea. Instead of being the intolerant aesthete, he is one of a group of experts upon whom he depends for the success of his work, for the modern large building with its complicated machinery is beyond the capacity of any one man to master, and yet he must, in order to control the disposition and arrangement of this machine, have a fairly accurate general knowledge of what it is all about. Added to this he must know how to plan his building so that it will 'work' economically and produce the revenue for which his clients have made their investment."

William F. Lamb, Architect – Principal, *Shreve, Lamb & Harmon* & primary designer of the ESB

"The present cult for harsh plainness is obviously a temporary one…based no doubt, on a revulsion to a period of undue ornateness. It will pass. Those buildings which mirror most fully the present bleakness of outlook will be most violently rejected by a more normal, reasonable generation. Because one generation has gilded lilies is no reason why the next should strip them bare."

Arthur Loomis Harmon, Architect

RE: His and SL&H's preference for the "Modernist" style rather than the "International Style" of architecture in their building designs

Shelton Hotel (NYC)
(by Arthur Loomis Harmon)

YMCA Jerusalem
(by Arthur Loomis Harmon)

500 Fifth Avenue
Shreve, Lamb & Harmon, Architects, 1929
(design forerunner of the Empire State Building)

"It would have been convenient to know, as one passed Fifth Avenue and 34th Street, just who designed the Empire State Building, and, two blocks further uptown what architect conceived the Morgan Library"

Charles Hanson Towne, 1931 – writer for the *Rochester Journal*

RE: Architect Charles F. McKim had "signed" his building – the *Morgan Library*, by having his face sculpted in bas relief as the sphinx's face

"By signing buildings we help to educate the public to the idea that a really good building is a work of art, not merely a structure, and that its author is an artist as well as a master builder"

William Orr Ludlow, VP *New York Building Congress*

RE: Tradition whereby architects "signed" their buildings becoming passe in the 1920's – SL&H did not sign their buildings

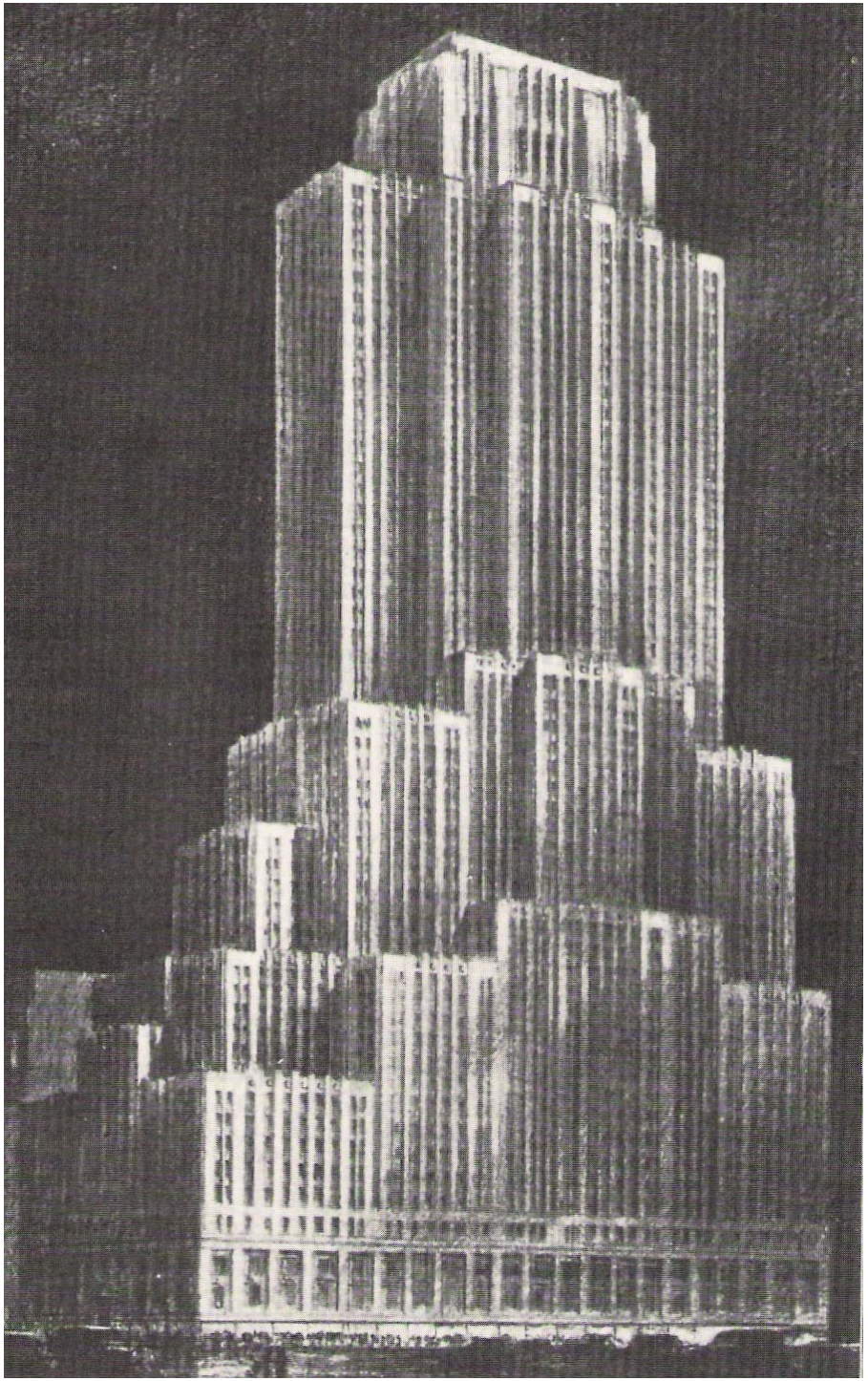
"The determination of the height of the building will be based on the sound development of usable space. As we proceed with the plans the owners will be in a better position to determine what the height of the building is to be. Any announcements as to dimensions and set-up must come from Governor Smith."

Richmond H. Shreve, Architect
RE: ESB height

"Since the building must pay, the designer must do his best to make this possible…After all the elements to make up the cost of the skyscraper are gathered together, we must locate the point at which the balance begins to swing back, where the additional floor space becomes too expensive and the rate of return on capital investment, our financing, our income, and our fixed charges and our operating cost, which will finally determine if the building we have designed is to be built"

Richmond H. Shreve, Architect

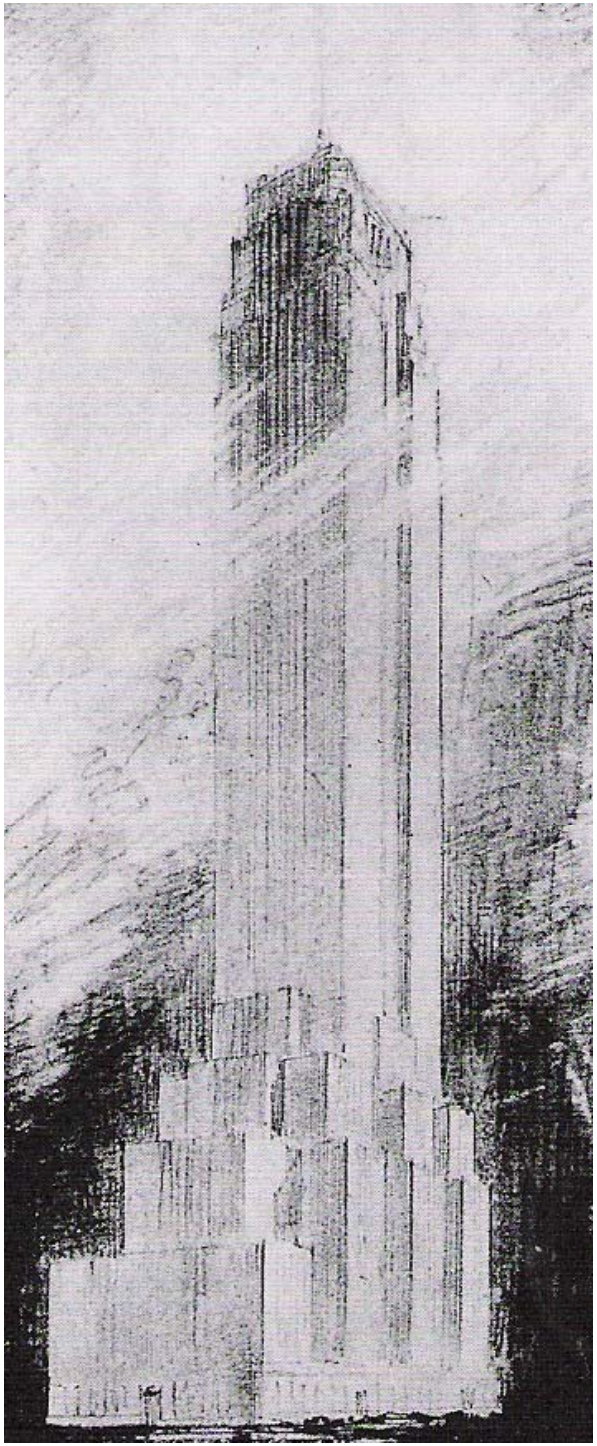
RE: Excerpt from his speech entitled: *The Economic Design of the Modern Office Building*, at the Hotel Commodore for the Building Managers & Owners Assoc. dinner



Original *Shreve & Lamb* rendering (before Arthur Loomis Harmon joined the firm as a principal) proposal for a $25 million, fifty-story office building on the site of the old Waldorf-Astoria Hotel at 5th Avenue and 34th Street

"Planners calculated the construction costs, operating expenses, and income…A building sixty-three stories high reached the point of maximum economic return, at 10.25 percent. Anything higher than sixty-three stories, and the return began to decline. On a seventy- five story building, the return was down to 10.06 percent. At 131 stories, it was zero. A building as high as seventy-five stories would succeed only if the land cost as much as $400 a square foot. With its $185-a-square-foot valuation, there was hardly any economic justification for going much higher than the originally planned fifty-five or sixty-five stories on the Empire State site. And Shreve knew that."

John Tauranac, Author



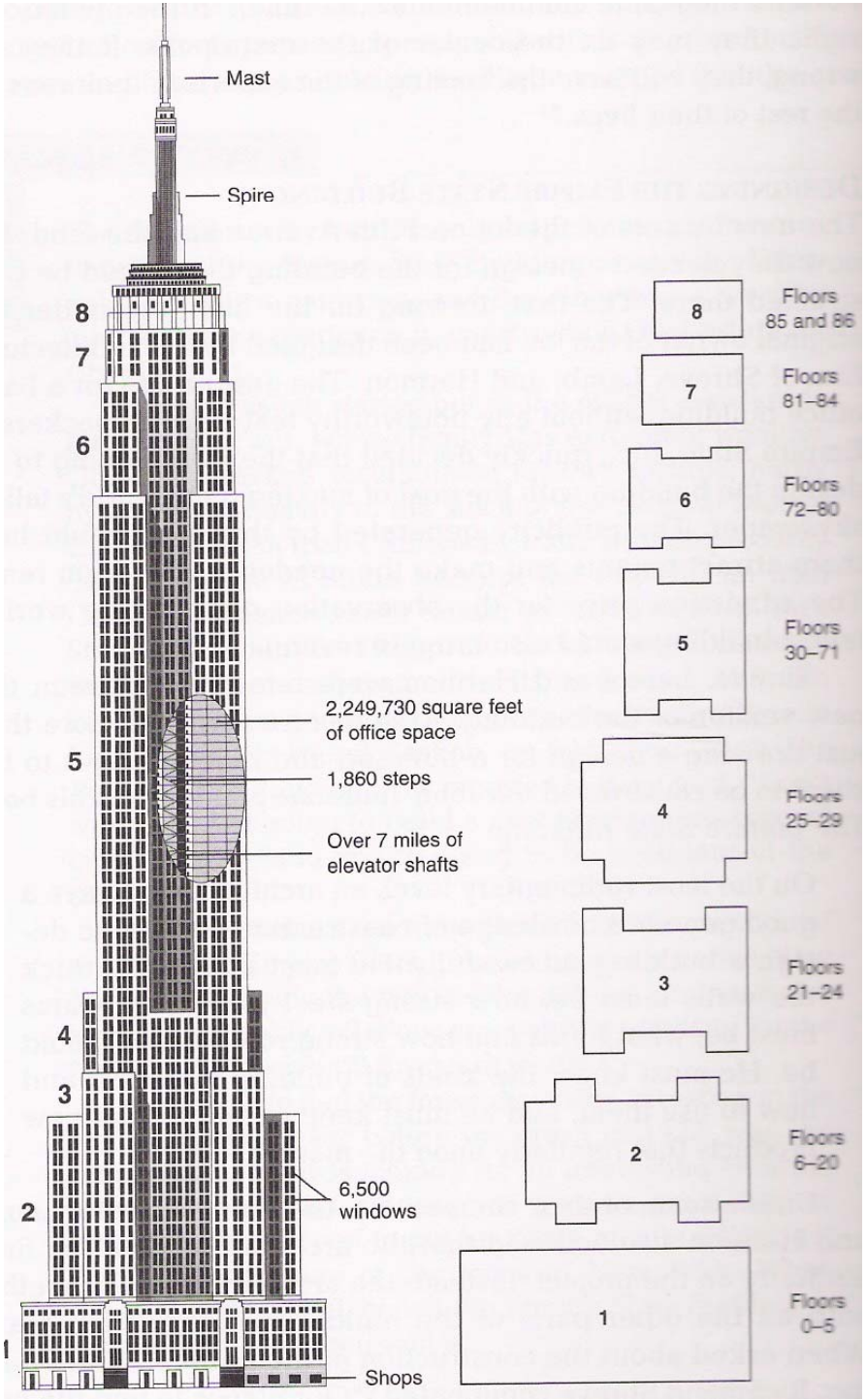
Rendering for an 85-story office building
The decision to make the building 80-stories high (with a 5-story Penthouse, thus making ESB 85-stories overall) was J.J. Raskob's. SL&H obliged their client by publicly stating that 80-stories was the most economical height to build to on the site, but they knew better.

"Construction costs were based on a very rough rule of thumb. A run-of-the-mill skyscraper might cost 50 cents a cubic foot to build. But the higher the building, the more expensive. A tall building could easily cost 85 cents a cubic foot; an extraordinarily tall building might cost 95 cents a cubic foot. Raskob was talking about an extraordinarily tall building, one that would have about 36 million cubic feet, and he was conservative in his estimates of $35 million."

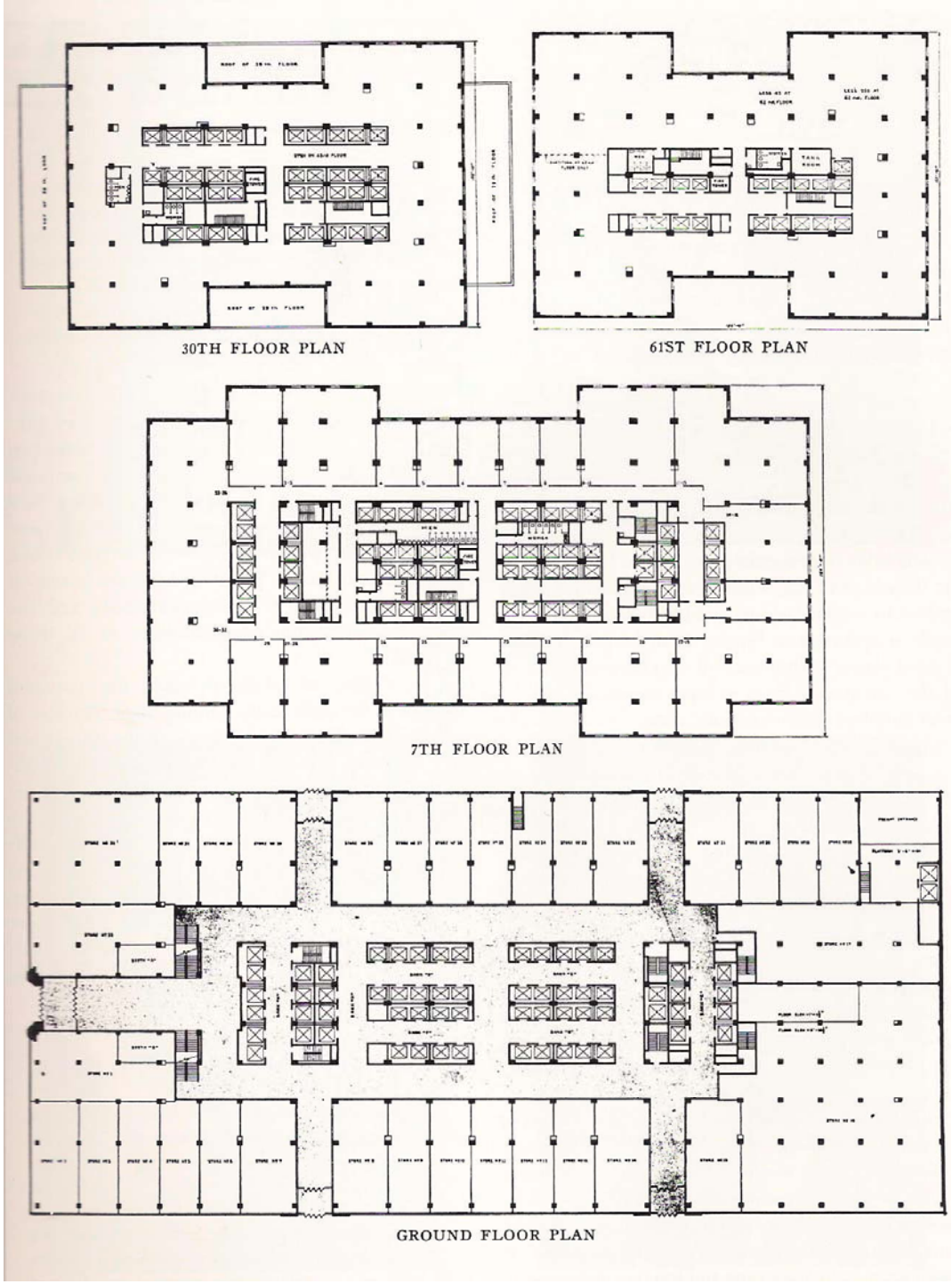
John Tauranac, Author

RE: With the cost of the land; $16 million, the entire ESB project cost was estimated to be $50 million in 1929. After the crash and by early 1930 when construction began, construction costs were reduced significantly due to the economic effects of the October, 1929 stock market crash.

Form Follows Function



"The logic of the plan was very simple. A certain amount of space in the center, arranged as compactly as possible, contains the vertical circulation, mail chutes, toilets, shafts and corridors. Surrounding this is a perimeter of office space 28 feet deep. The sizes of the floors diminish as the elevators decrease in number. In essence there is a pyramid of non-rentable space surrounded by a greater pyramid of rentable space, a principle modified of course by practical consideration of construction and elevator operation."
William Lamb, Architect
RE: Excerpt from *The Architectural Forum*, 1931



"A distance of about twenty feet separated the center points of the columns along the exterior walls, making the average office unit about nineteen feet wide. With partitions down the middle, the interior could be comfortably divided to form two-nine foot wide offices, each with its own window, and an anteroom."

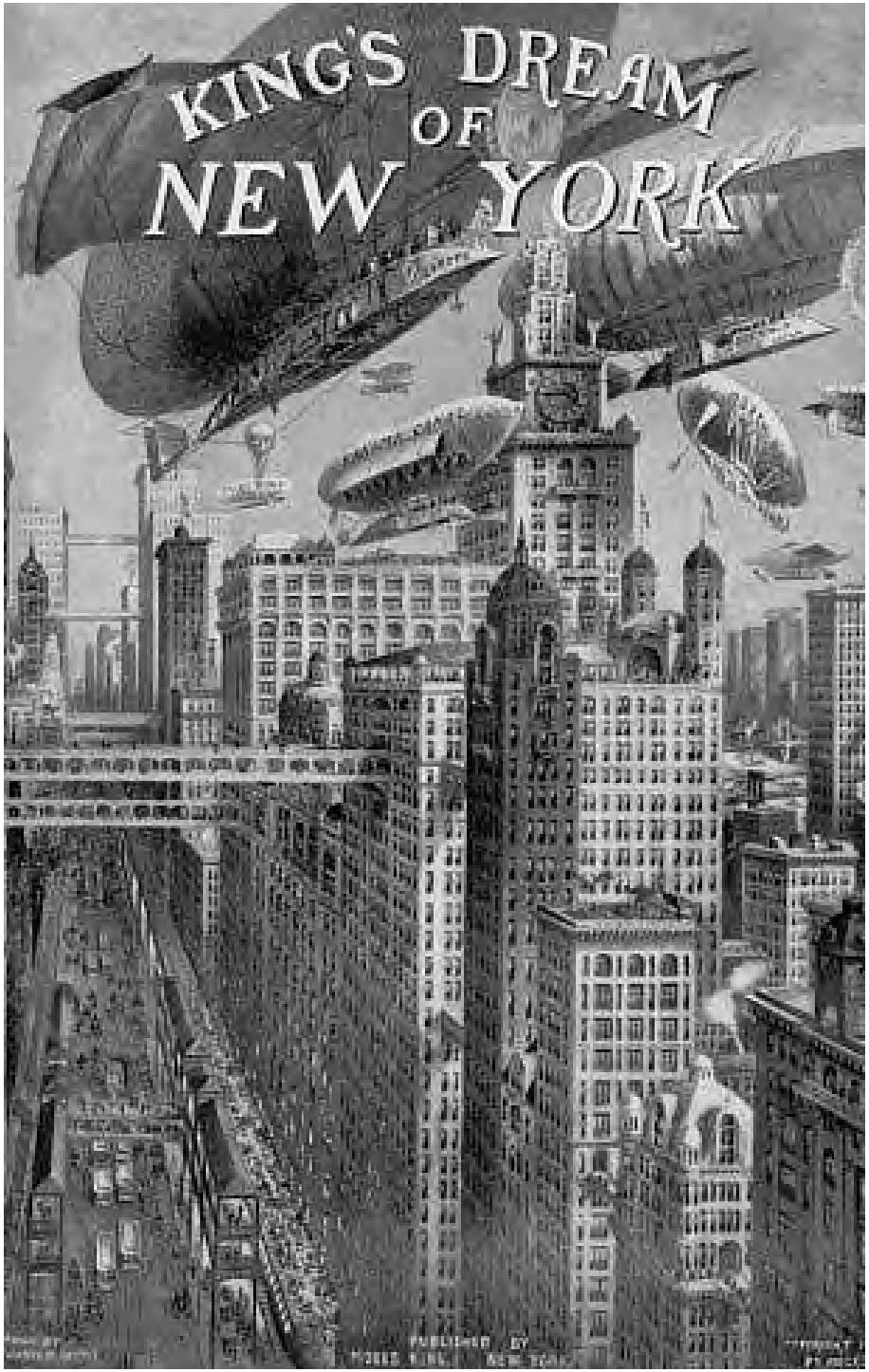
John Tauranac, Author

RE: Harmon's clients considered 9-feet wide offices most desirable.

***Shreve, Lamb & Harmon*, Architects**

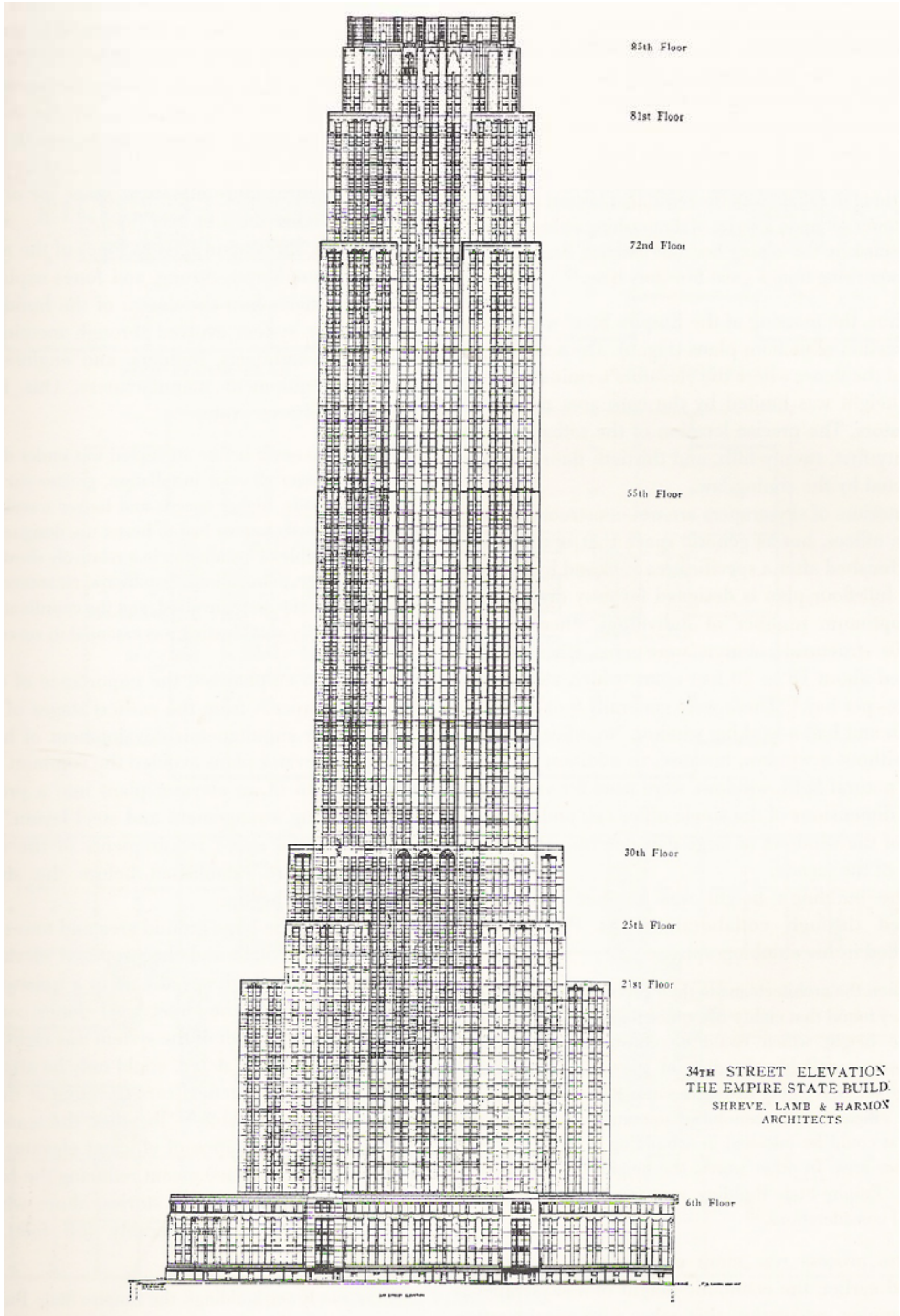
Part 9

This Building Needs A Hat!



"The top of the Empire State Building would be more than ornamental, more than a spire or dome or pyramid put there to add a desired few feet to the building or to mask something as mundane as a water tank. Their top, they said, would serve a higher calling. The Empire State Building would be equipped for an age of transportation that was then only the dream of aviation pioneers."

John Tauranac, Author



"What this building needs is a hat!"

John Jakob Raskob

RE: His idea for a 200' high mooring mast for transatlantic dirigibles atop the 85-stories of office building below

"Building with an eye to the future, we have determined to build a mooring tower 200 feet high on top of the new Empire State Building. The roof of the building itself will be 1,100 feet from the sidewalk. That will mean that the Zeppelin would be anchored more than 1,300 feet in the air, with elevator facilities through the tower to land passengers downstairs seven minutes after the ship is anchored."

Al Smith

RE: ESB mooring mast

"If it was bein' put up by just a regular politician and not Al Smith, wouldn't any of us believe it. We would demand a recount."

Comedian

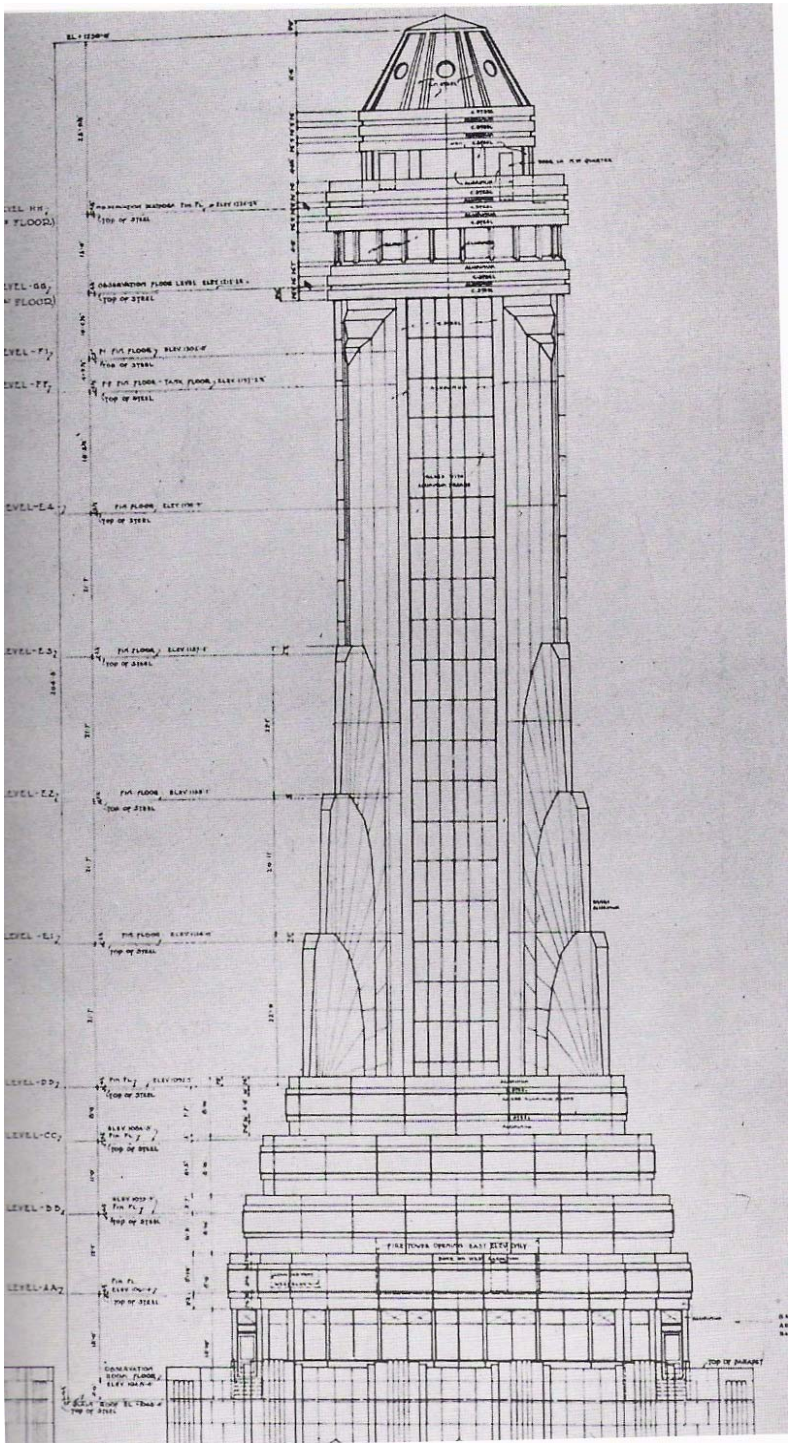
RE: December 11, 1929 announcement by Al Smith – President of the *Empire State Corp.*, that, rather than rising 1,048 feet to claim the title of: "World's Tallest Building" by only a few feet, the ESB would rise to 1,250 feet (202' higher than the *Chrysler Building*) with the addition of a dirigible (Zeppelin) mooring mast

"On the level, all right. No kidding. We're working on the thing now. One set of engineers here in New York is trying to dope out a practical, workable arrangement and the government people in Washington are figuring on some safe way of mooring airships to this mast."

Al Smith, 1929

RE: Response to a question concerning the addition/practicality of a dirigible mooring mast atop the ESB

Graf Zeppelin moored to ESB (superimposed on photograph) A lateral force of 100K pounds would need to be resisted by the steel frame of the mooring mast if the idea of a derigible airport atop ESB was to work. That problem could be overcome, but the turbulent air currents at plus one thousand feet above a New York City skyscraper would prove insurmountable.



"The mooring mast had to have strength enough to withstand a horizontal pull of fifty-tons at its head. This required engineering changes to the entire frame. Four great wings flanking the mooring mast and serving as buttresses."

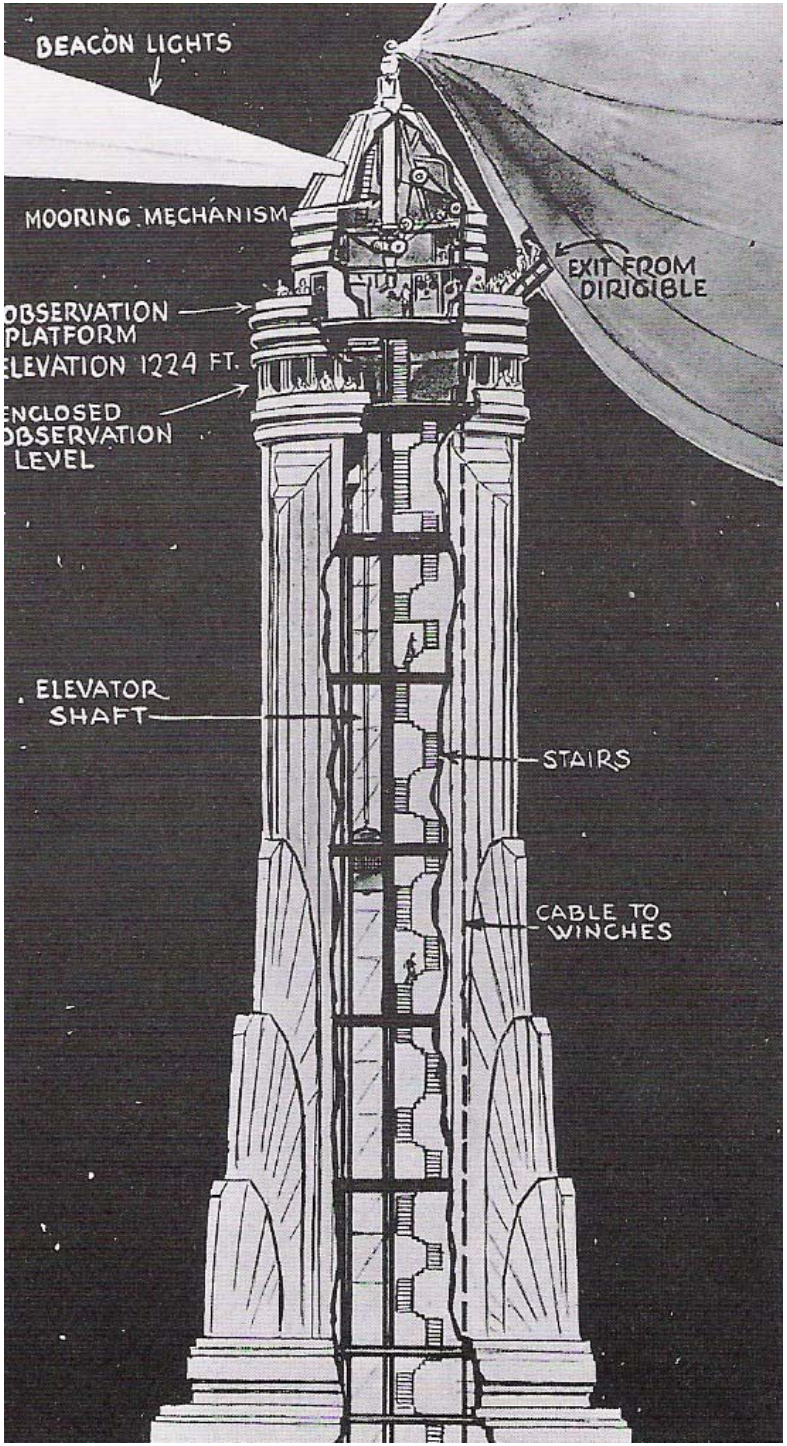
John Tauranac, Author

"Wings of Progress"

Four aluminum freestanding "wings" set at 45 degree angles at the base of the mooring mast. They actually serve a utilitarian purpose: buttressing the mooring mast against the horizontal pull of a moored dirigible.

Buttress Framing (Mooring Mast)

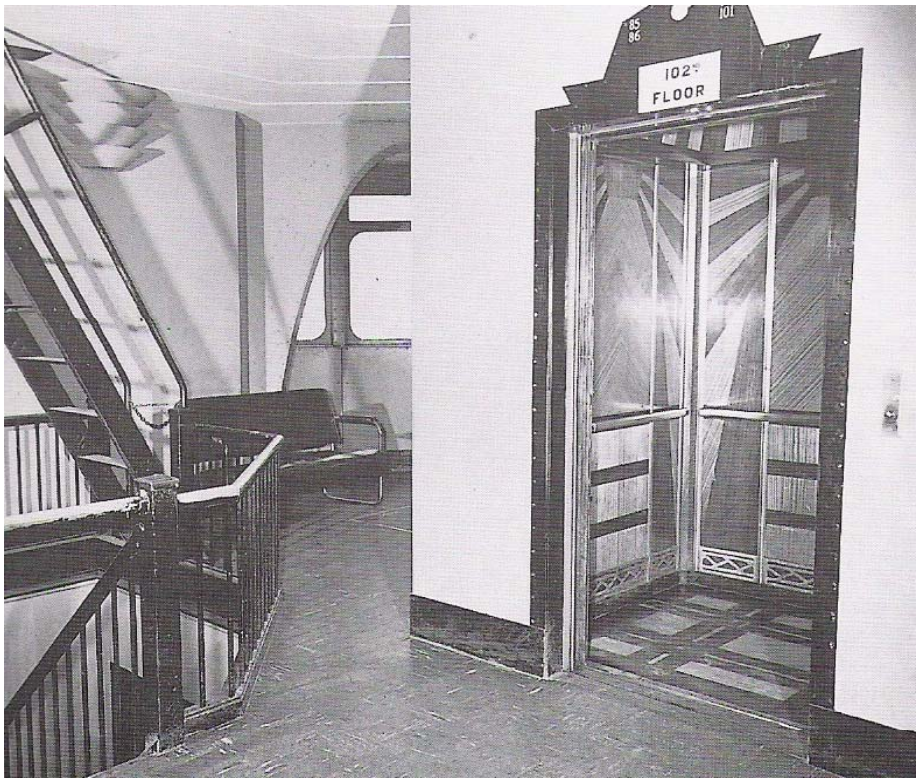
Genessee Valley Trust Building
Rochester, NY
(a.k.a. *Times Square Building)*
Ralph Walker, Architect (1930)
Origin of the design idea for the ESB mooring mast's "Wings of Progress" buttresses



"No one seemed to be staying long in the highest observatory. Nothing to see but mist, nowhere to sit, not a tremendous amount of room, and perhaps a rather odd feeling, being up so high…the dungeon of a medieval keep, painted silvery and raised among the clouds!"

***New York Sun*, 1932**

RE: Visit to the 102nd floor observatory deck.



102nd Floor
Actually, the 101st floor - the 102nd floor was closed and was originally meant for use as the dirigible landing platform and an open observation deck. The 101st floor was to be an "enclosed observation level."

"Some pretty smart fellows in the Navy Aviation outfit…You can hitch one of these babies all right, but they won't stand hitched like a horse. If there's a wind blowing – and there always is up here where we are – the dirigible would be whirled around like a top, and that wouldn't be so good. Elsewhere when the airships are moored to masts they are weighted down at the stern, with enormous lead weights, so that they will stay hitched even against a stiff wind. But I don't believe they would stand for that here. Half the population of Manhattan Island would get the heeby-jeebies at the thought of forty or fifty tons of lead swinging over their heads. But there must be some way to work the thing out, and if there is our engineers will find it."

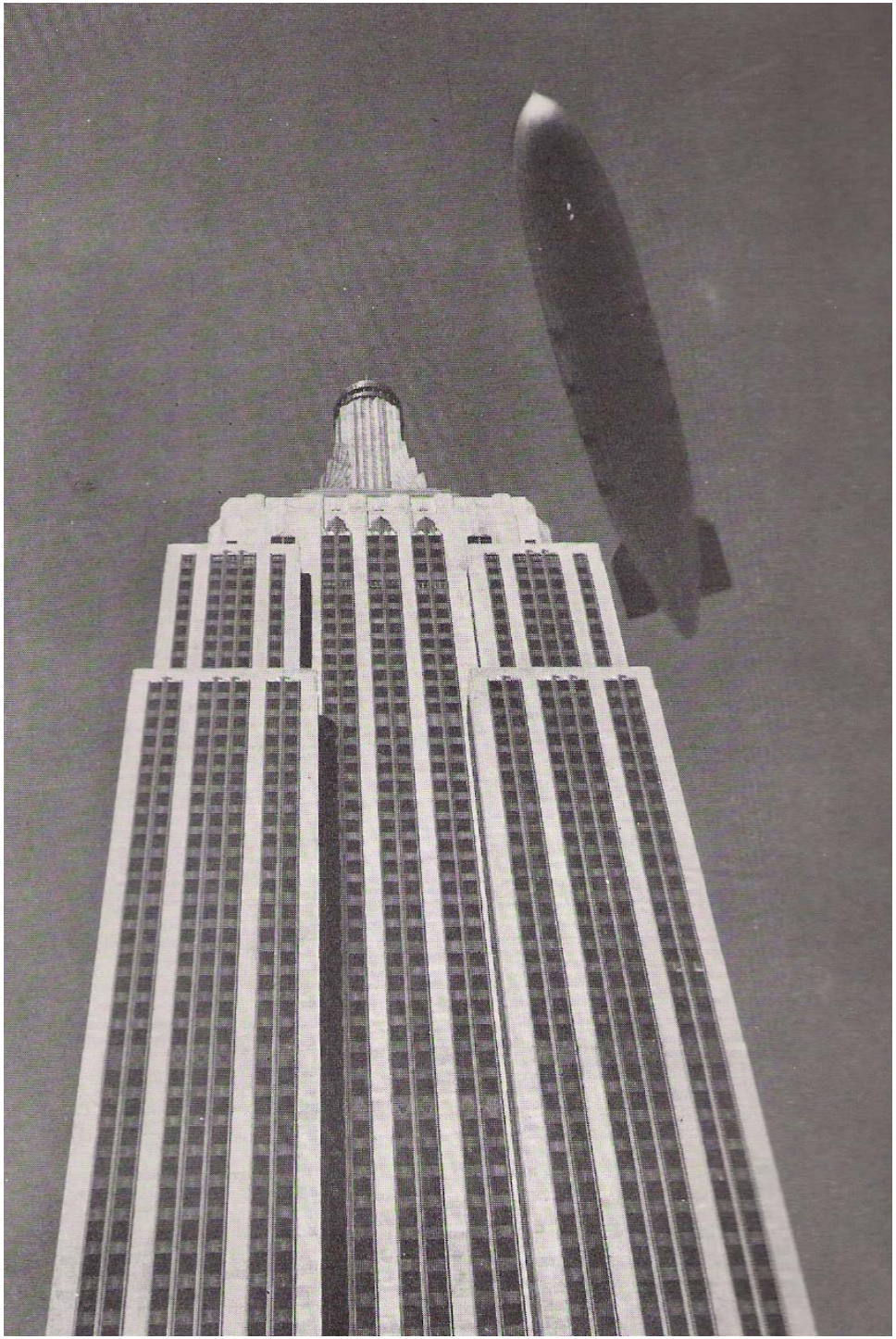
Al Smith, 1929

RE: Difficulties encountered trying to use the top of a skyscraper as a hitching post for inherently unstable dirigibles

"The difficulties of mooring a great airship to a mast over New York City would be very great. The violent air currents up and down caused by your high buildings would, I think, make such a project almost impossible at this time."

Dr. Hugh Eckener, Commander of the *Graf Zeppelin*

RE: Inherent instability of derigibles in the wind



"I would never try it with the Graf Zeppelin"

Hugo Eckener, Pilot of the *Graf Zeppelin*

"…possibly illegal flying…on the whole, the courts will probably hold that erection and use of the mooring mast will be legal, but this opinion is an enlightened guess and not a prediction made with assurance. The answer is too speculative to be given positively."

***Chadburne, Stanchfieeld & Levy* - Attorneys at Law**

RE: Legal issues concerning the mooring mast's erection and use over urban areas

"Slowly and with its command on the alert lest the delicate fabric of its envelope be staked on the sharp spires of the tall buildings in the Pennsylvania zone, the semi-rigid dirigible J-4, auxiliary of the Los Angeles of the Lakehurst Naval Air Station, reconnoitered about the dirigible mooring mast at 3:15PM Tuesday, December 17th, while thousands watched from the streets below…A stiff wind was blowing as the dirigible hovered with throttled engines and approached the tower. In the cabin of the airship Lt. S.M. Bailey, the commander, kept his hands on the controls and ballast releases in case a gust threw him too close to the nearby buildings. Bailey declined to comment on the feasibility of attempting to tie-up to the mast and added that he was so busy at the controls while the ship oscillated in the treacherous air currents over the city that he had little time to notice the details of the mast."

New York Times

RE: Failed attempt on December 17, 1930 to secure a navy dirigible to the ESB's mooring mast

"…suggested and participated in the exploitation and building of the mooring mast on top of the Empire State Building, making it the highest building in the world. The resulting publicity, with pictures of dirigibles moored to the mast, was printed in every city in the world."

Josef Israels II, ESB Publicist

RE: Comment to *Daily News* Photographer concerning the September, 1931 delivery by dirigible of the *New York Evening Journal* (on the occasion of its 25th Anniversary) to the mooring mast and the purpose of the mast in general:

Publicity

"…enjoyed the quips and jokes about the Empire State mooring mast, on the same principle as the individual in high public office enjoys the slings and arrows embodied in cartoons of him. It is all in a lifetime. The Empire State Building was built to stand all kinds of wind pressure as well as hot air. We of the management feel flattered to know the Empire State has attracted the attention of the universe."

AL Smith

RE: Failure of the mooring mast scheme and the unpublicized decision to leave it incomplete

"The as yet unsolved problems of mooring air ships to a fixed mast at such a height made it desirable to postpone to a later date the final installation of the landing gear"

R.H. Hunter, VP *Starrett Bros. & Eken*

RE: Excerpt from April, 1931 speech to the *New York Building Congress* concerning the problems with the mooring mast (it remains incomplete)

Part 10

Nearest Peacetime Equivalent to War

"Building skyscrapers is the nearest peacetime equivalent to war…The analogy to war is the strife against the elements. Foundations are planned way down in the earth alongside the towering skyscrapers already built. Water, quicksand, rock and slimy clays bar our path to bedrock. Traffic rumbles in the crowded highways high above us, and the subways, gas and water mains, electric conduits and delicate telephone and signal communications demand that they not be disturbed lest the nerve system of a great city be deranged…"

Colonel William A. Starrett, 1928

Paul & William Starrett

The "Starrett Brothers" (identical twins). William Starrett earned the title "Colonel" from his service during WWI. He led the effort to build housing and other facilities for the federal government on a large scale. Both brothers were involved with skyscraper construction dating back to the early 20th century.

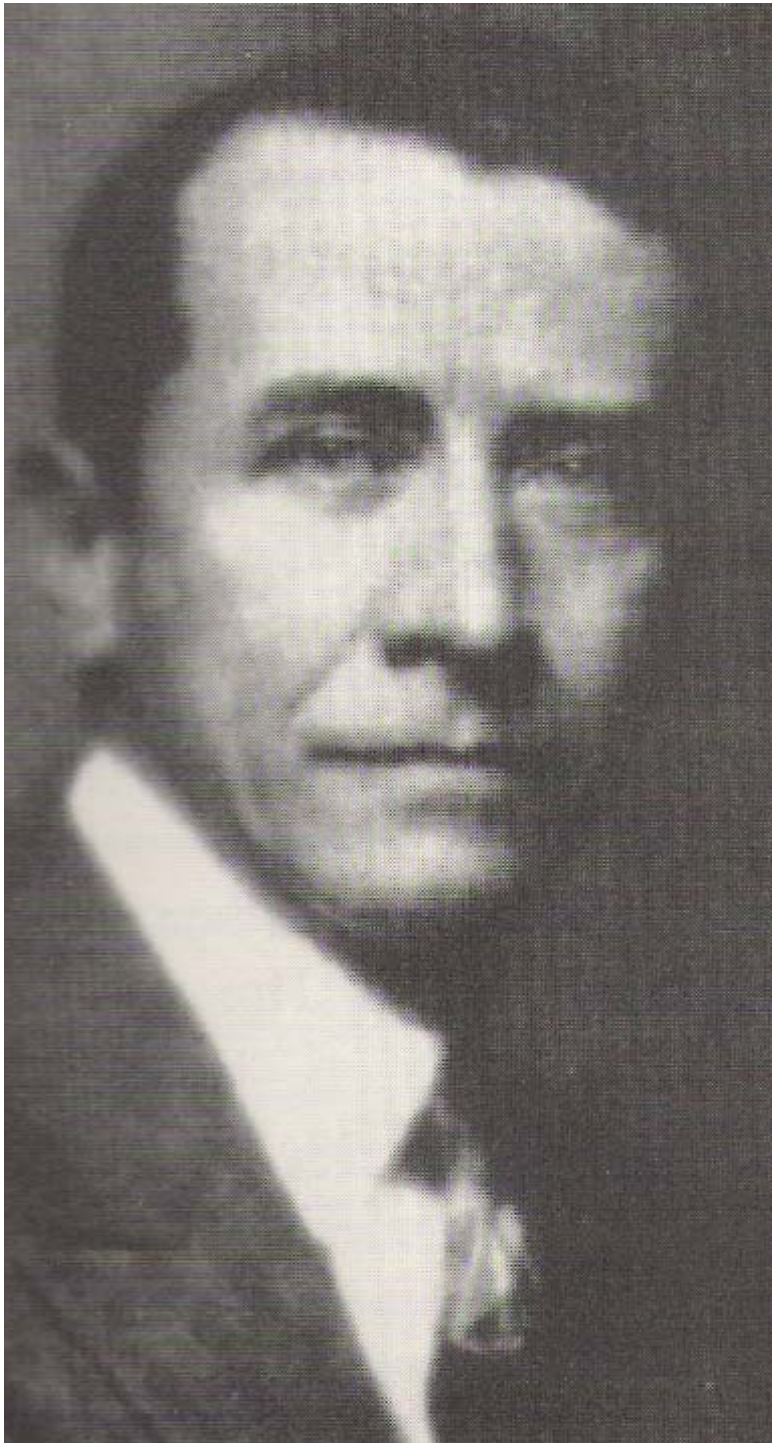
"…The obtaining of materials near and far and the administration of all those thousands of operations that go to make up the whole, are the major functions of the skyscraper builder. Knowledge of transportation and traffic must be brought to bear that the building may be built from trucks standing in the busy thoroughfares, for here is no ample storage space, but only a meager handful of material needing constant replenishment…Yet it all runs smoothly and on time in accordance with a carefully prepared schedule; the service of supply in peace-time warfare; the logistics of building, and these men are the soldiers of a great creative effort."

Colonel William A. Starrett, 1928

"The formidable task of supervising the construction of a building that is to be at once the largest and tallest building in the world – a building that has to be finished within the space of one year from the start of setting the steel, requires first of all a highly trained organization on the part of the Builders. It must contain a personnel of individual specialists who can take charge and carry through a definite program that requires the closest kind of co-ordination between the branches of work being done by the Builders and about 40 subcontractors, practically all of whom are working on the building at the same time."

Paul Starrett

RE: ESB



Andrew J. Eken
Partner to the Starrett Bros.
(in the General Contracting firm of *Starrett Bros. & Eken*)
Known as: *"The Dean of the American Skyline Builders"*

"…is a fascinating game…and to those of us who stay in it year after year it's like strong drink; we get so that we just cannot do without the strenuous activity of it all. And it is a compelling thing, to; a man gets his pride up over it, pride of accomplishment, pride in making good on prediction and forecast. 'It can't be done' carries a challenge that the dyed in the wool builder sometimes too eagerly accepts."

Colonel William A. Starrett

RE: Building skyscrapers

"Not only is the product of this manufacturing process a form of wealth, but the money that is spent for construction is practically always capital, not income. Construction is practically always paid for out of saved or borrowed capital. Construction, then, transforms one kind of capital, money, into another form of capital – buildings, highways and the like…About half the total is spent directly for wages on building labor. A certain portion goes to compensate architects, contractors and engineers…"

Thomas S. Holden - ***New York Building Congress*****, 1927**

RE: His assertion that construction is essentially a manufacturing process resulting in a new form of capital thus adding to the permanent wealth of the nation

"…A very considerable portion goes into the purchase of materials, which in turn are produced largely by labor. The money that is put into circulation when such capital is transformed into construction passes through many hands and purchases every conceivable variety of goods. So the influence of construction activities is felt in practically every line of business in the country. When you stabilize construction you stabilize one of the most important disbursers of community payrolls."

Thomas S. Holden - ***New York Building Congress*****, 1927**

"The principal functions of the General Contractor is not to erect steel, brick or concrete but to provide a skillful, centralized management for coordinating the various trades, timing their installations and synchronizing their work according to a predetermined plan"

Colonel William A. Starrett, *Starrett Bros. & Eken*, General Contractor for the ESB. General Contracting firms such as SB&E were the forerunners of modern *Construction Managers*, applying their knowledge to fast-track scheduling, value engineering etc.

"Nothing is impossible, speed is dependent on management, man power, equipment, initiative and will to do"

Starrett Bros. & Eken

"Of all the places you might pick to build a skyscraper, the most desirable site for the developer is probably the most God-awful site for the contractor"
SB&E

"Not a blankety-blank thing, not even a pick and shovel. Gentlemen, this building of yours is going to present unusual problems. Ordinary building equipment won't be worth a damn on it. We'll buy new stuff, fitted for the job, and at the end sell it and credit you with the difference. That's what we do on every big job. It costs less than renting second-hand stuff, and it's more efficient."

Paul Starrett, President - *Starrett Bros. & Eken*

RE: Response to Al Smith's question: "*How much equipment do you have on hand?*" during SB&E's interview to discuss their bid to be the General Contractors for the ESB. The other four bidders assured Smith that they had a "wonderful lot of equipment."

"Well, Governor, I feel pretty sure that in $600,000 you are only paying me a fair fee, but I suppose as a good businessman you have to pare something off. I'll tell you what I will do. If you will make some minor changes in the contract, allow us to carry our own liability insurance, and provide the money as we require it, I'll say yes."

Paul Starrett, 1929

RE: Response to AL Smith's offer to give *Starrett Bros. & Eken* the job of ESB General Contractor for $500K rather than the $600K requested/bid by SB&E as their fee.

"…erected steel canopies that remained in place for the duration of the construction work to protect passing pedestrians…Electricians strung temporary lights under the canopy, and carpenters built offices and shanties atop the 'sidewalk', and in the case of the Empire State site – a first-aid station"

John Tauranac, Author

"A careful Superintendent appreciates, first of all, that he is not only the custodian of the property of his employers, but in a higher moral sense, he is also the protector of the lives of those working under him and of the public coming in contact with his building operation"

Starrett Bros. & Eken

"They needed a forum in which to encourage open dialogue among the subcontractors, a forum that would explore the coordination of the various tasks and to thresh out any problems that might be encountered. The Empire State Building Club was formed to promote just that."

John Tauranac, Author

RE: The once-a-month meetings allowed for the 60 sub-contractors for the ESB to openly discuss progress, problems etc. SB&E sub-contracted out much of the work, but when it was more cost-effective they did the work themselves. This included;

*** demolition of the *Waldorf-Astoria Hotel***

*** concrete floor arches**

*** roofing**

*** fireproofing**

*** exterior stone & support**

"I am the President of the Empire State, Inc. We do not build buildings. We do not buy materials. We do not lay brick. We do not buy mortar. We do not buy steel and we do not buy lumber – I know nothing about the materials which entered the building. Our contract is with Starrett Bros. & Eken, who for a given fee are to deliver a finished building."

Al Smith – November, 1929

RE: Response to South Carolina Senator Coleman Livingston Blease's criticism concerning the fact that comparable lumber was purchased from Russia rather than South Carolina for use in the ESB

With a payroll of about $250K at peak construction (in the summer of 1930), armed guards were required. Each workday morning, a tradesman was given a brass tag (a.k.a. “check”) that had to be produced upon demand of the time-checkers who patrolled the building and/or upon entering or leaving the building. Typically, a tradesman’s brass tag was inspected an average of 4x per day and recorded the number of hours worked that day and the type of work performed. On Friday, along with the brass tag, he was also given an aluminum tag with his number on it to present to the payroll clerk whereby he stated his name and was given his pay envelope.

"Wrecking the Waldorf-Astoria was scheduled to start September 24, 1929. The general excavation was scheduled to start on January 22, 1930. The excavating work was to be finished on March 17, 1930. The fifty-thousand tons of steel had to be fabricated, shipped, hoisted into place, and secured by October 4, 1930 so that the floors and fireproofing could be finished by October 10, 1930 to allow the cladding to be installed by December 1, 1930 so that everything could be in readiness for opening day May 1, 1931. The winter months of 1930-31, when weather would have otherwise played havoc with schedules, would be occupied by activities that by then would be protected from the elements."

John Tauranac, Author

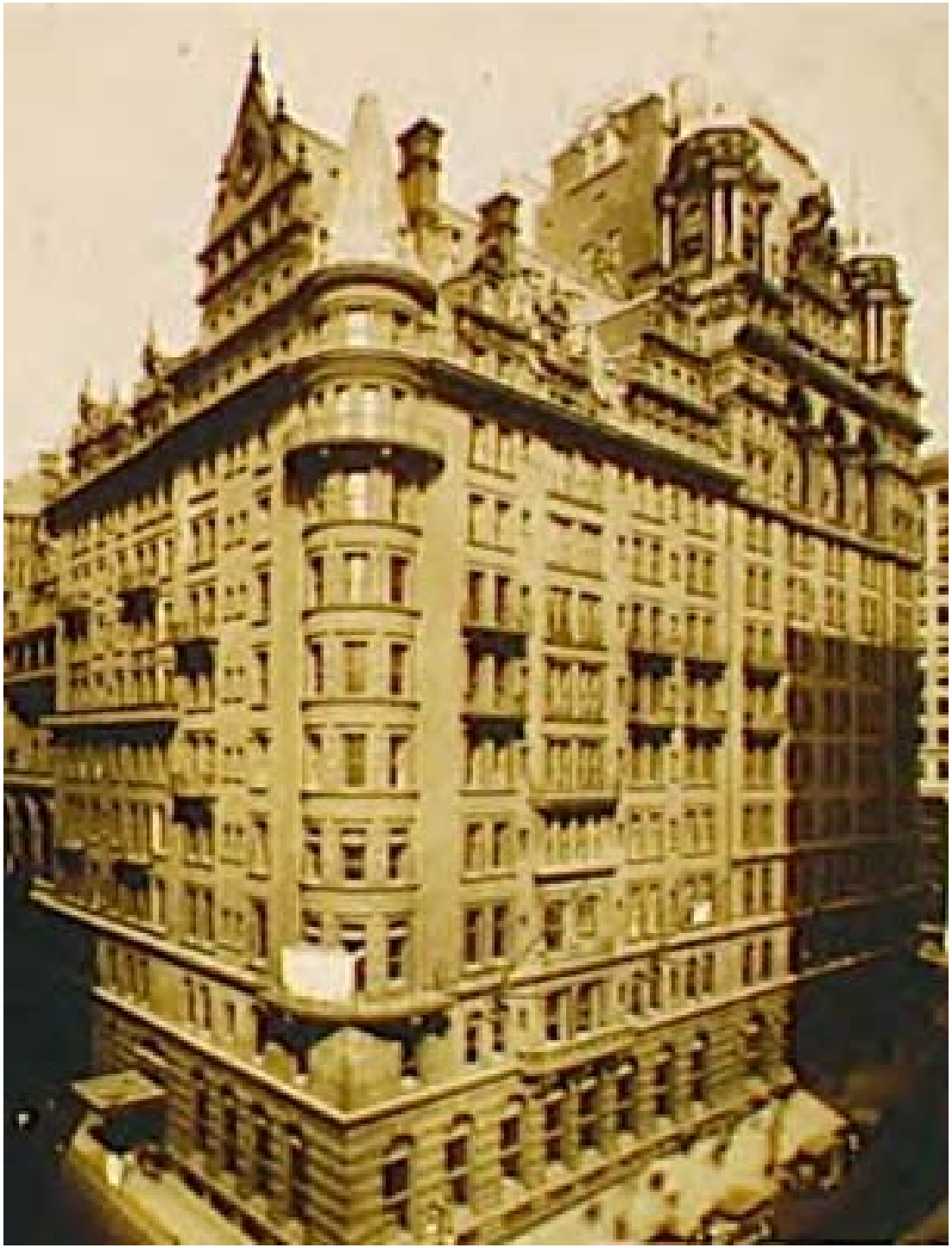
Demolition

"Promptly following the first announcement of plans for the construction of the Empire State Building, a motor truck drove through the wide door of the Waldorf-Astoria – the door at which presidents and princes, rulers of state, and the uncrowned kings and queens of society had been received. The truck, like a roaring invader, thrust its great bulk into the lobby…churned across the floor, then turned and roared down 'Peacock Alley', that proud corridor lined with gold mirrors and velvet drapes. The end of the old Waldorf had come."

Geraldine B. Wagner, Author

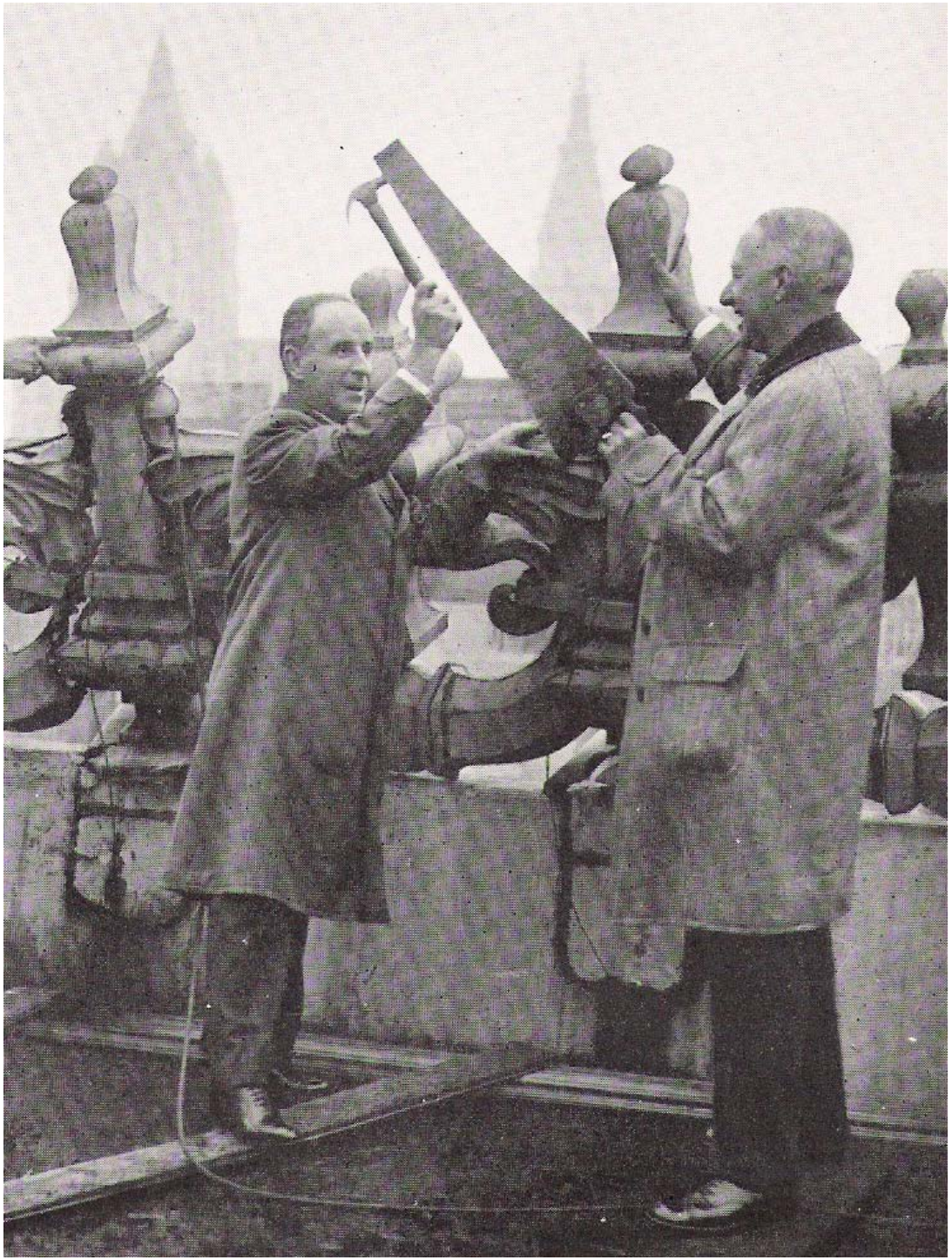
The original *Waldorf-Astoria Hotel* was composed of four buildings to be demolished;

- **<u>The Waldorf Hotel Section</u> – the original 12-story hotel completed in 1892**
- **<u>The Waldorf Annex</u> – a four-story annex to the original hotel completed in 1897**
- **<u>The Astoria Section</u> - sixteen-stories adjoining the original Waldorf Hotel with its frontage on 5th Avenue, also completed in 1897**
- **<u>The Astor Court Building</u> – an eight-story office building between 33rd & 34th Streets separated from the Waldorf-Astoria Hotel by a fifty-foot wide street known as Astor Court**



"The wrecking business had changed by the 1920's. Wreckers had formerly either paid for the privilege of removing a building or they had done it free of charge, which they could afford for the value of the materials they salvaged."

John Tauranac, Author



JJ Raskob & Al Smith ceremoniously begin the mighty task of demolishing the *Waldorf-Astoria Hotel*

"Wreckers were the real heroes of construction sites, and the greatest hero of them all was the barman. The bar-man's tool was a pinch bar (a type of crowbar), which was fashioned of tempered steel. He was the one worker who was madcap enough yet cool-headed and skillful enough to drive the toe of his pinch bar into a wall that he might have been standing atop and loosen the timber or bricks below him without causing the wall or himself to fall down."

John Tauranac, Author

Russians and Poles dominated the wrecking crews. A total of six men died during the demolition operations.

"With an average of 600 men employed in the demolition of the Waldorf-Astoria and with 5,000 men employed on the construction of the building, five workers were killed. One worker was hit by a truck as he was sawing a plank; the second ran into a blast area; the third stepped off a scaffold; the fourth fell down an elevator shaft; the fifth was struck by a hoist."

Paul Starrett

RE: ESB safety record

In reality, six workers died during construction; one ironworker, two laborers & three carpenters. In particular, open hoist shafts were one of the most dangerous places during construction. A man would stick his head in the shaft to see where the hoist was and would then be decapitated by the fast-moving hoist (1,300fpm mine-skip).

"Smith announced the establishment of a free woodpile in a vacant lot on West 30th Street. The pile would be replenished every day with about six truckloads of wood. For Smith it was a good deal – he saved money on trucking the wood out of town, while performing a public service. The bulk of the other detritus was carted to an East River dock, where it was loaded onto barges and dumped in the Atlantic Ocean fifteen miles off Sandy Hook. As Smith said, it was cheaper to send the bulk of the Waldorf-Astoria to the bottom of the Atlantic rather than to try to salvage it."

John Tauranac, Author

Bulk materials salvaged and sold included;

- **14,615-tons of structural steel and misc. scrap iron**
- **36-tons of scrap copper**
- **8-tons of bra, lead and zinc**

Other items sold to the public included;

- **Electrical and plumbing fixtures**
- **Glass and mirrors and radiators**
- **Marble**
- **Wood, revolving and Elevator Doors**
- **Mantlepieces**
- **Hardware**
- **Woodwork**
- **Railings, grilles and moldings**
- **Safes, lockers, mail chutes, gates, storefronts**
- **Statues and cast-iron figures**


EMPIRE STATE

"A man in Keokuk, Iowa, wrote asking for the iron railing fence on the Fifth Avenue side. A Connecticut woman wanted another railing and a man from Maine wanted a flagpole. Somebody in Washington pleaded for stained-glass windows. Other people asked for fireplaces, pieces of marble or brick, or lighting fixtures. One man and his wife were made happy by getting the key for the room they had occupied many years before on their honeymoon."

Paul Starrett

RE: Requests for relics of the old *Waldorf-Astoria Hotel* by souvenir hunters


EMPIRE STATE

Part 11

The Four Pacemakers

The four major components of construction SB&E defined as needing to take the lead for the trades that followed (to maintain the speed of construction required to meet the scheduled construction completion date of April 1, 1931) were referred to as *The Four Pacemakers.* In sequential order they were;

- **Structural steel erection**
- **Concrete floor arch construction**
- **Exterior metal trim and aluminum spandrels (including metal windows)**
- **Exterior limestone (exterior trim and limestone backed-up with common brick)**

A date had been set for each division to begin and finish. Not a single contractor lagged behind the assigned period, and the average contract was completed ahead of schedule. Each of the four pacemakers; the trades that had to take the lead and set the pace for the trades that followed, was ahead of schedule;

Trade	**Scheduled Date**	**Actual Date**	**Time Saved**
Strct'l. Stl.	**October 4th**	**Sept. 22nd**	**12 days**
Flr. Arches	**October 10th**	**Oct. 6th**	**4 days**
Ext. Metal	**December 1st**	**Oct. 17th**	**35 days**
Ext. Stone	**December 1st**	**Nov. 13th**	**17 days**

Note: all dates in 1930

John Tauranac, Author

The April 1, 1931 date set for the completion of construction would allow one full month for tenants to move into their spaces (before the beginning of their leases on May 1, 1931, that being the traditional date for leases to commence). The fact that the building was enclosed before severe weather set-in and the time saved by the earlier-than-expected completion of the four pacemakers allowed the construction completion date to be moved up one full month; to March 1, 1931. This would give tenants two months - rather than just one, to settle into their new spaces.

Substructure

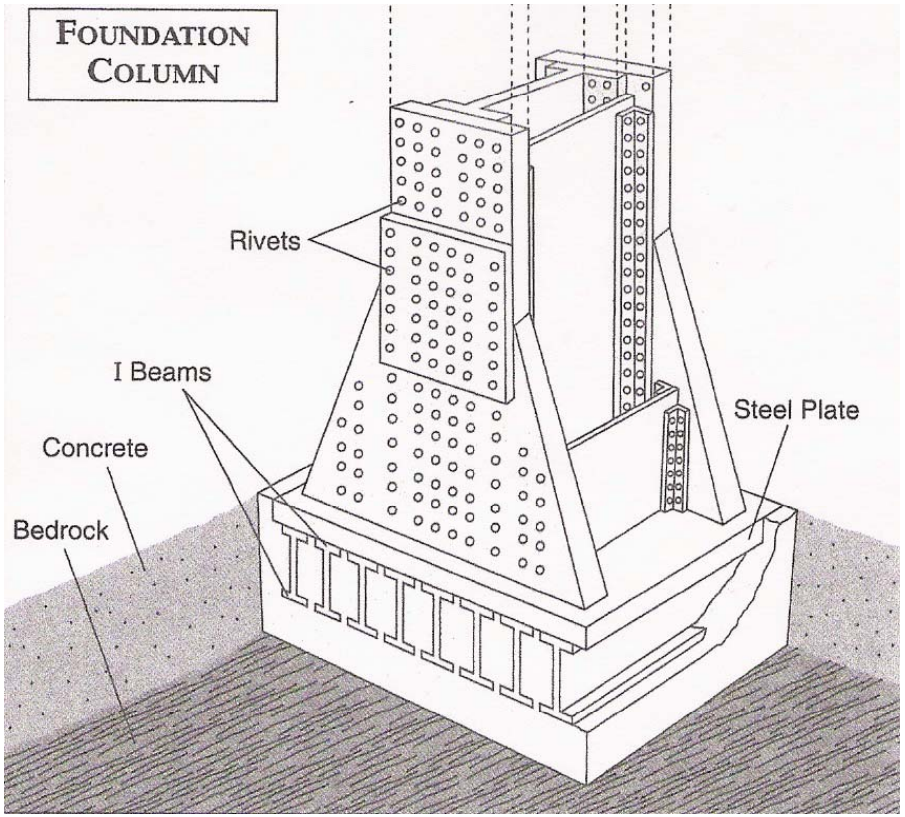
"I know it don't look like much today. But trust me. The same way I came out of the Fulton Fish Market to rise to Governor of this great state, so too will this site be transformed. A year from now we'll be drinking tea a quarter mile high in the air and looking down on Walter Chrysler's nifty little tower."

Al Smith

RE: March 17, 1930; Groundbreaking Ceremony remarks. For good luck, Smith chose St. Patrick's Day for the ground-breaking to begin.

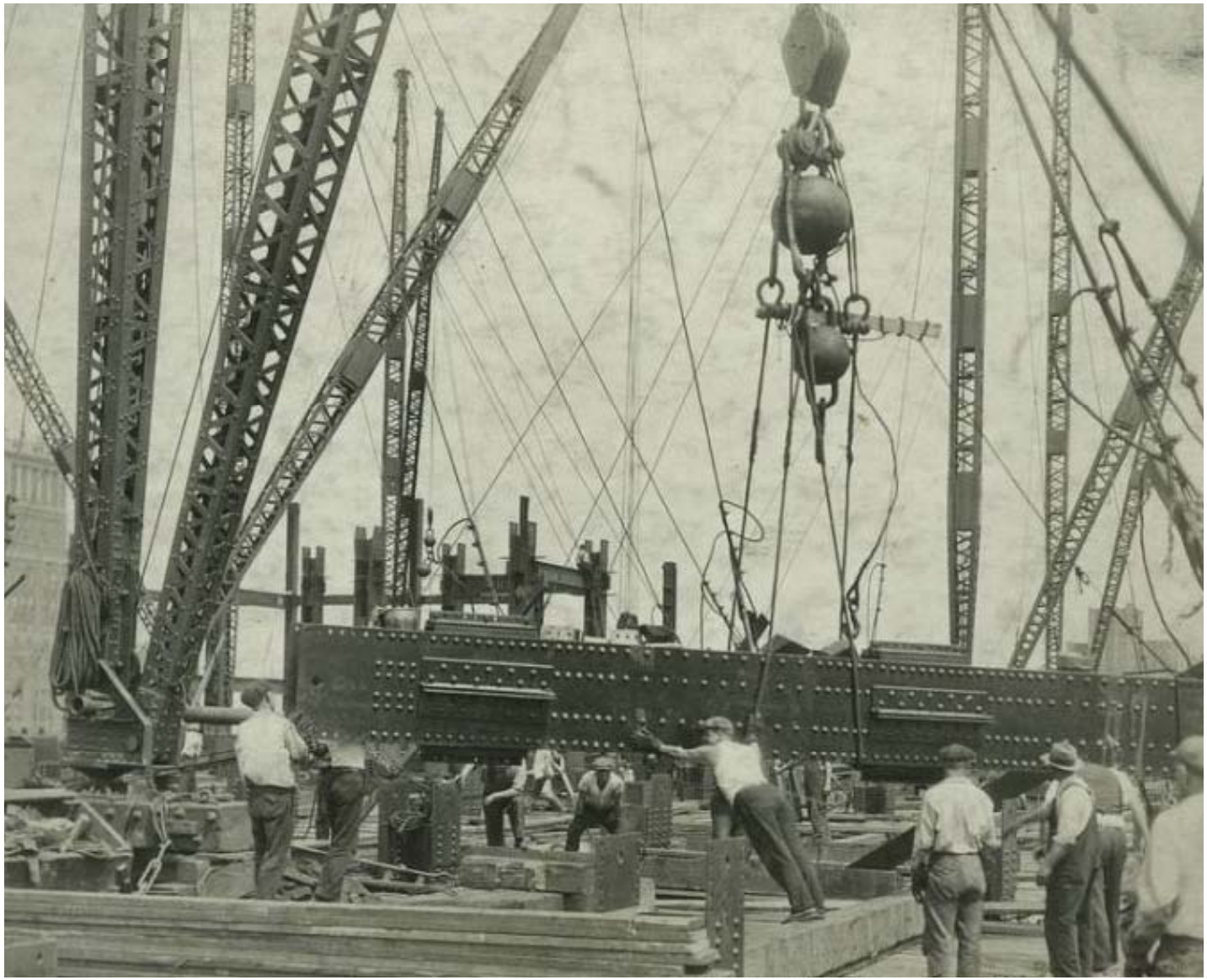
"The first steel construction would include the erection of the 210 steel columns that would constitute the building's vertical frame, twelve of which would run uninterrupted from the foundation to the top of the building 1,050 feet up, there to join the steel columns for the mooring mast."

John Tauranac, Author



"The largest columns, fabricated as the "master link" in the steel framework, were box columns with a core section of the heaviest rolled column, two plate webs, four angles, and cover plates as wide as forty-two inches. These columns, 693 square inches of steel in cross-section, weighed a-ton-a-foot, and were designed to support a weight of 5,000 tons, or more than ten million pounds."

John Tauranac, Author

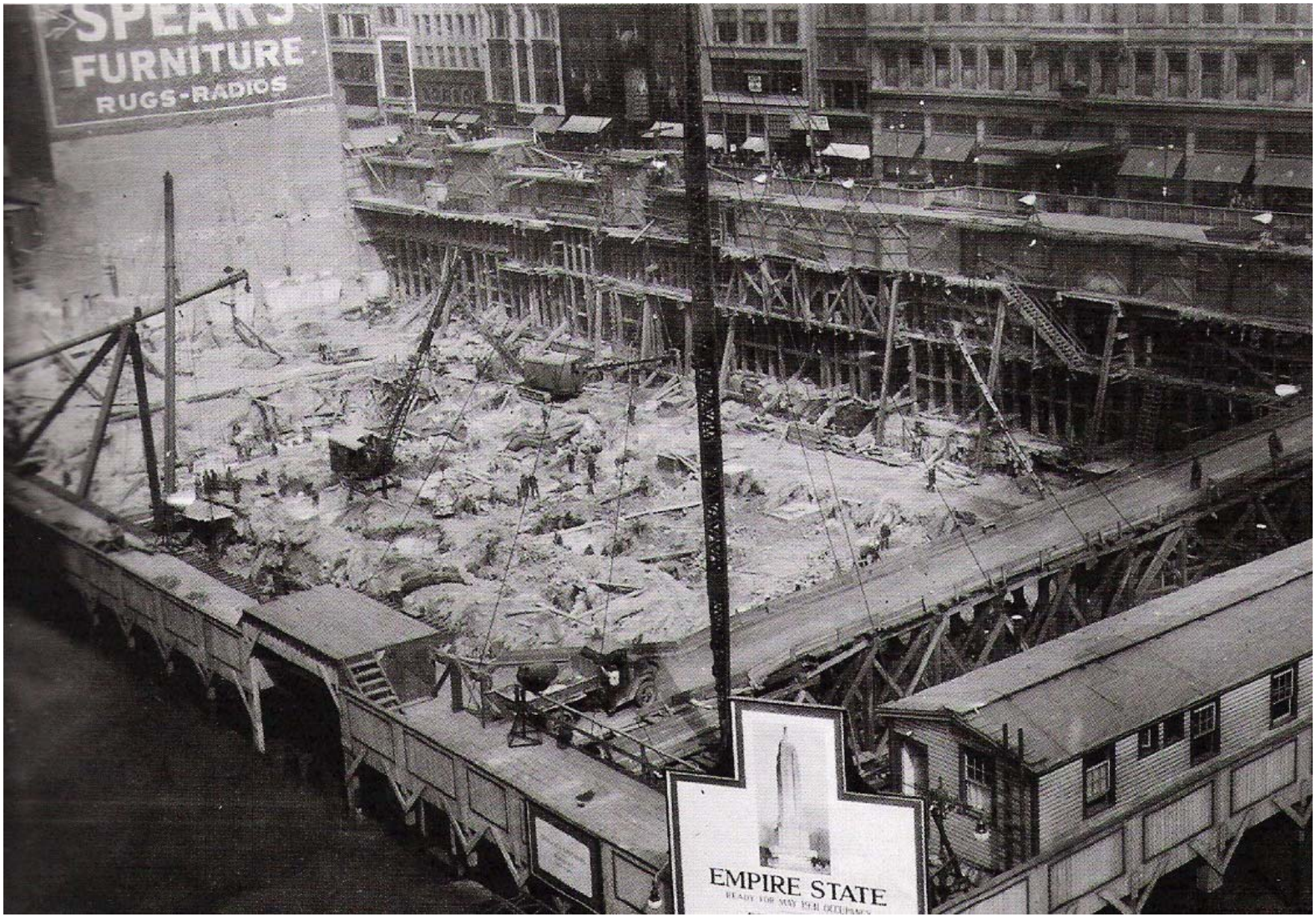


"First the steel was protected by an iron oxide and linseed oil paint for the trip from the steel mill to the site, where it was given an asphaltic coat to resist alkali and to keep it from breaking down when brought in contact with cement. The lower story columns, where the hazard of fire is great during construction, were fireproofed with cinder concrete. The exterior columns above the street level were fireproofed with four inches of brickwork. All other columns were fireproofed with two inch cinder blocks, and the floor construction steel was fireproofed with cinder concrete."

John Tauranac, Author

"Although most of the work might have been mundane enough, the beehive of activity was constantly fascinating. And there was always the element of danger. You couldn't help but wonder whether the buildings that had been shored up to ward off collapse might not fall into the pit, or whether one of the trucks hauling away refuse might not actually tip over the side of the precariously angled ramp. The price of admission was right, especially after the stock market crash and the beginning of the depression, and the curious, the "sidewalk superintendents", would peer down into the pit through cracks in the walls and from other vantage points to watch - fascinated and in awe, the digging and hauling."

John Tauranac, Author

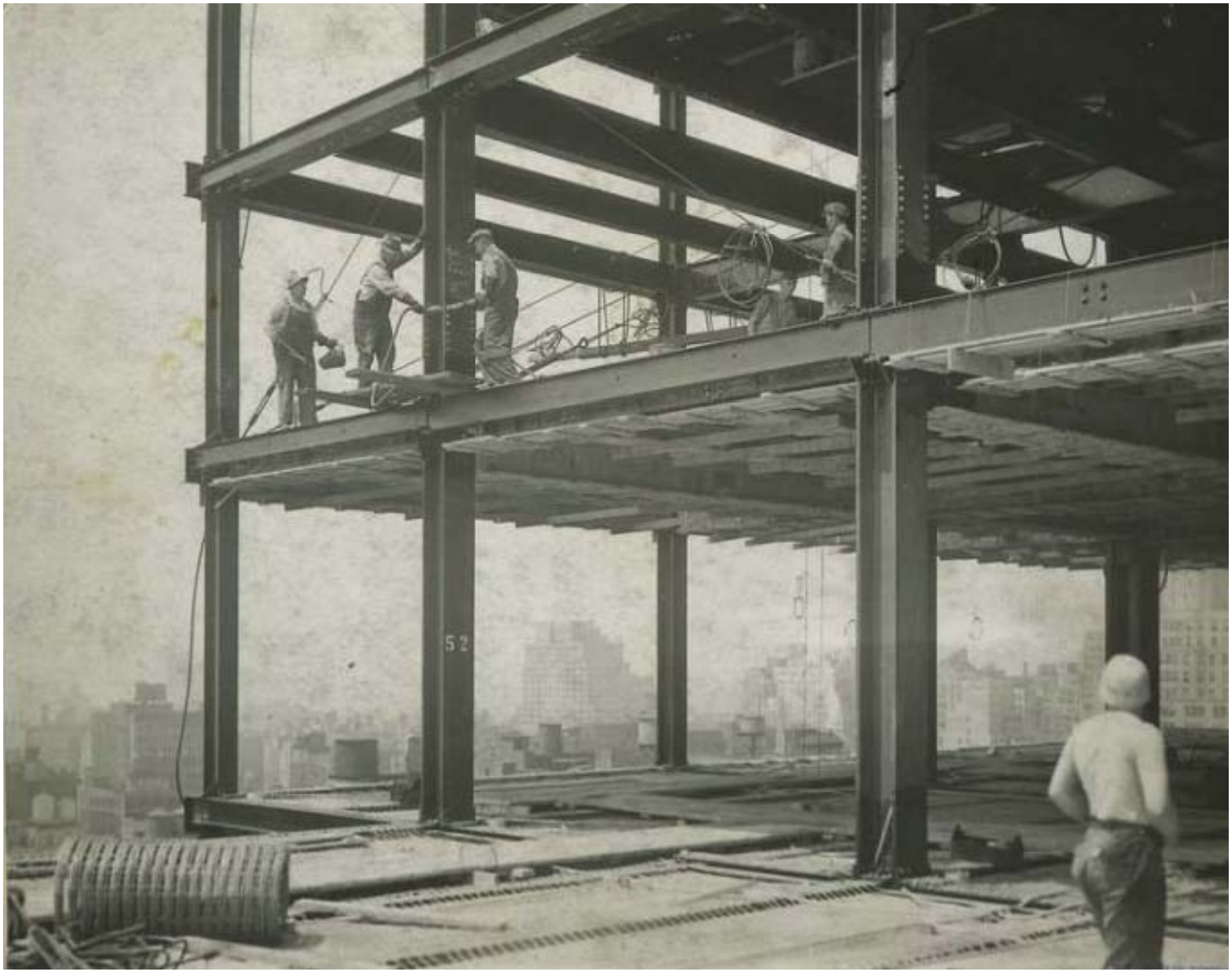

FURNITURE
RUGS-RADIOS
EMPIRE STATE

"Can't something be done about it? We can't dictate! We can't telephone! We can't think!"

RE: Complaints to the NYC Health Dept. during the ESB's construction from neighbors due to the loud noise generated by steam shovels, jack-hammers, rivet guns etc.

"There were 35 to 40 gangs of riveters at work on the Empire State Building at onetime, and an expert gang could drive more than 500 – 1&1/8" rivets in a 7&1/2 hour work day, or more than one a minute. The blows fell at a rate of two per second behind the driving force of 100 pounds of compressed air per square inch. Riveting was a noisy business that affected people for blocks around, but it was allowed between 6:00 AM and 11:00 PM."

John Tauranac, Author



Superstructure

"To erect the approximately fifty-thousand tons of steel they chose Post & McCord…the firm that had erected the twenty-one thousand tons of steel for the Chrysler Building…Post & McCord split the steel-fabricating contract between the American Bridge Company and the McClintock-Marshall Company"

John Tauranac, Author

SB&E had promised that subcontracts awarded for the ESB would only be given to closed (union) shops and the job would be 100% union. However, *Post & McCord* ran an open (non-union) shop. Despite Smith's offers to mediate the dispute between the ironworker's union & SB&E, the union rejected his offer and struck six other SB&E const. sites, but not the ESB.

"There were days when the messenger reached Pittsburgh with drawings only an hour before the steel mills started rolling the 'I' beams we would need a few days later. Steel had gone up 30 stories before plans could be finished for some details of the Ground floor. We had to keep ahead of the workmen no matter what happened. We had enough close shaves to make us all turn white."

Richmond H. Shreve, Architect

"…a revision to the building code that would have permitted an increase of the basic working stresses in structural steel from 16,000 to 18,000 PSI…the 18,000 pound standard was already in use in most American cities at the time…Passing the legislation would mean a 10 to 12.5% reduction in the total amount of steel needed to erect a building. Since steel represented 15 to 20% of the cost of a skyscraper, the savings to the builders would be considerable…the savings on the steel would be $500,000…despite his former refusal to revise the building code piecemeal, in March 1930 the mayor signed into law the revision on steel – and not a moment too soon. The Corporation had already ordered tons of steel according to the proposed new standard…was sitting on the New Jersey waterfront the day the bill came up for final passage"

John Tauranac, Author

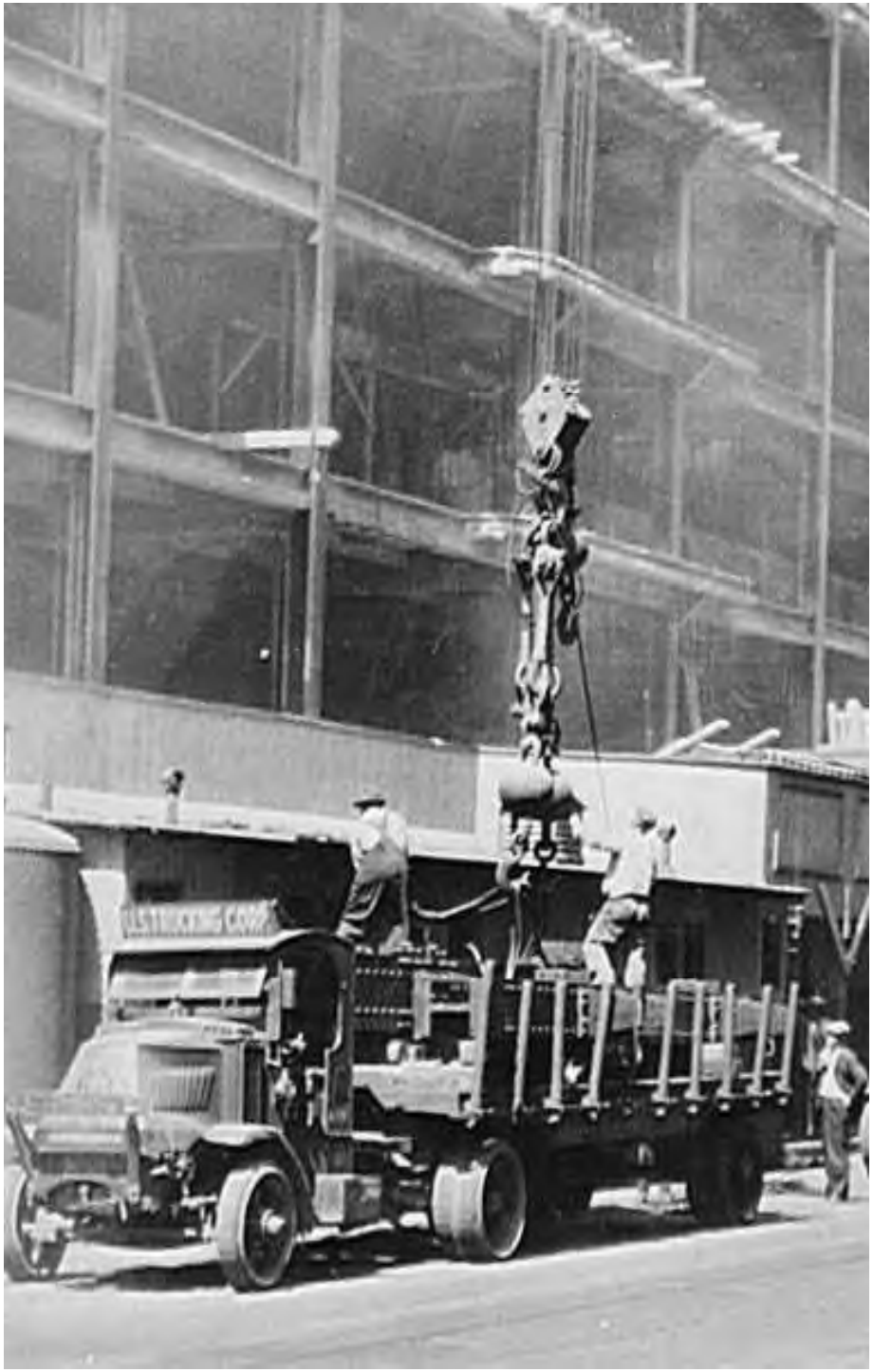
Mayor Jimmy Walker's revision to the NYC building code allowed for 18K PSI steel to be used rather than the 16K PSI standard in the code since the turn of the century

"When we were in full swing going up the main tower, things clicked with such precision that once we erected fourteen & a half floors in ten working days - steel, concrete and all. We always thought of it as a parade in which each marcher kept pace and the parade marched out of the top of the building still in perfect step. Sometimes we thought of it as a great assembly line – only the assembly line did the moving; the finished product stayed in place."

Richmond H. Shreve, Architect

RE: The machine-like efficiency of the construction process via "standardization" akin to an automobile assembly line. An average of 4&1/2 floors were erected each week.

06/25/30 07/07/30 07/24/30 08/18/30 09/08/30 11/10/30



"The steel was shipped first to a waterfront supply yard near Bayonne, N.J., from which the amount needed for two floors would be withdrawn in a single requisition and delivered to the site. All deliveries were received within the building except the steel members for the framework and the lime-stone facing for the first five floors; these deliveries were made directly from the streets."

John Tauranac, Author

"…ran trucks the way they run trains in and out of Grand Central. If a truck missed its place in the line on Tuesday, it had to wait until Wednesday to get back in."

Andrew J. Eken

RE: Truck delivery coordination

"Derricks lifted the steel off the trucks and set it near where it would be installed. When the building was up to the sixth floor, the sixty foot setback could be used as a staging area. Lifting steel more than 30 stories in one motion was not practical, so a series of relay derricks were built on setbacks or on plat-forms built out from the edge of the building. The steel would be trans-ferred directly to the erection derricks, or to the relay derricks and finally to the erection derricks."

John Tauranac, Author

"They did not worry about designing the eighth floor until the drawings for the third floor had been completed and sent to the fabricators"

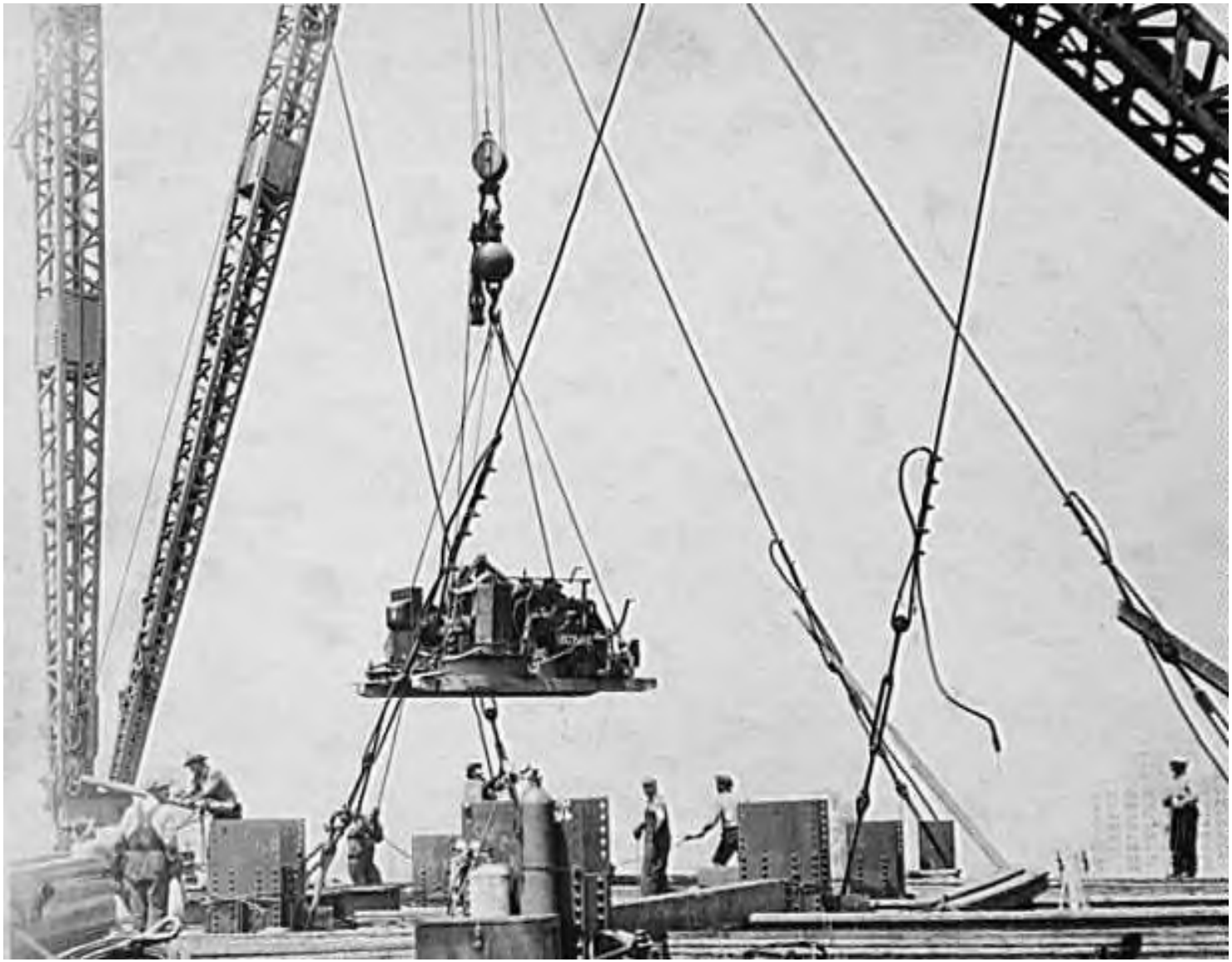
John Tauranac, Author

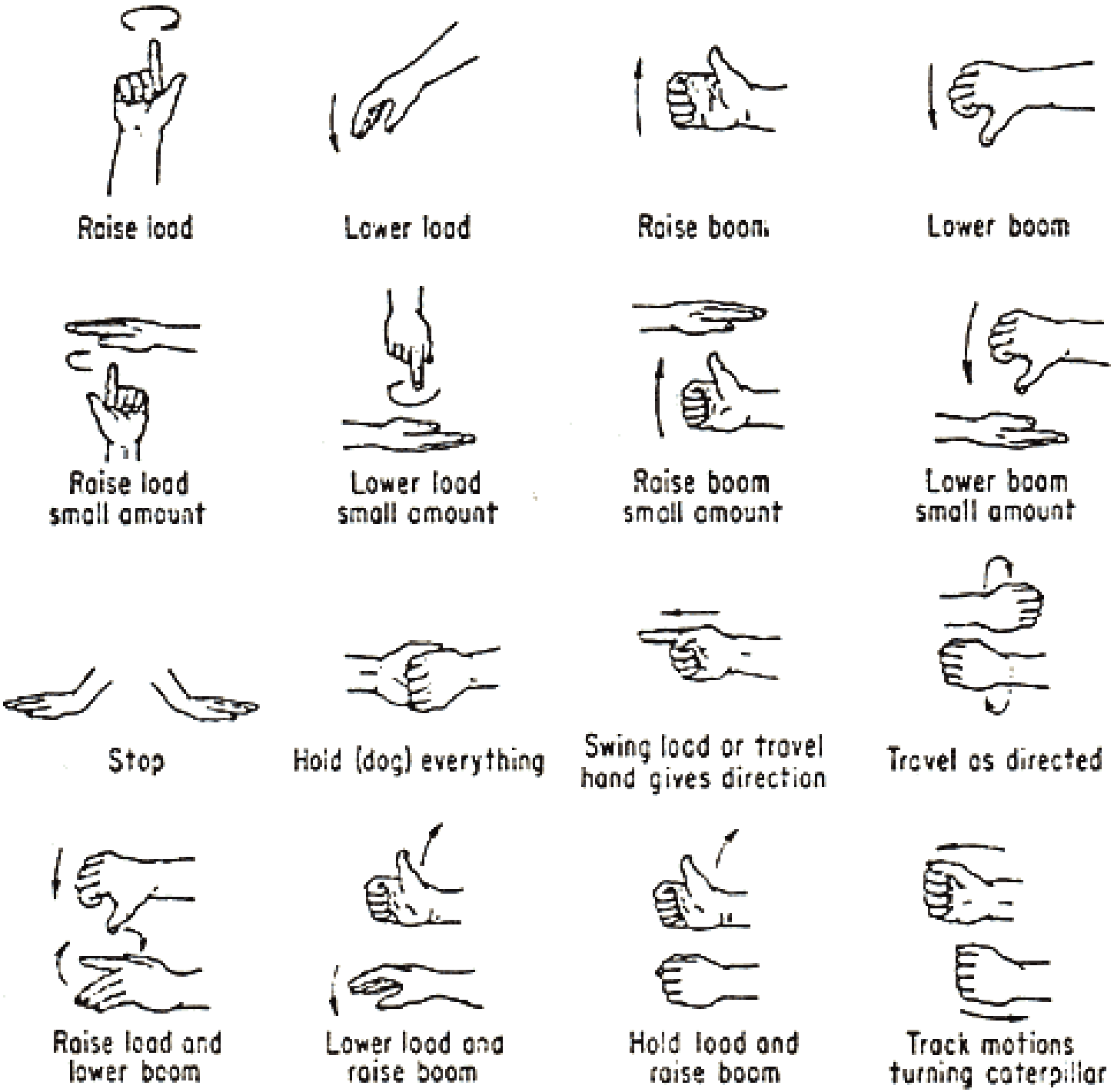
“Housesmiths”

Term referring to skilled mechanics who set iron fixtures and framework in the late 19th/early 20th century/s. They later became known as *Bridgemen* and/or *Ironworkers.*

"A profane orchestra conductor, directing the derrick, yelling at the bull-stick man who turns the boom, signaling with his arms and his hands to the man who yanks the engineer's bells, jerking his head at the tag line man whose line guides the dangling column"

RE: Magazine writer's description of a ironworker foreman





Ironworker hand-signals (to boom operator)

"Ye, gods! If there ever was an experience to bring to the human body its sense of helplessness and despair, its agonies and terrors, it is the sensation felt by one who has not had training when he suddenly finds himself out on a narrow beam or plank, high above the ground and unprotected by a hand-hold of any kind."
William Starrett, 1928


EMPIRE STATE

"I made one trip up, and once was enough. When I saw some of those kids – steelriggers and stone masons – go toe-dancing over steel beams or maybe along a foot-wide strip of stone work, with not a thing under them but air, it made me kind of sick. I don't see how they did it. Honest, I don't."

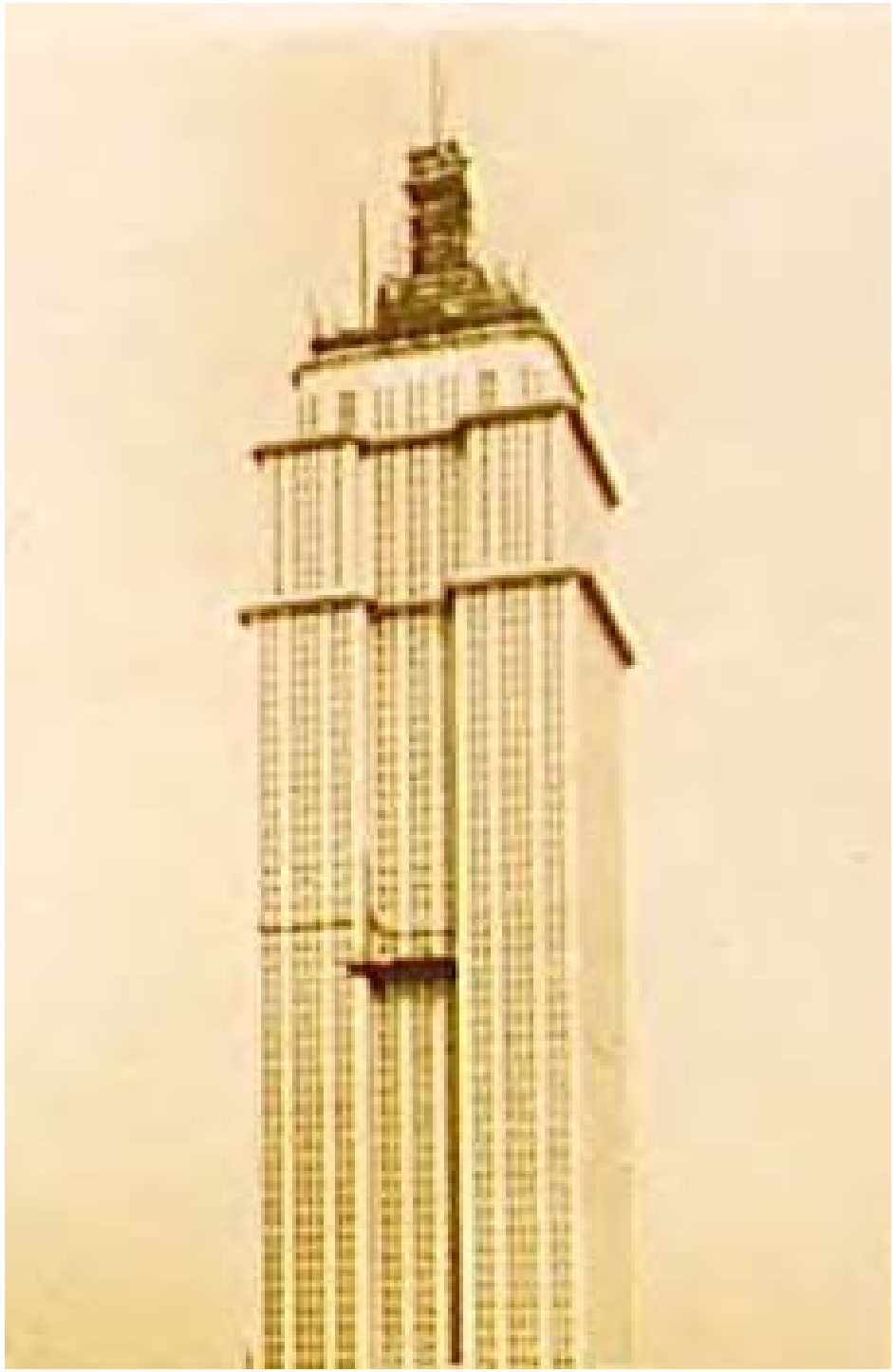
Al Smith, 1930

RE: Response to a reporter from the *New York Sun* if he had visited the floors during ESB's construction


EMPIRE STATE

"Beneath the scaffolds were two catch-all scaffolds that were fairly widely separated from each other. The first was set under the stone and brick setters and was solidly planked in addition to being wired. The second scaffold consisted of rope net about 15 floors below the stone-setter's catchall, it was designed to catch lighter objects that might fall within the interior floors."

John Tauranac, Author



Mooring Mast (steel erection)

Planning and Control Permit Erection of 85 Stories of Steel in Six Months

Empire State Building in New York City Involving 57,000 Tons Goes Up in Record Time—Nine Derricks Starting Work on 425x198-Ft. Site Reduced to Five Above Twentieth Floor—Relay Platforms Necessary in Hoisting Steel—All Hoists Inside of Building

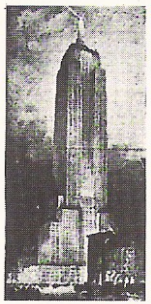


FIG. 1—EMPIRE STATE BUILDING, NEW YORK CITY

THE PLACING of more than 57,000 tons of structural steel in an 85-story building between the months of April and October is the task which has confronted the steel erector on the Empire State Building in New York City. Eighty per cent of this total tonnage was in place on Aug. 1, when the building had reached to about the 50th story. During July, 22 stories of steel were placed in 22 working days, involving regular hours and no night work. As progress has averaged about 10,000 tons of steel per month (working five days a week), it seems probable that the difficult schedule will be met.

This article is devoted to an account of the steel erector's methods and equipment which are of interest and value both because of the magnitude of the project and the careful planning and control which has been exercised. The steel tonnage in the Empire State Building exceeds by a large margin that used in any comparable structure. The Chrysler Building utilized 21,000 tons and the 70-story Manhattan Company Building, both in New York City, required 18,500 tons. The Merchandise Mart in Chicago, recently characterized as the world's largest building, required only 38,000 tons. The principal roof of the Empire State Building is 1,043 ft. above the curb, and latest plans contemplate the addition of a combination airship mooring mast and observation tower approximately 200 ft. tall above this point. The building's completed height will exceed that of the Chrysler Building, now the tallest structure, by something over 200 feet.

In preparing a plan of procedure for the steel erection, it was necessary to consider four major problems: (1) steel supply, which had to take into account the fabrication schedule and methods of delivery; (2) plant layout, including number, size and location of derricks and hoisting engines; (3) steel-handling methods at the job, which necessarily had to be considered as complementary to plant layout in the planning; and (4) actual erection procedure, including methods of setting, fitting up and riveting.

Steel Supply

The large tonnage in the building and the urgency for completion made it advisable to divide the fabricating contract between two firms, the American Bridge Co. and the McClintic-Marshall Co. Alternate sections from the basement to the roof, comprising from two to eight floors each, were assigned to each fabricator. All steel is shipped to a joint waterfront supply yard near Bayonne, N. J., and steel for erection is ordered from this supply yard one lift (two floors) at a time, as needed. Because of possible delays in loading and shipment it is necessary for the steel erector to order steel two days in advance of the time it is to be used. Since there is no storage space at the building site, it is absolutely necessary that everything be in readiness to erect the steel when it arrives.

Steel is delivered from the supply yard to docks on the East River waterfront by derrick-equipped lighters. Columns and heavy members are transferred to trucks at 23d St. while the smaller material comes ashore at 19th St. Since the Empire State Building is between 33d and 34th St. on Fifth Ave., the haul through city streets is not long. The largest shipping pieces were the two bottom column sections, the lower one 15 ft. 8 in. long, weighing 44 tons, and the upper one having about the same weight but being 33 ft. long. By using a two-wheel trailer, the trucks were able to handle these sections as easily as the smaller ones.

At the beginning of the job steel was delivered to the 33d St. side of the building; an unusually wide sidewalk on 34th St. made it impossible for the derricks standing in the excavation to reach trucks on this side. When erection had reached the second floor, however, the derricks could reach either street and steel was delivered on both the 33d and 34th St. sides until erection reached the 46th floor, when unloading on 34th St. was discontinued. All steel is now being received along 33d St. which, although narrow, is a westbound street permitting the trucks to reach the building from the East River waterfront in the most direct manner.

The erection plant is divided into two main parts—

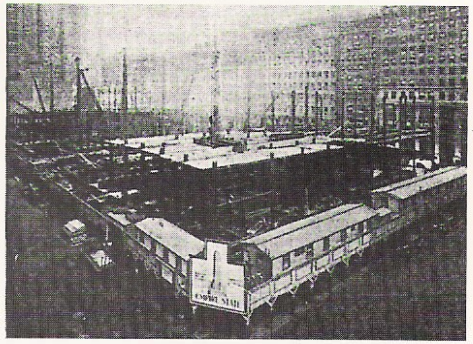


FIG. 2—EARLY ERECTION VIEW OF EMPIRE STATE BUILDING

At stage shown almost 8,000 tons of steel had been erected. Note extent of site which is 198x425 ft. General contractors' offices on bridge over 5th Ave. in foreground. Note complete planking of top floor forming a safe working platform for the steel erectors. Also at left, trucks unloading steel and materials along 33rd St. side.

"Workmen standing 1,050 feet above the sidewalks of New York raised a large Stars & Stripes to celebrate the topping out of the steelwork. The workers had placed steel at the record rate of 2,400 tons a week, they had completed their end of the contract in six months – twenty-three days ahead of the appointed date – and raising the flag atop the 85th floor was a powerful symbol to them. They had won a major battle, and a score of workers waved their hats from their slender perch on the rook beams to celebrate."

John Tauranac, Author

Part 12

Cowboys of the Skies

"Rough pioneers are these men of the steel, pushing each year their frontier line up toward the clouds. Wanderers, living for their jobs alone. Reckless, generous, cool headed, brave, shaken only by that grim power of fate, living their lives fast and free – the cowboys of the skies."

Ernest Poole, 1908

"In the eyes of all men, not hidden in shops nor buried in the bowels of the earth, they are continually plying their muscular yet delicate and venturesome craft. Look up 15 stories along the steel ribs of a great business structure just underway and the structural workers are like insects creeping over its great metal limb…With but a plank, perhaps a beam of iron only, as a resting place between earth and sky, the workers are doing wonderful things, just how wonderful you must be up there to see."

***Frank Leslie's Popular Monthly* – July, 1901**

RE: Ironworkers

"While the theorists lament that the machine age is making robots and automatons of all men, here is one type of workman, the steel man, the very spirit of the skyscraper, a direct product of the power age, whose personality the machine exalts."

Margaret Norris
RE: Visit to the ESB during construction

"Whatever might be said of Sam Parks, he was a man of his time, who was dedicated to the well-being of his fellow New York Ironworkers. He may have wanted a full wallet for himself, but he wanted his friends to earn sufficient wages to take care of their families adequately."

RE: 100th Anniversary (in 1996) publication of the official history of the *International Association of Bridge, Structural & Ornamental Ironworkers*

Sam Parks was the NYC (Local 2) president. At the threat of a strike, he extorted money from contractors and made non-union ironworkers "an offer they couldn't refuse." As a union organizer at first, if they didn't join the union at his invitation, he would beat them up. He died of Consumption (Tuberculosis) in *Sing-Sing* prison on May 4, 1904. A *NY Times* obituary stated: "*The wages of sin are paid in full at last.*"

"O you anarchic scum, you cowardly murderers, you leeches upon honest labor, you midnight assassins, you whose hands are dripping with the innocent blood of your victims"

General Harrison Gray Otis, Publisher of the *Los Angeles Times*
RE: Bombing of the *LAT* HQ on October 1, 1910 by the iron-worker's union during the 1907~1911 "Dynamite Conspiracy."
The *LAT* was an anti-union paper for an anti-union town; twenty-one people were killed.

"Only men of great physical strength and courage became skyscraper men. Putting their lives in daily danger as they did, they developed a psychology of recklessness and violence that people in less hazardous occupations may find difficult in understanding."

Louis Adamic

RE: Excerpt from his 1934 study of industrial violence: *Dynamite*. It featured the "Dynamite Conspiracy" of the ironworkers union (1907~1911) against the *National Erectors Assoc.* (NEA)

“Riding the Ball”

Skywalkers

"They were dissatisfied with this arrangement and would come out to the bridge itself every chance they got. It was quite impossible to keep them off. As the work progressed, it became apparent to all concerned that these Indians were very odd in that they did not have any fear of heights. If not watched, they would climb up into the spans and walk around up there as cool and collected as the toughest of our riveters, most of whom at that time were old sailing-ship men especially picked for their experience in working aloft…We decided it would be mutually advantageous to see what these Indians could do, so we picked out some and gave them a little training. It turned out that putting riveting tools in their hands was like putting ham with eggs."

Official of the *Dominion Bridge Company*

RE: Mohawk Indians

"They were inquisitive about the riveting and were continually bothering our foremen by requesting that they be allowed to take a crack at it. This happens to be the most dangerous work in all construction, and the highest paid. Men who want to do it are rare and men who can do it are even rarer, and in good construction years there are sometimes not enough of them to go around… they were natural-born bridgemen"

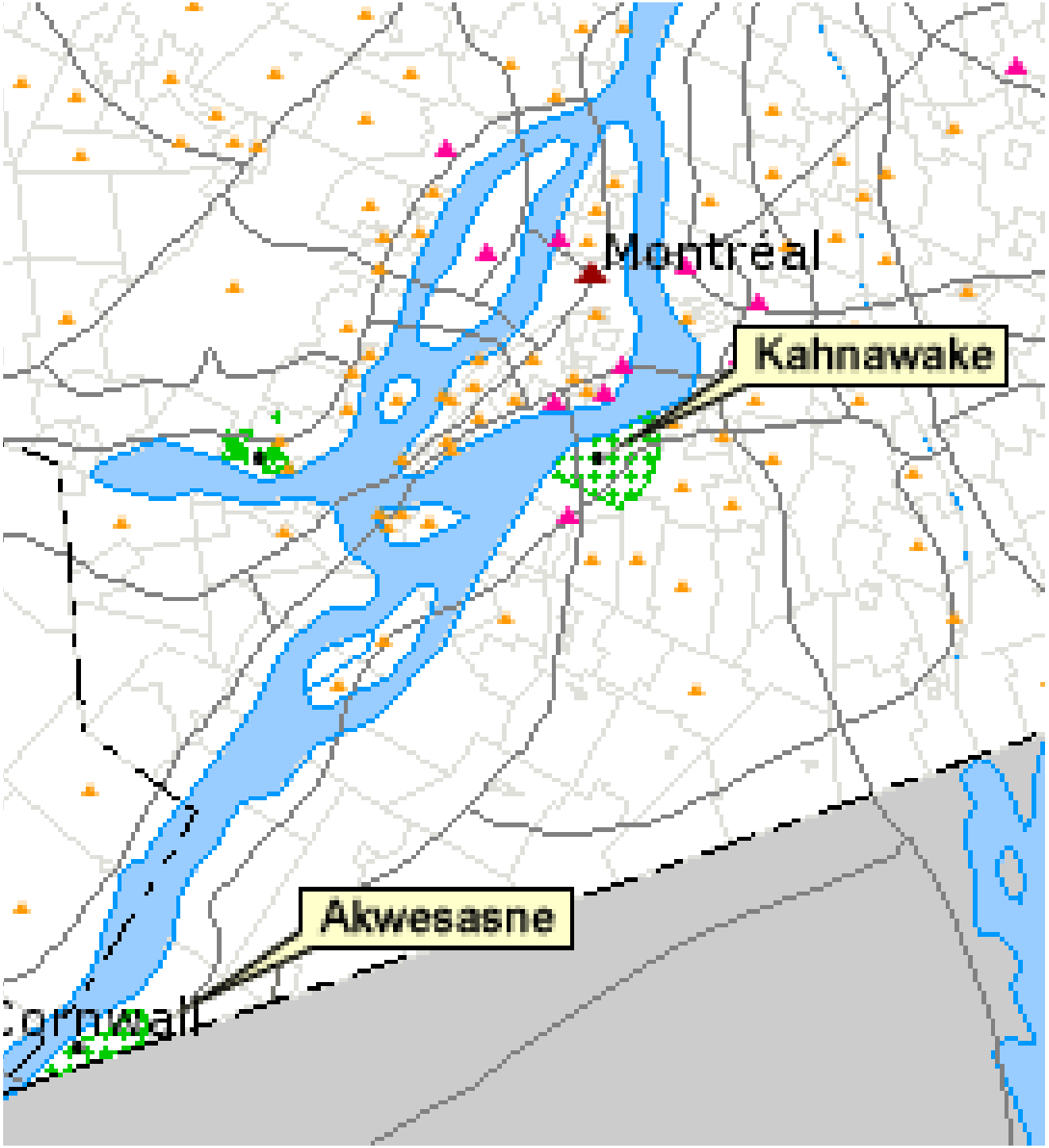
Official of the *Dominion Bridge Company*
RE: Mohawk Indians natural abilities as ironworkers

Hired at first as day laborers for a RR bridge over the St. Lawrence River (late 1860s), it became the Mohawk Indian's first experience as iron-workers. They later worked on the *Quebec Bridge* which collapsed during construction (in 1907) killing 75 (33 were Mohawks). This event became known as "the disaster" in Mohawk folklore. The first Indian ironworker in NYC was "Indian Joe" Diabo – he fell off of the *Hell Gate Bridge* in 1915 during its construction. Mohawk (Iroquois Nation) is an Alqonquin (enemies of the Iroquois) word meaning "man-eaters."

“Why did the Caughnawaga Mohawks take so eagerly to this spine-chilling high-iron work? The answer seems to lie in a puzzling characteristic found in many North American Indian tribes, and outstandingly in the Iroquois: they are almost completely lacking in fear of heights: ‘*They will walk over deep brooks and creeks, on the smallest poles, and without any fear or concern. Nay, an Indian will walk on the ridge of a barn or house and look down the gable-end and spit upon the ground, as unconcerned as if he was walking on Terra Firma.’*”

John Lawson, early 18th century English surveyor

RE: Excerpt from a late 1950s article in *National Geographic* about the Brooklyn (Gowanis) Mohawks



Mohawk reservations on the St. Lawrence River
On Friday afternoons, they would often make the long drive home from NYC to spend the weekend with their families

"These Indians were as agile as goats. They would walk a narrow beam high up in the air with nothing below them…And it wouldn't mean any more to them than walking on the solid ground. They seemed immune to the noise of the riveting, which goes right through you and is often enough in itself to make newcomers to construction feel sick and dizzy."

RE: Mohawk Indian ironworkers natural fearlessness of working at great heights

"I'm thinking of getting me a stout leather belt and tying myself by a chain. I marvel at these steelworkers – the way they move about almost as high as the sky with as little fear apparently as we walk the streets."

Al Smith, 1930

RE: ESB ironworkers

"It's funny about this business. Everybody seems to think you have to be a superman or something to work on steel. Of course, it ain't no picnic, but then there's lots of jobs I'd pass up for this. I wouldn't wanna be no taxi driver, for instance. Look at them down there, dodging in and outa traffic all day long. A guy's apt to get killed that way…She don't think nothin' about it. You don't see Lindbergh's wife telling him he can't fly around in airplanes, do you? All she ever said about it was, 'Good-by, baby; don't get hurt'"

RE: ESB ironworker Victor "Frenchy" Goselin – subject of Lewis Hines photographs. Commenting on his line of work.

Victor “Frenchy” Goselin
(“riding the ball”)

"A riveter never worked alone. He was part of a gang of four: the heater or passer, the catcher, the bucker-up and the gunman. Riveters selected their own mates, and trained together, as closely as a trapeze act. No 'Boss' would try to inflict a new member on a team. If a member of a team did not show up for work, the gang was laid-off for the day."

John Tauranac, Author

"…find themselves on a narrow beam with no handhold, fall flat on their stomach, clutch the beam, wrap themselves round it, shut their eyes and gasp as though drowning"

RE: New ironworkers

"I had the strangest experience once. I happened to have my mouth open and the red-hot burr flew right in my throat. It burned my cheek somehow. But the doctor at the hospital could never find the bit. They thought it must have worked out in some way and that I must have swallowed it."

***Frank Leslie's Popular Monthly*,**
ca. 1900
RE: A young ironworker's account of his injury from a flying rivet

"You got to love it and can't quit it. Life down on the street's too slow. Who wants to be a pencil pusher after he's worked with steel…It's nice to point to a mighty suspension bridge or a towering building and say, 'I helped erect that'"

Paul Rockhold, modern-day Ironworker

"Like spiders they toiled, spinning a fabric of steel against the sky. Crawling, climbing, swinging, swooping – weaving a web that was to stretch farther heavenward than the ancient Tower of Babel, or than all the older towers of the modern Babel."
***The New Yorker*, 1930**

Part 13

Innovations

"Following one of the trucks, an observer finds himself in a forest of concrete covered piers. Here there is an infinity of operations. Truckloads of brick are being unloaded with a roar as the truck chasis tips up and the load goes thundering down through the floor into a basement hopper. Truckloads of tile are unloaded more gingerly, by hand. Sheet iron, metal parts, bales of wire and coils of cable, sand and cinders and lumber and pipe arrive. Each is unloaded in a special corner of the block-wide floor, presently to go shooting up in elevators to the floor where each is needed."

C.G. Poure – Journalist, 1930

RE: Excerpt from his article about the construction of the ESB entitled: *Chase Up Into the Sky*

Railroad in the Sky

"The industrial railway system was a first for an office-building construction job. It was not as if there were four-by-eight locomotives up there. The railway cars were handcars with no motive power other than human push power, but they rolled along at a merry clip, and each car was the equivalent of eight wheelbarrows. Narrow-gauge trucks that were designed to reach every site were laid on the floors and the hoists – with 24 double-side-rocker dump cars and 24 platform cars serving the building. Materials would arrive; each would be unloaded in a special corner of the first floor, loaded onto a car, and sent shooting to the floor where it was needed. It saved labor by decreasing the number of handlers, hoists, and hoist men, and it saved time, and that meant money."

John Tauranac, Author

"The limestone ashlar, much of which was alike and of simple form, was so easily fabricated that one-third of the total order was finished in seven weeks. The Indiana Limestone Company rough-cut the stone at the quarries, but Starrett had the milling done locally, and there the milled stone sat until it was required at the site. This eliminated storage problems – the local millers doubled as warehouses."

John Tauranac, Author

"If the debris was heavy, it was taken down by hoists; if light, it was sent down metal chutes (wood chutes would not have been strong enough to withstand the weight and velocity of even light debris). The debris went into a hopper on the first floor, it was transferred to trucks, and out it went."

John Tauranac, Author

"The bricks were untouched by human hands from the time they left the brickyard until the bricklayers picked them up to set down in place in the mortar"
Starrett Bros. & Eken

The two “brick hoppers” were an innovation which eliminated the need for a large “brickpile” in a cordoned-off area. From the pile, they would be transported by wheelbarrow to their destination. SB&E built two large “hoppers” (in the Basement) that held 20K Bricks/EA. From the hopper, they would be loaded into dump cars (operating on the industrial railroad) and were then hoisted to the floor/area where the bricklayers were working. Bricks were placed three floors ahead of the brickeys who were setting up to 100K bricks every eight hours. The ESB required 10 million bricks.

"Ten miles of piping, every piece of which would have to come out before the building could be completed, were laid. The cost to Starrett of allowing a workman to have a drink of water without leaving his job was estimated at $25,000, but it probably saved that much and more in downtime."

John Tauranac, Author

RE: Concerning the use of temporary water tanks and piping to supply water throughout the ESB during construction.

"Rather than having large numbers of workers using the elevators twice each lunch hour, several food concessions were provided, so men stayed closer to their work. These lunch stands were built, when needed, on the 3rd floor, 9th and 24th floor, 47th floor and 64th floor, and were completely equipped by the restaurant owner and remained in these locations throughout the life of the job."

John Tauranac, Author

"Forty cents bought a good-size meal of hot meat, vegetables, and potatoes, or a couple of sandwiches, bread and butter, coffee, milk or cocoa, and the inevitable pie for dessert. The men ate leisurely in the cafeterias, and would still get back to work on time. Except, said Starrett, the Italians who were on the job. They spurned the cafeteria cuisine and brought home-prepared lunches."

John Tauranac, Author

"Radiators were cleverly hidden under the window sills in space made available by the use of the thin aluminum spandrels. This innovation not only cleaned up the appearance of the offices and improved the general ambience, it also provided more rental space."

John Tauranac, Author

Typical office of the era
(with exposed radiator)

"Construction workers on the Empire State Building were saved climbing any great distances from workday one. Completely enclosed elevators with sliding doors had been salvaged from the Waldorf and set up temporarily to carry workmen until the usual hoists could be set in place."

John Tauranac, Author

Part 14

Floors, Walls & Windows

Because of the size of the building, there was a need for on-site concrete preparation & mixing for the 62K cubic yards of concrete required for the floor slabs. A hopper for cement, sand and cinders fed two on-site batching plants for making concrete. A dedicated hoist (in the 2nd Basement) lifted buckets of concrete to the floor/s where concrete was being laid.

Facade

"The choice of Bedford Indiana limestone was un-arguable. Limestone incorporated some of the best attributes of both marble and granite. Its coloration had a striking depth, with flashes of silver in it. And it was durable, said to last at least 500 years if protected from moisture building up between it and the frame. It possesses a thermal inertia that amounts to heat storage, a virtue shown when energy consumption of limestone buildings is compared with the profligacy of more modern glass-walled buildings."

John Tauranac, Author

The Appeal of Fine Architecture is Irresistible!

YOU see Indiana Limestone everywhere in buildings of monumental type. And now increasingly this dense, fine-grained, light-colored natural stone is becoming the preferred building material for commercial structures as well. Indiana Limestone gives the building faced with it a dignity, a beauty, that causes it to find quick favor with the public. Today when there is severe competition between buildings for tenants, the drawing power of this stone from ILCO quarries becomes a factor of decided importance. There is no better way to assure the return upon your investment in a costly site than by building to please the public—of limestone!

When beauty, permanence, and absence of exterior upkeep are considered, Indiana Limestone construction becomes an actual economy. Let us prove this statement. Get an estimate upon whatever type of building you are planning. You will be surprised at the small difference in cost between this and other materials. A word to your architect is sufficient, or write us direct. Informative literature mailed on request. Address Box 1520, Service Bureau, Indiana Limestone Company, Bedford, Indiana. (Executive offices: Tribune Tower, Chicago).

INDIANA LIMESTONE COMPANY

Ad for the *Indiana Limestone Company* featuring the Indiana War Memorial (completed in 1930)

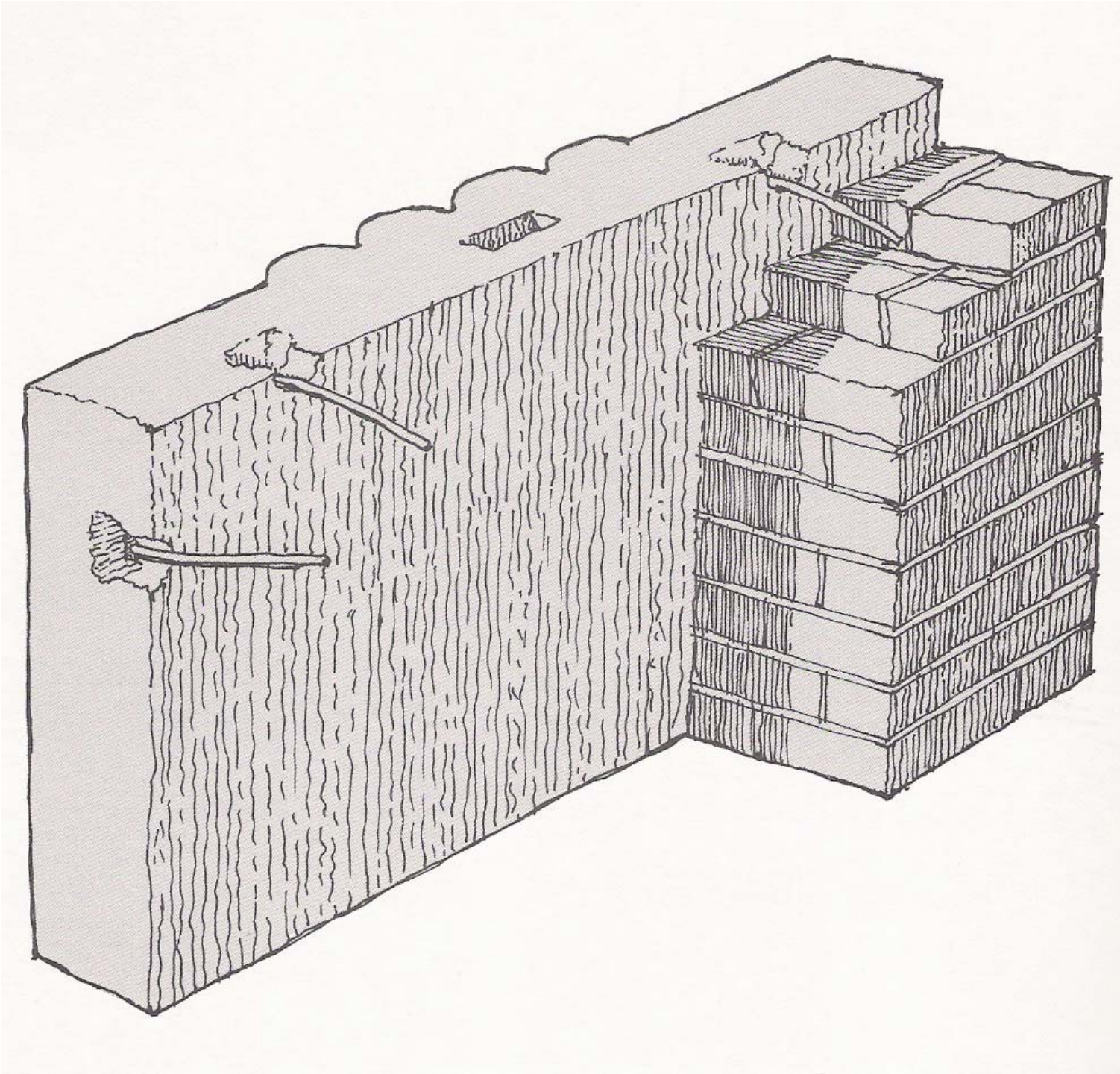
Even though much of the limestone was brought up to the higher floors by the use of hoists and the industrial RR's flatcars, exterior (Dobbie) hand winches were needed to set the heavy limestone panels into position

"Chrome-nickel steel the color of silver was used for the mullions that would run from the sixth to the 85th stories. An alloy steel containing approximately 18% chromium and 8% nickel, chrome-steel is rust-less, stainless, impermeable to weather, and can be washed with plain soap and water."

John Tauranac, Author

"The men who worked on the outside of the façade worked from scaffolds, or "duckwalks," suspended from the floor above. These scaffolds were equipped with solidly planked protection overhead and under-foot, with guardrails, and wire mesh between rail and platform."

John Tauranac, Author



The masonry wall consisted of an eight-inch backing of brick faced with either limestone or aluminum spandrels

"If all the materials which came to the corner of Fifth Avenue and 34th Street for the construction of Empire State had come in one shipment, a train 57 miles in length would have been needed. When the locomotive of such a train would have entered New York, the caboose on the rear end would have come to a halt in Bridgeport, Connecticut. Ten million bricks were used in building the Empire State. A single workman, had he continued at it every day, would have to work for 25 years before he could have finished mortaring these bricks."

Starrett Bros. & Eken

"The main entrance, which is smack in the middle of the block on Fifth Avenue, is a thirty foot high portal. Defined by a diamond-shaped grille framing the glass, it is solid, sub-stantial and dignified. Colossal engaged columns flank the entrance. Instead of concave grooves, you find the convex fluting that reflects the motif running up the building, and instead of terminating in the usual capital, you find eagles. Incised above the entrance in a v-cut are the two words: EMPIRE STATE in a clean, serif type-face."

John Tauranac, Author


EMPIRE STATE

"Windows, spandrels, steel mullions and limestone, all fabricated in various parts of the country, were designed so that they could be duplicated in tremendous quantity and put together almost like an automobile"
William Lamb, Architect

"Eliminate the customary reveals of soffits and jambs, and their attendant assertive shadows"

Richmond H. Shreve, Architect

RE: Decision to set the windows (except for the first five floors) in shallow openings in the exterior walls rather than the traditional deep openings (people interpreted depth as representing strong exterior walls)

"A unifying vertical element critical to the building's efficient construction was the use of cast-aluminum spandrels…the spandrels for the Empire State Building were decorated with facing pairs of stylized lightning bolts that were set in a Chevron pattern that almost met at mid-stroke. The average spandrel was 4'-6" high by 5'-0" wide, and weighed 130 pounds. The spandrels were placed in front of common brick, with their flanks designed to fit between the chrome-nickel steel mullions that ran up the face of the building. Their upper edges fit under the sills of the windows, their lower edges set into the tops of the window frames. The spandrels were angle-braced for rigidity (a bar was fixed to their backs) and attached to the structure's ribs by steel straps. The faces of the spandrels were sandblasted to produce a dull gray surface to contrast with the metal trim on their flanks."

John Tauranac, Author

"…avoiding the impression of a perforated shell, of adding dignity to utility while escaping the inherently monotonous grid-iron of oft-repeated floors crossed by the slotted vertical bands of uniformly spaced windows"

Richmond H. Shreve, Architect

RE: Design of the ESB façade's 6,400 windows while maintaining "solidity of mass"

"A standard type without special features of design"

Richmond H. Shreve, Architect

RE: Use of non-galvanized steel window frames; painted "tomato-soup red" for corrosion protection. Window frames were set flush with spandrels covering the façade's limestone panel edges allowing them a rough edge which was not required to be finished smooth.

"The window frames were set into the openings so that frames covered the edges of the flanking stone and were flush with the spandrels. Since the window frames covered the joints, the stone did not have to be finished, which greatly reduced the cost of the stonework and simplified installation."

John Tauranac, Author

"As the ferries leave downtown Manhattan for points west and south at sundown, an unusual sight sometimes presents itself to the passenger who casts a backward glance at the city's ramparts. In the mid-town section there appears what seems to be a tower of flaming gold. For a full five minutes it gleams, a torch of fire in the midst of faintly glowing candle lights. It is the Empire State Building, ablaze with the reflection of the setting sun against its windows and bare metal strips."

***New York Times*, 1931**

RE: "Second-hand Light" effects

Part 15

Going Up, Going Down

The ESB, including its eighty-five stories (plus the 200-foot mooring mast) rose to an overall height of 1,252-feet above street level and contained nearly 36 million cubic feet. Since the value of rentable space in such a tall structure is dependent to a large extent on proper elevator service, providing suitable vertical transportation was critical. The key to success was high-speed elevator service. There would be fifty-eight passenger elevators, two tower elevators, one mooring mast elevator and six freight elevators (sixty-seven elevators total). SB&E chose the *Otis Elevator Company* for the $2.9 million contract to design, manufacture and install the elevator service in the ESB.

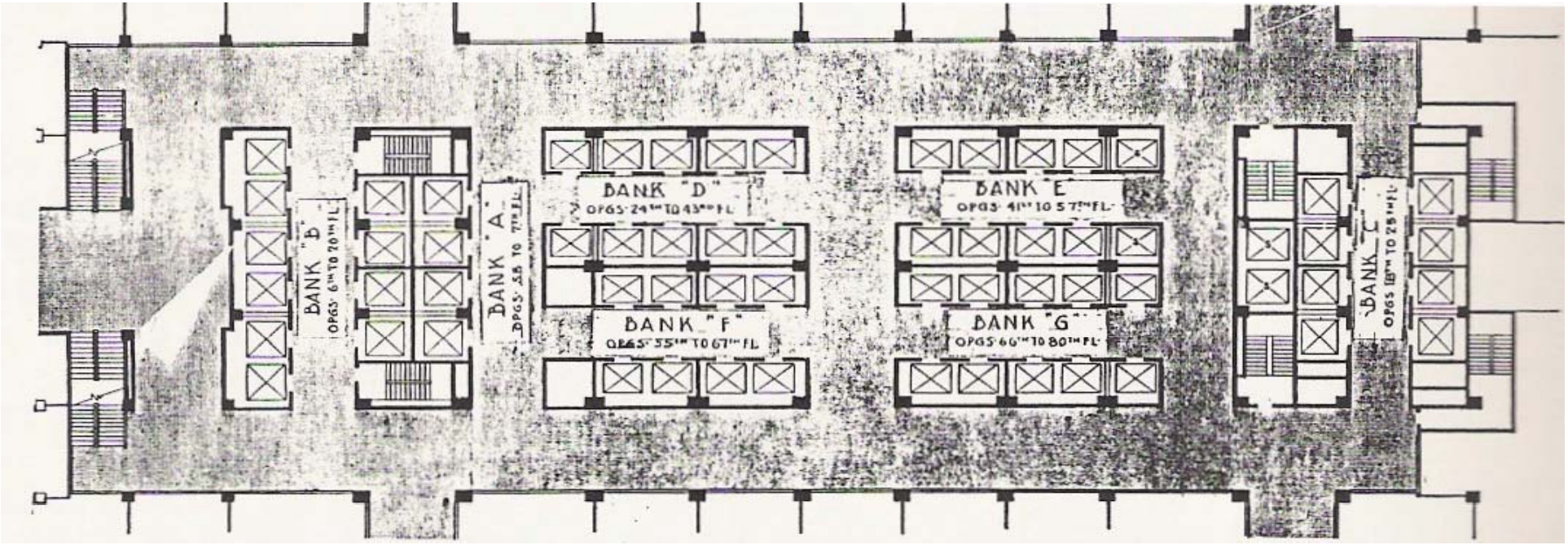
"So that the additional rentals, even though proportionately less, may be applied to increase the returns on the total investment, including construction and ground costs"

William Lamb, Architect

RE: Taking advantage in the design of the large plot to provide additional elevator shafts allowing the building to go higher thus providing more rentable space

"The code restricted the speed of elevators to 700 fpm. For the giants among skyscrapers, that was too slow - the code had to be revised to allow elevators to travel as fast as 1,200 fpm. For the first six weeks after the building opened, the elevators operated at the slower rate. By the second week of June, however, under the new elevator rules adopted by the Board of Standards & Appeals, elevators could whisk their passengers upward at a rate of 1,200 fpm."

John Tauranac, Author



Passenger Elevator Bank (58 total) APPORTIONMENT;

Bank A: Four Cars	**Local**	**700fpm**	**3rd to 7th Floors**
Bank B: Ten Cars	**Express**	**800fpm**	**7th to 18th Floors**
Bank C: Eight Cars	**Express**	**800fpm**	**18th to 25th Floors**
Bank D: Ten Cars	**Express**	**1,000fpm**	**21st to 41st Floors**
Bank E: Eight Cars	**Express**	**1,000fpm**	**41st to 55th Floors**
Bank F: Eight Cars	**Express**	**1,200fpm**	**55th to 67th Floors**
Bank G: Ten Cars	**Express**	**1,200fpm**	**67th to 80th Floors**

The building materials were all hoisted within the building in four shafts that would later accommodate passenger elevators. In the early stages, the hoists traveled at 80 fpm, but they were soon replaced by mine-skips that zipped along at 1,300 fpm.

John Tauranac, Author

"Electric hoists, which were like small cranes that operated from an overhead monorail, lifted the stone from the truck, swung the stone along the monorail, and deposited it on a platform car. Two hoists handled all the stone for the building."

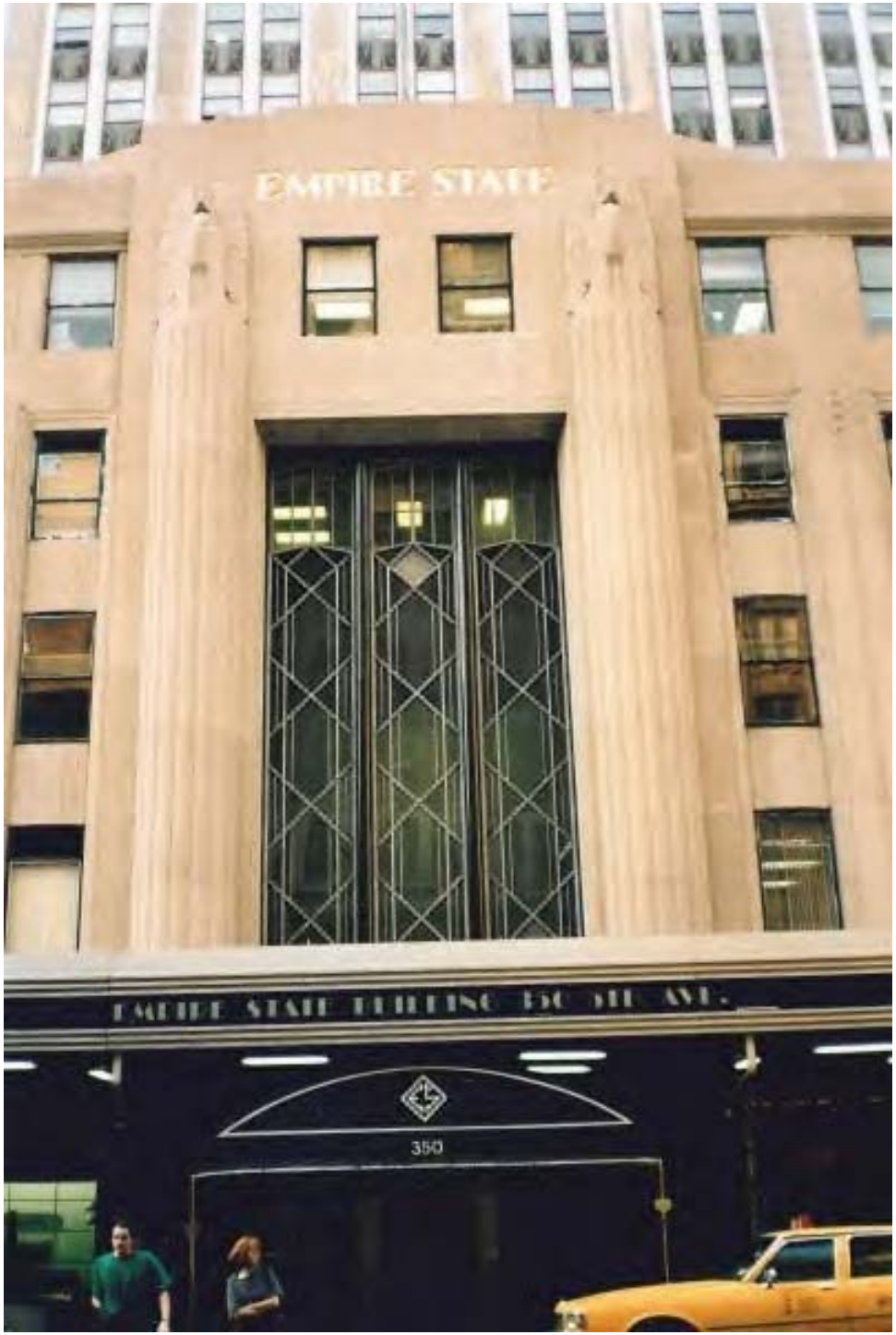
John Tauranac, Author

RE: The monorail hoist was a material hoist with an overhead winch set on a small trolley, capable of moving back & forth. This hoist was used for carrying large, heavy items that could not be loaded and unloaded by hand, such as sections of stone.


LL-6

Part 16

Public Spaces



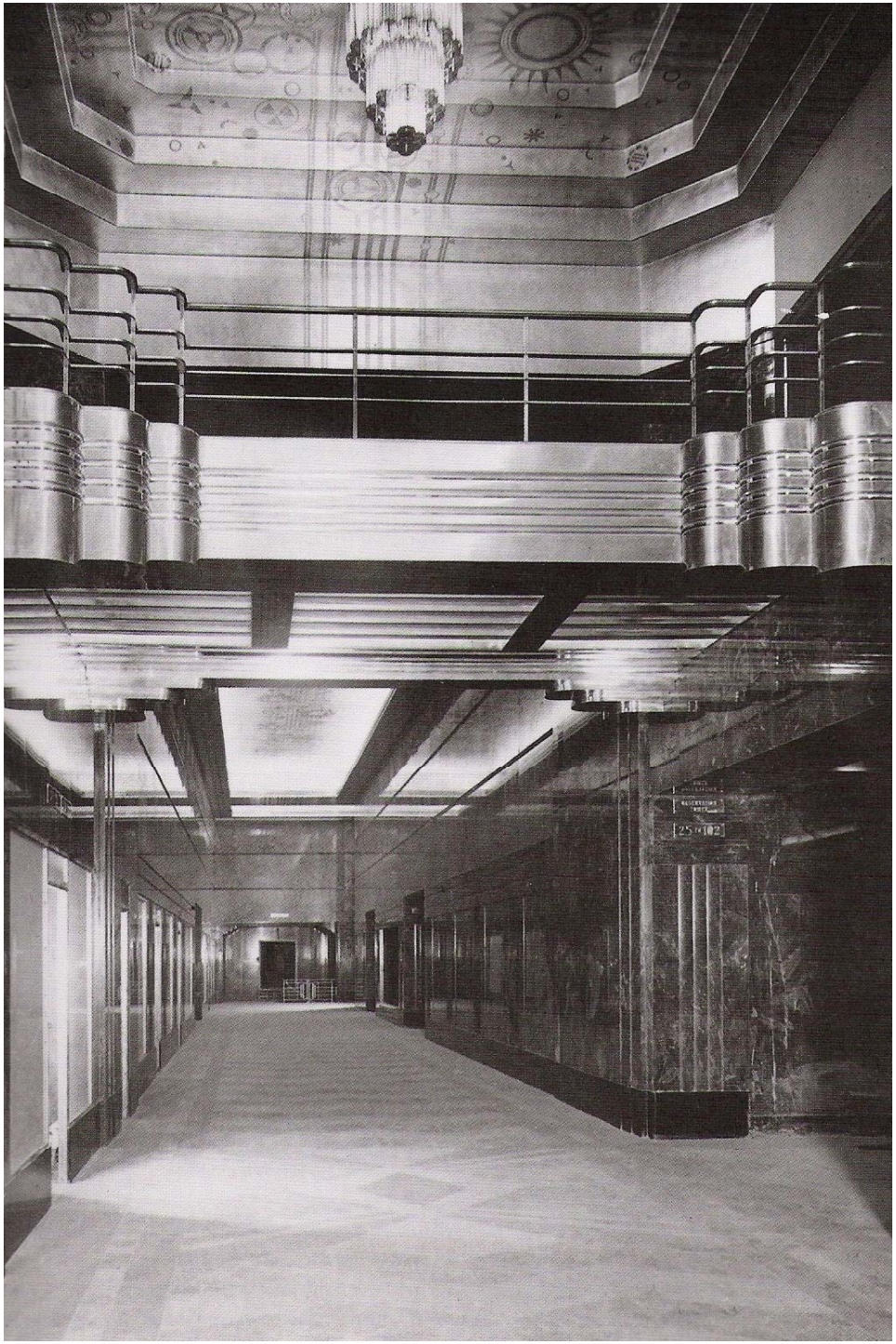
Lobby Entry
(350 Fifth Avenue)

"A feeling for restrained modern design permeated the treatment of the public spaces"

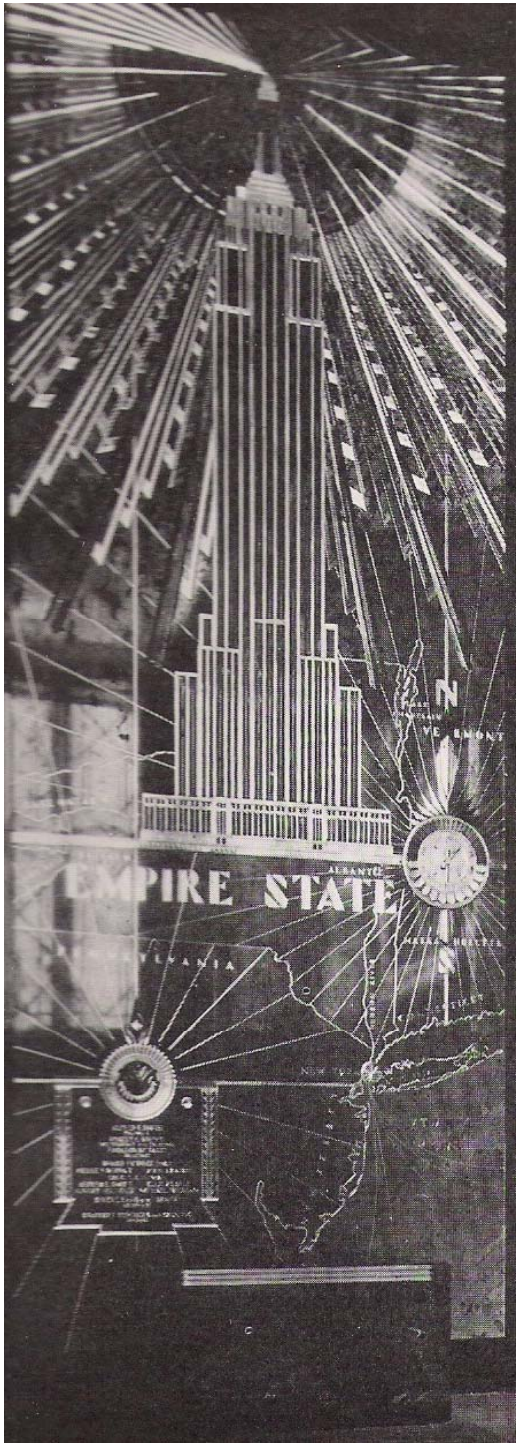
London Architect

RE: The ESB's celebrated lobby design


ELECTRICITY

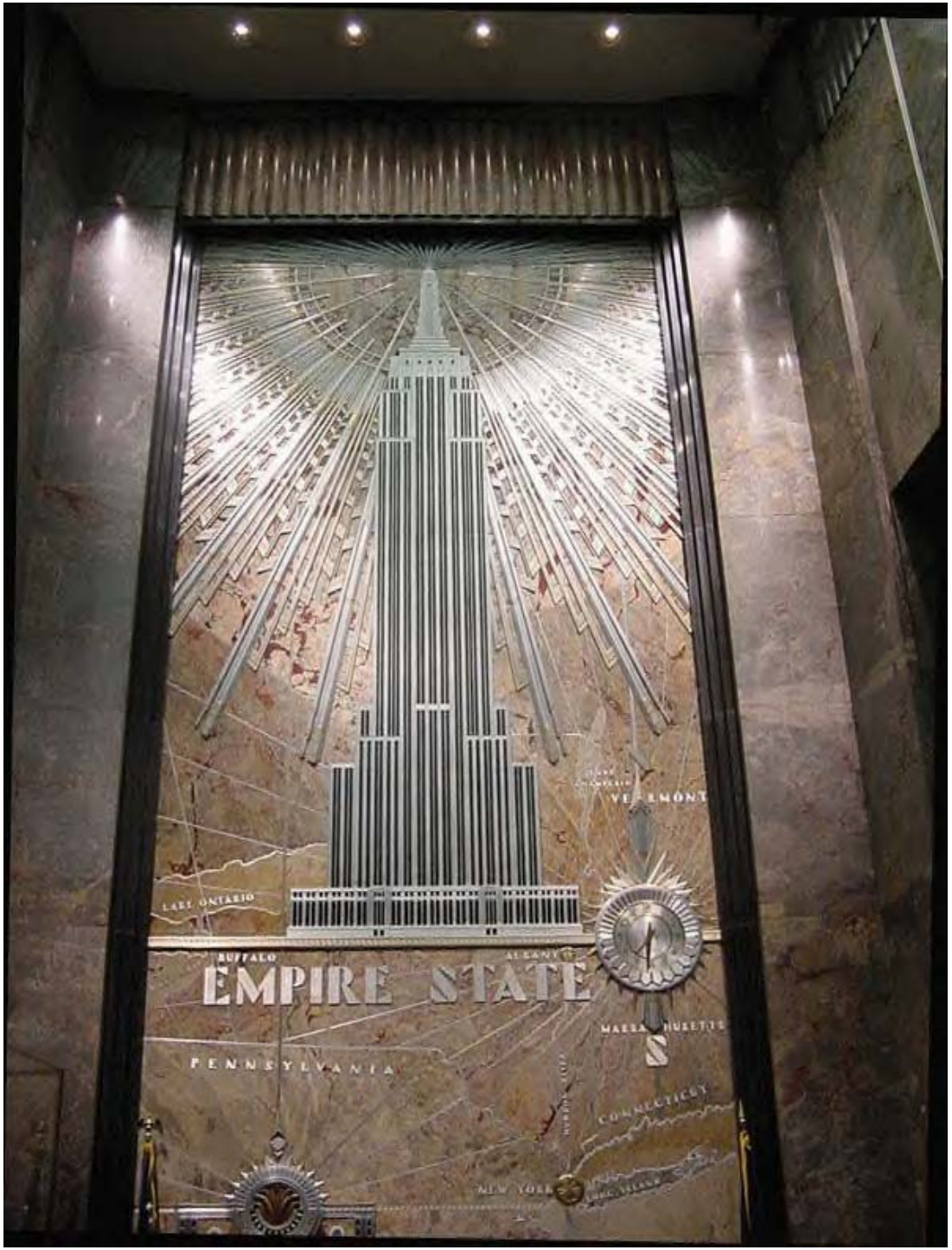


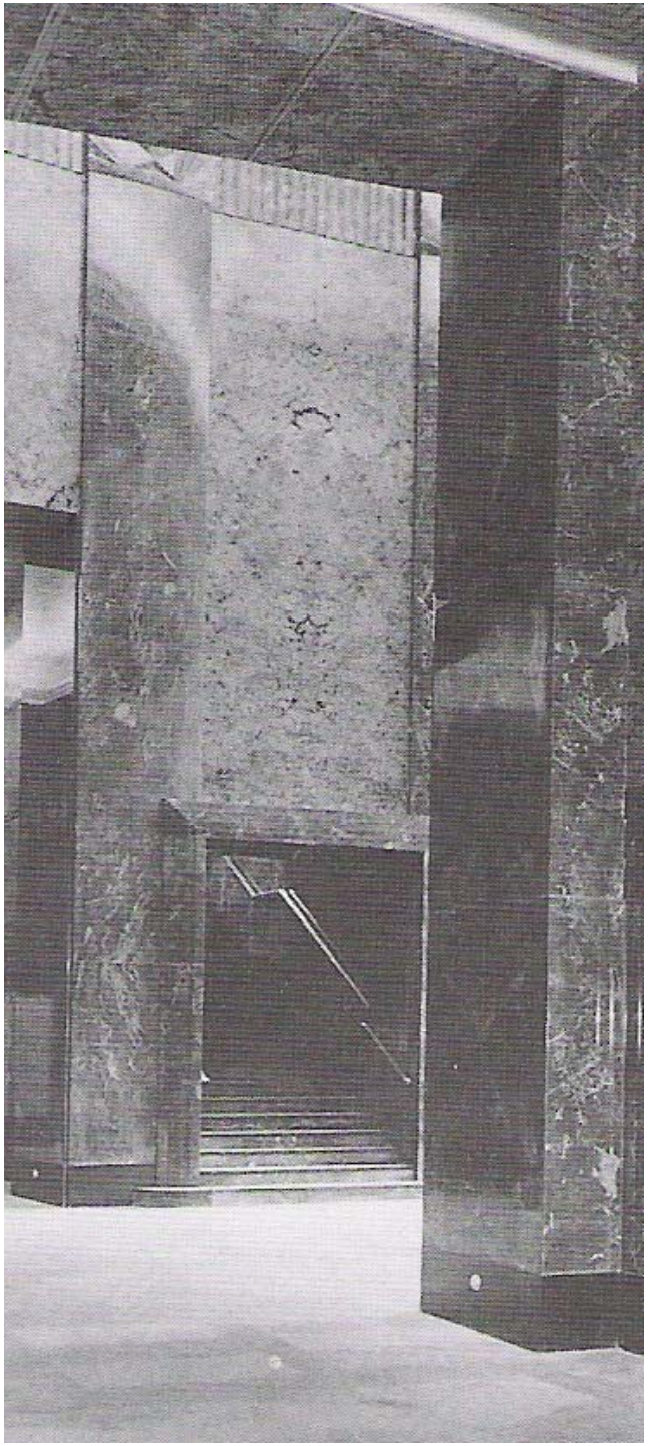
"To link the Mezzanine, which is divided by the two-story-high halls in the north and south sides of the building, pairs of chrome-steel bridges were installed with horizontal banding. The ceilings above the bridges were stepped up, and chandeliers hung from them, and the undersides of the bridges were boldly corrugated aluminum. The lights were set on reflectors in chromium troughs that were suspended, so the light bounced off the reflectors onto the ceiling, which diffused it downward."
John Tauranac, Author



"The wind indicator was set within a larger and far more dominating whole: a mural that depicted the Empire State Building against an outline map of its namesake state, bordering states and neighboring provinces of Canada putting the "Empire State" in its proper geographic perspective. New York City and Albany; the state's principal city and capitol, were highlighted. Beams emanated from the top of the building, shedding rays across the state all the way to Canada. The wind indicator - long defunct, was replaced with a clock."

John Tauranac, Author


LAKE ONTARIO
BUFFALO
ALBANY
EMPIRE STATE
PENNSYLVANIA
VERMONT
MASSACHUSETTS
CONNECTICUT
NEW YORK



Main Floor Interior Marble

The sub-contractor for all the interior marble was *William Bradley and Son.* The walls of all entrance halls, corridors and elevator lobbies have a base course of *Belgian Black* (from Belgium). Above, all pilasters, door trim and panels were finished in *Estrallante* and/or *Rose Marble* (from Germany). Floors for all entrances, lobbies and corridors used *Blue Belge* marble (from Belgium) for the borders with a field of *Red Levanto* marble (from Italy) and/or *Bois Jordan* marble (from France).

"The choice of facing marble for the entrance hall and public areas was, originally, to have been dark Hauteville marble, but the decision was revised when the quarry informed Starrett that it could not keep up with the pace of construction. The solution was to buy an entire quarry in Germany for the Rose Formosa marble. The lobby required about 10,000 SF of marble facing overall."

John Tauranac, Author

"The marble you see on the upper part of the walls – the kind that looks like wonderful, pale, old Oriental rugs – is called Pink Famosa, and the marble on the lower walls , the deep-hued richly red marble is Estralante"

Al Smith

RE: Highlighting the marble to be found in the ESB's lobby on one of his famous personal tours


Walgreens

Part 17

Lewis W. Hine, Photographer

Official ESB photographer Lewis W. Hine - a sociologist, was famous for his documentary photographs of child labor and social conditions, much like his contemporary Jacob Riis. Belle Moskowitz - Al Smith's political advisor in Albany and now head of her own PR firm representing the ESB, decided to create a documentary record of the building's construction for publicity purposes. A sociologist herself, she chose Lewis Hine for the job.

Hine photographing impoverished children

Boilermaker (1917)

Railroad Engineer

"Day by day, floor by floor, he followed the steel work upward. With the workmen he toasted sandwiches over the forges that held the rivets; he walked the girders at dizzying heights, carrying over his shoulder not a pocket-size miniature camera but a five-by-seven-inch view camera complete with tripod, or a four-by-five Graflex. When he reached, with the workmen, the very pinnacle of the building, he had them swing him out over the city from a crane, so that he might photograph in midair the moment they had all been striving for – the driving of the final rivet at the very top of the mooring mast."

Beaumont Newhall: ***The Magazine of Art***

RE: Official ESB photographer Lewis W. Hine

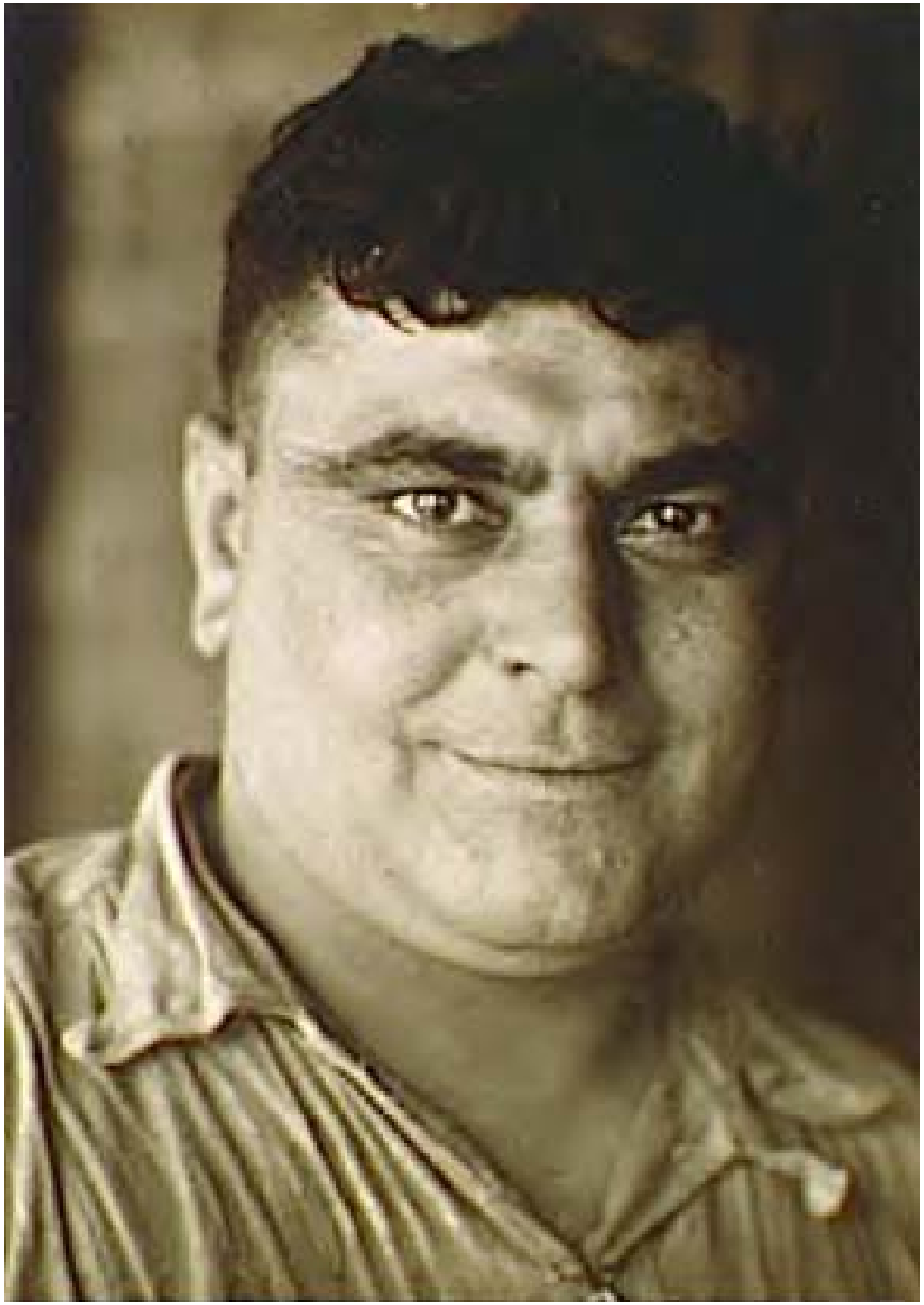
Hines' photographs on display in ESB storefronts

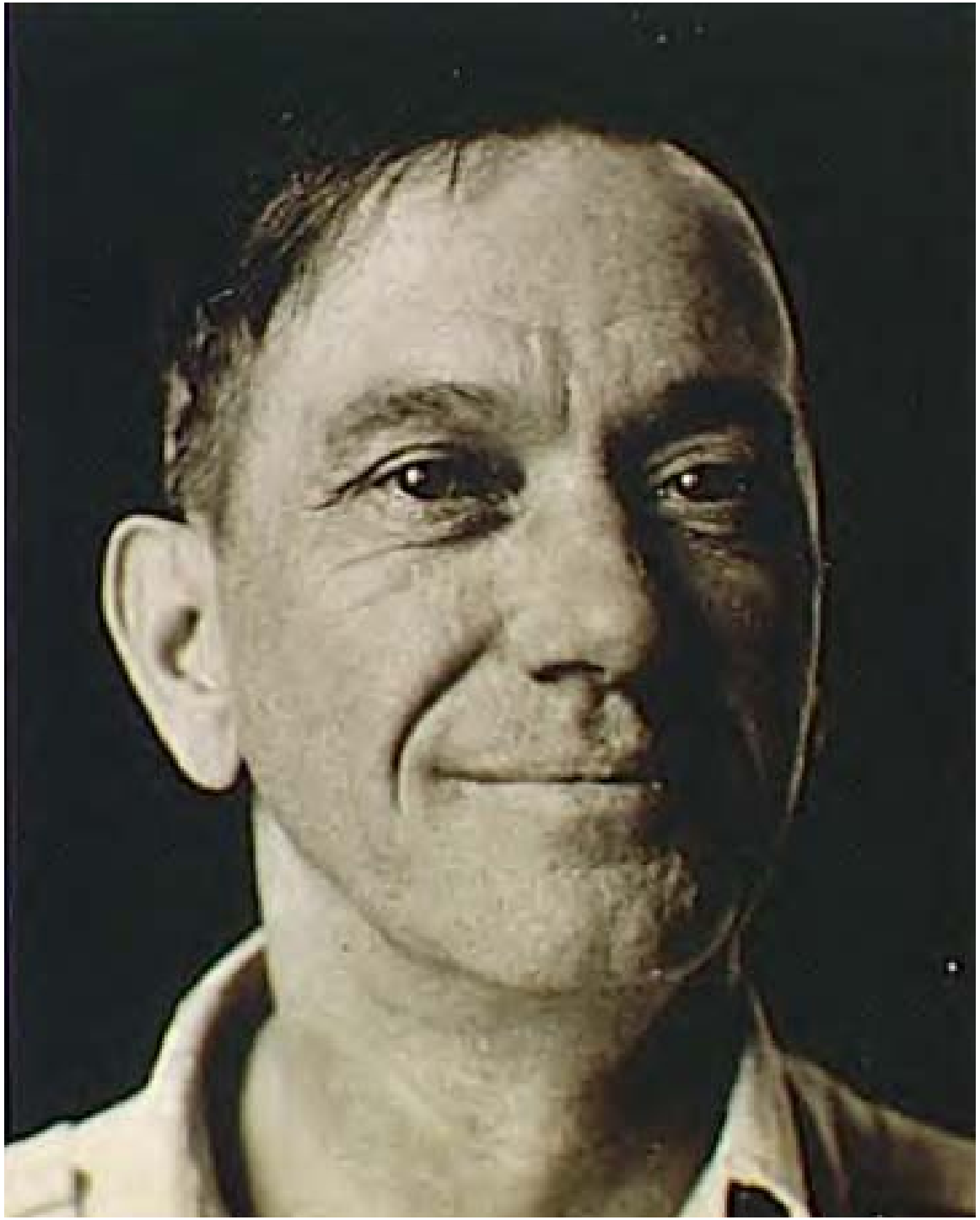
Classical Heroes in the Flesh

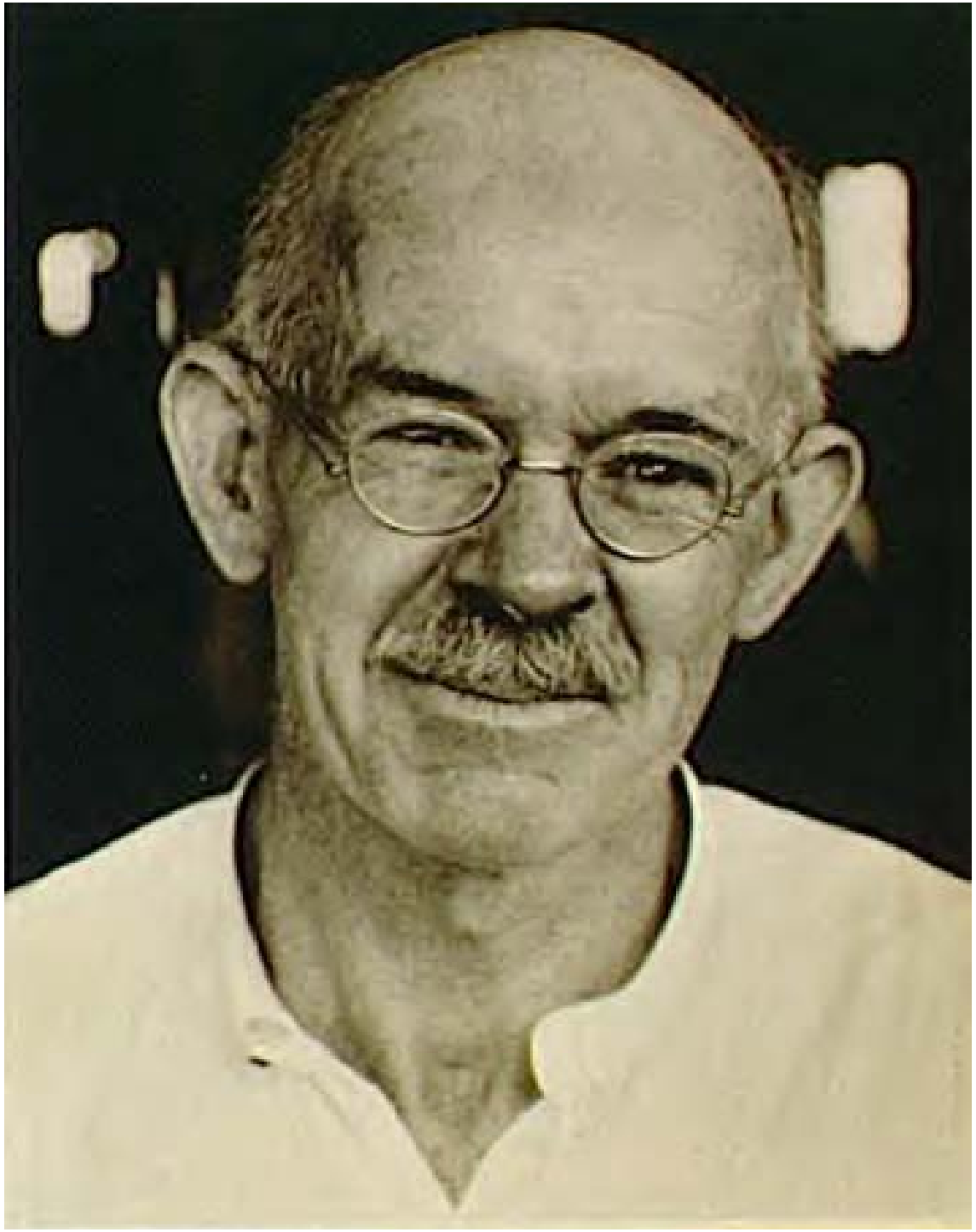
"Classical heroes in the flesh, outwardly prosaic, incredibly nonchalant, crawling, climbing, walking, swinging, swooping on gigantic steel frames. Hairy chested huskies, strapping youths, clean limbed and clear eyed fusing the idea of their nerves with the steel girders they build into modern cities."

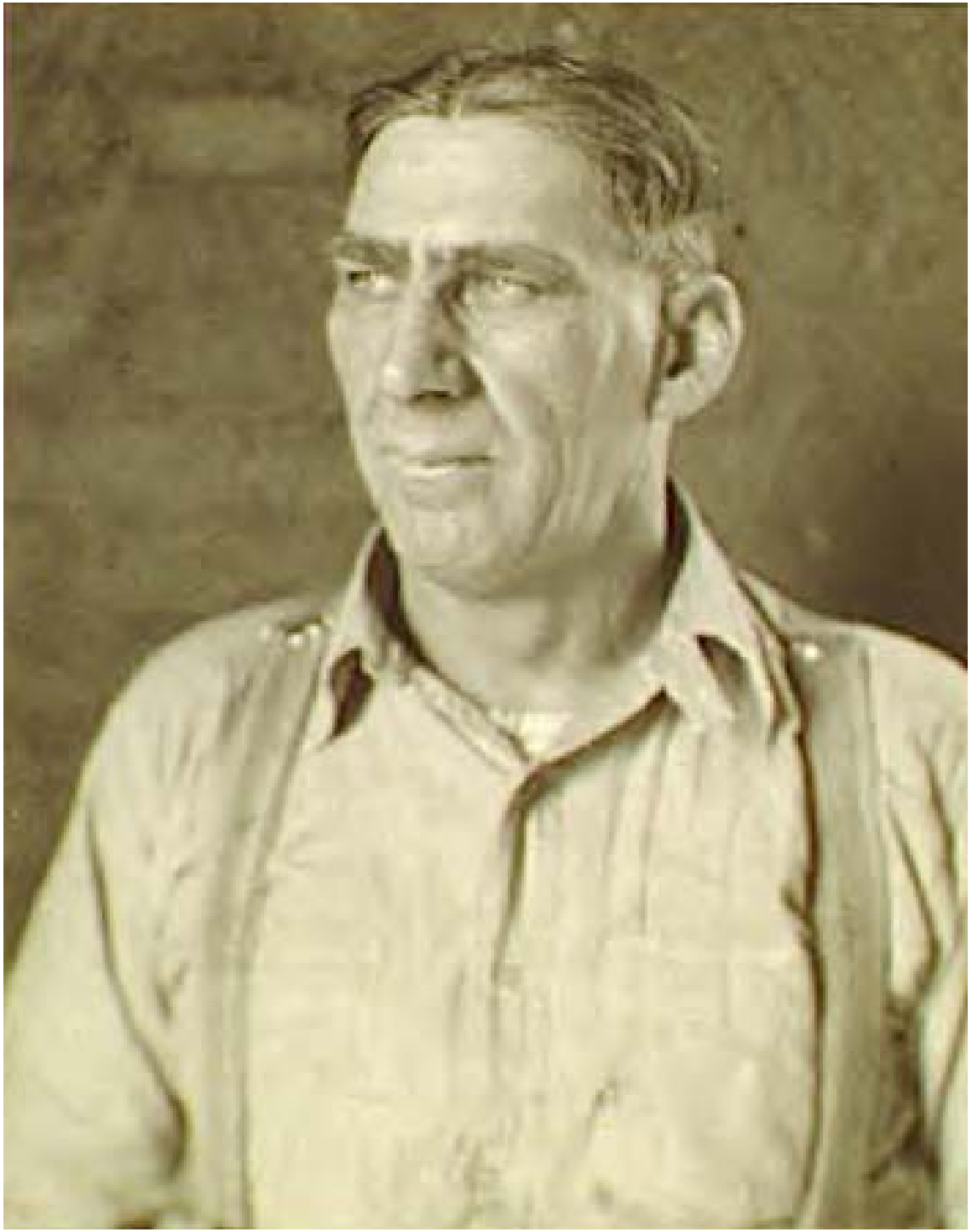
Harold Butcher – NY correspondent for the *London Daily Herald*, 1930

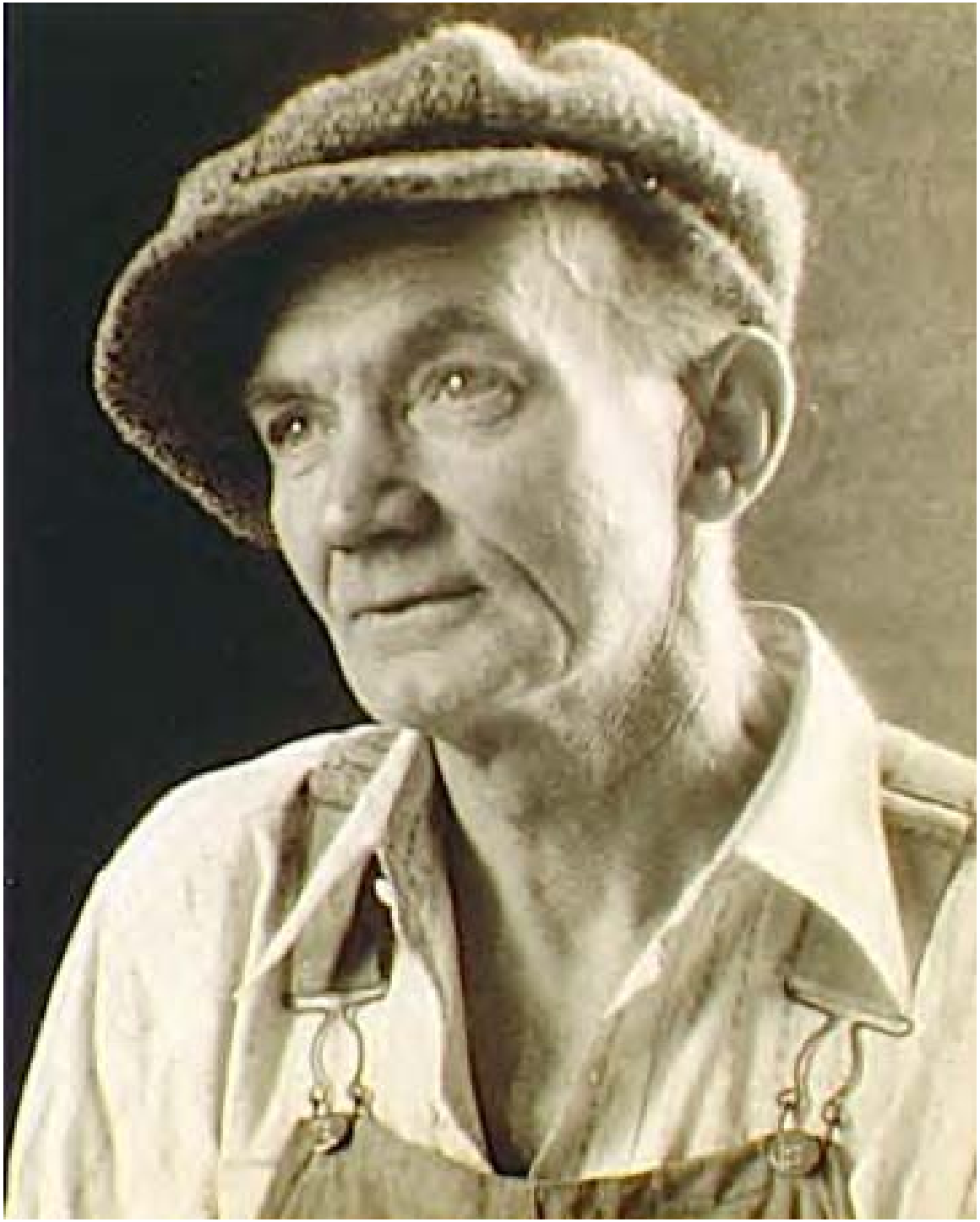
RE: ESB ironworkers

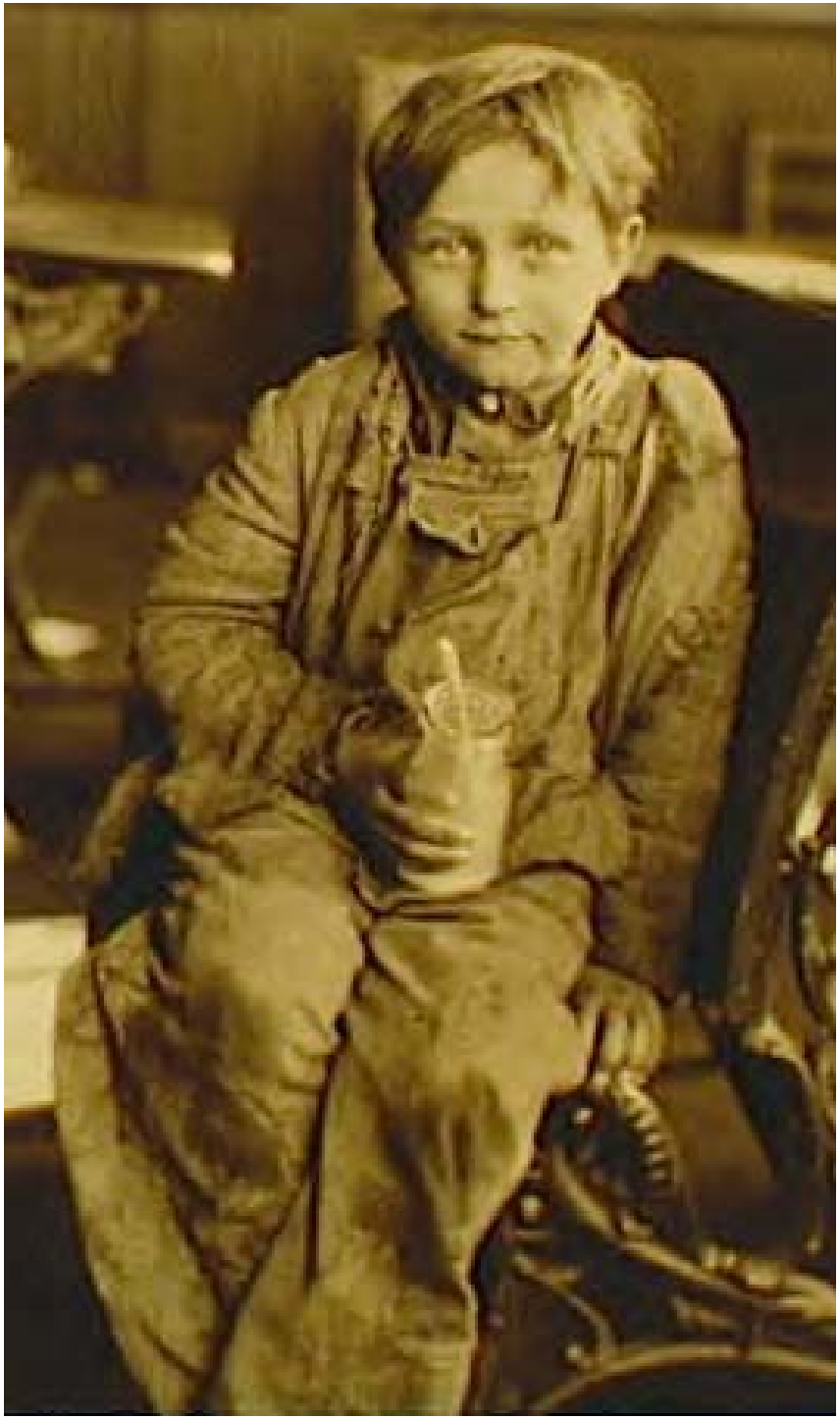






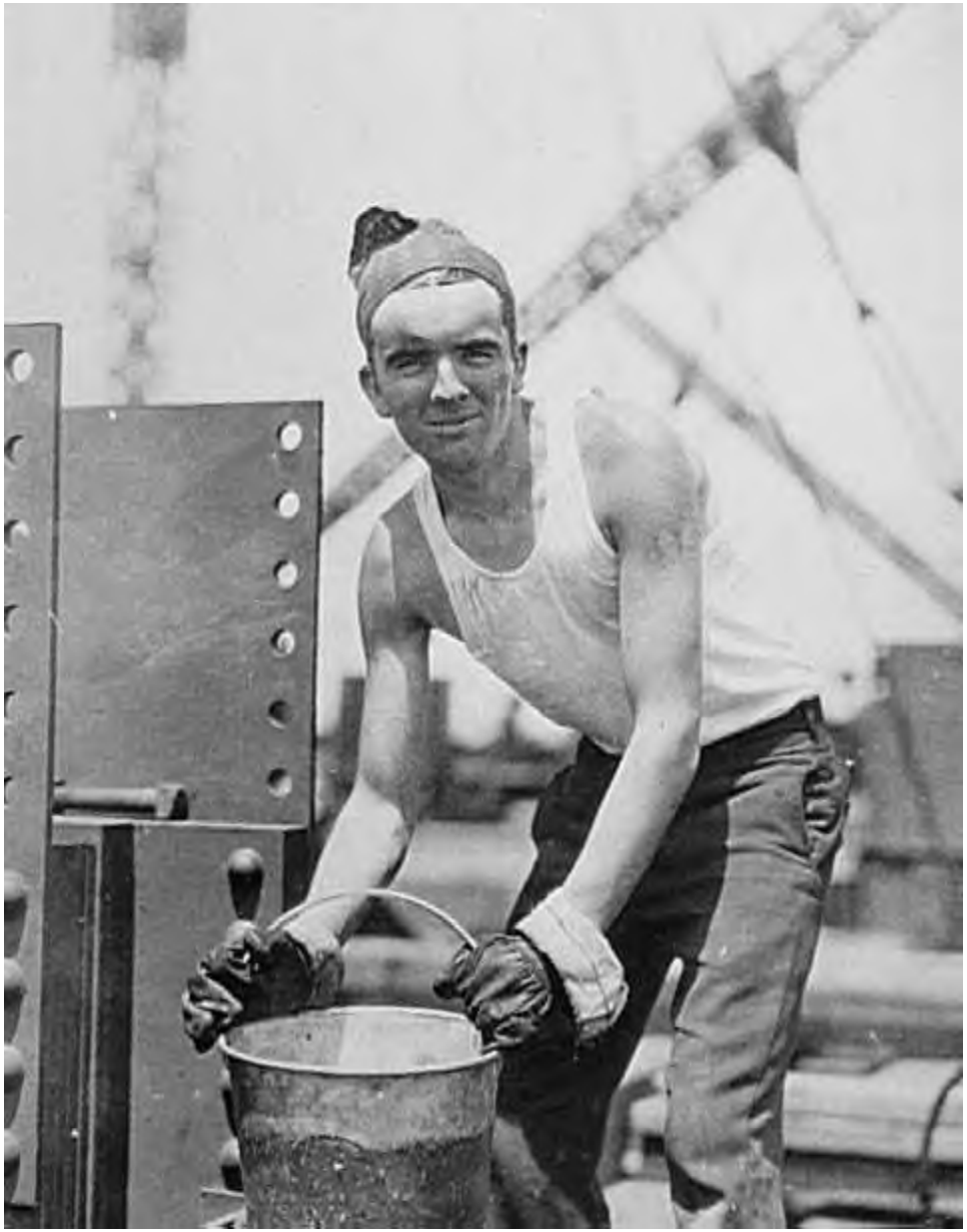






"At its peak, there were about 3,000 men at work on the job at one time, among them 225 carpenters, 290 bricklayers, 384 brick laborers, 107 derrick men, 285 steel men, 249 elevator installers, 105 electricians, 192 plumbers, 194 heating and ventilating men, trade specialists, inspectors, checkers, foremen, clerks and water boys (who also peddled cigarettes to the workmen)."

John Tauranac, Author



Thirty-two of the best of the 4,200 workmen were awarded: "Empire State Craftsmanship Awards." Their names were inscribed on a plaque mounted in the lobby for posterity.

“Some of them were heroes. It was a privilege to know them all.”
Lewis W. Hine

Part 18

Eighth Wonder of the World

The House That Smith Built

"The present value of this land is $20 million, but from the top of this building you can see cabbages growing in the fields of the few truck gardens that remain on Long Island. It is truly wonderful to look back on little old New York with its 3-story brownstone private houses and the subdued quiet of its gas lamps, and the music of the bells on the collars of the horses that pulled the street cars, and look upon it tonight with its great towering structures – the Empire State Building, the tallest building in the world. The flood of light that surrounds the island and swiftly passing automobiles below makes one feel that he has been suddenly carried from old New York to the fairyland of new New York – the center of the world and of industrial activity."

Al Smith – June 30, 1931

RE: Opening day-eve radio broadcast remarks

"…a little awestruck…In looking out from this building, I have got an entirely new conception of things in the City of New York"

Franklin Delano Roosevelt – NY State Governor

RE: His impression of the view from the 86th floor observation deck on opening day; May 1, 1931

"For generations to come down through the ages, and the two small children, with scarcely the proper understanding of just what was going on, were there to symbolize for all time to come that this building is to be a monument for generations to come"

Al Smith

RE: The cutting of the ribbon by his two grandchildren on opening day; May 1, 1931

"The ceremonies marking completion of the Empire State Building are only a kind of climax to what has long been going on under the eyes of the people of this city. They have seen the audacious plan formed. They have watched the majestic design of the architect taking form in one upward flight after another towards the clouds."

***New York Times* – May 1, 1931**

Promotion

GREETINGS: the officers and directors extend the Season's Greetings and best wishes for the coming year to tenants and tenants-to-be, and to the great business neighbors of Empire State. We hope this greatest structural achievement of 1931 will do much to further the prosperity of the uptown business district of which it is an integral part…SERVICE: Trained personnel of every department will provide for the needs of each tenant from the planning and building of the office to the maintenance and protection of its contents…

RE: Excerpts from the first ad appearing on New Year's Day, 1931 and signed by Al Smith: a three-column, half-page ad run in local newspapers and a second ad that appeared in newspapers in March 1931


EMPIRE STATE—world's largest office building—between Grand Central and Pennsylvania Terminals—an internationally famous site—the logical address for New York City offices
EMPIRE STATE
FIFTH AVENUE AT 34th STREET, NEW YORK
OFFICERS
ROBERT C. BROWN
Vice President & Treasurer
ALFRED E. SMITH
President
J. HOLLOWAY TARRY
Secretary
DIRECTORS
PIERRE S. DUPONT
MICHAEL FRIEDSAM
AUGUST HECKSCHER
ALFRED E. SMITH
JOHN J. RASKOB
ELLIS P. EARLE
LOUIS G. KAUFMAN
READY FOR MAY 1931 OCCUPANCY
For Rental Information Inquire
H. Hamilton Weber, rental manager, or your own broker

So far above the earth as to be literally in the clouds – so near the sky the sun shines there an hour longer every day…You will find here the inspiration and isolation of an eagle's nest on a towering crag – an atmosphere of such peace, of such quiet and seclusion that you seem miles removed from the bustling city below

RE: ESB advertisement

For more than a generation the pinnacle of hotel construction, luxury and service. AND NOW – the EMPIRE STATE, an office building, taking its logical position on this site, whose tradition is perfection. A building designed to be a worthy follower of its historic predecessors - in dignity, in size, in beauty of architecture and in efficiency of service to the great business population that will occupy it.

RE: ESB advertisement

THE WORLD'S TALLEST BUILDING WAS STARTED WITH A PENCIL: In the extensive offices and drafting rooms of Shreve, Lamb & Harmon – each architect and draftsman chooses his own equipment. We are proud of the fact that a majority of the pencils used are Venus Drawing Pencils.

RE: Advertisement for the *Venus Pencil Company*, 1934. Belle Moskowitz's PR firm strongly encouraged vendors & suppliers to use the ESB in their advertisements to help promote the building. Many did such as: *Otis Elevator Co. / Indiana Limestone Co. / Carnegie Steel Co. / Campbell Metal Window Co. / Allegheny Steel Co. & P & F Corbin Co.*


Profit from the experience of others
GOOD BUILDINGS DESERVE GOOD HARDWARE
CORBIN
F. & F. CORBIN

"…become the logical sight-seeing goal of New York's millions of visitors…At its top, the tourist can visualize in a few minutes what would have taken hours to study through maps. The city, in an instant, becomes an open book…The whole of New York and its environs are brought to his feet. It has therefore become of inestimable importance and the first place to visit on his arrival."

RE: Excerpt from: ***The Tourist in New York***

"Part of the geographical education of every child within fifty miles of New York should be at least one geography lesson from the top of the Empire State Building. Under the guidance of his instructor he will see states, cities, rivers, islands and mountains laid out in one grand map."

Al Smith, 1934

Smith wrote to 1,257 public & parochial schools encouraging them to arrange for student trips to the ESB's observation deck as a geography lesson. One ad, placed in the January 1932 *Private School News*, stated: "Geography on New York, Lesson 1. Take your pupils to see the greatest city spread at their feet like an animated map." By November 1934, 6,500 school children had visited the ESB observatories.

"WOR takes pleasure in presenting again 'The Microphone in the Sky' from the pinnacle of the world's tallest man-made structure…1,250 feet in the air in New York City, Earl Harper interviews travelers from all over the world…Julia Chandler tells you unusual stories about about the Empire State observatories and its many distinguished visitors…"

RE: *WOR* Radio's 15-minute show broadcast from the 86th floor of the ESB beginning in 1936 starring Jules Chandler – press rep and general manager of the ESB observation deck

"A building with this much character can't seem to to keep itself out of the movies"

RE: ESB featured in movies including;

*** *King Kong* – 1933**

*** *An Affair to Remember* – 1957**

*** *Taxi Driver* – 1976**

*** *When Harry Met Sally* – 1989**

*** *Sleepless in Seattle* - 1993**

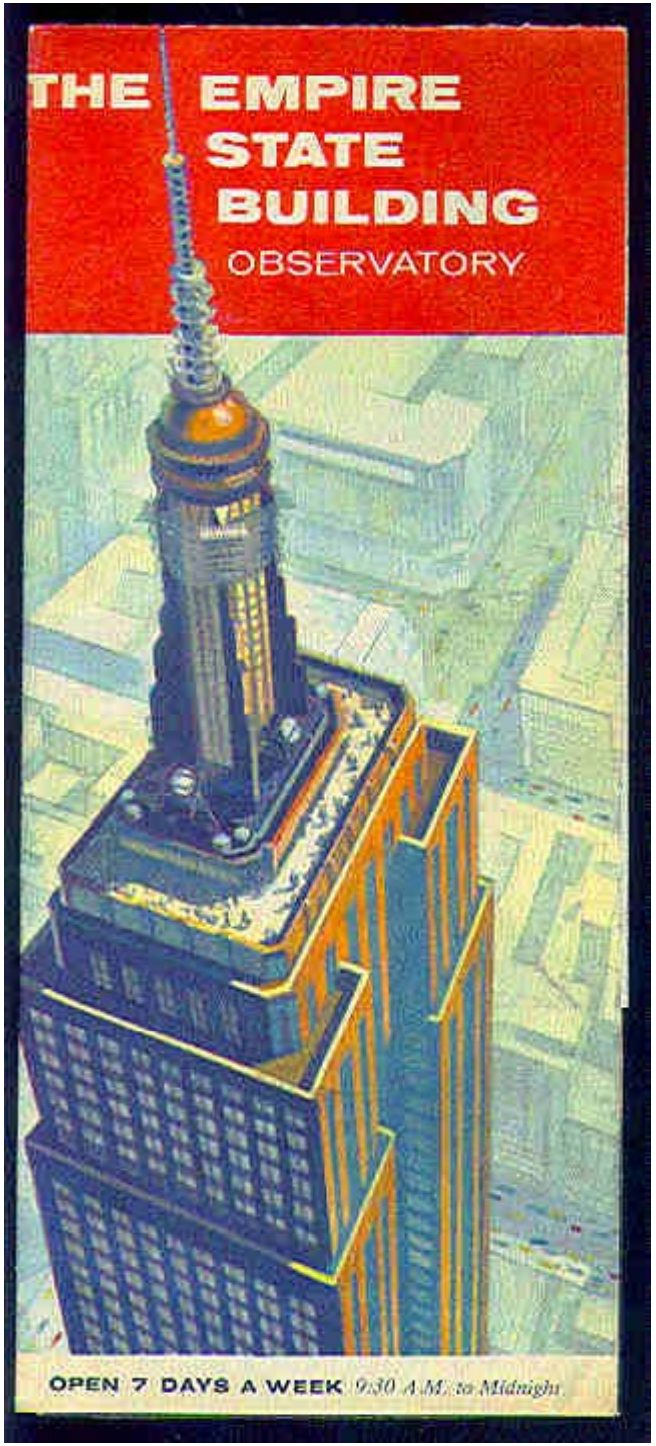
Originally, King Kong was to climb to the top of the Chrysler Building. However, realizing the parabolic top might be too slippery to climb, the Empire State Building was chosen instead.

“The Three Jacksons”
Acrobatic team

The annual race up the ESB's stairs to the top of the building unofficially began in 1934 when the Polish ski team attending the Lake Placid, NY winter Olympics used the stairs for training. In 1978, the race became an official annual event.

For the celebration of the 50th Anniversary of the movie: *King Kong* in April 1983, an 84' tall inflatable balloon replica of King Kong - costing $100K, was tied to the mooring mast. While being inflated, a hole developed in its shoulder. But, after great difficulty, the mighty beast was inflated for several days until strong winds tore a 15' hole in the balloon's seam ending its career atop the ESB. The balloon went on tour after its NYC/ESB performance and was – contrary to the movie's plot, finally done in by a bolt of lightning.

On a Clear Day, You Can See Pennsylvania



When you step out of the elevator on the 86th Floor you find yourself in comfortable and luxurious surroundings and just as SECURE and SAFE as you would be in your own home. Here you will find a Waiting-Room for your convenience, a Ladies Retiring Room and a Gentleman's Retiring Room.

ESB Brochure, 1934

"A view unsurpassable without actually flying"
Al Smith
RE: ESB observation deck view

North

South

Southeast

East

West

"Few failed to exclaim at the smallness of man and his handiwork as seen at this great distance"

Reporter - May 1, 1931

RE: Experiencing the view from the 86th floor observation deck on opening day

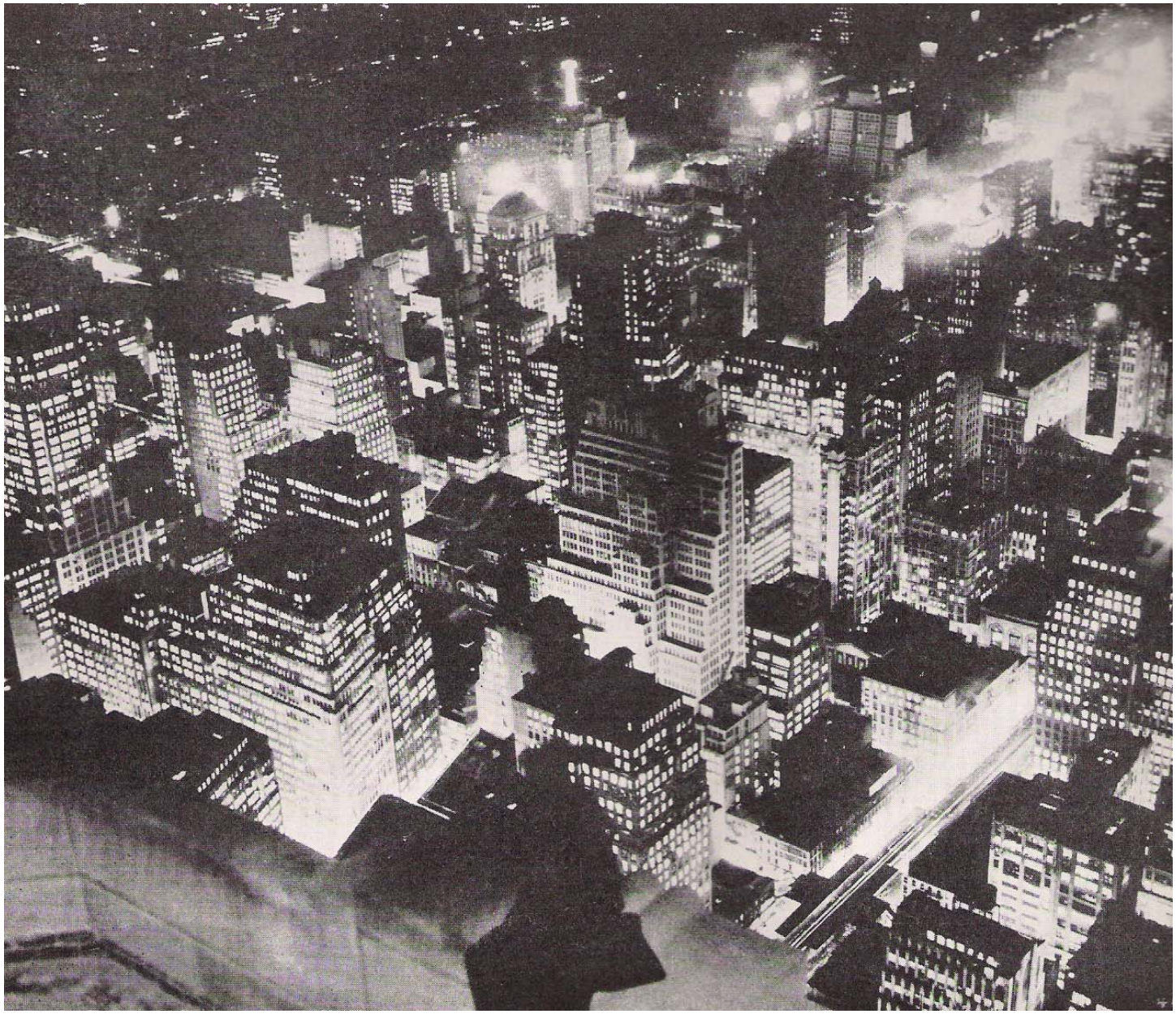
"…saw men and motor cars creeping like insects through the streets; they saw elevated trains that looked like toys"

***New York Times*, 1931**

RE: view from the 86th floor observation deck

"The city flung out like a handful of jewels over black canyons of stone and shadow, laced with slow-moving black-and-silver rivers…A veritable fairy-land of lighted towers and mysterious bridges, with its sound and fury too far below you to mean anything"

***Vogue* magazine, 1936**



NYC at night; as viewed from the observation deck

Viewing a solar eclipse from the observation deck (ca. 1940)

"The most beautiful thing I've ever seen"
Queen Elizabeth II
RE: October, 1957 visit by the Queen and Prince Philip to the observation deck of the ESB (her opinion of the view)

"Liliputian motor-cars halting or moving forward in groups appearing like a slow procession. They see trains gliding along like worms and people as ants scarcely moving, neighboring buildings, monsters of steel and stone when viewed from below, dwarfed to insignificance."
***London Daily Mail*, 1931**
RE: Experiencing the view from the ESB's 86th floor observation deck

"I suppose that you think of me as a statesman, but just now I am a diag-nostician, and I have brought you a little medicine"

Al Smith

RE: Visit to Winston Churchill in the hospital after being hit by a taxi cab in NYC. He had visited the observation deck of the ESB and Smith had liked and befriended him. Smith's "medicine" was a bottle of Scotch whiskey.

Fidel Castro

Albert Einstein

Nikita Khruschev

KISS

Lassie

"Evidence that the sightseers' space was turning out to be a profitable venture financially as well as an advertising medium for the corporation"

Newspaper commentary

RE: Extension to 1:00AM - from midnight, for the observation decks hours of operation

Visitors to the Observatories were issued two tickets: one for the 86th floor observation deck and the other for the 102nd floor observatory

Souvenir Shop


EMPIRE STATE


EMPIRE STATE


EMPIRE STATE OBSERVATORIES
E S O
★ NOTICE ★
IF RECORD SLIPS ON TURNTABLE OF YOUR PHONOGRAPH, WRAP SMALL PIECE OF PAPER OVER HEAD OF TURNTABLE PIN AND PRESS RECORD DOWN OVER PIN.
SOUVENIR


NEW YORK
NEW YORK
TUESDAY
27
APRIL

"If there was a subconscious thought in my mind up there, a quarter of a mile heavenward, it was gratitude to God for having given the blind seeing minds. I am convinced that until we have looked into darkness we cannot know what a divine thing vision is."
Helen Keller

A Splendid Suicide

"My darling: This is a picture of my son, Arnim, which was taken in Astoria, Long Island on June 4, 1930"

RE: Note on the back of a picture found on the body of Queens shopkeeper Frederick Eckert – first person to commit suicide from the 102nd floor observation deck. The first suicide from ESB occurred in April 1931 while the building was still under construction. An ESB workman who had lost his job snuck into the building and jumped from a 72nd floor window.

"Have been sickly. Bad Rheumatism."

RE: Note found in pocket of 37yo C.C. Lawler who jumped from the 86th floor observation deck and landed on a three-foot ledge three stories below. He survived the first suicide attempt from the 86th floor in September 1933.

LEAPED FOR LOVE! FROM THE WORLD'S HIGHEST BUILDING

RE: Newspaper headline for the first successful suicide from the 86th floor observation deck by Irma P. Eberhardt, 22yo in February, 1935. Believing her boyfriend was cheating on her and carried by a gust of wind, she leaped 1,029' to her death landing on a marquee below.

"Some bent on suicide come up here with the idea of making a pyrotechnic display of it by dropping in on the avenue…but the mighty terrace 60' broad sweeps back to the foot of the tower. The would-be suicide cannot drop down on Fifth Avenue. He would only land on hard girders. His dream is busted. How many suicides are deterred by this disappointment we can only guess, but we know it is a factor."

Joe Bolton – Observatory Manager, 1934

RE: ESB setbacks deterring "Leapers" since they cannot land on Fifth Avenue directly

"We have men in our employ who can pick 'em off. You would be surprised to learn how many persons intending to jump from the building indicate their purpose by their manner. Not only do we have men expert in this line of work, but we have complete machinery including ambulances to function in case someone jumps from the building."

Joe Bolton - Observatory Manager, 1934

RE: "Leapers" – persons intending to commit suicide by jumping from the ESB's observation decks

"Although the problem of suicide is primarily a police matter, the building desires to render every possible assistance in curbing those bent on ending their own lives as well as preventing any possible injury to people on the street"

RE: On-going suicides from the ESB. By January, 1947, nine people had jumped from the observation decks and six from windows. By December, 1947, a seven foot tall fence with diamond-shaped mesh & inwardly curving steel rails was in place atop the 86th floor observation deck parapet.

Sky Cafe

“Management had very quietly dropped the facilities for dirigible passengers and substituted emenities for sightseers. Into the space on the eighty-sixth floor that would have been used for the baggage rooms, customs inspection offices, and ticket desks for dirigible passengers went: ‘the world’s highest soda fountain and tea garden.’”

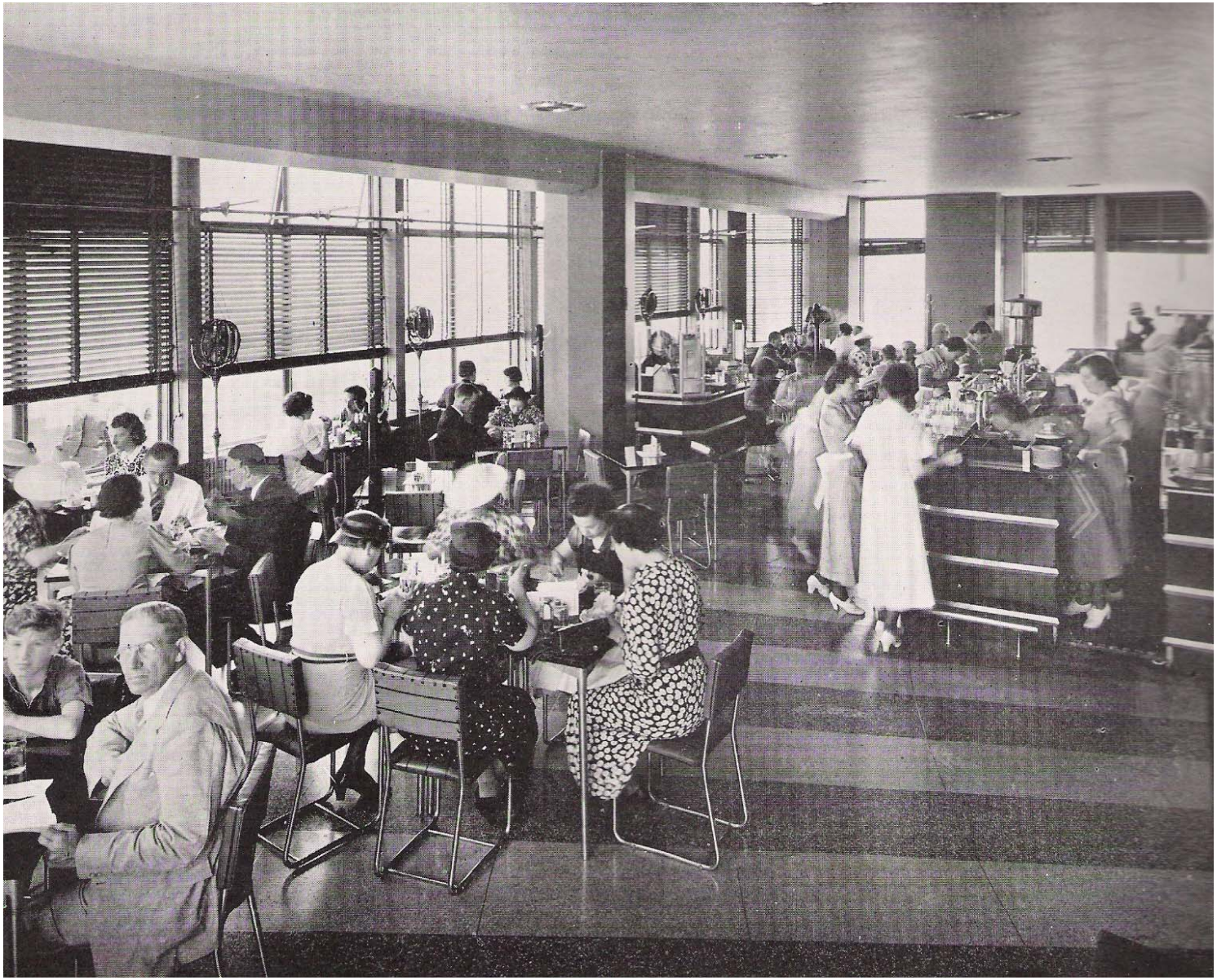
John Tauranac, Author

Tearoom

"Al Smith's stone and chromium nest is the coolest and most towering dinner and supper club in New York…The terraces are spaciously wide, especially the one toward the east, which also is equipped with dining tables and dancing facilities. An attractive bar is inside and beyond that dining room. Dinner is served on the terrace as well."

***The World Telegram*, 1934**

RE: ESB's *Tearoom* (originally meant to be the baggage area for dirigible passengers)



Part 19

The Empty State Building

The diminishing commercial real estate market in New York City resultant of the widening depression made Al Smith work hard at promoting the ESB. Much office space was coming on the market at the same time the ESB opened in more desirable locations. ESB opened with only a 23% occupancy rate (50% was considered a borderline case). Seeking out blue-chip companies as prestige tenants proved futile, save for *Dupont* (Pierre Dupont along with J.J. Raskob were the ESB's principal owners) and *Schenley* (a liquor company). The ESB would not be fully occupied until 1950 thus it earned the nickname: *The Empty State Building*.

"We have reason to believe it will be fully rented from the start of occupancy"
Al Smith, 1930

"In proportion to its size and the time still to elapse before opening, the Empire State is renting as rapidly as could be expected of any large new building. It will share largely in the activity of the spring leasing season…made at a gratifying rate and opening of the building has served to increase the number of inquiries for space."

H. Hamilton Weber – ESB Rental Manager, Spring 1931
RE: Overly optimistic analysis of the ESB's rental prospects just before and after opening (May 1, 1931)

"…no return whatever on their investment of $23,500,000. Manifestly it is impossible for any property, no matter how well financed, to carry a burden of this kind without relief. We are exhausting every effort to provide the relief needed in order to prevent the failure of this great enterprise which would be a great blow, not only to the owners, but to the City of New York and its property owners everywhere."

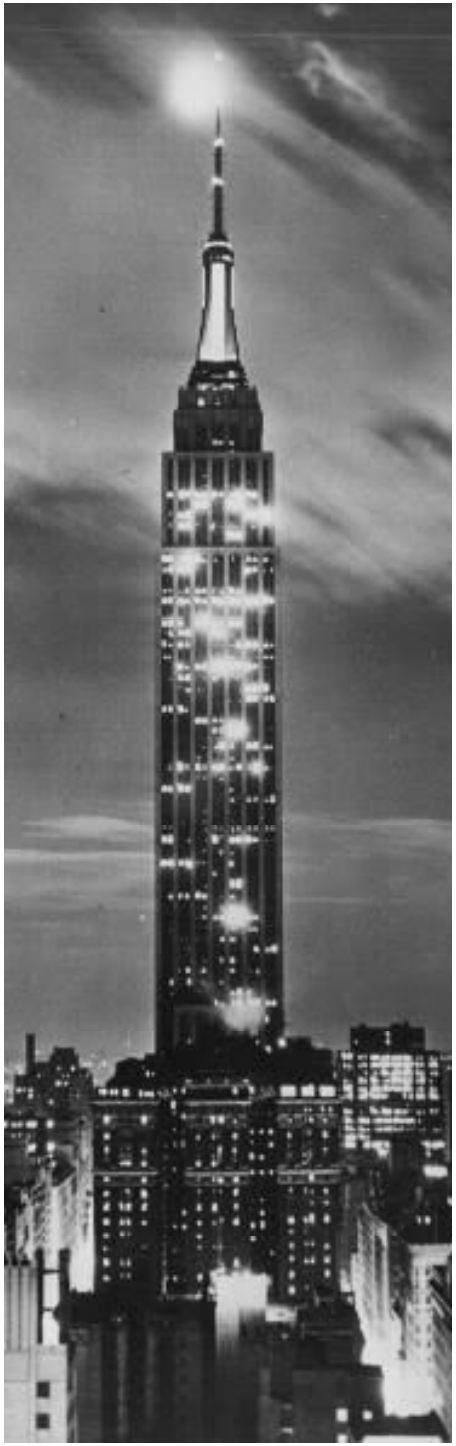
Empire State, Inc. **Treasurer – January, 1933**

RE: Formal request to the *NYC Dept. of Taxes & Assessments* to further reduce (from $42 to $40 million previously granted) the ESB's assessed value thus reducing its owner's tax burden. In 1933, NYC agreed to another downwardly revised assessment of $34 million and, by 1936, $28 million.

"I can sum it up in a few words and say that it could scarcely be worse than it is"

Al Smith – March, 1935

RE: Excerpt from letter to J.J. Raskob. Smith got Met Life – the mortgage holder, to make concessions on interest and principal payments averting foreclosure on the ESB with refinancing plans (three by 1937). Al Smith had been on the Board of Directors of the *Metropolitan Life Insurance Company* at the time the ESB was conceived. Being the principle lender for the ESB, Smith resigned his position on the board when he became President of *Empire State, Inc.*, to avoid any conflict of interest.



"The idea was to keep the tower from looking as if it were just floating. What with the first forty floors being fairly well lighted by cleaning women and belated office workers, the whole effect from outside is imposing and probably worth the expense; somebody who wanted an office might happen by, think 'What a fine building!' and rent some space in it. If this somebody should want one above the 40th floor, the smallest amount of space the management would rent him would be four floors. As things are now, the express elevators marked '45-55', '56-57', and so on, aren't in use, and it wouldn't be financially worth while to operate them unless they were to serve at least four floors."

***The New Yorker*, 1936**

RE: Illuminating floors between the mooring mast (lit at night) and occupied floors. By 1936, up to the 40th floor was rented

"This building is named after the Empire State of our Union…The State of New York can use this building any time it wants to. The Governor can have a meeting up here, and if the session lasts into the warm weather he can bring the 30-day bills up on the roof here and we will provide him with lemonade, and he can dispose of the State's business at the highest point on the continent."

Al Smith, 1933

RE: Invitation for NY State to rent space in the ESB

SEE THE EMPIRE STATE OBSERVATORY TOWER – 86TH FLOOR – OCCASSIONALLY AL SMITH – TWO CENTS

RE: Advertisement for a giant telescope on 42nd Street (near 6th Avenue, pointed at the ESB observation deck). By the late 1930s, visits to ESB by Al Smith were in decline (and the butt of jokes).

"On a clear, fogless day from the top of the Empire State Building, Alfred E. Smith can't even see the Hudson River. That's because he doesn't go up there too often these days."

George Russ, 1939

RE: Al Smith's absence from the ESB as the 1930s drew to a close

Tenants

EVERY NEED AS PER SPECIFICATION…EVERY DETAIL AS PER REQUEST: Tremendous range of unit sizes in Empire State presents a real advantage to every user of office space. There is no need to lease excess area and pay for unnecessary footage. The flexibility of Empire State floor plans is an equally vital asset – because office space can be enlarged or reduced as desired…

RE: ESB advertisement – February, 1932

"The building that had been planned to attract blue-chip corporations had never attracted many – DuPont and Schenley had been the major exceptions. There were lawyers and accountants, but the vast majority of the tenancy was still related to the garment industry – in menswear alone there were 302 tenants occupying 784,000 square feet. The majority of the 850 tenants occupied midsize offices in the range of 2,000 to 3,000 square feet. There were more than two hundred tenants with a full bay (a bay was between building columns), and almost two hundred tenants with a half-bay."

John Tauranac, Author

Executive Corner Office

Law Firm Library

Lady’s Hoisery Company Waiting Room

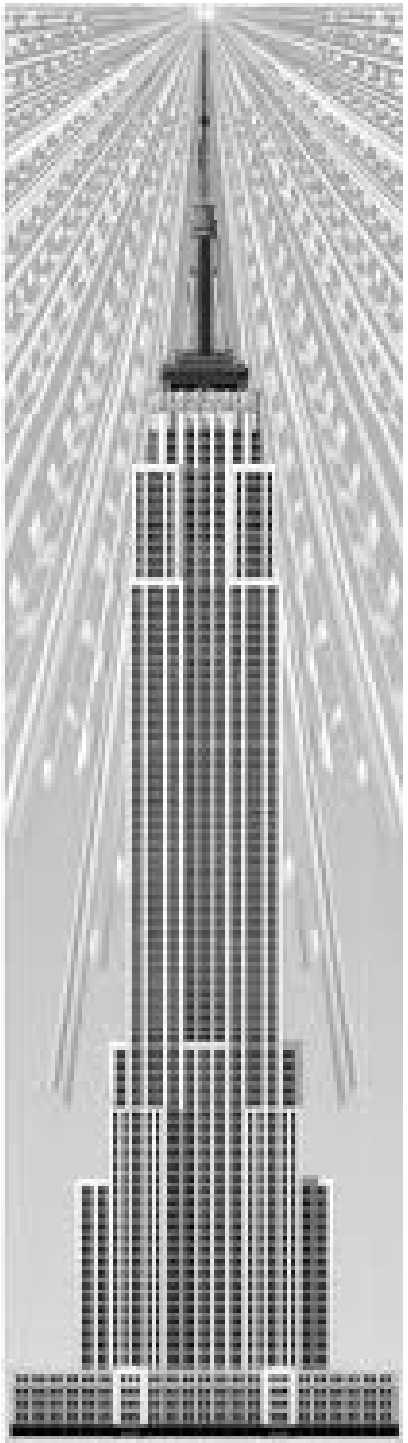
Office Reception Area

"…the honor of occupying the highest office in the world will fall to Democratic National Chairman John J. Raskob, who is a director of the Empire State, Inc. He has leased the entire 85th floor of the building, beyond which there will be no rentable office space."

Al Smith

RE: Remarks at the September 9, 1929 cornerstone laying ceremony.

Actually, J.J. Raskob & Pierre DuPont occupied the 80th floor. NBC occupied most of the 85th floor where their TV broadcasting equipment and antenna were located.

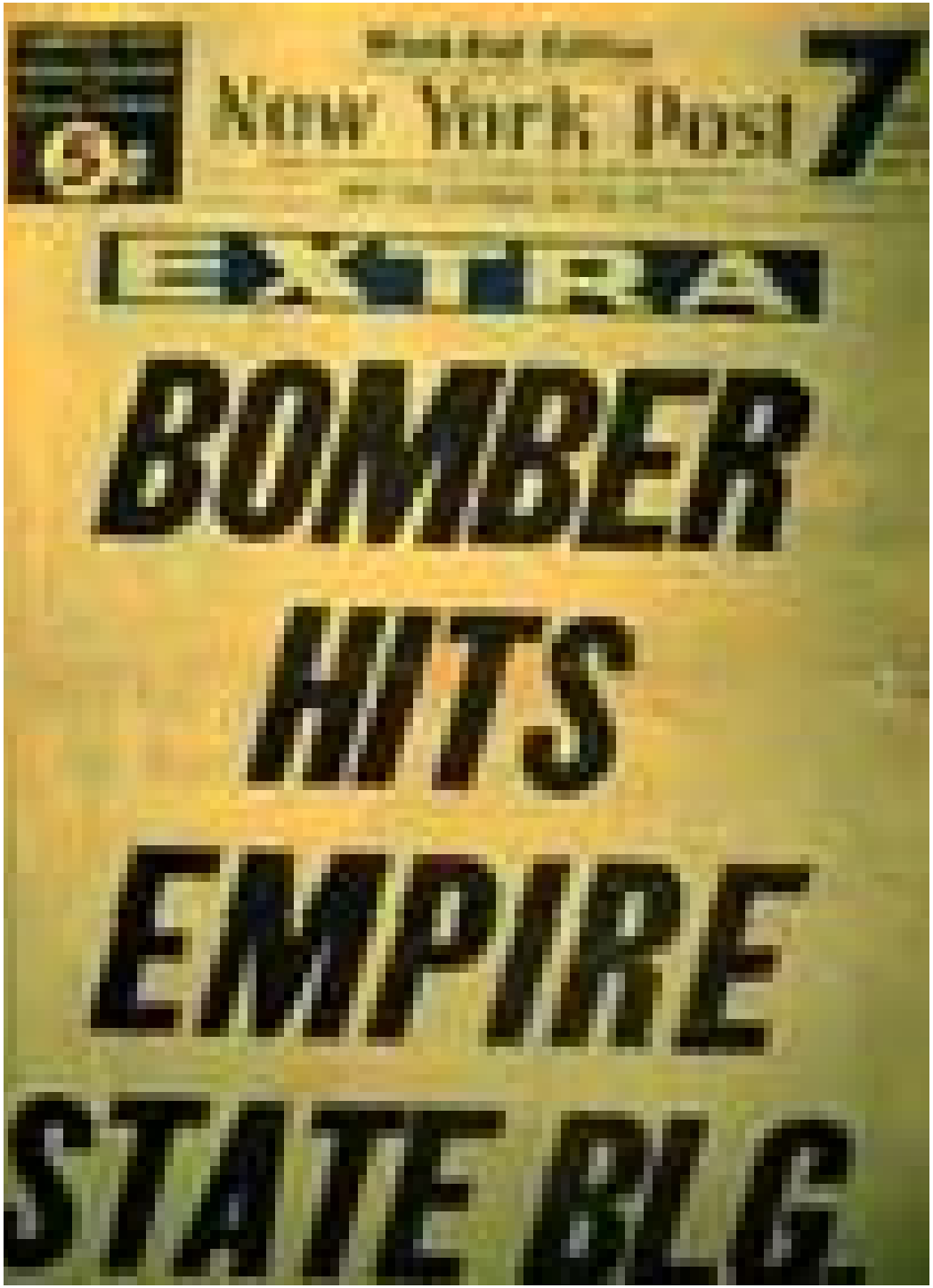


"Look at the World Trade Center over there. What is it? Nothing but a couple of shoeboxes standing on end. But this place, this is special, a landmark building."

Jack Brod (long-term ESB tenant)

Part 20

The Sky is Falling!



At 9:49AM on Saturday morning, July 28, 1945, a 10-ton USAAF B-25 Mitchell medium bomber crashed into the north façade (34th Street) of the ESB (between the 78th & 79th floors). Three crew members and eleven office workers for the *National Catholic Welfare Conference* (on the 79th floor) were killed). Flying too low, the plane was en-route from Bedford, Mass. to Newark airport when it encountered heavy fog over New York City.

"Horror stricken occupants of the building, alarmed by the roar of engines, ran to the windows just in time to see the plane loom out of the gray mists that swathed the upper floors of the world's tallest building…It crashed with a terrifying impact along the north wall of the building"

***New York Times* – Sunday, July 29, 1945**

RE: The Saturday morning, July 28, 1945 head-on crash of a USAAF B-25 Mitchell bomber into the ESB

"There's no story here, boys…The Army wants no publicity on this"
RE: Army Colonel's comment and directive to swarming reporters on July 28, 1945 – the day a B-25 bomber crashed into the ESB


FURR
ELLBE

"I told them not to fly over the city. If the pilot had been up where he belonged, there would have been no problem."

Elmer Haslett - NYC Director of Airports

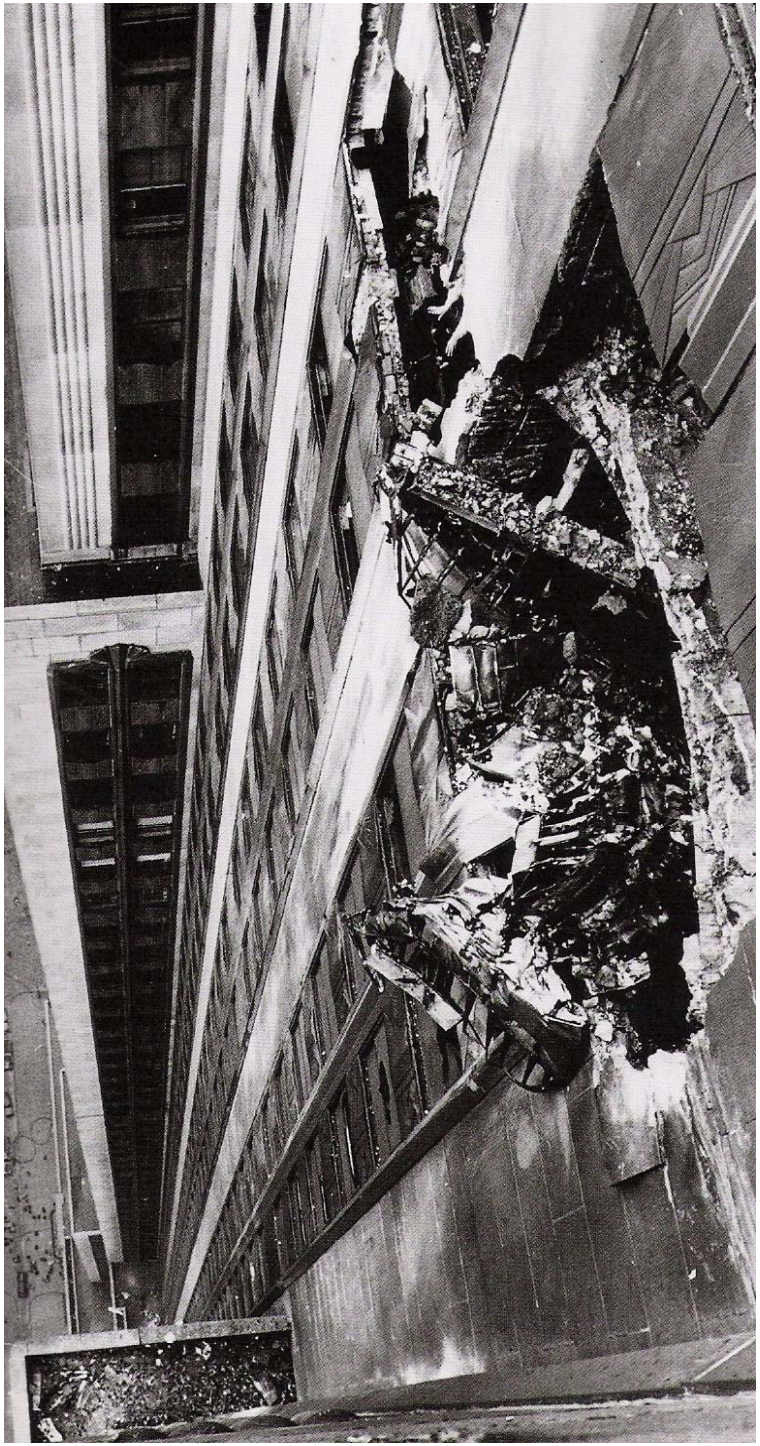
RE: A minimum altitude of 2,000 feet was required when flying over NYC (ESB is 1,250 feet high)

"The comparative order of the whole experience was remarkable. Maybe the war had something to do with this – all the preparations for an air raid that never came."
Maurice Whitebook – Chief Rent Attorney for the *Office of Price Administration* (ESB tenant)

"Holy Smokes!"

Henry Hering, Sculptor

RE: His only comment when returning from a round of golf to view the damage to his Penthouse/Studio at 10 West 33rd Street. One engine, part of the fuselage and a landing gear tore through internal office walls, two fire walls, across a stairway, through another office and out the south face of the 78th floor. It all came crashing through his roof destroying most of his life's work in the fire that ensued. His 22' model for *Pro Patria* – which stood in the *Indiana War Memorial* and was the largest bronze statue of its kind at that time, was also destroyed that day.



"There must be many tenants of the ESB who, like us, wish to pay tribute to the engineering perfection which enabled this magnificent building to withstand the assault of the bomber…The grand building stood staunch and firm. This almost human steadfastness on the part of the structure itself was further impressed on me when later I returned to my office. There was the same stillness of any Saturday afternoon…no hint of the chaos not so many floors above and of the wreckage of the two elevators in the basement below."

Francis G. Guilford – ESB tenant
RE: July 28, 1945 crash of a B-25 into the ESB. She was in her office on the 34th floor at the time

"Thank heaven, the Navy's here"

RE: Comment from one of two female elevator operators when there appeared a Coast Guard corpsman to their aid and rescue. Witnessing the crash, he commandeered from the *Walgreen's* drug store (on the 33rd Street side of the ESB) medical supplies and proceeded to the Sub-Basement where the elevator in shaft six had come to rest after the cable snapped as a result of one engine passing through the shaft and landing atop the car. Though injured, both survived their ordeal.

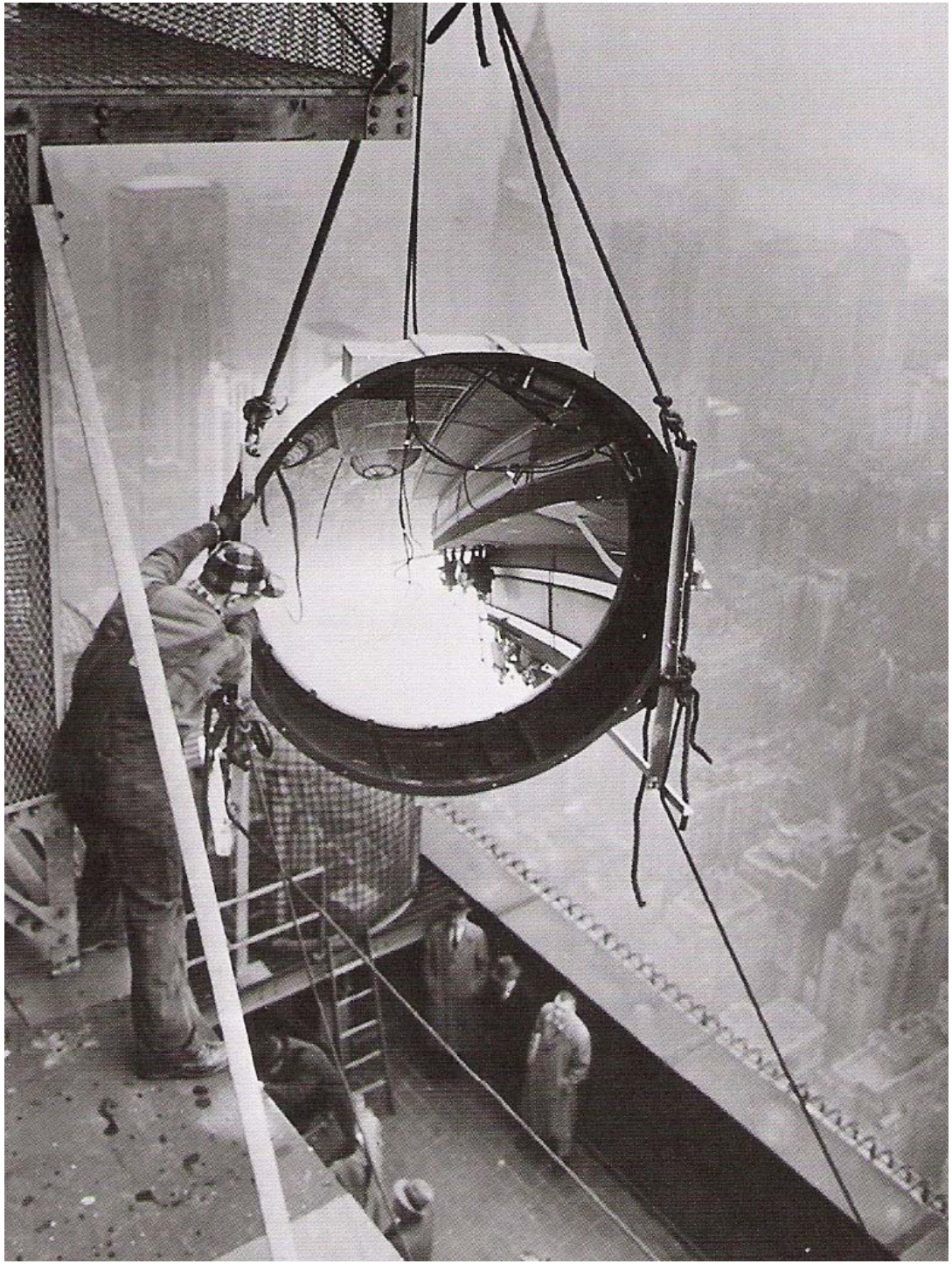
Repair work under way
The ESB was open for business the following Monday morning. Note the sign “Gimbels” (atop the building below). This department store (and other buildings within easy viewing distance of ESB’s observation deck) took advantage of the observatory’s audience for some free rooftop advertising. To the left of the workman is the old Penn Station (demolished).

Part 21

Light Up the Night!

Whence rise you lights?
From this tower built upon Manhattan's native rock
Its roots are deep below forgotten musket balls, the moldered wooden shoe, the flint, the bone
What marks you lights?
Our Nation's doorway…
Poem: *The Empire State Lights*, by Mackinlay Kantar

“*Operation: Light Up the Sky*”
(a.k.a. “*The Freedom Lights*”)
Four – 5’ diameter light beacons rotating 180 degrees per minute & perfectly synchronized. Set at the foot of the ESB’s TV tower and installed in 1955. Meant to be an: “*air-age symbol of welcome and freedom*” to airline passengers. It was the first initiative by PR pioneer Benjamin Sonnenberg for the ESB’s new owner Colonel Henry Crown – an Illinois coal magnate who purchased the building in 1954.



1976 was the year of the ESB's 50 millionth visitor, DNC convention in NYC & the nation's bicentennial celebration – also ESB owners (Harry Helmsley and Lawrence Wein) wive's birthdays (July 4th). The idea to keep the upper floors red, white & blue that year has become a NYC/ESB tradition.

"A great advertising gimmick. It certainly makes your building stand out and makes people think of it when they're looking for space."

Harry Helmsley, 1976

A sampling of some of the color schemes for various holidays;

*** Red, Black & Green: *MLK Birthday***

*** Red: *Valentines, Fire Safety & Firefighter's Memorial Day***

*** Green: *St. Patrick's Day***

*** Red, White & Blue: *Memorial, Independence & Labor Day***

*** Red, White & Green: *Columbus Day***

*** Blue & White: *UN Day***

*** Red & Yellow*: Halloween, Thanksgiving***

*** Red & Green: *Christmas/Holiday Season***

*** Specific events;**

*** *NY Yankees Win World Series*: Blue & White**

*** *Pope John Paul II Visits NYC*: White & Gold**

"It sounded like the sort of lovable civic gesture that no one could argue with"
Paul Goldberger – Architectural Critic, 1976
RE: Lighting up the upper floors of the ESB – starting in 1976, with different colors was a violation of the building's design (in his opinion)

Part 22

Operations & Maintenance

"We take all the pains possible to help our employees to hold their places, but we require absolute obedience to our rules, and will not accept any neglect of duty"

Chapin L. Brown – ESB Building Manager

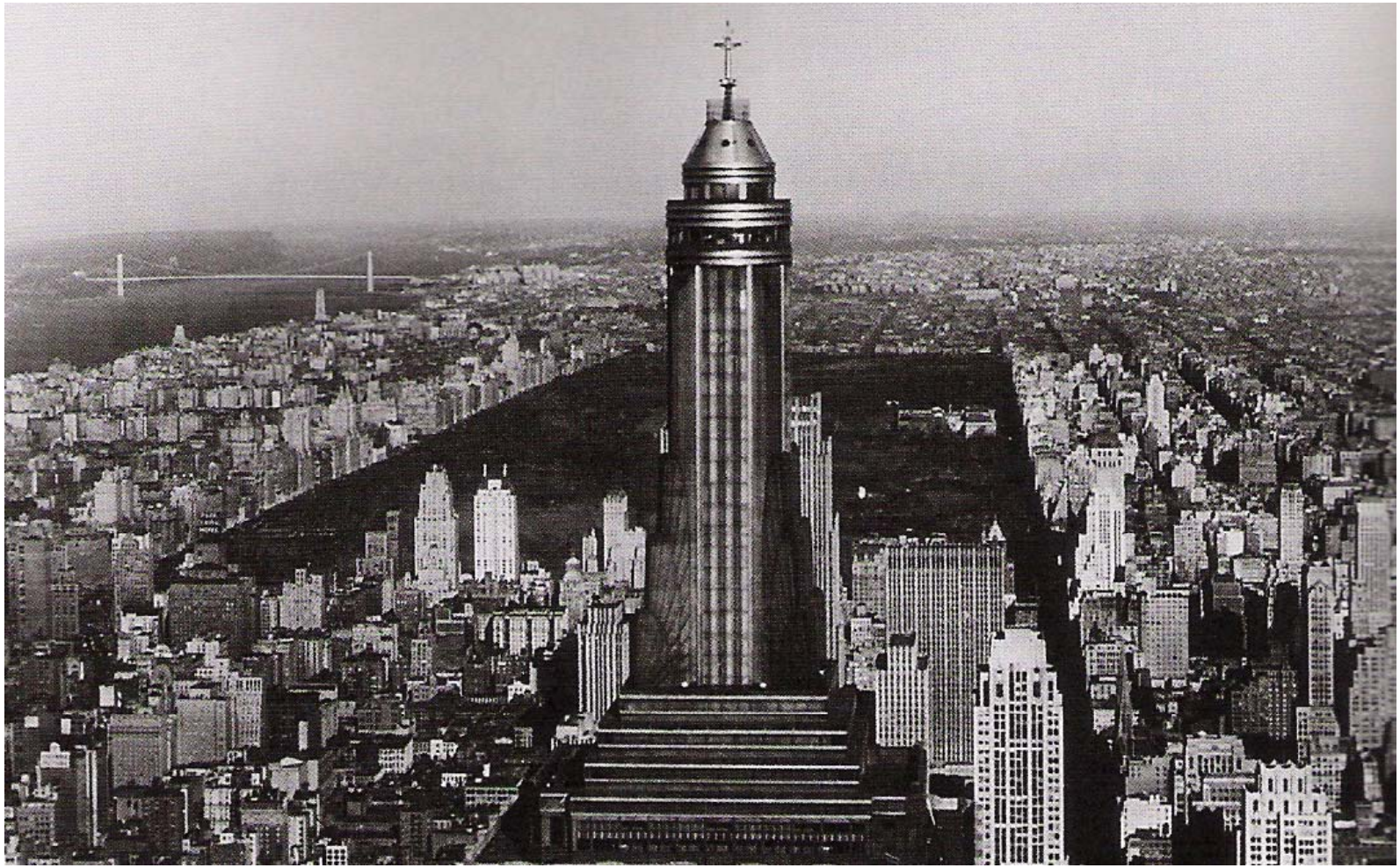
RE: Supervision of +/- 350 service employees in the 1930's (about 1K at full occupancy)

True Calling

"…was run through the television transmitter atop the Empire State Building for broadcast on tiny wavelengths…panels with dials, radio tubes, misc. coils of wire…really something special, a circular band of steel which gives off the sound waves. Below this are four stubby, torpedo-shaped arms of stainless steel at right angles which send out the visual waves."

The New Yorker

RE: Describing experimental TV broadcasts starting in June, 1936 (by NBC) from atop the ESB's 85th floor. By the late '40s, WNBT (NBC-TV) was broadcasting from their 5,000 watt transmission antenna atop ESB (the FCC restricted the transmitter's power).

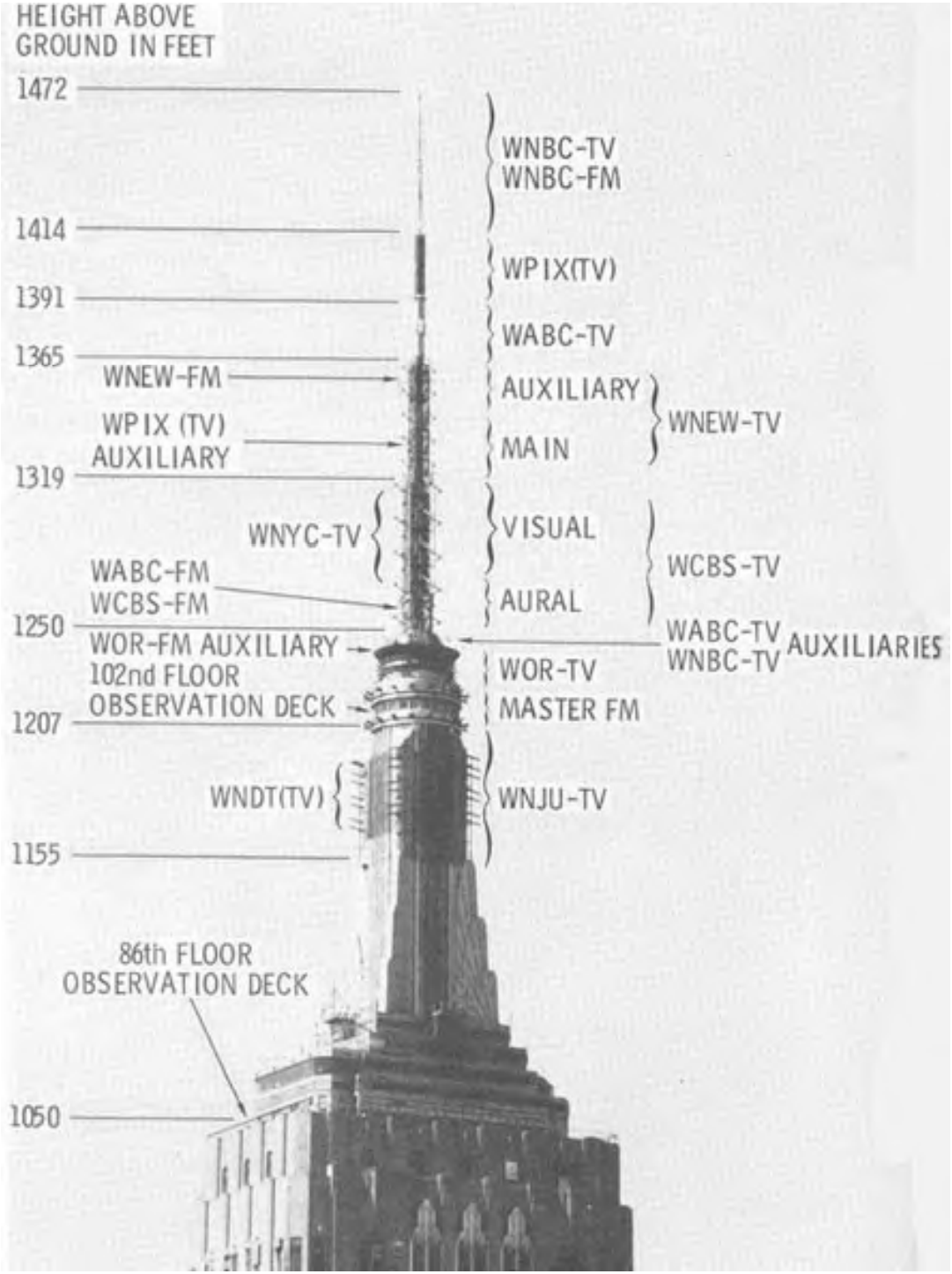


ca. 1936

"…even with the FCC's restrictions on WNBT's power, no other TV station could hope to compete successfully while transmitting signals from lesser buildings. WJZ-TV, owned by ABC, transmitted from atop the Hotel Pierre; the city-owned WNYC-TV broadcast its UHF signals from the top of the Municipal Building; WPIX, the station of the Daily News broadcast from the top of the Daily News Building. Their signals struck other buildings, bounced around, and created ghosts. Transmission from atop the Empire State would exorcise the ghosts, while at the same time allowing individual receiving antennas in homes to be directed toward just one transmission point instead of several."

John Tauranac, Author

RE: Though NBC held exclusive rights to the ESB, for the benefit of the TV industry they agreed to allow other TV & radio stations use of the building as a common transmission point on a share-the-cost basis.



ESB Antenna Array (ca. 1967)

In 1950, a 222-foot high TV antenna - which extended from 1,250-feet to 1,472-feet, was installed. With the antenna up & operating by 1951, five stations started paying $70K/YR for the use of the tower, in addition to $7/SF for transmitter floor space, realizing about $500K/YR for the ESB's coffers. By the mid-1950s, eight TV stations transmitted from the ESB.

"We'll lug the steel up from the street in an elevator open at the top. That'll be slow, but better than taking the chance of dropping a steel girder a thousand feet into 34th Street."

Andrew J. Eken

"…winds would rattle your slats. We thought of using a protective scaffolding, but the steel-erection people just laughed. If a man gets blown off one of the highest beams a man ever walked, he'll fetch up with a jerk but he won't get hurt."

Andrew J. Eken

RE: Installation in 1950 of the TV antenna. The ironworkers wore safety lines around their wastes

On average, the ESB is hit by lightning 100x per year

"All you do, is to be sure your belt is jake, then slap on the water with a big sponge, and give the glass the old swipe with the squeegee. After that you finish up the corners and give the whole thing a polish with your 'shammy'. The whole job takes about four minutes (per window) – three if you're racing – and when you've washed 75 windows you can call it a day. There's nothing to it…The sills here are only an inch and a half deep, and we have to stand with our feet turned outward – like Charlie Chaplin…Air currents come whooping up and down the wall surface like express trains! I'll be working away and a gust will come screaming up from 34th Street and for a moment I'll be doing a tap dance on nothing. Then, as my feet find the sill again, maybe another blast will come from above and make my knees buckle. Anyway, it keeps me interested."

Richard Hart – head window washer at the ESB, 1937

Serenade to a Lonely Window Washer on the 73rd Floor of the Empire State Building

RE: Longest song-title in radio history – by the Dorsey Bros. Band

Part 23

Legacy

"Office blocks have an economic life, calculated by actuaries; so much floor space, so much rent, so many years of earning power as premises, and then demolition"

John Gloag, Architectural Historian

RE: Comment upon the fact that, in America, buildings are built for investment, not posterity. When they've outlived their utility, they are simply replaced.

"I am not just a landmark. I am not just a relic of the past. I am not just an exercise in nostalgia. No. I am still at the center of New York."

Louis Philips

RE: December 15, 1977 letter to the NY Times praising the ESB

The ESB lost of the title: “World’s Tallest Building”, to One World Trade Center in 1972. Laurence Wein - ESB owner along with partner Harry Helmsley, tried unsuccessfully to downgrade the WTC project through their organization: *The Committee for a Reasonable World Trade Center (*to retain the title for the ESB). They really wanted the WTC to be only 100 stories high (rather than 110) so as not to cut into their business/income from the ESB observatory. They thought tourists to NYC would abandon ESB for the taller WTC observation deck/s. It was much ado about nothing, both the WTC and/or the ESB observation decks did not suffer for lack of customers despite the others existence.

"Mr. Wein and his publicity agent, Mr. Robert Kopple, have applied every conceivable pressure, every propaganda device, every distortion and every misstatement of fact that would serve their narrow and selfish objectives"
Austin J. Tobin, Executive Director *PANY&NJ*

Lawrence A. Wein

Architect Robert W. Jones (of *Shreve, Lamb & Harmon*) made a proposal to remove the top six-stories of the ESB plus the mooring mast and replace them with thirty-three additional floors, thus making the ESB 144-feet taller than the new *One WTC* in Lower Manhattan and 44-feet higher than the *Sears Tower* in Chicago – all to allow the ESB to maintain the title of "*Tallest Building in the World*". His idea was mocked and ridiculed and he was summarily dismissed from the firm for publicizing an idea that, apparently, was entirely his – not SL&H's.

"The Empire State Building's characteristic silhouette stands for the City of New York almost uniquely; there is no stronger symbol in the 20th Century. It's Art Deco tower is not just the most important local landmark, still upstaging the graceless flat tops that out bulk it; it is also an undisputed local landmark, it is also an undisputed artistic monument of international stature. The architects make it clear that it could not be reproduced. That unmistakable tower is New York."

***New York Times* editorial, 1972**

September 11, 2001
Sadly, with the collapse of both towers of the WTC, the ESB could once again claim the title of tallest building in New York City

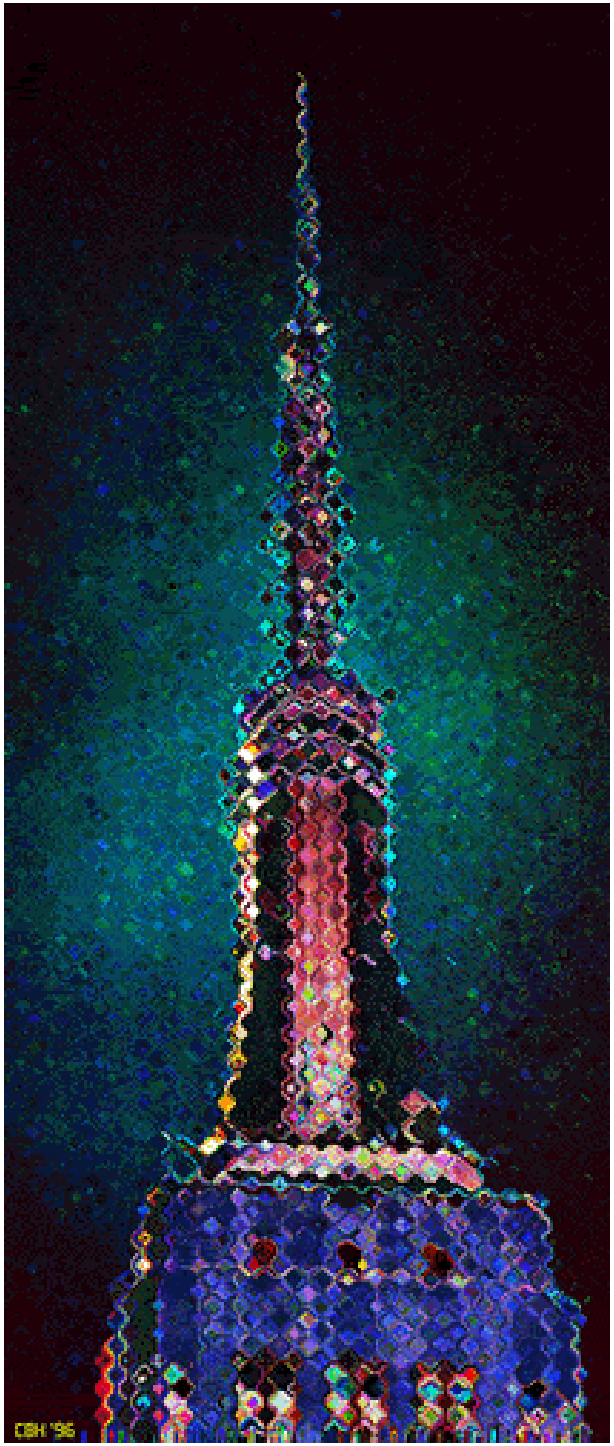
"New Yorker's never visit the Statue of Liberty or the Empire State Building, but that doesn't stop us from bragging"
Ed Sullivan, 1935

Cultural Icon

In 1965, Andy Warhol filmed the ESB for 24-hours


B2
USA

NYC Landmark Designation


CBH '95

Top of the World

"Manhattan seemed squeezed between its rivers and buildings pushed into space. Central Park sprawled before us and helicopters whirred past. And I suddenly thought of something that Cagney had shouted at the end of 'White Heat', under very different circumstances: 'Top of the World, Ma', I said to myself: 'Top of the World.'"

Mary Cantwell, Writer
RE: Excerpt from a *NYT* article whereby she recalled her visit to the ESB 50 years later

The Power and the Glory

"In our initial meeting to discuss the purchase of the Empire State Building by the Federal Government I purposely avoided discussing the question of price and terms in order to have opportunity to study these questions more carefully. I think you will find the two statements enclosed herewith most interesting in support of the $38 million price now submitted."

Al Smith

RE: Excerpt from a May 26, 1943 letter to Harold Smith, U.S. Government Director of Budget. Smith and the ESB owners sought to sell the building to the Federal Government and, by 1942, the owners were discreetly seeking a buyer.

"As you know for the past two years we have been engaged in an effort to dispose of our building which, so far, has not been successful, but we are continuing our effort with the hope of eventual success"

Al Smith, early 1944

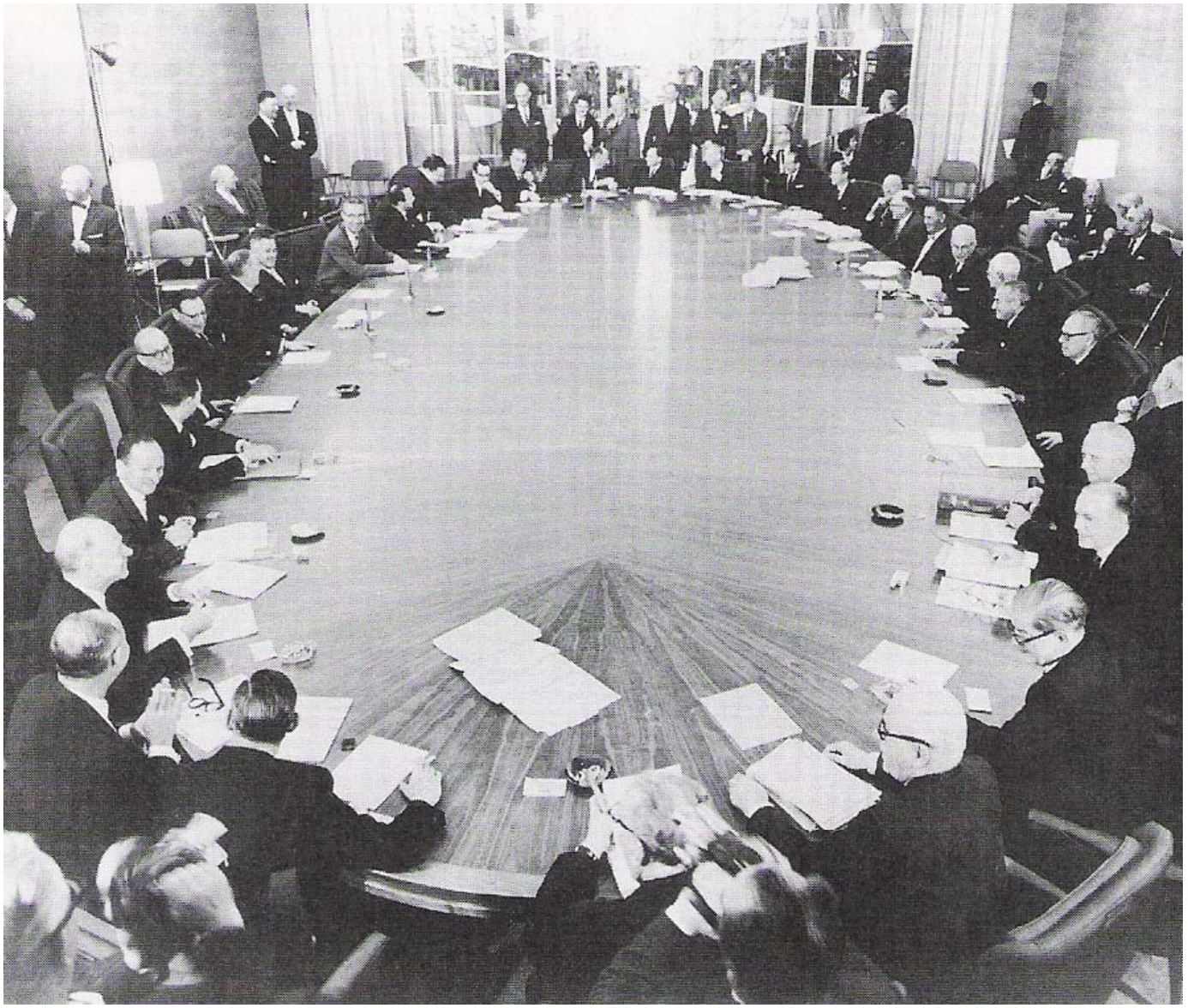
RE: Excerpt from a letter to Pierre DuPont upon failure to sell the ESB to the Federal Government. Smith died of heart failure in August 1944 - aged 70yo.

"All I had to do was find a buyer willing to pay $50 million and accomplish that before the 'cat was out of the bag.' This was easier than perhaps you would imagine."

George A. Hammer – VP *Charles F. Noyes Co.*

RE: Brokerage firm received $1 million for the December, 1951 sale of the ESB for $51 million. Hammer knew that J.J. Raskob had advised the executors of his will to sell the ESB as soon as an offer of $50 million was made. The buyers were a group of three led by Roger L. Stevens, a theatrical producer and real estate investor. Their partner in the deal was the *Prudential Life Insurance Company*, which bought the land ($17 million) and held the mortgage.

A syndicate: *Empire State Associates*, formed by Lawrence A. Wein purchased the ESB for $82 million ($65 million for the building + $17 million for the land). The ESB's third owner; Henry Crown, had purchased the ESB from the Steven's group in 1954. Crown sold the building to Wein in the fall of 1961. After the deal with Crown, Wein arranged a sale-and-leaseback deal with Prudential. The "master-lease" allowed Wein and partner Harry Helmsley to receive all the ESB's annual income while paying an annual rent to Prudential over a five-term, 114 year period ending in the year 2076.



Sale of the ESB to *Empire State Associates*
(Fall, 1961)

By 1991, *Prudential* had recovered its investment & sought a buyer for the ESB through their agent *Salomon Bros.* Hedeki Yokoi – a Japanese "businessman" (with reputed ties to organized crime), sought to buy the ESB for $40 million – Prudential refused to sell to him. Instead, Prudential sold the ESB to *E.G. Holdings* (in 1991) for $40 million. E.G. Holdings was headed by Oliver Grace, Jr. – great-grandson of William R. Grace, a former NYC mayor. *Vanity Fair* soon discovered that Yokoi had used Grace as a front-man for the purchase of the building with Yokoi's daughter & son-in-law acting as his agents.

Hideki Yokoi (seated)
with son-in-law
Jean-Paul Renoir

"…take those actions necessary to restore the building to its rightful position as a world-class operation"
Donald Trump, 1995
RE: His controversial role as partner/adviser to ESB owner Hedeki Yokoi – described by *The New York Observer* as: *"a former war profiteer and stock manipulator…embroiled with organized crime in Japan"*

Without investing any of his own money, Donald Trump was brought in by Hedeki Yokoi as an "onshore advisor." If he could obtain an increase in the master lease rent or a sale of the fee title for more than $42 million, Trump would receive one-half the profit. This meant either negotiating a deal with the ESB's owners – Leona Helmsley & Peter Malkin, or breaking the master lease, Trump chose the latter route since he and Leona Helmsley despised each other and he wanted to convert the upper floors to condominiums.

“I consider myself to be a nice person. I don’t say I’m the best person. But she’s a horrible, horrible human being. She’s the meanest person. She’s not even mean. She’s beyond mean. She’s sick. I’ve seen what she’s done to certain people, including her own husband. She’s a terrible human being.”

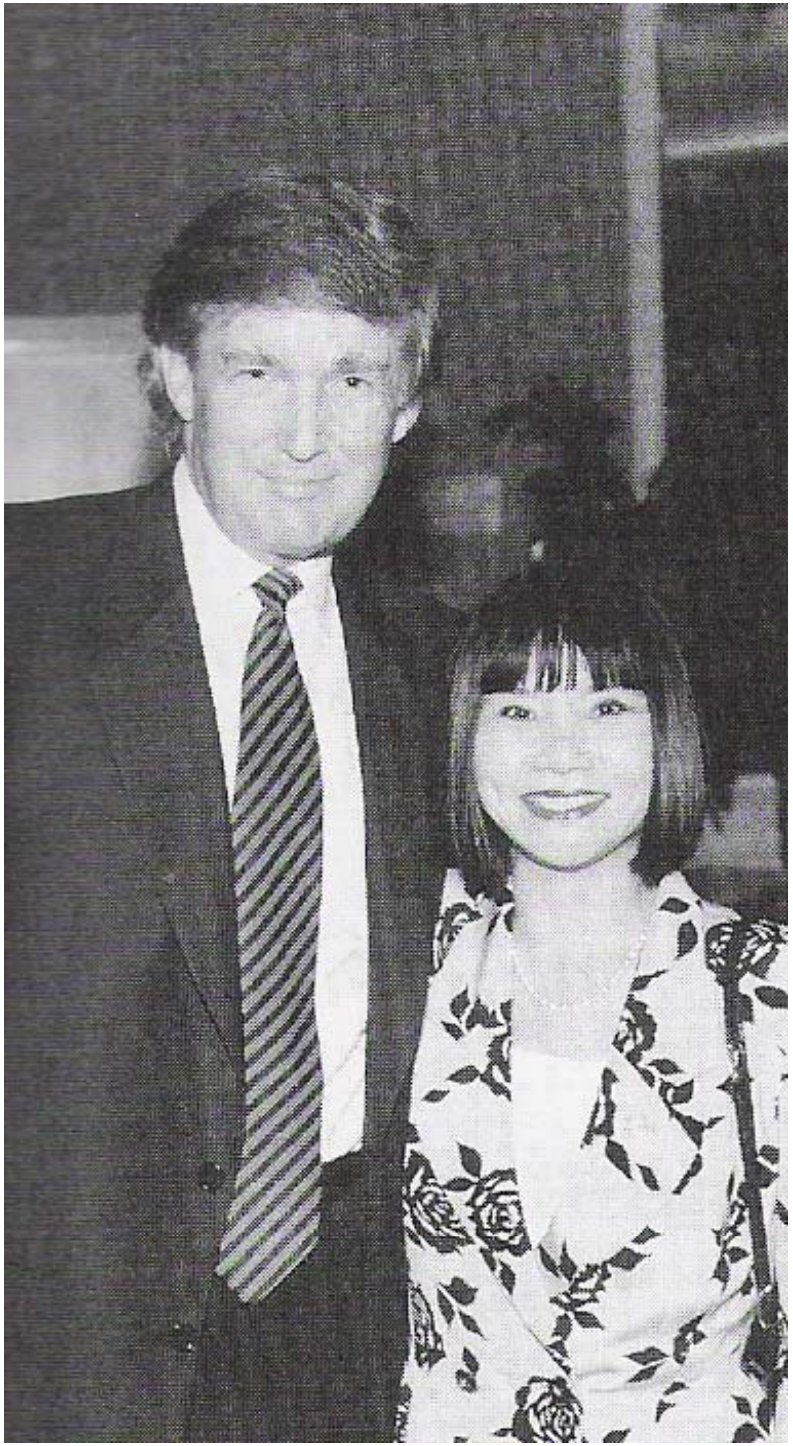
Donald Trump

RE: Leona Helmsley

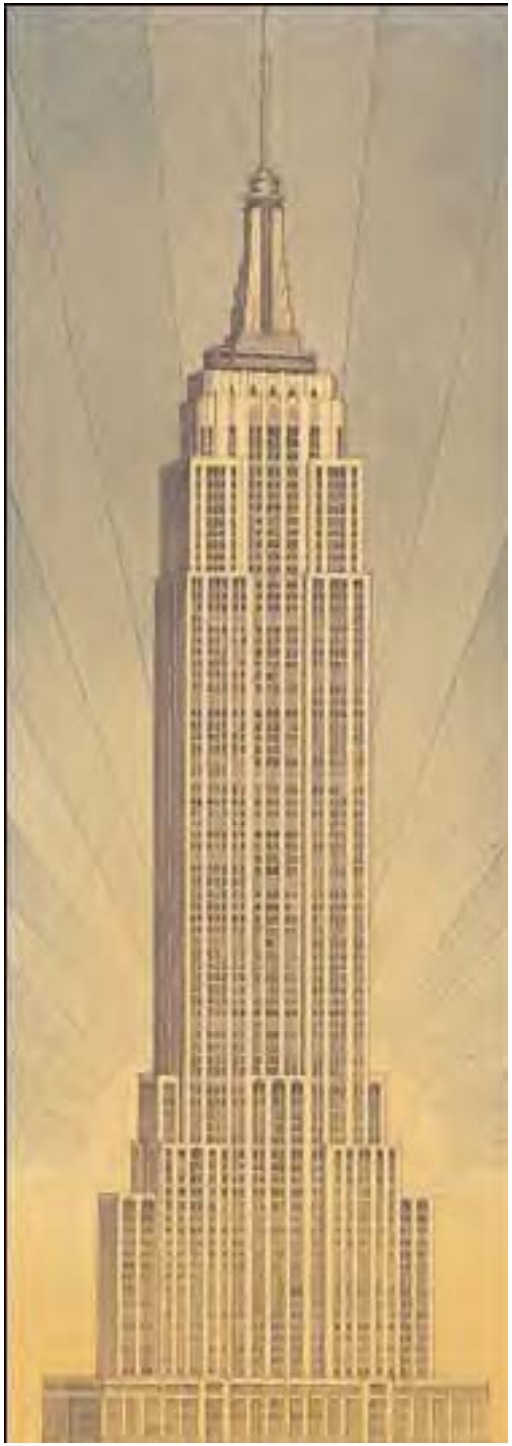
“I wouldn’t believe him if his tongue were notarized”
Leona Helmsley
RE: Donald Trump

The Trumps & Helmsleys
(in happier times)

Trump failed at breaking the master lease but netted a substantial profit when the building was sold again in 2002. Hideki Yokoi sued his daughter & son-in-law in 1994 claiming they stole title to the building for themselves rather than buying the building on his behalf as instructed. They claim he told them to buy it as a birthday present for her.



Donald Trump & Kiiko Nakahara
(Hedeki Yokoi's daughter)



"Therefore, when we build, let us think that we build forever. Let it not be for present delight, nor for present use alone, let it be such work as our descendants will thank us for, and let us think, as we lay stone on stone, that a time is to come when these stones will be held sacred, because our hands have touched them, and that men will say as they look upon the labor and the wrought substance of them; 'See!, this our fathers did for us.'"

John Ruskin, Architect