

# The Architecture and Development of New York City

with Andrew S. Dolkart

## THE BIRTH OF THE SKYSCRAPER

### Introduction

To many people, New York is defined as a skyscraper city, and indeed the skyscraper is a really important part of what New York is all about. New York has many streets lined densely with skyscrapers, but the skyscraper did not come out of nowhere. The skyscraper is a result of New York's importance as a major commercial center, an importance that begins with the seventeenth century—with the Dutch settlement—and expands, especially in the nineteenth century, as New York becomes the most important commercial center in North America. And with the growth of commerce comes the construction of commercial buildings, first small buildings and then, as technology permitted, as land values rose, and as the demands of business increased, more and more tall buildings are built until New York becomes the quintessential skyscraper city.

## The First Elevator

The history of skyscrapers goes back to the late 1860s, with the construction of the Equitable Life Assurance Company's building on the corner of Broadway and Cedar Street. Life insurance was a relatively new business in America, and like the banks and the hotels, life-insurance companies understood the value of architecture as a way of marketing their new idea of trying to get people to take out life-insurance policies. The Equitable Life Assurance Company decided that they were going to build a very prominent headquarters on Broadway, right across from Trinity Church cemetery. This was a really prime location in the commercial core of New York, and the president of Equitable Life, a man named Henry Hyde, decided that he was going to get the maximum publicity out of the idea of constructing a new building. So he held a competition in 1868 for the design of the building, and many prominent architects entered it. There was one requirement for the competition, and that was that the building include a passenger elevator.

This was a radical new idea. This is the first office building to include an elevator. And by including an elevator in the building, it actually turned the idea of the office building on its head. It had been, when you had an office building before 1868, the higher up you went, the lower the rents were because you had to climb up flights of stairs and people were not really going to climb up more than one or two flights of stairs. But once the elevator was implemented, suddenly the top stories were more valuable than the lower stories. And now you can get higher rents on the top stories because they are quieter, there is better light, and they are away from the noise and dirt of the street. So suddenly you can rent all the space in the building for a very high amount of money. So Equitable decided that this would be a good idea. Equitable actually only occupied a portion of the completed building, the lower floors, understanding that they could maximize their rental income by renting the more prominent upper floors of the building.

The firm of Gilman and Kendall won the competition. This was a very conservative firm and they designed a very conservative looking building. It is basically a French Second Empire-style building, with a mansard roof and a nice three-dimensional façade. It does not look like it is more than about four or five stories. It was actually about seven-and-a-half stories. The upper floors would really not have been available for rental space because nobody was going to climb up above the

fourth or fifth floor. The building expanded and it eventually took up the entire block, but the original part of the building was finished in 1870, and it got a lot of publicity for the Equitable Life Assurance Company, especially the elevator.

## Critical Acclaim

The elevator is one of the requirements of the skyscraper, and this was, of course, realized very early. One of the first major bits of criticism of the skyscraper, and one of the first histories of the early skyscraper was written in Scribner's magazine, a very popular art and literary magazine of the late nineteenth century. Barr Ferree, one of the leading nineteenth-century architecture critics, wrote about the skyscraper and how the skyscraper developed. He wrote:

Vertical architecture would be impossible, first of all, without the elevator, the great equalizer of civilization, which . . . by excessively rapid "express service," makes the twentieth floor scarcely more difficult to access than the third. . . . Without [the elevator] its chief merit [of the tall building] would be gone; without it its upper stories would be as inaccessible as a mountaintop.

## Height Sells

So once you had the elevator, you could build much taller than seven-and-a-half stories. And in fact, in the next few years, a few other tall buildings began to appear in New York. The second office building with an elevator was built for the Western Union Company and the third building with an elevator was built by the New York Tribune. Newspapers were another kind of business that saw the marketing potential of the skyscraper and of architecture. The New York Tribune built about a nine-story building on Park Row, right across City Hall Park from Broadway. So this was a very visible building as people were commuting up and down Broadway.

And they capped the building with a tower that had a clock on it, so as you were rushing to work, you would check out the clock to see if you were on time. Above the clock it says "The Tribune." So while you were looking at the clock to see what time it was, you were also reading an advertisement for the Tribune. And the idea was that you would go out and spend your few pennies on the Tribune rather than on the Times or the Post or any of the many other newspapers in New York.

This building was designed by Richard Morris Hunt. This was a very radical building. It was built out of red brick with black-brick trim, so you really could not miss the building. The red and the black were very pizzazzy and they really attract attention to the building. Also, the structure of this building is very evident. You can see the strong verticals in the design, which emphasize exactly where the structural members are. But this building was built out of traditional construction. The walls are actually bearing the weight. So it is a skyscraper because it has an elevator and the upper floors are now accessible, but it does not have any bearing or novel technology in the building. Iron is beginning to be used in the structure of the buildings, but the walls are still supporting the weight of this building.

## **Why Skyscrapers?**

Nine stories does not sound like a skyscraper to us today when we are used to buildings of fifty or sixty or more stories, but if you look at an old view of the City Hall area along Park Row, you can see the Tribune Building really towering over all the other buildings. And you can see with this tower with a sharp point on the top why people began calling these buildings skyscrapers. A building of this height was a really incredible novelty to people in the nineteenth century and these buildings caught the attention of the public. Some people loved them but others found it really scary that buildings like this would be built.

## **Early Styles**

For New York, as tall buildings begin to be built in ever-larger numbers—in the 1880s especially—New York architects had no interest whatsoever in developing a new style of architecture for the new tall buildings. In Chicago there were architects who saw

this as a new building type that needed a new aesthetic. But that was not something in which New York architects had an interest.

In about 1880, there was a flurry of tall buildings being built. There had been a hiatus in tall-building construction after the Tribune Building was built. The Tribune Building was begun in 1873, the year of a financial panic, so there was an economic depression during this period. In about 1880, when larger numbers of tall buildings began to appear, New York architects designed them in the traditional styles that they used for houses, apartment buildings, religious buildings, and for all other kinds of buildings, so you find tall buildings like the Potter Building on Park Row. This was located just about a block south of where the Tribune Building stood. The Tribune Building, unfortunately, was demolished in the 1960s. The Potter Building was a Queen Anne-style structure. This was a very popular residential style, using red brick and red terra-cotta with a very dynamic roofline and a wonderful sense of plasticity on the design, which created an odd use of classical and Renaissance ornamental form. This was a very popular style, now being adopted for a tall building, but still built largely out of traditional construction.

Probably the most popular style in the 1880s in New York was Romanesque Revival, a style with massive stone blocks and heavy round arches used for houses, factories, and especially churches. Here you can see it being used in an early skyscraper called the Lincoln Building on 14th Street and Union Square West, designed by a very prominent architect named R. H. Robertson in 1887. This building, too, has load-bearing walls, although it uses more iron. Iron begins to be incorporated more and more into helping to support the walls of buildings. But it still does not have a metal frame. In fact, this was one of the last skyscrapers in New York that was built without a steel-skeleton frame.

## The Corbin Building

R. H. Robertson was not the only prestigious architect to design early skyscrapers. Another example of this is Francis Kimball's Corbin Building. Francis Kimball was one of the most talented and most prolific architects in the late nineteenth and early twentieth century. He not only was a pioneer in the design of skyscrapers—like the Corbin Building, which was one of his earliest skyscrapers—but he also

But in the late 1880s, he became involved in the design of commercial skyscrapers and was responsible for a significant number of early skyscrapers in lower Manhattan.

His great early skyscraper is the Corbin Building, on the corner of Broadway and John Street. And this does not seem like much of a skyscraper to us today, since it is only eight stories high, but when it was designed in 1888, it was a building that towered over all of its four- and five-story neighbors.

The building is only 20 feet wide, but it extends for over 160 feet along John Street. Kimball devised an extraordinarily beautiful façade design for the building. It has a stone base, and then above that it is a beautiful tawny-colored brick with extensive terra-cotta ornament. So it has this rich use of ornamental terra-cotta, including scalloped arches around the windows, plus the windows are highlighted with cast iron. So you have a use of many different materials. And then at the corners were pyramidal towers, unfortunately now gone.

The building has been very badly neglected today and it is very dirty. And you have to look very carefully to see what an absolutely spectacular building this is. Unfortunately the building is also endangered. One of the unfortunate things that has occurred post-9/11 is that a number of important buildings downtown—some of which were damaged on 9/11—are being threatened by the new plans for downtown. And the Corbin Building stands on the site where a transit hub is planned. It is very important to people involved in historic preservation to try to save this very significant early building.

## Steel Skeletons

The year the Lincoln Building was completed in 1888, an architect named Bradford Gilbert designed the Tower Building on Broadway, just north of Bowling Green. This building is on an exceptionally narrow plot of land. So narrow that if they had constructed the building more than about four stories, as it went higher and higher, the walls would have been getting thicker and thicker and there would have been no ground floor left because the walls would have had to support the weight of each additional floor, so it would have been prohibitively expensive to build anything more than about four or five stories.

So Bradford Gilbert proposed a building with a steel-skeleton frame, which would support the weight of the building and keep the walls from being thick. This was a radically new idea and a lot of people were opposed to it because they did not think the building would stand up. Bradford Gilbert needed to persuade the New York City buildings department to give him a permit to build because the building's department was a little wary of this new technology. But Gilbert persuaded them that this building was going to stand up by making models of the building to show how it would withstand weight and wind pressure. He built this structure between 1888 and 1889 and it is now thought to be the first building in the world with a steel-skeleton frame.

## Changing Values

The steel-skeleton frame was the second necessity for tall buildings. First you had the elevator and then you had the skeleton-frame construction. The nineteenth-century architecture critic Barr Ferree wrote:

If the high building would be impossible without the elevator, it would be equally impossible without a mode of construction that would enable it to be built on a lot practically of any size, and without absorbing too much of the area for foundations and supports. This is accomplished by the steel-skeleton system of construction, now almost exclusively used for commercial buildings of great height, and which has the double advantage of saving floor space and of being above the height of an ordinary structure absolutely less costly than a construction wholly of brick or stone.

He wrote this in 1894, which was only five years after the Tower Building had been completed. The Tower Building was so novel and its engineering idea was so spectacular that it was picked up almost immediately by the developers of tall buildings.

In 1895, only six years after the Tower Building was completed, the Bowling Green Offices was begun, practically across the street, and you can see how from the small and narrow Tower Building we get into this vast bulky structure that runs right through the block. It is about 200 feet deep, and once the steel-skeleton frame had been perfected, you could hypothetically build a building of any size, as long as the elevators could get that far up. As long as you had other technologies like wind bracing and foundation construction perfected, once you had the steel-skeleton frame, you could build a building of practically any size. And very rapidly, New York architects, working often with engineers, were building huge, bulky office buildings.



Land values in Lower Manhattan, the center of the city's commercial district, rose astronomically in accordance with this because suddenly land was no longer valued for how much money you could make by building a five- or six-story building, it was being valued for how much money you could make by building a 20- or a 30-story building. So the Bowling Green Offices here show you exactly how fast and how big these buildings could be built. And it, too, is very traditional in its construction. It is built using Greek ornament, and New York architects used every conceivable style of ornament on their buildings. This is especially evident a few years later when New York City decided to build a great office building. The Municipal Building, which is basically a Roman classical structure, really exemplifies this New York love of traditional architecture with a giant triumphal arch at the base and a round temple at the top crowned by a statue of civic fame. This building was designed by McKim, Mead & White and was built between 1907 and 1916 in a very prominent site. Here the city is saying that the city's office needs are just as important as the needs of the business and financial world because they can construct a building that will rival the great skyscrapers of the financial district.

## **Romantic Symbols**

So many skyscrapers began to appear in New York that by the early years of the twentieth century these buildings become the symbol of New York. People began to see New York as the great skyscraper city and skyscrapers became romantic symbols of the city. They became the icons of New York, and this is something that remains true throughout the twentieth century and into the twenty-first century as skyscrapers define the city.

## **The Flatiron Building**

The first building to become a romantic symbol of New York was the Flatiron Building. The Flatiron Building was not the first skyscraper, nor was it the first steel-skeleton building, and it was never the world's tallest building—all the things that people traditionally associate with this building. But it was the first skyscraper to capture the romantic imagination of the world. And not only did it become an icon of New York after its completion in the early twentieth century, but it captured the imagination of artists.

Edward Steichen photographed this romantic icon; Childe Hassam, the American impressionist painter, painted the building; and many other artists and photographers used this building in their works because it became a symbol of the city. And it was a symbol because of its triangular shape. Thus the name Flatiron, because it looked like the old irons that people used to iron clothing. It was originally called the Fuller Building because it was built by the Fuller Construction Company for its headquarters, but people almost immediately called it the Flatiron Building. The Fuller company understood the value of this name and popularity of the building, so they began calling it the Flatiron Building as well, and that became the name by which everybody knew this building.

Ironically for a building that became the symbol of New York, it was designed by a Chicago architect named Daniel Burnham, who was from probably the most prominent architectural office in Chicago, but he designed in a New York manner. It is a traditionally ornamented building. It is filled with classical ornament, including Medusa heads and classical wreaths and other ornament in brick and terra-cotta on the façade. It was not only a building that appealed to high-art interests, such as people who were interested in Steichen's photography or Hassam's paintings, but this building also entered popular culture. It is at a triangular site where Broadway and Fifth Avenue—the two most important streets of New York—meet at Madison Square, and because of the juxtaposition of the streets and the park across the street, there was a wind-tunnel effect here. In the early twentieth century, men would hang out on the corner here on Twenty-third Street and watch the wind blowing women's dresses up so that they could catch a little bit of ankle. This entered into popular culture and there are hundreds of postcards and illustrations of women with their dresses blowing up in front of the Flatiron Building. And it supposedly is where the slang expression "23 skidoo" comes from because the police would come and give the voyeurs the 23 skidoo to tell them to get out of the area.

## The West Street Building

The Flatiron Building was designed on a very visible site, and Daniel Burnham took advantage of the site in the design of the building. But he was not the only architect that did that. Cass Gilbert, in his design for the 1905 West Street Building, also understood the visibility of the site. The West Street Building originally stood

And so he designed a spectacular Gothic Revival-style building that had a sumptuous top, was filled with ornament, and would be highly visible from the river.

The building was a speculative venture that was planned to attract businesses that were involved in shipping, such as railroad companies, shipping businesses, and coal firms—all of whom would want to be near the piers.

The building was extraordinarily well received when it was completed, and it was a very successful building. Over the years, it has undergone a lot of changes to its interior, including alterations by Cass Gilbert, late in his life, when he was asked to simplify the original lavish Gothic lobbies.

This is a building that is also endangered today. It was seriously damaged when the World Trade Center towers collapsed. And the building is now enshrouded in netting, and its future is very much in doubt, despite the fact that it is a landmark building and it held up well, even though there were some serious fires inside the building.

## Sullivan in New York

The New York-style skyscraper—with its Queen Anne or Romanesque or Greek or Renaissance ornament—contrasts dramatically with the skyscrapers that were being built in Chicago by architects like Louis Sullivan, who were determined to use a new style of ornament on the new building type and who also wanted to emphasize the vertical structure of the building. And you can make an interesting comparison between the New York style and the Chicago style here in New York, because one of Sullivan's most important buildings is on Bleecker Street in New York, the building known as the Bayard-Condict building, which was built from 1897 to 1899 and was an office and loft building. It is almost entirely clad in white terra-cotta; that is, it is a steel-frame building with very ornate clay detail on the façade.

Sullivan thought the building should reflect the structure, and you can actually read the very strong verticals where the steel-structural frame is located on the façade. There are the wide vertical members marked where the structure of the building is and the narrow, spindly little verticals do not go all the way down to the base.

They stop above the second floor windows, so it is very evident that those are not structural. Only the wider verticals are structural. The building is white and very bright, so that the building would be very visible. It is actually slightly askew of the New York City grid, so there is a vista to this building.

You can see how ornate it was, done entirely in terra-cotta but very expensive terra-cotta. The clay was both molded and hand carved to give it a very deep ornamental detail.

It is not traditional. You cannot look at this ornament and say, oh it is Romanesque, or Renaissance, or it is gothic, or classical. Sullivan invented a new ornamental aesthetic for his skyscrapers, a kind of organic design that was often based on natural forms, some that you would see with your eyes, some that were visible only with a microscope. The very dense intertwining forms characterized the type of ornament he used on his buildings in Chicago, Buffalo, St. Louis, and elsewhere in the Midwest, and they characterize his one New York building.

The second floor would also be ornate. It is a transitional story. Somebody walking by on the street could look into the windows on the second floor and might then go into a shop that was on that floor by just going into the lobby and walking up a flight of stairs. And Sullivan designed this very subtly so that your eye focuses on the second story windows. The plane of the windows is recessed and the soffit of the window frame, the underside of the top of the window frame, is very ornate so that it stops your eye as you are looking up, so you will actually focus on these windows. Then, above that, every single floor is exactly the same, just as Sullivan would have wanted. And it is very vertical in its emphasis so that your eye is going vertically up the building until you reach the cornice, which is very deep, and also has an ornamental soffit, of which the underside is very ornate. And here it is being supported by wonderful winged angels.

This idea of designing buildings using a new style of ornament was very different from what was usually done in New York. It is not any better or any worse, it is just a different aesthetic idea of what a skyscraper should be. Now, of course, Sullivan's work is in a category by itself and it is spectacularly beautiful, but the idea of using a new type of ornament was just a different idea of how you could design a skyscraper.

## Building for Height

At about the same time that the Bayard-Condict Building was being built and the Bowling Green Offices were appearing, the builders of skyscrapers began to realize the value of having the world's tallest building. People began to very consciously construct buildings that were taller than every other building so that they could advertise their skyscraper as the world's tallest. They thought this would be a good way of getting tenants.

It was especially true of office buildings that were built exclusively as speculative ventures. That is, they were built exclusively to rent the space. It is very important to remember when thinking about skyscrapers is that they were built to make money, even if they were named for a corporation like the Equitable Life Assurance Company. Equitable had some offices in that building, but they were intent on making money by renting space. So these are business ventures, and they needed to get tenants, otherwise they would be a financial disaster. So they thought of different ways to market the building.

The Park Row Building was the first building built specifically to be the world's tallest. It was completed in 1899, and not only was it the world's tallest building, but it also had a top that would be very visible. The building was designed by R. H. Robertson, the same architect who had designed the Lincoln Building a few years earlier. But here Robertson used a full steel-skeleton frame with traditional ornamental detail on it, and made it as tall as was economically viable on this particular lot. He then capped it with these towers that would make the building very visible. It is only a few blocks south of where the Tribune Building is and it is opposite City Hall Park, so it is visible in the same way that the tower of the Tribune Building had been visible, but now the Tribune's tower was dwarfed by this very tall building. The critics actually did not like this building when it was completed. One critic said that it "rose from a base of classical bombast to a top of rabbit's ears." But nonetheless, it was quite successful in its early history. It is presently being converted into housing since it was no longer viable as an office building.

## The World's Tallest Buildings

This idea of building the world's tallest building really catches on, especially with corporations that wanted to use the skyscraper as a means of advertising.

Sometimes a skyscraper could be built not for the economic viability of the floors but because of the economic value of having the world's tallest building and having a building that was very noticeable on the skyline.

This is the Singer Building. It was, of course, the headquarters of the Singer Sewing Machine Company, which was one of the companies that revolutionized advertising. They knew how to market those sewing machines so that every woman in America was going to want one, and in particular, they would want to have a Singer sewing machine.

The Singer Building was begun in 1902 and finished in 1908. It was designed by a very prominent architect named Ernest Flagg, who had studied architecture in Paris at the École des Beaux-Arts, and was a very sophisticated and talented designer. He worked with Singer on several buildings, and Singer told Flagg that they wanted to build the world's tallest building. They built this very slender tower on a low base. The base of the building, which is only about ten stories tall, was really where the Singer company's offices were located. The tower was a marketing tool. It is so small that the floors could never have been a great profit source for Singer. There was not a lot of rentable space on these floors. They had to have elevators, toilets, and public halls, and that took away from the space, and they were left with only a minimum amount of rental space. But that is not why Singer built this building with its distinguished top, recognizable by any who saw it. This building stood out on the skyline. When you saw the building you thought "Singer." The Singer name would be on your mind. So this was, for a very brief period, the world's tallest building. It was completed in 1908 but it only was the world's tallest building for one year. In 1907, the Metropolitan Life Insurance Company began construction of a building on Madison Square, just about one block from the Flatiron Building, which they wanted to be the world's tallest building. It was finished in 1909, the year after the Singer Building was finished. It, too, was not only the world's tallest building but was an advertisement for Metropolitan Life. This building appears on Metropolitan Life's letterhead, and in their advertising. Beams of light shone out from the tower of the building at night and Metropolitan Life became known as the light that never failed.

The light was the light on the building. The building had the world's largest four-faced clock so that again you would be looking to see what time it was and where would you be looking? At the Metropolitan Life Insurance Company's tower, so you would buy life insurance from Met Life and not from Equitable, which, of course, had already used architecture as an advertisement some decades earlier.

## The Woolworth Building

This development of taller and taller buildings continued with the construction of the Woolworth Building, which began construction in 1911, two years after the Metropolitan Life Insurance Company building was completed. And like the builders of Singer and Met Life, Frank Woolworth decided that he wanted the world's tallest building. His architect, Cass Gilbert, worked with him, redesigning the building as Woolworth decided that he wanted the world's tallest building. They chose Gothic for the style of the building because Woolworth saw himself as being in the tradition of the great medieval merchants with their Gothic houses, and so he saw this style as appropriate for his headquarters building. Woolworth actually only occupied a floor and a half of this building when it was completed, so this was a speculative office building—Woolworth hoped to make a profit on this building. He hoped that he would be able to rent all the floors and that he would make as much profit from this building as he was making from his five-and-dime stores. Cass Gilbert, another very talented architect, designed a building that is a spectacular structure on the skyline. This building, with a massive base and a slender tower, becomes a model later in the twentieth century for other skyscrapers. This was another building, like the Singer Building, that was so noticeable on the skyline that as soon as you saw it, you thought "Woolworth" and you went off to your local five-and-dime to spend money. You did not go and shop here at the Woolworth Building, however. There was never a Woolworth's store in this building, it was much too high class to have a Woolworth's store in it. But this was the symbol of the Woolworth company and it was designed in that traditional New York style, using traditional architecture—in this case Gothic—on the façade. The entire façade is clad in terra-cotta. It is blocks of molded clay hung on a steel frame. Most of the terra-cotta is glazed white to make it look like white limestone. It has very subtle polychrome terra-cotta ornament underneath the windows in blue, green, and other colors. They give it this kind of pizzazzy feel when the sun hits the building.

## The Woolworth Lobby

The Woolworth Building's lobby is one of the most spectacular publicly accessible spaces in New York (although it is currently closed to the public), and it really exemplifies the design ideas of lobbies in the first generation of office buildings. This lobby is extraordinarily lavish, yet the lobby serves only one purpose really, which is to get people from the street to the elevators. But clearly there was a lot more to the lobby than just a utilitarian space.

Woolworth spent an enormous amount of money on the lobby. It is one of the most lavish spaces in New York. And what is, of course, ironic about it is that Woolworth's fortune came from frugal shopping, from people spending their nickels and dimes at Woolworth stores, and yet the lobby makes no allusion to that kind of frugality—it is richly decorated with heavily veined marble from Greece and marble floors from Vermont. Designers, artists, and sculptors were hired to make the building lobby absolutely extraordinary.

And why was this done? Well, because the lobby said something about Woolworth and Woolworth's partner in the construction, the Irving National Bank. These were major corporations and they wanted a presence in the lobby, so that you knew when you arrived here that you had arrived someplace important. And this is made even more evident by the extensive use of W's, the initial for Woolworth, and caricatures done by a very famous caricaturist in the early twentieth century named Tom Johnson, who did caricatures of all the people involved with the construction of the building. There is Woolworth counting his nickels and dimes; there is Cass Gilbert cradling a model of the building; there is Gunvald Aus, the engineer, holding onto a steel beam; and there are others as well. All of these say something about the importance of the Woolworth Corporation.

In addition, the building was primarily a rental building. Woolworth only occupied a floor and a half of the building, and one way to attract tenants was to have an exquisite lobby so that when tenants or their guests came here they would know that they had arrived someplace important.



The way in which the lobby is designed is very carefully thought out. There is a small intermediate outer lobby, and then you go through a series of revolving doors and you burst into this brightly colored, very tall space.

Heineicke & Bowen, a very prominent decorating firm in the early twentieth century, was hired to do most of the work inside, and they prepared barrel-vaulted mosaics filled with flowers and birds and other ornament that were modeled after the early Christian mosaics in Ravenna, Italy. They were responsible for the stained-glass dome over the marble staircase that led to the Irving Bank. And it was they who put together the marble, the bronze, the plaster, the mosaics, and the stained glass—all of the different materials used to create this very special interior.

One of the things that is always worth looking at in these early lobbies are the mailboxes, the directory boards, and the elevators, which were often designed in an extremely beautiful way. And the mailboxes here are still intact. They are bronze; they have Gothic ornament, which echo the exterior of the building; they have W's for Woolworth; and they have shields with caducei on them, a symbol of Mercury, the god of commerce, which was appropriate for this major, major commercial undertaking.

Much of the detail in the building says something about Woolworth or about the ideals behind the building. The stained glass has dates on it, including the date that the first Woolworth store opened, 1879, and 1913, the date that the Woolworth Building was completed. There are also murals in the building, one about labor and one about commerce, which are two themes that run through the building.

This, in addition to the W's and the heads of people involved with the building, are all very specific to the ideas of the Woolworth Building.

## The Future of the City

As buildings were getting taller, there were images created of what the future of New York was going to be, especially in the downtown commercial area where skyscrapers were sprouting up on blocks all over. And there was a tremendous controversy over what the future of the city held. Was the skyscraper something good for New York? Or was it bad? Did it generate a tremendous amount of income? Was it a reflection of the dynamism of New York's business and commercial field or was it putting the streets in darkness all the time? Was it sti-fling light and air? Was it incredibly unhealthy for the people of the city, who could never see the sun in these skyscraper districts?

This is a 1908 drawing called "King's Dream of New York." I think most people must have seen this as King's nightmare of New York. It is a view looking up Broadway in which every single sight has a huge skyscraper on it. You can actually identify the Singer Building's profile in this design; it is the only identifiable building here. The city is so dense now that there are double-decker sidewalks; there are double layers of elevated railroads; there are bridges going across the sky, connecting buildings; and there are commuter zeppelins as a way of getting to work. You can see just a tiny slice of the East River waterfront, and there are four bridges going across. There are only four bridges over the East River at all, and so there is a huge amount of infrastructure and transportation. You wonder how the hundreds of thousands of people that would have filled these buildings could have gone to work? This is a reflection of the argument in New York about whether or not skyscraper construction should somehow be regulated.

## The Regulation Debate

These are the Trinity and U.S. Realty Company Buildings. These are Gothic-style skyscrapers that were built in 1906 to 1907 on Broadway immediately north of Trinity Church's cemetery. They flank Thames Street, which was actually moved to allow construction. Thames Street is extremely narrow and these two buildings were built right on the edge of their lots—that is, they take up 100 percent of their lot area. Thames Street was placed in the dark for, I would say, 23 hours and 50 minutes a day. For maybe 10 minutes at about noon, when the sun is overhead,

tremendous amount of controversy when they were completed. This led to an increased debate—in which the "King's Dream of New York" played as part—as to what was appropriate for office building construction in New York.

In 1907, the year that the Trinity and U.S. Realty Buildings were completed, Puck magazine, a humor magazine, published a cartoon called "The Future of Trinity Church," and you can see Trinity Church with its spire sticking up into a skyscraper. Not only is the church under a skyscraper, but the cemetery is now gone and clearly Puck was opposed to the bulk and vastness of the skyscrapers that were being built. So there is increasing debate as to what was appropriate for New York. Some architects like Francis Kimball, the architect of the Trinity and U.S. Realty Buildings, argued that there should be absolutely no regulations for skyscrapers. He argued that the free-enterprise system should just allow skyscrapers to be built with no regulation whatsoever except maybe on the safety of the structure. However, architects like Carrère & Hastings and other prominent New York architects were actually in favor of some sort of regulation. But once you decided that maybe the skyscraper should be regulated, you needed to think about how the skyscraper should be regulated. Should there be a cap on the height of skyscrapers? Well, New Yorkers actually liked tall buildings, and the idea of having the world's tallest buildings. So others argued no, maybe you should regulate them in a different way but not cap the height.

## The Bulkiest Skyscraper in New York

And as this debate was going on and people were proposing different ways in which to build skyscrapers and how to regulate skyscraper construction, the old Equitable Building that had been begun in 1868 and had expanded in the latter part of the nineteenth century to incorporate an entire square block between Broadway, Nassau Street, Pine, and Cedar Streets, burned down. And an announcement was made in 1912 that the new Equitable Building would rise on the entire plot and it would be one and one-quarter million square feet of space. This would be the bulkiest skyscraper in New York. This really added to the debate that was already going on. Sometimes this building is interpreted as the building that caused New York to pass a zoning law in 1916, but that is not exactly true.

The debate had already been going on and it was very clear that there was going to be some sort of regulation. This building just increased the debate. The massive new structure of this building, which played such an important role in this debate, was, like the Flatiron Building, also designed by a Chicago architectural firm. It was actually designed by Daniel Burnham's successor firm, Ernest Graham & Associates. And it was finished in 1915, the year before the zoning law was passed. This building was really condemned when it was completed because of the huge scale and the bulk of the building. But from the point of view of the developers—who actually were not Equitable, Equitable sold the site and although its name was attached to the building and they leased space in the building, they did not own it—this building was a masterful example of how to design a huge skyscraper. It has a large number of elevators, which were very carefully planned. It was thought of as a moneymaking building and they thought about how tall they could build a building to maximize rental income. How would they have to design it to attract attention to the building? It has a beautiful Roman classical lobby that is actually designed to look like a Roman basilica inside, and then it has a vast array of elevators that take the thousands and thousands of workers up to their offices each day.

## Social Indicators

There were far more office workers in this building when it was finished in 1915 than there would be today because technology has lowered the number of workers needed. But when there were large numbers of secretaries, and large numbers of people keeping ledger books, there were enormous office staffs using these buildings. So this building was an economic engine. It was not designed to be beautiful, although beauty certainly is important here because you wanted to attract tenants. It was designed to make money. And buildings on this scale are also an indication of the change in the office market. The social change and the expansion of office workers meant there were large numbers of women working in buildings like this, as women were becoming more a part of the office staff. In the nineteenth century, offices maybe consisted of four, five, or six people at the most. But in the twentieth century, office staffs could be in the hundreds or thousands, and there is an expansion of the office bureaucracies, which is very evident in large buildings like this.

But this was one of the last buildings in New York built as just a bulky box, because in 1916, New York passed America's first zoning law, which basically banned the construction of buildings like the U.S. Trinity and Equitable Buildings.

## Non-Skyscrapers

But before we return to the effects of the zoning law, it is very important to remember that even in the late nineteenth and early twentieth centuries, all commercial buildings were not tall buildings. Small buildings were still being built. In fact, in many cases the construction of a small building on a plot of land that was enormously valuable showed just how powerful a company was. J. P. Morgan, for example, built the Morgan Bank in about 1912 on the corner of Wall and Broad Streets on one of the most valuable plots of land in the world. Instead of constructing a skyscraper for his bank, he built a three-story building. Morgan was saying, in effect, I can own one of the most valuable pieces of space in the world, and I can build just a small building on that plot because I can afford to do so.

## Banks

Other banks also were building grand, but small-scale buildings. We have seen before how banks, especially savings banks, used architecture to attract lots of small depositors. This continued in the late nineteenth and into the twentieth century. The building here is the Bowery Savings Bank, which was built in 1893 on the Bowery, in the Lower East Side, where it would attract poor immigrant workers who would open up accounts with very small amounts of money. But if they could attract enough of these immigrant workers, this could be a very profitable bank. So the Bowery hired McKim, Mead & White in 1893 to build a grand new banking facility for them. McKim, Mead, and White were by the 1890s the most prestigious architectural firm in New York. And they designed a grand Roman classical building that would attract attention, bring in depositors, and also, at a time before the government insured deposits, it would appear to be an insurance policy. The depositors would think that this bank, because it could afford to build such an extraordinary building so grand and so stable looking, was a safe place to put their money.

The interior was also lavish. For people who lived in tenements and who rarely saw a building of great beauty, they could go in and bank under a stained glass ceiling with the most beautiful marble columns, comfortable seating, and spectacular interior spaces. You were entering a palace in order to bank. And this was another way of attracting attention.

Many of these banks appeared in New York in the early twentieth century. The most important were designed by the architectural firm of York & Sawyer, the leading bank architects in America in the early twentieth century. Both York and Sawyer had worked in the McKim, Mead & White office, and they were very familiar with their ideas. In the second and third decades of the twentieth century, they designed many of the great banks of New York. This included the old Central Savings Bank (now the Apple Bank on Broadway, at Seventy-third Street), which was built in 1924 to look like a grand Italian palazzo with a spectacularly lavish interior and rental office space on the top. It was built in this manner because the bank wanted to make at least a little bit of rental money out of this spot and they were giving up so much space to the banking hall. It is ornamented with the most beautiful ironwork. The ironwork here is the work of Samuel Yellin, the leading ironworker in America in the early twentieth century. He was a Philadelphia ironworker, who designed these donkeys with very tall ears sticking up and also used this ironwork lavishly on the interior of the bank. So there were many smaller-scale commercial build-ings going up during the heyday of the skyscraper.

## The First U.S. Zoning Law

In 1916, New York passed the first zoning law in America, and because New Yorkers did not want to cap the height of skyscrapers, they decided that they would regulate the shape of skyscrapers. The idea was that that light and air would reach the sidewalk; light and air were a major issue. So the law stated that you could build right up to the lot line on your building and you could rise up to a certain height and then once you reached that height, you had to step back, you had to set the bulk of the building back. And the height that you could build up to depended upon the width of the street on which your building was located. On a wide street you could have a street wall that was higher than if you were on a narrow street, where the first setback would have to be at a lower story. You would rise up and then you would set back, and then you could rise up some more, and then you had to set back again. There was a formula for how high you could go before you had to set back. Once you reached 25 percent of your lot area, you could build a skyscraper of any height. So on 25 percent of the lot, you could build a slender tower. So this gives New York skyscrapers built between 1916 and about 1960 their unique profile—a bulky base with setbacks and a slender tower soaring up above. And this becomes the model for the skyscraper.

Now the law stated that you had to rise up and set back and rise up and set back, and there was a formula for it, but you could manipulate this so if it said that you could rise up 100 feet before you had to set back, that did not mean that you had to do that, it just meant that once you reached 100 feet, you had to set back. You could actually set back at 50 feet if you wanted to, if you wanted to make the building more dramatic. So there was a lot of leeway for the designer in this new zoning law.

## The Heckscher Building

Although the zoning law was passed in 1916, very little construction occurred in New York for the few years after this because of the First World War. So the impact of the zoning laws was not really felt until about 1919, after the end of the World War I.

This is the Heckscher Building on Fifth Avenue at Fifty-seventh Street, one of the most prominent sites in New York. This was one of the first buildings in New York to use the 1916 zoning law. It was designed by Warren & Wetmore, a very prominent architectural firm, probably best known for the design of Grand Central Terminal, although in the 1910s and the 1920s they designed a lot of skyscrapers and high-rise hotels. The Heckscher Building was an entirely speculative venture on the part of the Heckscher family, a very wealthy New York family that was involved with real estate. In this very early example of a skyscraper that was built under the new zoning law, you have Warren and Wetmore following the letter of the law. The law said you go up and you set back, and you go up and you set back, and that is exactly what they did. So this building appears like a series of boxes piled one on top of another, with a fancy crown on the top. It uses early French Renaissance ornament, so it is within that New York tradition of using historic ornament, but it does not use the zoning law in a particularly expressive way. The massing of this building is actually kind of boring, and it is the ornament that makes the building lively.

## Experimenting

Architects began to experiment with how you could design a building using the requirements of the zoning law and get something that was spectacularly dramatic on the skyline. The design that influenced New York architects was actually a losing design for the Chicago Tribune competition. This was a design that was submitted in 1922 to the Chicago Tribune competition by the Finnish immigrant architect Eliel Saarinen. It was the second-place design, so it did not win the competition, but it was widely published and it had a tremendous impact on New York architecture.



Saarinen was inspired by the New York zoning law, even though this law was not in effect in Chicago. He designed a building that used the ideas of the zoning law but did so in a dramatic way. The building has a very solid base. It is anchored to the ground, and the base has large round arches. It is only about two or three stories tall so that it has a relationship to the pedestrian. There is a solid, rather horizontally massed base, and then on top of this dramatically vertical massing; the windows are in vertical bays and they are recessed between vertical piers that shoot right up the building. And then there is a series of cascading setbacks, each one marked by buttresses in a very dramatic manner so that your eye goes cascading up the building and through the setback until you reach a dramatic buttressed top to the building.

Saarinen took the idea of the New York zoning law and turned it into something dramatic and expressive. Almost immediately, New York architects were inspired by Saarinen's design. In 1922, the architect Arthur Loomis Harmon designed the Shelton Hotel on Lexington Avenue. And you can see how similar this is in its massing to Saarinen's Tribune design: it has a very solid base anchored to the ground, in this case a stone base with brick above; it is horizontally massed in a proportion that worked very well with the pedestrian on the street; and then you have soaring setbacks and strong verticals rising up above. And this building—like the Flatiron Building before it—captured the imagination of the public. This building was painted in a number of views by Georgia O'Keefe, who found this building to be one of the most dramatic buildings on the skyline of New York. She actually lived in the building and would go out and paint it because of its soaring massing and dramatic setbacks.

## The Barclay-Vesey Building

The first office building to be really influenced by Saarinen's design was begun in 1923, the year after the competition, and it is called the Barclay-Vesey Building because it is on Barclay and Vesey Streets. It was the headquarters for the New York Telephone Company. It is an entire square block in a section of the city that was not part of the grid of streets. So it is not a rectangular block, it is on an oddly shaped trapezoidal block. It was designed by the architectural firm of McKenzie, Voorhees & Gmelin. This firm had been designing telephone company buildings since the nineteenth century and although the firm had different names, it was actually the same firm. So when this commission came to the firm, it was no big deal. They gave it to an associate named Ralph Walker, a very talented young associate, to design this building. Walker was very influenced by Saarinen's design and was interested in how to turn the zoning law to his advantage, and how to design buildings with dramatic setback massings that would make the buildings an important and dynamic part of the skyline of New York.

And so Ralph Walker designs one of the great buildings of the 1920s. It has a solid horizontal base and then it has the soaring verticals with window bays between vertical piers just as on Saarinen's design. It has very dramatic setbacks marked by buttresses and sculpture until you reach the top with its limestone detailing and its sculptural work. This building was widely published and it captured the imagination of New Yorkers. It was also very influential in getting other designers to use these kinds of forms on the city's architecture. It was so successful that Ralph Walker became a partner in the firm, which became known as Voorhees, Gmelin & Walker. And Walker designed several other very important skyscrapers in the 1920s.

The top of the building, as you can see, is very dramatic. You were supposed to be able to enjoy this building and experience its drama from both close up and from far away. This building, which, when it was completed in 1926, was right on the waterfront, now cannot be seen from the water because of Battery Park City. It was in an area of relatively low-rise commercial buildings, so this building towered over all the nearby buildings in order to be visible both from the water and from the land. Its top would capture your attention, and on the lower floors the ornament was very complex so you could also enjoy this building from close up. Walker, like Sullivan before him, wanted to use an ornamental vocabulary that was not histori

cally based, and he actually invented his own style of ornament, which has this very complex foliate design in which are interspersed little babies and animal heads. And even in the center, above the door, there is a bell, the symbol of the telephone company.

## The Pyramid Look

Another building that uses the zoning law in a dramatic way—at about the same time as when the Barclay-Vesey Building was being built—is the Fred French Building, which was built also in the mid-1920s on Fifth Avenue north of Forty-second Street. The 1920s were a period when Midtown was rivaling Lower Manhattan as the commercial center of New York. Once Grand Central Terminal was completed in 1913, many offices began gravitating to the Grand Central area and to Fifth Avenue just north of Forty-second Street. And you get a whole series of spectacular new office buildings erected in the Grand Central area in the 1920s.

The Fred French Building was built by the Fred French Company, which was a building firm. They built many of the great skyscrapers of New York. Fred French was responsible for the construction of Tudor City, one of the great apartment house complexes of New York. This building held his offices but was mostly a speculative venture. He wanted a building that would be very visible. This building takes the zoning law and uses it in an expressive manner. It does not follow the letter of the law like the Heckscher Building does, but instead it puts all the setbacks at approximately the same area on the façade. So you have this series of setbacks that almost makes it look like an ancient Near Eastern ziggurat, or pyramid. It has these very dramatic setbacks and then a tower that rises up above them. The notion of using the zoning laws to create something that looked like an ancient Assyrian structure was something that people talked about in the 1920s, people realized that you could get this stepped pyramid look with the new zoning law. Fred French took this a step further. Rather than using traditional ornament like Gothic or Renaissance or classical, he actually used ancient Near Eastern ornament on this building to match the ziggurat form. Above the door there are winged figures, some are half human and half lion and there are a lot of stylized ancient Near Eastern forms.

This was during the period when there were a lot of archeological excavations in the Near East and this appealed to people. So it is an old kind of ornament, but it is a little bit more exotic than the ornament that had been used in the early twentieth century on skyscrapers.

## **Conclusion**

Why were these buildings suddenly getting bigger and who was actually occupying them? The answer is that there was this huge social change in the office world in the early twentieth century. The need for office workers was expanding at a spectacular rate as businesses like banking, insurance, and law firms hired more people, not only the partners at these firms but huge numbers of office workers too. Both men and women were being hired and so they needed more space.

In addition to the large businesses, there were many smaller support businesses that rented small offices in these speculative office buildings. But the number of these businesses expanded enormously. If business had not been expanding, this skyscraper development would never have occurred because these are money generators. The builders of these skyscrapers wanted to make a profit and they had to know that there was an office market out there to rent the space, because if there was no office market, what was the point of investing money in constructing such a large building if it was just going to remain vacant? So it was the expansion of the office market that went hand in hand with the expansion of the skyscraper.