The First Skyscraper

When was the skyscraper born? Which building has the right to be called the first skyscraper? These questions surfaced at a recent meeting in Chicago. Convened earlier this year to commemorate a hundred years of skyscraper construction, the Second Century of the Skyscraper conference may actually have come several years too late.

For decades, the nine-story Home Insurance Building in Chicago held the title. Completed in 1885, it was, many people claimed, the first building in which a skeleton of steel columns and beams rather than massive masonry walls keep the structure from collapsing. In this case, lighter masonry walls were "hung," almost like curtains, from the steel framework.

Engineer William LeBaron Jennings was credited with this innovation. It was a major step, as one historian puts it, in the conversion of buildings from stone-armored crustaceans to thin-skinned vertebrates.

This skeletal-frame, curtain-wall type of construction is found in practically all tall buildings now standing. In many cases, the building is little more than a framework covered with glass.

Courtesy: Council on Tall Buildings and Urban Habitat

Chicago's Home Insurance Building (1885-1931): The first skyscraper?

Architecture historians, however, are beginning to find that the Home Insurance Building's claim to fame is probably unjustified. Contemporary records show that there was nothing particularly noteworthy about the building when it was constructed, and later evidence reveals that a steel framework alone did not support the building. Heavy masonry walls still played an important role.

"In my opinion," says Gerald R. Larson, architecture professor at the University of Cincinnati, "the Home Insurance Building was not the first of a new type of building." It wasn't even Chicago's tallest building when it was finished, he says.

Then how did the Home Insurance Building gain its reputation? The answer may lie in a bitter patent dispute. In 1888, a Minneapolis architect named Leroy S. Buffington was granted a patent on the idea of building skeletal-frame tall buildings. He even proposed the construction of a 28-story "cloud-scraper"—a notion mocked by the architectural press of the time as impractical and ludicrous.

Nevertheless, Buffington brought the potential of the iron skeletal frame to the attention of the national architectural and building communities. Architects and engineers began using the idea, which in primitive form had been around for decades.

To break the patent and avoid paying royalties, powerful Chicago architects started a campaign to discredit Buffington and to prove that his ideas were not original. They settled on the Home Insurance Building as an example showing that iron frameworks had been used before the patent was granted.

"It was a campaign of 'the big lie,' " says Larson, and it succeeded in discrediting Buffington. Buffington later damaged his own cause by forging dates on his drawings to show that they predated 1885.

When the Home Insurance Building was demolished in 1931, a special committee of engineers studied how the building had been constructed. Looking at just a few of the building's features, the committee decided that a skeletal frame had been used.

This sanctified the building's title as the first skyscraper, and few questioned the designation. Almost every historical account that mentions skyscrapers cites this building. But the new evidence suggests that the panel members ignored features that would have weakened this claim.

Moreover, some historians are now moving away from the idea that only the type of construction determines whether a building qualifies as a skyscraper. The term "skyscraper" (referring to any tall building) was in use in Chicago before the Home Insurance Building had been conceived, says Larson. Unfortunately, many references still list 1889 articles in the Chicago Tribune and in ENGINEERING NEWS as the word's first appearances in print.

"In my view, we can no longer argue that the Home Insurance Building was the first skyscraper," says Carl W. Condit, now retired from Northwestern University in Evanston, Ill., and author of several books on Chicago architecture. "The claim rests on an unacceptably narrow idea of what constitutes a high-rise commercial building," he says.

Historians have tended to pay too much attention to structure and form and too little to factors like the essential roles of elevators and adequate plumbing, heating and lighting systems, says Condit. Without these utilities, tall buildings would be uninhabitable, and builders couldn't demand premium rents for penthouse views.

Most of the inventions needed for a livable tall building date back to the late 18th and early 19th centuries. They were improved and came together in the great building boom of the second half of the 19th century in cities like New York and Chicago. The invention and improvement of the elevator was one key element in this reaching for the sky.

"If there is a building in which all these technical factors—structural system, elevator, utilities—converge at the requisite level of maturity," argues Condit, "it's the Equitable Life Assurance Building in New York." Completed in 1870, the building rose 7½ stories, twice the height of its neighbors. To lighten the building and keep costs down, engineer George B. Post used a primitive type of skeletal frame in its construction. A great fire destroyed the building in 1912.

But the choice is controversial. "It depends entirely on the criteria that you choose—what you're looking at," says Tom Peters of Cornell University in Ithaca, N.Y. The importance of the Home Insurance Building, he says, has clearly been blown out of proportion. But pinpointing any other building would probably be just as doubtful. A complex evolutionary process involving many stages led to today's skyscrapers.

Condit agrees. "It really is very difficult to establish such a thing," he says. "I can remember when I was in grade school, we were taught that the Renaissance began in 1453 with the fall of Constantinople. All of a sudden, everybody woke up and said, 'Now we have a Renaissance.' History is just too complicated for that kind of assertion."

"The relative value we assign to various developments depends entirely on what preoccupies us at the moment," says Peters. "That is why history is continually being rewritten." He adds, "History is not just an amusing pastime when you have nothing else to do. It is actually an analytical tool to understand the problems that we have today."

The engineering curriculum has room for history, says Peters. "The basis of structural engineering has always been analysis, but that process is now being taken over by computer programs." That gap can be filled by teaching engineers to design holistically, he says. In this approach, an understanding of history is an important element.

Peters heads a committee for the Council on Tall Buildings and Urban Habitat, based at Lehigh University in Bethlehem, Pa. This committee is compiling a book outlining various aspects of the history of tall buildings. "It should show engineers who are attracted to it that a historical perspective is also a way of understanding current problems," he says.

The history of tall buildings is more than part of the history of technology. It includes the history of science, architecture, economics, planning, law and sociology. "It's a case study that transcends traditional boundaries between disciplines," says Peters. Such border crossings often lead to exciting new insights.

— Ivars Peterson

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