Architecture: That Midtown Tower Standing Naked in the Wind

Skyscraper Buffs See Antique Skeleton

By ADA LOUISE HUXTABLE

THERE is a new kind of curiosity in Times Square these days — a Ripley-believe-it-or-not for the technically-minded. Ever since the Times Tower was stripped of its masonry skin for the complete remodeling and refacing that is being carried out by its new owners, the Allied Chemical Corporation, its antique steel skeleton has been an object of special interest to skyscraper buffs.

For three months now, while the remodeling has proceeded, the skeleton has stood naked, but not shivering, in the wind. It hasn't shivered since 1904, when it went up, because it has an elaborate and quite archaic system of wind-bracing that makes it extremely rigid and sturdy. It is as fascinating to skyscraper-watchers who are interested in what makes a building stand up as a Bugatti Royale is to automobile fans.

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Allied's remodeling will replace everything except the steel skeleton, which will carry an all-new building. If this old, completely serviceable frame is a curiosity today, it was even more of a curiosity when it was built.

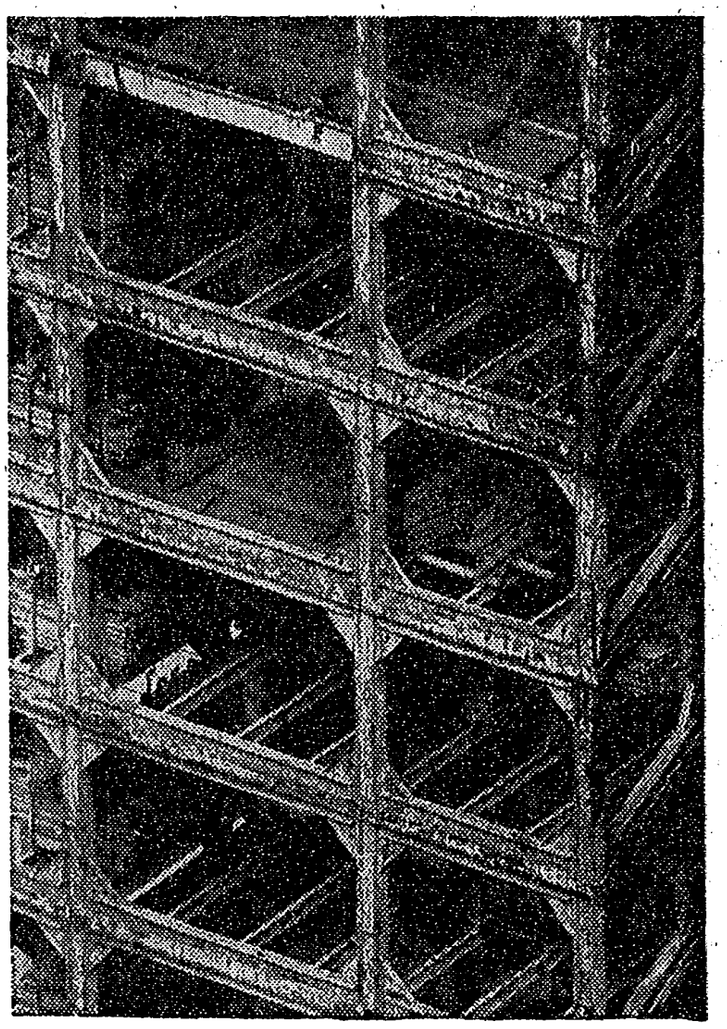
The year 1904 was an early date for skyscrapers, and the 22-story, 375-foot Times Tower was the tallest building in New York. It took the record away from the 20-story, 286-foot Flatiron Building of 1902, a similarly shaped structure on a similar site.

Architects had only been building the big ones since the mid-1880's, when Chicago engineers had developed the strong metal frame with its thin, nonsupporting curtain wall that made new heights possible.

Basically, the 1904 model and the 1964 model are the same. But appreciation of the difference in details makes the skyscraper connoisseur.

In both models, a cage of steel columns and beams, reinforced to resist winds, is covered with an outside skin — stone or brick then, more often glass or metal panels now. To say that they don't build them anymore the way they did in the old days, however, is literally true.

The Times Tower is a collector's item. It is full of vintage structural details. The Tower is radical and conservative at the same time. Its stodgy masonry exterior deliberately suggested the Giotto campanile in Florence while it acted as a "front" for revolutionary modern construction.



The New York Times

The Times Tower in Times Square, stripped of its masonry, reveals frame constructed in 1904. Triangular gusset plates connecting beams braced structure against the wind.

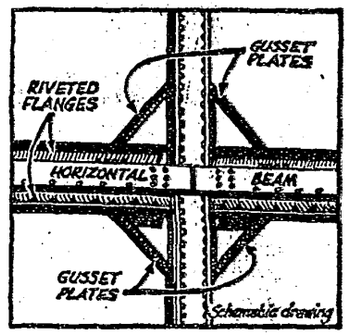
Fancy Steel Framing Elaborated by Rivets

Because the steel-framed skyscraper was relatively young — a 20-year-old postdeb — its designers were playing it safe, and so were the building codes. The steel was extra strong and the walls were extra thick; two feet of masonry had to be ripped down where today's codes require only a few inches.

The building is an odd-shape, on an odd-shaped piece of land; a trapezoid that is extremely narrow for its length, with a particularly narrow end. When the wind blows on its 120-foot long sides, there is no bulky depth behind to brace it. The stiffness of the steel must resist the push.

The solution is special stiffening, and the result, as they did it in 1904, is pretty fancy. Triangular steel plates at each end of the beam reinforce every intersection of beams and columns on the outside walls, to virtually turn the frame into a truss. Just to be sure, this "extra margin" is carried all around the building, not only on its critical short sides.

The fancy work is further elaborated by rivets, which give it a ruggedly embroidered effect. Today buildings are bolted or welded, quietly and neatly.



The New York Times March 20, 1964

Those old, 30-inch deep horizontal girders were put together with separate top and bottom pieces fastened to them; they would never be used now. Girders of this size are rolled in one piece.

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Bracing is done now by welding the beams to the columns at the top and bottom, rather than by adding those dramatic diagonal gussets. All the principles are the same, but techniques have advanced, codes have been revised, and the sense of adventure that made this such a progressive building at the beginning of the century has moved on to other forms of construction.

"We meet this kind of thing every day," says Frank Cardile, the engineer in charge of the job for the architects, Smith, Smith, Haines, Lundberg and Waehler, dismissing the archeological wonder matter-of-factly. "It was a fine, sturdy job, but we do it better now."