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Planning the World Trade Center: 40 Years Apart



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Jan Klerks is the Communications Manager of the Council on Tall Buildings and Urban Habitat. In this position he is responsible for creating knowledge on tall buildings by initiating and conducting research, editing books about this topic and by writing articles and reviews. Jan graduated from the Erasmus University of Rotterdam, the Netherlands, where he obtained master degrees in economics and sociology. For his final thesis Mr. Klerks did research on high-rise living in Rotterdam. Before moving to Chicago, Jan was self employed and commissioned to act as Executive Director of the Dutch Council on Tall Buildings, an active local sister organization to the CTBUH. In this position, he was responsible for organizing conferences, publishing newsletters, conducting study projects, supporting high-rise related activities and maintaining the professional network in the Netherlands.

“Without being disrespectful to the shocks of the events which caused it, the destruction of the former World Trade Center towers allowed for the opportunity to fix certain town planning problems which were caused by oversized ambitions.”

There was never much enthusiasm or praise for the former World Trade Center Towers. Immediately after the events of 9/11, some people suggested to rebuild the World Trade Center exactly as it was. Real estate mogul Donald Trump was one of them, with the additional thought of adding one extra floor for symbolic reasons. But the idea to rebuild the Twin Towers never stuck, in large part because the way we think about how to fit supertall buildings into an existing urban environment has changed considerably. Once completed the new World Trade Center, currently under construction, will grace New York well over 40 years since the completion of the original Twin Towers that soared over Lower Manhattan. A look at the planned development and the previous one allows for a unique comparison between the way supertall buildings are planned in an urban setting, and the changing contexts, motives and guiding principles that shape these developments.



Figure 1. Former World Trade Center load bearing wall © CTBUH Ramsey Collection

Thinking Big

Everything about the former World Trade Center was big. The two 110-story office towers were part of the scheme that architect Minoru Yamasaki designed to fit the commissioned 93 hectares (230 acres) of floor space onto the 6.5-hectare (16-acre) site. Together with four low-rise buildings, the towers were positioned around a plaza which was “to lend a human scale to the World Trade Center.”

Everything was big about the commissioning agency as well: the Port Authority of New York and New Jersey (PANYNJ), was a bi-state, semi-governmental agency that had previously built large scale projects such as the George Washington Bridge, the Lincoln Tunnel and Newark Airport. It was an agency not accustomed to doing anything small. The World Trade Center was its first entrée into the office building business.

Fittingly, doing things in a big way was a sign of the times. Developed in the 1960s and built in the early 1970s, this was the age when modernism was at its peak. In these days, the world looked more rational, efficient and spacious than ever before. The future was always bigger and brighter. Visions imagined a future world of smiling people who travelled swiftly in airborne cars and lived happily in shiny, supertall structures connected by skybridges. This was the age of the new, and modernism was the design of choice. Initially fueled by post-war optimism and prosperity, and aided by technological advancements, building big was a way to quickly deliver these promises to everyone. Society was to leave behind the cramped streets and unhealthy housing conditions that dominated the pre-war city once and for all.

This is the time in which superstructures emerged in the New York and Chicago cityscapes. It was an exciting time for structural engineers, as bigger plans called for technical innovations that had never been applied before.

The Twin Towers of the former World Trade Center was made possible through a bearing-wall construction; a structural system in which the exterior wall carries most of



Figure 2. Former World Trade Center lobby © Smurfy



Figure 3. Former World Trade Center skyline before 1980 © Graystone Society, National Iron & Steel Heritage Museum



Figure 4. Former World Trade Center skyline with the World Financial Centers © Wallcoo

...risk

“I think it is a bit condescending to think that the public are somehow unable to comprehend risk and weigh risk against reward. The world is littered with examples of accidents or disasters which did not prevent the public from carrying on as before.”

*CTBUH Advisory Group Member
Simon Lay, WSP UK*

the vertical weight (see Figure 1). Such a system doesn't allow for a lot of architectural frolicking, as each floor must be exactly the same size (see Figure 2). It also doesn't allow for wide panoramic views. But the design of the towers did fit the rational aesthetic that dictated Modernist principles of the time.

Over the top

The World Trade Center was a big project that wanted to be big. But as much as modernism is the art of creating space, overdoing it can result in emptiness, leaving people feeling dwarfed and diminished. The Twin Towers were considered a marvel of engineering, but it wasn't until the development of the World Financial Center in the 1980s, whose towers bridged the scale between the World Trade Center and the pre-war development in Lower Manhattan, that the Twin Towers' place

in the New York City skyline could be appreciated for its proportions (see Figures 3 and 4).

But the size of development also enlarged the impersonal character of the architecture, especially when experienced from street level. Critics and the public alike thought the whole project was just too big. This overpowering perception was also influenced by the fact that PANYNJ had razed thirteen square blocks of low-rise buildings in a neighborhood known as Radio Row to create space for the World Trade Center. Not only did the lively and bustling character of this small business district disappear, it also gave the PANYNJ the image of a brutal organization that had little interest in the environmental effects of what it was doing. This was also felt by the local real estate industry, as PANYNJ was a public agency acting like it was a private company.



Figure 5 The Twin Towers © Scott Murphy

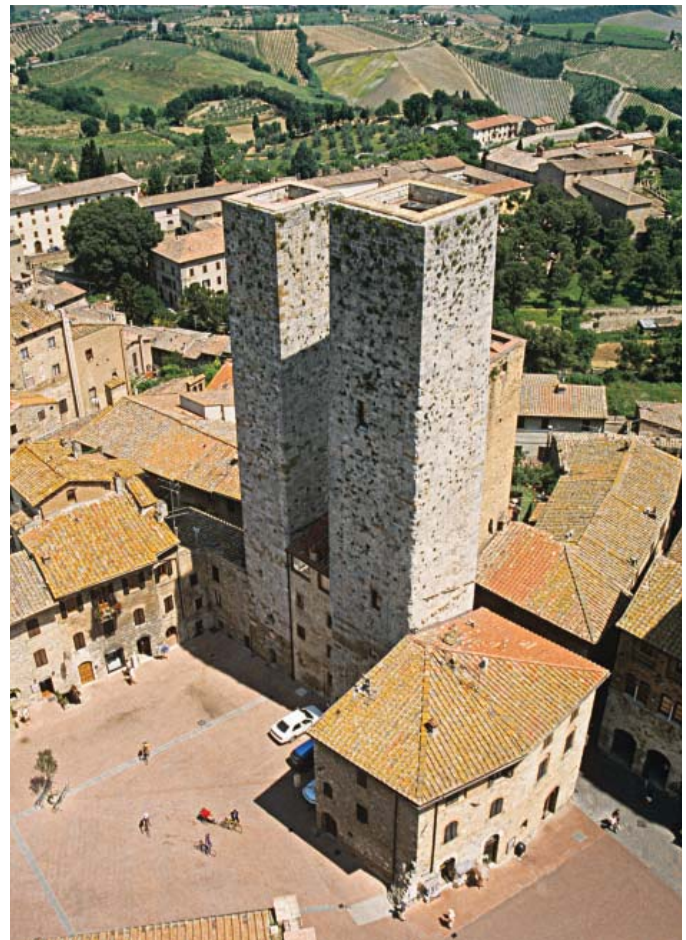


Figure 6. San Gimignano Plaza, Italy © Shutterstock

Supertalls

The former World Trade Center was both the zenith as well as one of the last of the dinosaurs of its age. Architecture was entering the age of post-modernism, and urban planners were starting to focus on the human scale. The 1973 oil crisis had strongly influenced the way people thought about progress and development, and the way to shape it. But it did not stop the world from building even taller skyscrapers. When the Twin Towers were completed in 1973 (see Figure 5), only three other towers – all located in the United States – stood over 300 meters, or roughly 1,000 feet tall. Today, there are 52 supertall buildings around the world, with over a hundred more currently under construction.

New supertall towers often stand as landmark within a planned development that comprises a mix of functions, project sizes and public places. Largely seen in Asian and Middle Eastern developments, some of the towers are ambitious in many ways, and serve to attract attention. But it is important to understand that in the art of urban planning, supertall towers need breathing room to allow for the infrastructure that feeds the tower, but also to be able to admire them in full view (see Figure 6). A tapered main profile, like One World Trade Center, not only benefits the structural system of the tower, but it also has the ability to soften the overwhelming impact a tall building can have at the ground level.

It is interesting to note that the development plan of the new World Trade Center has three (almost four) supertall towers situated around a green space. As such, it is not only a memorial site, but it also offers the kind of space supertall buildings need. Contrary to the stone plaza of the former World Trade Center, which served the same purpose, the green and sunlit space of the National September 11 Memorial site is much more likely to be a pleasant place to be in (see Figures 7 and 8). It is visually enclosed through its surrounding towers but, unlike the earlier plaza, it is better connected to the surrounding urban environment. Creating not just space, but also place is what attractive



Figure 7. Former World Trade Center Plaza © Andreas Ziegler



Figure 8. World Trade Center Memorial, Michael Arad/Peter Walker © Squared Design Lab

urban design is really about. The development of the Rockefeller complex in Midtown Manhattan illustrates that this is not a recent insight.

Without being disrespectful to the shocks of the events which caused it, the destruction of the former World Trade Center allowed for the opportunity to fix certain town planning problems which were caused by oversized ambitions. Breaking up the envelope of the development into large, but not overpowering, towers, ambitious architecture, sustainable practices, the partial restoration of

the street grid, and meaningful and attractive public space, show that when it comes to making a supertall buildings fit into the existing urban environment, quite a number of insightful lessons have been learned since the former World Trade Center was built. ■