



CTBUH Research Paper

ctbuh.org/papers

Title: **One Vanderbilt: Approving Midtown's Tallest Office Building**

Author: James von Klemperer, President, Kohn Pedersen Fox Associates

Subjects: Architectural/Design
Building Case Study
Urban Infrastructure/Transport

Keywords: Connectivity
Supertall
Zoning

Publication Date: 2015

Original Publication: Global Interchanges: Resurgence of the Skyscraper City

Paper Type:

1. Book chapter/Part chapter
2. Journal paper
3. **Conference proceeding**
4. Unpublished conference paper
5. Magazine article
6. Unpublished

© Council on Tall Buildings and Urban Habitat / James von Klemperer

One Vanderbilt: Approving Midtown's Tallest Office Building



James von Klemperer

President

Kohn Pedersen Fox Associates,
New York City, USA

James received a Bachelor of Architecture from Trinity College, Cambridge and a Master of Architecture from Princeton University. He has lectured at Harvard University, Smith College, and Miami University as well as at congresses in Jakarta and Mexico City. He has served on architecture juries at Harvard, Princeton, and Yale Universities. He serves on the Zoning Board of Appeals in Darien, Connecticut, and is a registered architect in the state of New York.

Abstract

This paper traces the development of One Vanderbilt from early design through the complex city approvals process that is ultimately allowing for its realization. From the onset, the building was not only charged with creating state-of-the-art Class A office space in a part of the city burdened by its outdated building stock, but also with a civic duty to strengthen Manhattan's Midtown core, and particularly, the Grand Central District. While sites elsewhere in the city have mostly been developed through as-of-right zoning, adding density in such a central and historically significant location necessitated a special permit obtained through a discretionary public review process. The resultant Vanderbilt Corridor rezoning plan outlined a framework to spur private commercial development by financing notoriously underfunded public improvements. As the anchor of this new development, One Vanderbilt will provide iconic architecture with multi-level connectivity to the landmarked Grand Central Terminal transit hub.

Keywords: Connectivity, Density, Office, Transit-Hub, vertical urbanism, Zoning

In May of 2015, the One Vanderbilt tower received a ULURP approval from New York City Council, three years after it was first proposed in the public arena. The vote was 49-0. A similar version of this design, for Midtown Manhattan's tallest office building, had been rejected 18 months before, the subject of intense debate about urban density, architectural context, landmarks preservation, and the role of the tall building in connecting to public transport. What had changed in the intervening time, and why did public support swing so markedly 180 degrees? If the political environment, though shifting, had not changed radically, and the building design under consideration had remained substantially the same, how did the public debate change? Why was the building welcomed in the press as a positive event in shaping New York? What, in the program strategy and design configuration of this tall building justified this overwhelming endorsement? The answer lies in the argument, which gathered momentum over time, that this substantial vehicle of private commercial investment is actually an instrument that will advance the public good. A marriage of private and public interests had been made.

Background

New York, which along with Chicago, gave birth to the skyscraper well over a century ago, has long been a fertile ground for the evolution of the tall building type. Favorable conditions including commercial intensity, international free market focus, spatial limitations of island geography, ready supply of innovative engineering talent, and solid bedrock all encouraged vertical growth. The grid plan of much of Manhattan supported the business-like development of the tall building as a reliable commodity. The relative reliability and transparency of enforceable law, in particular the major zoning codes of 1916 and 1961 supported a logical process for such real estate development. The history of the tall building in New York is a topic of endless fascination, reflecting the many vicissitudes and trends of the city life over the past 100 years.

The current New York environment presents a number of interesting factors that are shaping the debate about the tall building. A new wave of foreign investment, particularly in the residential sector, is encouraging higher property values, which in turn justifies more and more exotic plans and structural solutions. In particular, large Chinese investment and development companies are showing a huge appetite for both new and existing structures. The practices of designing and constructing tall buildings are alive and well. At the same time, there is a growing sense that perhaps in some sense the skyline should be curated. A distinctive city profile that was a historical resultant of circumstance, a sort of architectural bar chart of market forces, might in the future come under more active public scrutiny. Certainly the recent spate of slender residential towers approaching Central Park have revived debates about shadows originally sparked by the Columbus Circle proposals of the 1980's. New Yorkers are now as likely to regard new tall building initiatives with suspicion as to celebrate them.

It seems more than ever that the limits to vertical growth are defined not only by the economics of the balance sheet, or by the structural limitations of materials, but increasingly by the inventive interpretation and adaptation of zoning laws, public opinion of community groups and other non-governmental bodies, and debates about the effects of such large buildings on the public realm. Among such areas of concern, environmental review procedures are generally becoming more involved. Naturally, as the city matures, so does the complex process that governs its growth. Though many sites are being developed as-of-right, the increasing cases of special permits invite a more discretionary process of regulation and deal making. Though New York does not yet approach the “nothing-allowed-unless-consented” practice of much of London and other older cities, more and more cases are beginning to resemble that model.

In this context, it is critical that debates about the public good focus on those areas of the city are particularly critical to the well-being of the greatest number of New Yorkers. No sites are more important than the transport hubs that link New York’s sub centers to each other, and to the greater urban agglomeration that includes the suburbs. The inevitable finding of many discussions about the sustainability of cities is that mixed use density, properly planned and built, is a key contributor to urban efficiency. More and more, transit hubs are being seen as mixed use environments, where direct links between trains and offices, subways and retail are being strengthened. In this sense, the links between horizontal and vertical, between passenger platforms and high rise elevator cores can be planned together as part of a larger organic system. The notable examples of Hong Kong’s IFC and ICC, or Berlin’s central rail station give New Yorkers a glimpse into their own future. The One Vanderbilt project, comprising both a tall office building and a major addition to the transit hub of Grand Central, is based on such synergies.

Site

No significant urban building can be considered completely on its own; it’s impact on its surroundings and conversely the influence of the surroundings on a particular

site makes it part of a larger equation. This building in particular, is born of its context. The site is a full, almost square block (200’ x 215’), at the heart of midtown Manhattan. Its location at the intersection of Madison Avenue and 42nd Street puts it in the middle of the middle of New York City (see Figure 1). More importantly, this one acre plot sits over the loop track of existing commuter train tracks, across from Grand Central Terminal, adjacent to subway platforms, and perhaps most significantly above the future platforms of the East Side Access. This last project will almost double the peak load of rail passengers coming through the terminal, adding another estimated 94,000 people to the existing approximately 100,000 daily arrivals (see Figure 7).

Early Design

At the outset of the design process, this connection to public transport was recognized to be one of the key attributes of the proposed tall building. The client, SL Green, is the largest landlord of commercial real estate in New York. Much of their portfolio, which is publicly owned as real estate investment trust, sits in and around this station district (see Figure 4). Led by CEO Marc Holliday, SL Green assembled the land from four sub-lots over more than a decade. Before any public engagement, the client had KPF produce design studies, launched a two month competition including entries from KPF, Pei Cobb Freed, and SOM, and then awarded the project to KPF. During this process Hines was retained as Development



Figure 1. Context Map; One Vanderbilt is bounded by Vanderbilt Avenue and Madison Avenue, and between East 42nd and East 43rd Streets (Source: Kohn Pedersen Fox Associates)

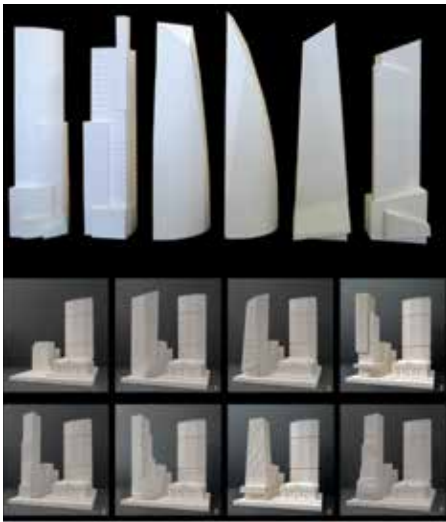


Figure 2. Massing Studies, early exploration (Source: Kohn Pedersen Fox Associates)

Adviser, given their depth of experience in building towers in New York and around the world. SL Green had never undertaken a single ground up large-scale building development. As in many competition formats, the process of design resembled a continuum, producing ideas generated before, during, and after a formal process with a defined brief. A series of alternate ideas covering a range of plan solutions, massing strategies, and configurations of the public realm were compared, analyzed, and evaluated. The ultimate scheme, which is planned for completion in 2020, emerged clearly and strongly to fit the brief. The distinguishing

features of the design were identified as follows: orthogonal plan, tapered section, 4-part massing, point tower top, and a “lifted” base. The rectangular plan, though seemingly obvious, was not the prevailing solution amongst the early study and competition entries. The dominant directional relationship to Grand Central, and the large “urban room” of space that results from the low scale of that landmark, at first suggested angled, curved, and otherwise more unusually shaped designs (see Figure 2). The squared edges of the eventual solution fit well with the Manhattan grid context, including the Lincoln building across the street to the south, the street wall of Madison Avenue, and the body of the most significant tower in the neighborhood, the Chrysler building one block away to the east.

Program

The business proposition that shaped the program and hence the building was to create a leasing machine for class A+ office tenants. Since the building had to resemble a leasing diagram, the tapered section allowed the succession of floor plates to match the full variety of tenant typologies. Base floors of 40,000 ft² are suited to trading, news room, or other functions with long span needs; middle floors of 30,000 ft² to 20,000 ft² work well for a variety of corporate tenants; and upper floors of 20,000 ft² to 15,000 ft² are created to serve boutique firms including hedge

funds and flagship representational offices (see Figure 3). The very top and base of the building contain the highest revenue spaces: observation deck and street retail, respectively.

City Planning process

Though the basic concept design was conceived in relative isolation vis-a-vis the government approval process, the brief assumed that the tower would require a special permit, exceeding both the zoning envelope and the standard FAR allotted to the site. The standard as-of-right FAR of 15 was supplemented by a landmarks transfer from the nearby Bowery Savings Bank and various improvement bonuses to achieve an FAR of 20.7. Yet, the economic Performa of a new construction on this site necessitated an FAR 30 building. That meant that the remaining FAR of 9.3, amounting to over 400,000 ft², had to be secured through other means.

Simultaneously, Mayor Bloomberg’s administration had launched a program to overhaul the zoning of East Midtown through text changes to the law. This agenda was to run in parallel with the early design stages of One Vanderbilt and the FAR entitlements mentioned above. The East Midtown effort was led by Department of a City Planning Director Amanda Burden, who strongly championed a vision of selective densification

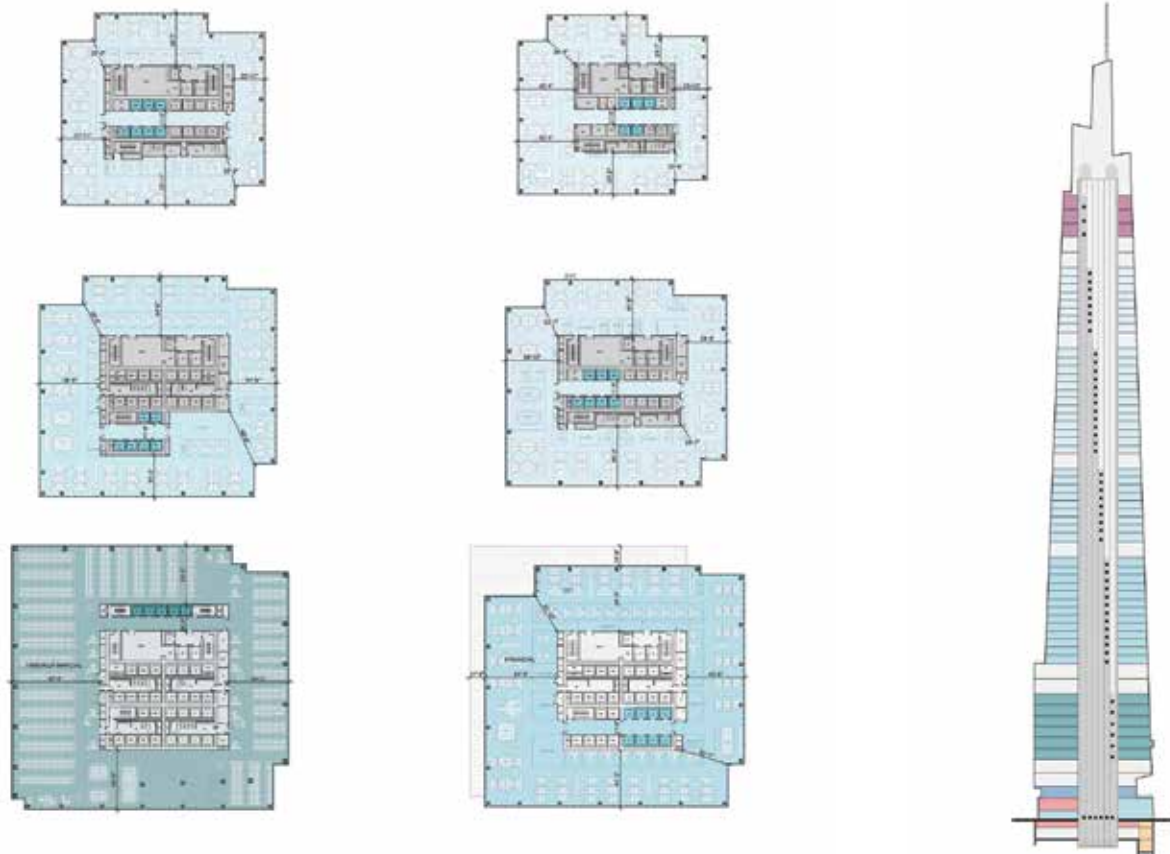


Figure 3. Plan Matrix, variety of floor plates (Source: Kohn Pedersen Fox Associates)

of an almost 50 block area, stretching from 42nd Street to 57th Street. The premise of this proposal was that the building stock of this area, consisting mostly of tall office buildings, is aging in a way that compromises the environmental sustainability and the economic competitiveness of the district. If more area could be added in specific locations, some of the older buildings would be replaced or renovated. In addition, the proposed text explained, adding density to one of New York's two great transit hubs makes sense in terms of co-locating office jobs with train access. Strong examples of such transit oriented density recently achieved in other cities such as Hong Kong, London and Tokyo were invoked to support this argument (see Figure 4).

First Entitlement Process

Amanda Burden also proposed that owners wishing to obtain the extra FAR allowed by the law be required to include some key special features in their buildings: the creation of new public space, an enhanced public realm, and "superior architecture". SL Green, Hines, and KPF engaged with City Planning in late 2012 in a series of meetings to explore these conditions. The spirit of these meetings was highly collaborative, suggesting an early model for a successful public/private collaboration in city building.

Though the larger East Midtown Zoning proposal failed to pass in October 2013, as Bloomberg's third and final term as Mayor was drawing to a close, these special features survived in the design as later approved, so they are worth mentioning. First, a public space was to be created within the building. This was drawn as a public room, situated on the south along 42nd Street.

Second, a public place was to be established where Vanderbilt Avenue now runs between 42nd and 43rd Streets. Though this land does not belong to SL Green, this feature became, in the later version of the design, the responsibility of SL Green to finance and build. Hence, the public open space became identified with an essential benefit derived from erecting the tall tower.

The quality of open space was further protected by the configuration of the tower section. Extensive analyses were made using parametric methods to understand how a maximum degree of insolation (i.e. exposure to sky rather than to direct sunlight) could be maintained, or even improved, over existing conditions (see Figure 5). These

Introduction East Midtown

- 70 million sf office space
- 250,000 jobs
- NYC financial core
- Regional Transit Hub
- Unparalleled investment in infrastructure



Special Permit

- GET**
- Additional 6 FAR
- GIVE**
- Contribute to DIF / TDR's Enhanced Public Space & Pedestrian Network
 - "Superior Design"

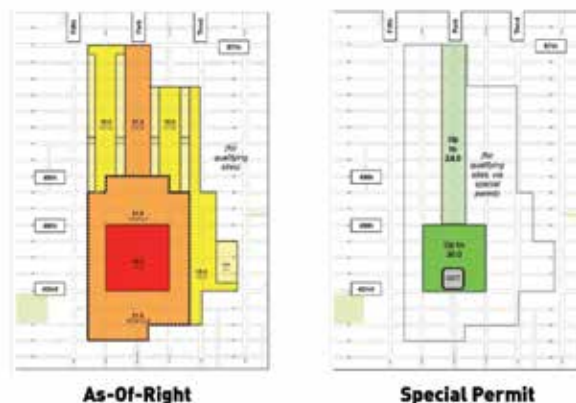


Figure 4. East Midtown Rezoning, department of City Planning proposal to rezone East Midtown, a 73-block area surrounding Grand Central Terminal. The purpose of the rezoning was to ensure the area's future as a world-class business district and major job generator for New York City. The plan was withdrawn by Mayor Bloomberg in November 2013 (Source: Kohn Pedersen Fox Associates)

efforts helped to show that the proposed design, while not as of right, supported the goals of zoning envelopes referred to as Waldrum diagrams. This helped to reassure the city planners that density can be increased without a loss of the quality of urban experience.

Third, City Planning required that the proposed building rise to the quality of "superior design". This term, while initially somewhat vague, became identified with the slender form of the tapered tower, the crystalline character of the top of the building, and the dynamic transparency of the building base, which appears in places to hover above the street.

Second Entitlement Process

When the City resurrected the program of advancing East Midtown Zoning, albeit in a much scaled back version concerning itself specifically with the Vanderbilt corridor, the new De Blasio administration saw the One Vanderbilt

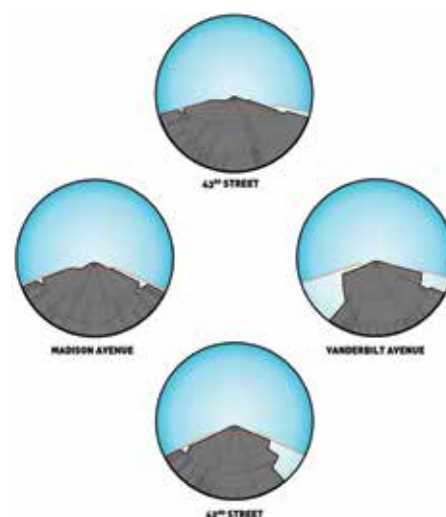


Figure 5. Sky Exposure, Degree of insolation (i.e. exposure to sky rather than to direct sunlight) (Source: Kohn Pedersen Fox Associates)

project as a positive addition to their agenda. The new chief of City Planning, Carl Weisbrod, and the director of Manhattan planning Edith Hsu-Chen, who had worked closely with the SL Green development team under the previous administration, saw value in these



Figure 6. Transit Hall, a triple high publically accessible Transit Hall will offer a direct connection between One Vanderbilt and the Grand Central main concourse (Source: Kohn Pedersen Fox Associates)

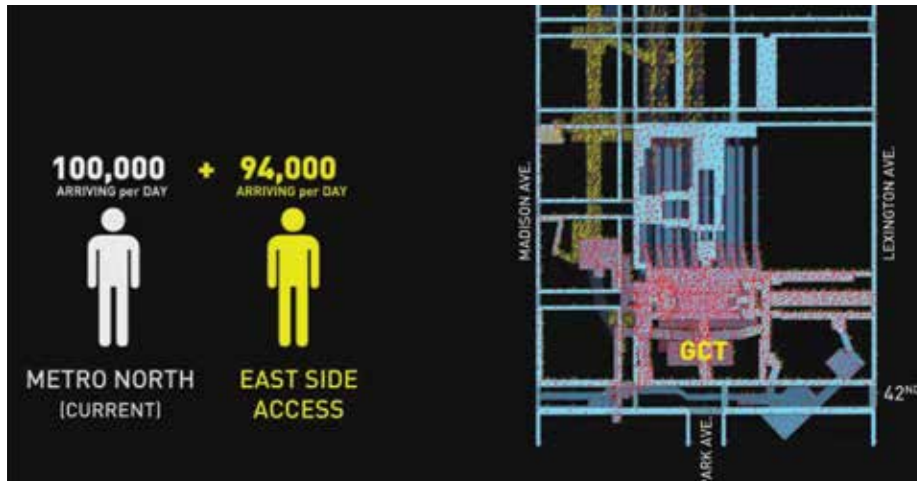


Figure 7. Projected Transit with East Side Access, East Side Access will bring an estimated 94,000 daily riders to the Grand Central District. As part of the ULUPR application, transit projections were simulated and explained in an animated video (Source: Kohn Pedersen Fox Associates)

design features. The actual mechanism for the granting of 30 FAR did change, to require that the owner make a payment of \$220 million to pay for the building of Vanderbilt Place, along with a series of improvements to the platforms and stairs of the 4, 5, 6 and Shuttle lines connected at Grand Central.

Connections to Transit

Perhaps the most significant part of the public-private process in shaping the design of this high rise building is the interaction with transport authorities, specifically the MTA. In the second phase of the entitlement process, the public room shifted to the northeast corner of the building, and gained a stair connecting it to Grand Central. This space of approximately 4,000 ft² was dubbed “Grand

Central West” due to its fully public nature and accessibility. Below grade connections to East Side Access thread their way through the project, creating easements for the MTA through SL Green’s property (see Figure 6). Extensive commuter flow diagrams were made to ensure that escalators, stairs, and corridors will be able to handle the huge loads of daily foot traffic (see Figure 7).

Landmark Sensitives

One of the main objections to the project that arose in the arena of public debate during the entitlement process had to do with the architectural relationship of the proposed building to neighboring Grand Central Terminal. Though such objections were eventually overcome, the scrutiny

and criticism that were brought to the discussion were eventually responsible for increasing the quality of the architecture. According to a legal agreement established earlier to transfer air rights from the Bowery Savings Bank, it was determined that the One Vanderbilt site needed to establish a “Harmonious Relationship” the terminal. This terminology was discussed with both with both governmental and non-governmental bodies including the Landmarks Commission, Landmarks Conservancy, Municipal Arts Society, the AIA, and several Community Boards.

In the discussion that ensued the architect argued that Harmony is not achieved through repetition but rather through complementary differentiation. In music, a simple harmony is created by the juxtaposition of two contrasting notes. Thus, it was proposed the solid granite and limestone Roman box of Grand Central be balanced with a neighboring base of lightness and transparency. The concept of One Vanderbilt as a high-rise which is lifted off the ground is meant to expose more views of Grand Central as seen from the west. The diagonally inflected and cantilevered soffits of the new building gesture to the Warren and Wetmore building in a generous and inclusive way (see Figure 8).

During the approval process, Community Board 5 met several times in KPF’s offices in workshop sessions, to find ways to satisfy the requests of those concerned with the landmark issues. Changes to the design emerged from this process. Specifically, bronze screens were added to the office lobby wall, with the belief that this decorative relief would recall some of the metal subdivisions in the finest ration of the Terminal’s arched openings. Also, changes were made to the plan of the interior public room, now called the transit hall, in response to the Community Board’s concern that the space might encourage loiterers. Further quantitative analysis was made to optimize the main flow of foot traffic from East Side

Access platforms, moving towards an exit on 42nd Street.

Architectural Motifs

The diagonal geometries mentioned above are played out in many scales and levels of the tower architecture. The tower top is composed of four volumes, each of which finishes against the sky with an angular profile. The glass walls of these volumes are accented by diagonal bracing elements. At the base, the plan of the ground floor angles back as it travels from west to east in order to ease the flow of crowds approaching the Terminal. As mentioned above, the soffits above the lobby and consequently the south elevation are given about a 12-degree rake. The “scissor” sloping of these prominent elements echoes one of the most important and original aspects of the terminal as it was created 100 years ago: the bold ramps that lead, for example, from the concourse to Vanderbilt Hall, or from the Oyster Bar to the “Kitty Kelly” ramp.

Façade

In the body of the building, the typical wall displays another scale of the diagonal theme. Its spandrels are clad with concave terracotta ribs. In addition to giving the building a directional grain, this also fulfills a goal that was clear from the beginning of the project: that this building do its best to create exterior surfaces of texture, scale, and depth. What remains of the neighborhood once conceived of as “Terminal City” depends for its cohesiveness on some degree of consistency of detailed masonry. The brick decorations of the Bowery Savings Bank, the stamped metal chevrons of the Chrysler building, and the existing façades of Grand Central itself are good cases in point. The One Vanderbilt design is committed to support that agenda. The “New York” qualities and characteristics of the design are strong, blending a past vision of a railroad era district, with the new goals of economic sustainability and densification.

Building Top

The top of the One Vanderbilt building, as designed and permitted, fulfills many of the larger architectural, commercial,



Figure 8. Existing (left) Proposed (right), currently, buildings on site obstruct a view to Grand Central Terminal. One Vanderbilt reveals the Grand Central cornice and corner for the first time in over 100 years. This feat is achieved through a sloped massing, angled cuts at the base, and a highly transparent glass atrium space (Source: Kohn Pedersen Fox Associates)

and public agendas of the project. The architectural design is based on a concept of four overlapping tapered volumes. The re-entrant corners of the plan of this “multi-form” emerge at the building top, and individual volumes are expressed more independently. The themes of diagonal geometries, which are played out at the building base, and which echo the slopes of the internal ramps within Grand Central Terminal, emerge in full flower. Each volume terminates in a sloped roof. Inclined planes play against each other in a contrapuntal manner. Initial design sketches referenced natural forms where such repetitive elements alternate in diminishing scale, as in a bird-of-paradise flower or a sheaf of wheat. Structural bracing placed just within the exterior envelope reiterates these visual themes.

The commercial value of the building top will be considerable. Whether it will be used as a publicly accessible observation deck has yet to be determined, but it has been planned with elevator and egress capacity to function as such. Elevators connect spaces at the top directly with entry lobbies at the Grand Central concourse level, as well as at a mezzanine level. Spaces within the building crown are planned to accommodate dining, celebrations, and other activities that could be valued by

office tenants as well as outside users. Though the market will determine the short term use, in the long term, this part of the building will add a significant boost to the overall economic proposition.

The public benefit of the top element of the tower was discussed early on with the Department of City Planning. Although no commitments were made about public access, the suggestion of such a use had a powerful effect on the reception of the building. It has been said in other cities, in London for example, that the top of town should not be occupied by the private space of one apartment owner. Instead, a building top of such a vertical landmark carries a sort of public responsibility. During initial discussions with the then Chair of the City Planning Department, Amanda Burden, an agreement was reached that called for “superior design”, especially of this part of the building. Its slenderness, crystalline transparency, and termination in a vertical marker, all contributed to an agreement about its appropriateness on the skyline. A consensus between developer, planner, and architect emerged that formed the basis of a public private accord. Hundreds of millions of dollars of construction, rent, and payments towards the improvement of the transit hub were in effect brokered by these unquantifiable aspects of visual design.