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Bringing an Icon into the Future: Willis Tower



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Abstract

Few buildings are as iconic as Willis Tower. Generations of Chicagoans have a collective memory of this building playing a role in their entire lives. Chicagoans mark time with Willis Tower, but time has caught up with this aging supertall. The way the building engages with the city and its occupants needed a fresh approach. Understanding how Willis is being reimaged by new owners is crucial to the success of old and new supertall towers around the globe. This paper examines the efforts of the design team as it created a new path forward for Willis Tower. A new city-block-sized podium structure and substantial infrastructure improvements are part of this work (see Figure 1), and the results have a dramatic effect on a piece of civic history while transforming the building into a destination for tenants and visitors alike. The path to ensuring a vital urban center, which includes legacy tall buildings from the late mid-century modern movement, is explored through this project, and is applicable in many cities.

Keywords: Future, Icon, Renovation, Supertall

History and Design Context

"We cannot explain every spatial move, except that they must exist for the poetry to exist, and for that purpose does the artist in us live."

—Bruce Graham (1989)

Willis Tower began life as the Sears Tower, at a time when the downtown Chicago Loop area had been in a state of steady decline for many years. In 1974, when the Sears Tower was completed, then-Mayor Richard J. Daley was at the height of his power, having been first elected in 1955. The years leading up to 1974 saw the dwindling of manufacturing as an economic base for the city, and the mayor and city leaders were eager to see professional and financial organizations become an engine for city growth. Zoning restrictions for the Loop were being eased, including constraints on building height (Pridmore 2002).

Sears, Roebuck & Company was once the largest retailer in the world. As The New York Times (2018) describes it, "Sears became the Amazon of its day, because its co-founder Richard Warren Sears harnessed two great networks to serve his enterprise—the railroads and the United States Postal Service." Sears was at its apex in 1969 when Chairman Gordon Metcalf embarked on an ambitious plan to move thousands of employees from its North Lawndale company complex into one large building in the Chicago Loop. Its West Side complex was a massive 40-acre (16-hectare) site, with mail-order processing facilities, a merchandise development laboratory, and corporate office space that had been retrofitted into warehouse structures, due to a lack of other suitable buildings. Sears leadership was bearing witness to the overall decline of the North Lawndale neighborhood, due to unfavorable economic and opportunity conditions. The result of Sears' view from its front door would influence not only their decision to move locations, but how their new headquarters would interface with the urban context of 1970s Chicago.

Sears desired modern, functional office space, and intended to engage in the growing trend of signature downtown buildings for corporations. Other Chicago examples include the John Hancock Center (now 875 North Michigan) and the Standard Oil



Figure 1. Aerial view of Catalog, the new retail podium of the Willis Tower, from the southwest. Image courtesy of Blackstone

Building (now Aon Center) (Pridmore 2002). The manner in which these buildings engaged the street was rooted in mid-to-late-20th-century modernity's approach to human scale and notions of the individual's place in society. Grade changes were often handled with elevated plinths and stone-clad walls at street level. Outdoor spaces were mostly hardscape with places to rest on the periphery. Monumental sculptural works of art (such as Picasso, Calder, Moore) literally took center stage. In the case of the Sears Tower, the Calder was located inside the lobby. A tension thus existed between how intensively these buildings focused inwards, as opposed to the neighboring city environment.

The design of the Sears Tower was a historic partnership at SOM between architect Bruce Graham and structural engineer Fazlur Kahn. As a client, Sears wanted both economy and modern expression. There was already a nearby precedent from which to draw: the dramatic tapering and exposed structural grid of the recently-completed John Hancock Center gave way to the structural concept of the bundled tube. This was modern structural expression on a massive scale; strong, yet lean.

In a 1975 New York Times review, Ada Louise Huxtable praised the building in an overall sense, noting, "Sears Tower is there, all right, presiding over the city with an almost nonchalant understatement," (Huxtable 1975). She gave less praise to the podium area: "The building is not as successful outside at ground level, with a conventional plaza and a dead rear end, and the philosophical and functional questions about buildings on this scale remain unanswered."

Blair Kamin stated in the Chicago Tribune in 1993, "In many ways, the old Sears was one of the coldest and fortress-like towers ever constructed - from some vantage points, a soaring presence on the skyline; from all sides, a dud at street level. Its curtain walls of black aluminum and bronze-tinted glass slammed into the ground without a hint of human scale. Its steeply pitched, granite-paved plaza repulsed all but the most determined lunchtime brownbaggers" (Kamin 1993).

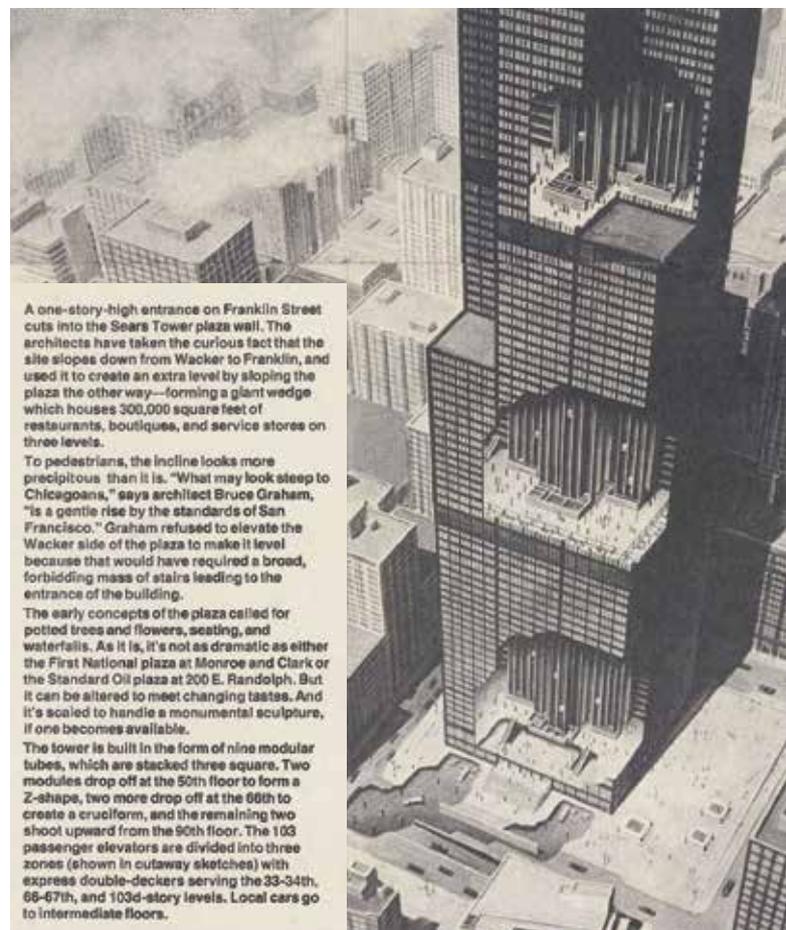


Figure 2. An excerpt from the Sears Tower Almanac explains the thinking behind the original "giant wedge" slab at the base of the tower. © Educational Fair Use

The original podium design for the Sears Tower engaged the city with a public connection on Wacker Drive (on the west side of the site), which provided access to the elevated plinth (see Figure 2). The main set of entry stairs was centered on the building's 75-foot (23-meter) "super bay," with access to the plaza that surrounded the building on either side of the

stairs. The other three sides of the site (along Adams, Franklin and Jackson), however, seemed to turn their backs on the city, with high, stone-clad walls at grade. This was the result of a seven-foot (two-meter) grade change from Wacker Drive down to Franklin Street. While this urban gesture had practical and efficient means for addressing site characteristics, it would be subject to several major revisions over the course of time.

While most of the façade remains virtually unchanged, the base of the Willis Tower has undergone significant revisions over the years, as its owners have sought to more fully embrace the surrounding neighborhood and city. In 1985, SOM, under the design leadership of Bruce Graham, added the “Lunchbox” barrel-vaulted lobby extension, and a new street level entrance on Jackson Boulevard. The ideas of an enhanced entry sequence off Wacker Drive and a direct connection to Jackson Boulevard were steps in the right direction, but the long-term result of these modifications led to mixed results. The Postmodern aesthetic applied to the lobby extension seemed at odds with the late-Modern minimalism of the original tower, and the lower-level retail space was a confusing experience.

A 1993 renovation, designed by DeStefano & Partners, fared no better. This project aimed to bridge the scale gap at the base of the building with several grand canopies, but there were aesthetic inconsistencies, especially with the liberal use of burnished stainless steel in a swirl pattern throughout the project, which contrasted with the black, anodized aluminum cladding original to the building.

Resurrecting a Giant

In 2015, Blackstone Group purchased Willis Tower, with a goal of taking this signature property into the future with substantial building and infrastructure upgrades. Gensler was engaged to study and research possibilities for how this iconic building could meet the needs of current and future tenants and the surrounding urban environment.

The design and ownership team focused on four drivers for success:

- Porosity and transparency
- The separation and mixing of uses
- The active streetscape
- The “Outdoor City”

The goal was to create an inviting and scale-appropriate destination for the building tenants and city at large. The result had to be a new icon that merged the legacy Sears/Willis iconography with both old and new Chicago building iconography.

The design team was conscious of maintaining a people-centric planning approach and considered important questions, such as how people move in the city, and how the new podium building would be part of their daily routines. We also explored technical solutions such as stack-effect mitigation, façade detailing and the balance between historic preservation and the need for a new direction for the building. As we reshape iconic skyscrapers to meet the way people live and work today, we also learn about our society’s values.

Porosity and Transparency

An important lesson from previous street-level versions of Willis Tower was the need for a porous and transparent grade-level façade (see Figure 3). The design team felt this approach would help activate the streetscape, particularly at night, when the building could become a beacon of sorts, letting people know that there are food and beverage businesses open after the workday ends. This was important to the ownership, which looked to extend the time that the building would be generating revenue and creating a living, urban streetscape.

Transparency extends to views of the iconic tower itself. The amount of programmatic square footage required for

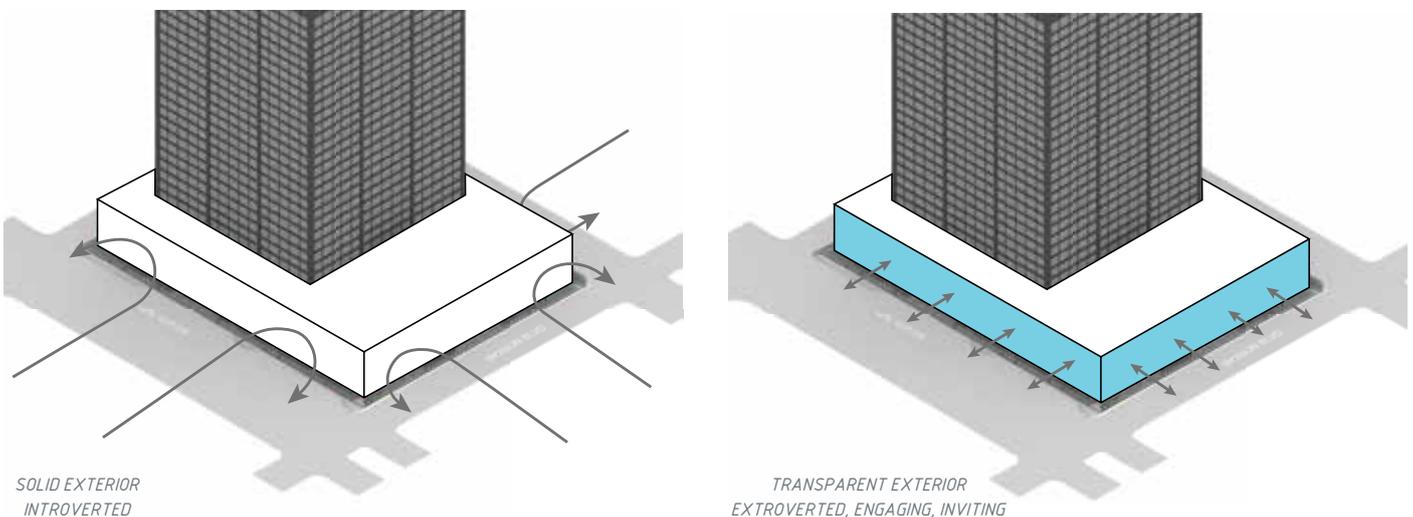


Figure 3. The concept of the new retail podium is to be “porous and transparent.” © Chris Smith and Gensler

the project, and the footprint this would occupy on the site, created a challenge for the goal of exposing views of the tower. The team made two major design moves to provide a visual connection for building occupants and visitors. The first is a 75-by-30-foot (23-by-9-meter) skylight at the Wacker lobby (see Figure 4). This skylight joins to the tower itself and affords views straight up to the top. It also greets tenants and visitors as they enter the building and provides a visual connection to their destinations. The other skylight occurs over the Jackson atrium, known as Catalog (see Figure 5). This is a custom, double-curved 75-foot (23-meter)-square skylight, which frames a spectacular view of the tower, serving to remind visitors of the iconic power of the original building.

The Separation and Mixing of Uses

The program for the project involved a total renovation of three below-grade floors, constructing three new above-grade floors, plus a new fourth-floor outdoor roof deck. This is in addition

to a total renovation of the tower lobbies and all associated infrastructure for the building and site conditions. Central to the new program is a five-story atrium space called Catalog, named as a historical nod to Sears Roebuck’s iconic printed catalog. Catalog serves as a central mixing zone where tourists, residents and office workers can gather, eat and relax. Directly off Catalog are food and retail tenants, with the outermost ring of food and retail spaces having direct access to the street. The third floor is set up for meeting-room spaces. Many of the upper-level tenants have direct access to the 30,000-square-foot (2,787-square-meter) outdoor deck and garden. To add to the challenge, all this work had to occur without disrupting one of the largest real-estate operations in the country.

For the new building program and renovated lobby areas, an early focus for the design team became finding the “sweet spot” for the needs of the three main building user groups (see Figure 6). Office workers want a good range of food options during the day, but also have fitness and after-work needs. Skydeck tourists have food needs, but are also there to learn



Figure 4. A view of the Wacker Lobby under construction, with white terra cotta panels (left) and a skylight view of the tower (right). © Gensler

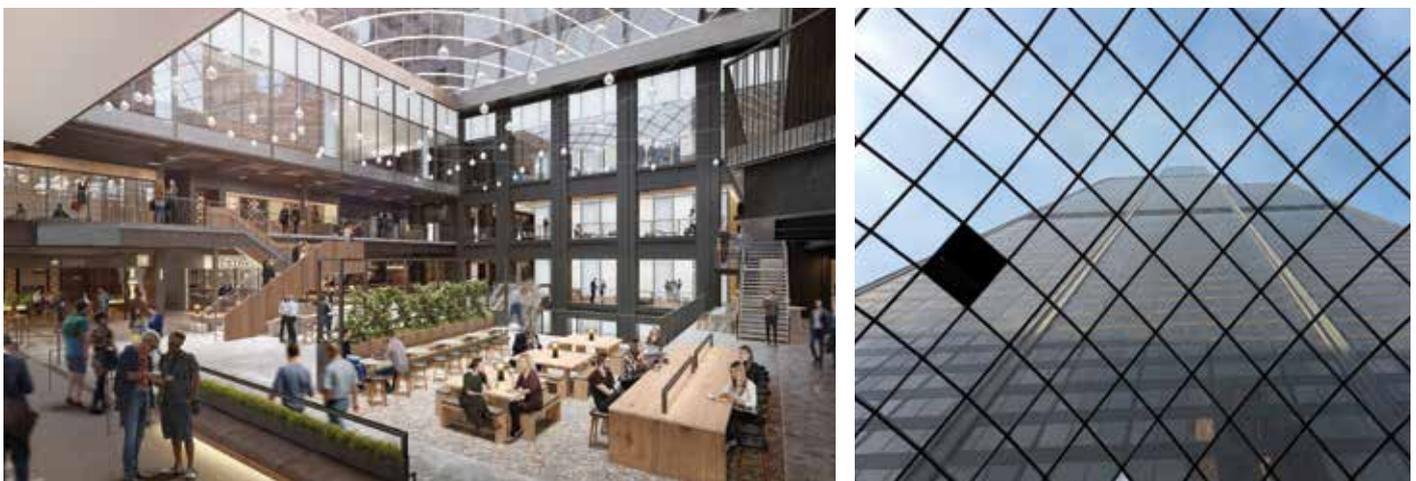


Figure 5. Rendering of the Catalog atrium space (left) and a construction view up to the tower through the skylight dome structure (right). © Gensler. Image courtesy of Blackstone



Figure 6. "The Sweet Spot" diagram documents the overlapping requirements and objectives for the redesign of the Willis Tower base. © Gensler

and be entertained. Chicago residents come to Willis Tower for lunch, but better building amenities and people flow patterns will likely drive more local Chicago visitors during the day and after-work hours. These groups need to exist in the same space, but a degree of separation is desired. Office workers, for example, need a level of privacy from the large number of tourists. This was accomplished with buffer zones in the plan. There are co-mingled spaces where the programs can mix, but the more private spaces for the office tower tenants are located furthest from the central atrium.

The Active Streetscape

A major lesson learned from the original tower podium design and subsequent efforts to revitalize the base of the building involved the way in which previous design efforts approached connecting to the street. Large expanses of stone-clad walls and storefront systems with dark tinted glass did not create an environment that welcomed human activity. Success for this new project was partly defined as "having an active streetscape and inviting presence."

The design team therefore proposed street elevations that incorporated oversized glass units with no tint and a visible light percentage of 65 percent. The architects set the façade rhythm to the existing tower grid and worked with the landscape architect to carefully align the building grid with the paving and streetscape design. The result feels orderly and has a degree of openness that welcomes views into and out of the new building (see Figures 7, 8, and 9). Retail canopies made of steel and glass mitigate the scale of the new building

at street level, while also providing opportunities for signage and lighting.

The Wacker Drive and Franklin Street entrances lead to the office tower lobbies and feature custom white glazed terracotta panels. This lighter material provides a visual contrast to the black steel and aluminum of the rest of the building and original tower (see Figure 10). Directly in front of each main entrance is stone paving, which serves as a giant "welcome mat."

The Outdoor City

Early design discussions with the owner revealed a desire to incorporate a large, publicly accessible outdoor green space. The natural place for this is the fourth floor, which affords fantastic views of the city (as seen in Figure 1). Locating an elevated green space on the south side of the property provided the best opportunity for sunlight penetration, since across Jackson Boulevard is a large, street-level park. Connecting these two green spaces begins to form an urban dialogue beyond the property line. Within the new fourth-floor park, the team created both open spaces for people to gather, and smaller places for quiet contemplation. This variety affords office-tower tenants an opportunity to work outdoors, but away from where visitors might be collecting. Outdoor workplaces are in demand, even if on a seasonal basis. Connecting with nature in dense urban environments has tangible benefits for occupant well-being, and Willis Tower is now positioned to offer this atmosphere in a competitive real estate market. The design team was able to distribute

several smaller green spaces on Levels 2 and 3, which creates a network of green terraces.

The landscape design incorporates winding pathway shapes that purposefully interrupt the building grid. The resulting curved planting area shapes are reminiscent of Midwestern streams and landscapes. Earth was mounded to provide a degree of dimensionality, and to focus key views outward to the city. The landscape architects chose planting species in keeping with tall grass prairies, and varied the density to provide a naturalistic look and feel.

A Catalyst for Change

The Sears Tower was conceived as a single-use office tower. Retail and food amenities were not a programmatic driver or area of major consideration for the public at that time. Commercial space in the original building appears to be either leftover corner areas above grade, or uninspiring below-grade retail experiences. Subsequent building renovations attempted

to broaden commercial offerings within the building and provide much-needed daylight to below-grade areas. The opening of the Skydeck Observation Experience pavilion and Franklin Street canopies added street presence, but the base of the building had lost a cohesive design language in terms of form and materiality (see Figure 10).

Tall building design has evolved since the early 1970s, to the point where mixed-use programs are now the norm rather than an exception. The owner is adding 300,000 square feet (27,871 square meters) of retail, food and meeting-room space, in a recognition of the need to transform Willis Tower into a destination for the city, but also for prospective tenants. The economic reality of supertall office buildings from the late mid-20th century is that, in order to remain attractive to tenants, building amenities and mixed-use offerings should be incorporated to meet the needs and expectations of today's workforce. A range of retail and food experiences should be considered. The building's leasing agent has been carefully selecting commercial tenants to provide value-, middle- and premium-level options. Retail leasing strategies for Willis Tower



Figure 7. The redesigned Wacker streetscape, looking north with steel retail canopies and custom benches. Image courtesy of Blackstone



Figure 8. A rendering of the new southwest corner view from Wacker and Jackson. Large expanses of glass create an inviting nighttime environment. Image courtesy of Blackstone



Figure 9. New northwest corner view from Wacker and Adams. The new Wacker Lobby entrance is clad in custom white terra-cotta panels. Image courtesy of Blackstone



Figure 10. The existing southwest corner view from Wacker and Jackson, before construction began on the new podium. The 1985 "Lunchbox" (left) and 1993 Skydeck entrance pavilion (right) can be seen. © Gensler



Figure 11. View of the previous Wacker Lobby from inside the “Lunchbox.” Note the Calder sculpture beyond and the 1993 stainless-steel cladding. The stairs lead down to the first-floor elevator lobby. © Gensler

will not solely rely on international chains, but instead will mix in local craft businesses.

The reality of people’s movement patterns through office buildings has changed over time. Consequently, lobbies now feel more like hospitality environments. People have short meetings in lobbies, get some work done, or wait for a ride-sharing vehicle. The design team also restored the entry sequence of the Wacker Lobby to the original 1974 version, in which one ascends a short flight of stairs to the second floor, instead of going downstairs to the first floor. The new lobby design leads up through the tower structure while affording views from the skylight up to the tower itself (see Figures 11 and 12). New lobby interior cladding on the tower structure was chosen to complement the original tower’s black anodized aluminum. Morning coffee and other amenities flank the lobby areas. The conscious merging of design with people’s daily routines creates opportunities for a brighter day, in both a literal and figurative sense.



Figure 12. View of the new Wacker Lobby, with restored entry sequence up to the second floors. Image courtesy of Blackstone

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