

# Filling in the Details

Design for downtown Chicago 39-story residential tower met a host of challenges aided by an intricate architectural precast concrete façade in three finishes

— Craig A. Shutt

*The residential complex at 2550 North Lakeview Drive in Chicago is divided into three towers, a 39-story central tower flanked by 21-story (at left) and a 30-story (in background above left tower).  
Photo: High Concrete Group LLC.*



**S**oaring above Chicago's north-side lakefront, the 39-story residential tower at 2550 North Lakeview Drive has been called "the Vertical Gold Coast," an allusion to its high-end accommodations that reflect the opulence of the nearby affluent historic district. The architectural precast concrete panels that were used to clad the structure were designed to invoke that atmosphere with their intricate, highly detailed appearance. Achieving that goal required overcoming a variety of obstacles, including construction on a busy urban street and filling in details when the design architect filed for bankruptcy early in the construction process.

The 318-residence building was designed by the architectural firm of Lucien Lagrange, a prominent Chicago firm known for its use of precast concrete panels on tall, residential downtown structures. The firm designed thousands of residential units, including those at the Ritz-Carlton Residences on the Magnificent Mile, The Catalyst, the Ten East Delaware condominium tower, and the Elysian Hotel & Private Residences in the Gold Coast. But in

2008, Lagrange filed for bankruptcy (for more on the company, see the profile in the Summer 2008 issue of *Ascent*).

"This building was probably the most ornate of all of the Lucien Lagrange buildings," says Kellen Decoursey, assistant project manager at Walsh Construction Co., the

project's general contractor. "The uniqueness of the design was a key point in its planning and for its marketing. But it also created challenges."

The 39-story tower features residential units that range in size from 900 to 5,000 square feet and range in price between \$465,560 to \$11.4 million

## PROJECT SPOTLIGHT

### 2550 North Lakeview Drive

**Location:** Chicago, Ill.

**Project Type:** Condominium

**Size:** 39 stories, 1.2 million square feet

**Designer:** Lucien Lagrange & Associates and Solomon Cordwell Buenz, Chicago, Ill.

**Owner:** Ricker-Murphy Development LLC, Chicago, Ill.

**Structural Engineer:** CS Associates Inc., Oak Lawn, Ill.

**Contractor:** Walsh Construction Co., Chicago, Ill.

**PCI-Certified Precaster (architectural panels):** High Concrete Group LLC, Springboro, Ohio

**PCI-Certified Precaster (balconies):** Precast Specialties Inc., Monroeville, Ind.

**PCI-Certified Precaster (base panels):** Lombard Architectural Precast Products Co., Alsip, Ill.

**Precast Components:** 2,000-plus architectural precast concrete panels and column covers

*Reveals, ledges, and balcony designs unique to each tower created depth and interest to the building's façade. A second precaster provided the balcony components, requiring added coordination. Photo: High Concrete Group LLC.*







*Soaring above Chicago's north-side lakefront, ornate architectural precast concrete panels on the 39-story residential tower at 2550 North Lakeview Drive, seen here from Lincoln Park, helped to give the building its nickname of "the Vertical Gold Coast." Photo: High Concrete Group LLC.*



(for a penthouse). It sits on a three-acre site north of downtown that overlooks Lincoln Park and offers expansive views of Lake Michigan to its east and downtown Chicago to the south.

### Three Joined Towers

The building's design creates the illusion of three towers of varying heights (a 39-story central tower flanked by 21- and 30-story towers) joined into one complex. Each of the towers includes unique intricate detailing and finishes. A distinctive set-back, zinc-clad, mansard roof provides a skyline focal point. Dimensional balcony fascias and elaborate railings, again unique to each tower, create depth while ensuring the towers complement each other. A dramatic two-story entrance announces the building's presence at street level, where limestone and granite veneer were used to clad the bottom two floors.

The challenges for designing the individual precast concrete panels began after the architectural firm filed for bankruptcy about six months into the design process, explains Cliff Broyles, project manager at High Concrete Group LLC. "We didn't have any specific direction or plans for developing the details that were desired," he explains. "That created immense challenges for us in achieving the architectural intent. We took on the role of understanding the plan and supplying the engineering input to ensure the details coordinated." The architectural firm of Solomon Cordwell Buenz was brought on to oversee completion of the architectural documents.

The precaster worked out details of the reveals relevant to the architectural documents to ensure the original intent was achieved. "The architects had not completed all of the details, so we spent a lot of time trying to make everything fit together dimensionally and geometrically to get the appearance that was intended," says Broyles.

The three towers' unique appearances reduced the amount of repetitive formwork that could be provided for the precast concrete panels, notes Decoursey. "Each had different coursing patterns, with different widths of reveals and designs, and all were very ornate. In some cases, details varied from one floor to



*Curved precast concrete spandrels frame the large expanses of glass used at the towers' corners to create a welcoming street presence. The precasters interpreted the original architectural drawings to create details in the precast concrete panels to achieve the intended goals. Photo: High Concrete Group LLC.*

another, so we couldn't reuse forms as much as we would have otherwise." Broyles agrees. "There were different geometries involved with each tower that required changes in the reveal patterns. That meant we had to use new forms for each portion."

### Three Finish Colors

The concrete mix was specified to match a nearby structure, with a

medium sandblast finish. Each of the towers used a different color mix, with the north tower featuring a gray-green look, the central, tallest tower using a tan color, and the south tower, the second highest, having a whiter finish..

Black-granite and limestone veneer pieces were field-applied to the lower three levels of the building, providing visual interest at pedestrian level. The



*Penthouse residences feature extensive balconies with decorative architectural precast concrete components, including detailed cornices. Photo: High Concrete Group LLC.*

precast concrete backing panels were cast with anchors to supply connections for the stone. The limestone was then reflected in the precast concrete finish on the upper floors.

Balcony fascia panels were cast with deep insets at the center, creating a framing pattern for these three-sided enclosures. Balconies on another tower were cast as semi-circles, and these were clad with curved fascia panels. "There was a unique design for the balconies in each building, and each required a different design to the precast concrete fascia panels," says Decoursey.

The balconies also had scuppers cast into them to direct rainwater. The balconies sloped away from the building, he notes, but the panels on both sides were designed to retain their horizontal reveal pattern in line with the pattern on the building. A special jig apparatus was used by the precaster to ensure these pieces were erected to maintain the flow of the reveals from one dimension to another. Curved spandrel panels also were used at corners to support large, curved windows that provide softened edges for the building. Erecting and maintaining

the reveal patterns from one panel to the next required close coordination with the contractor and precaster.

### **Erection Challenges Arose**

The site provided several significant challenges, notes Decoursey. "This was a busy street in downtown Chicago right along the lakefront, so it had limited access and often had high winds." Construction was slowed due to working through the winter, when a number of days had wind speeds that were too high to erect steel framing or the large concrete panels with the two tower cranes. In addition, because of the building's location in a residential neighborhood, delivery times were limited during the day.

## **'It's a gem for the North Side of Chicago.'**

The tower cranes were unable to rotate the panels once they were lifted off the trucks as they were delivered. To overcome this challenge and deliver the panels so they could

be lifted into position with minimal handling, High Concrete developed a rotating carrier frame for the trucks. The panels were delivered, rotated into the proper alignment, and then lifted from the truck for positioning.

The precast concrete panels were delivered from two plants, while precast concrete balconies were cast in a third. This arrangement sped up casting but required coordinated scheduling to ensure the proper pieces were available for erection when they were needed. A staging area was established on the south side of the city due to the limited site access, with panels shuttled to the site as needed for erection.

The intricacies of the panels' detailing limited the way the erection could proceed, Decoursey notes. "With little repetition between different portions of the building, we erected all of one type of panel before moving onto the next type so similar panels could be cast in batches," he explains. "Typically, we would wrap each floor horizontally before moving upward, but it was easier in this case to erect all of the similar vertical panels up the face of the building



before moving onto another area and creating new forms with the details that area required.”

There were also two subcontracting precasters. Precast Specialties Inc. in Monroeville, Ind., fabricated the balcony bases, while Lombard Architectural Precast Products Co. in Alsip, Ill., provided the precast concrete base panels onto which the stone veneer was attached.

“There was a lot of coordination needed, but everything moved smoothly,” Broyles reports. In all, more than 2,000 pieces covering more than 200,400 square feet of architectural precast concrete panels and column covers were fabricated.

### **Cabrini Shrine Preserved**

An interesting feature of the project resulted from another obstacle concerning a historic church on the site. St. Frances Xavier (Mother) Cabrini, who had ministered to immigrants in the area back at the turn of the twentieth century, died in the hospital located on the site in 1917. She became the first U.S. citizen canonized by the Roman Catholic Church, according to *Chicago* magazine. To mark her impact, the Cabrini Chapel national shrine was built on the hospital’s grounds. The Missionary Sisters of the Sacred Heart of Jesus, who owned the property, agreed to sell it as long as the chapel remained intact.

To ensure it was unharmed during construction, Walsh erected protective scaffolding around the chapel. “The building construction sometimes came within inches of the church, but it wasn’t damaged,” says Broyles. As a result, the chapel is still located at its original location, now sitting behind galleries and other retail spaces inside the ground-level southeast entry, which is marked by classical columns to direct visitors to the chapel.

Such attention to detail and respect for the neighborhood ensured the project achieved its goals despite the variety of challenges. “The project was a big success for everybody,” Decoursey says. “It’s a gem for the North Side of Chicago. It’s also the most complex architectural precast concrete project I’ve been involved with or have seen in the city. High Concrete was able to handle this complex and challenging project with close coordination among engineering, plant staff, and field



*Bay windows framed with precast concrete spandrels add visual depth and enhance scenic views from every floor. Photo: High Concrete Group LLC.*



*Black-granite and limestone veneer pieces were field-applied to the lower three levels of the building, providing visual interest at pedestrian level. Photo: High Concrete Group LLC.*

management. The result is a project everyone in the city can enjoy.”

Indeed, despite the many challenges it faced, 2550 North Lakeview Drive today stands in harmony with Chicago’s grandest lakefront buildings, offering an

impressive appearance, high-quality amenities, and a little bit of the Windy City’s history as well. **A**

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