

# The Aesthetic Versatility of Precast

**A**esthetics is of great importance to any project, and precast concrete provides some of the greatest versatility to achieve your aesthetic goals.

Precast concrete is available in practically any color, form, and texture. Precast concrete can also be veneered with other traditional building materials such as brick, granite, limestone, terra cotta, tile, and more. This provides the look and feel of these materials while adding all the benefits of precast concrete.

Different finishes can also be combined for one project, even in one panel, without requiring multiple trades and additional detailing for movement and waterproofing. It offers an efficient way to develop a multitude of façade treatments while reducing costs and risk.

The next few pages highlight some of precast concrete's aesthetic versatility on various projects.

## University of North Florida, Biological Sciences Building

Jacksonville, Fla.

**Architect:** *Perkins+Will/Harvard Jolly Joint Venture, Jacksonville, Fla.*

**Structural Engineer:** *Structural Engineers Group, Jacksonville, Fla.*

**Contractor:** *AJAX Building Corporation, Jacksonville, Fla.*

**Owner:** *University of North Florida, Jacksonville, Fla.*

**Precaster:** *Gate Precast Company, Monroeville, Ala.*

The new Biological Sciences Building is a 117,000 square-foot facility, which varies from two to four levels, housing all six specialized educational programs within the Department of Biology. The building's envelope consists of brick and glass curtain wall systems and insulated Architectural Precast panels of various styles. The 52,000 s.f. of thermally efficient, pre-insulated precast concrete wall panels are composed of a combination of brick cladding, with simulated sandstone accents, and a one-of-a-kind precast wall that has the university's mission statement recessed into the panels. The continuous insulation between the exterior and interior wythe of concrete acts as a vapor barrier and exceeds the specified insulation value of R-10 for the project.

The project showcases a complicated brick layout with three different brick face planes (elevation changes) traveling along two elevations of the building. These planes created a random zigzag pattern. The face planes changed by 1" to 2" and the patterns were in a different location on each panel.



Photos: Harvard Jolly Architecture

## California Department of Veterans Affairs West Los Angeles Veterans Home

Los Angeles, Calif.

**Architect:** SmithGroupJJR, San Francisco, Calif.

**Structural Engineer:** KPFF Engineers, Los Angeles, Calif.

**Contractor:** S J Amoroso, Costa Mesa, Calif.

**Owner:** California DePARTment of Veteran Affairs, Sacramento, Calif.

**Precaster:** Willis Construction Co., San Juan Bautista, Calif.

The Retirement/Assisted Living Facility provides 400 beds of skilled nursing, residential care, and dementia long-term care. This project was designed as a prototype for other similar future facilities.

The large institutional scale of the building needed to express individuality, diversity, and community as well as present an equal opportunity for each resident. The challenge was to find a design solution for the façade that was similar but different, repetitive but not the same.

The solution was a modular concept of Glass Fiber Reinforced Panels (GFRC) that allowed a random pattern in the most cost-effective way. The façade's design impact came from using texture variation instead of color variation; alternating flat and corrugated panels in a seemingly random layout. Three-dimensional corrugated textures were used horizontally and vertically in GFRC panels to enhance the undefined façade impression, which changed by natural light depending on time of day, season, and weather. The design intent was well accomplished with the 3D GFRC panels.



Photos: Willis Construction Co.

## George Washington AutoPark

Winchester, Va.

**Architect:** Design Concepts, Winchester, Va.

**Structural Engineer:** Blue Ridge Design Inc., Winchester, Va.

**Contractor:** Howard Shockey & Sons Inc., Winchester, Va.

**Owner:** Winchester Parking Authority, Winchester, Va.

**Precaster:** Shockey Precast Group, Winchester, Va.

This seven-tier, 547 space parking structure is located within the historical district of Winchester, Virginia. The area had few buildings of such mass, so the architect used texture and color to weave the structure into the historical fabric of the area. The use of precast concrete helped the design team achieve all the goals set for this high profile project.

The first two tiers of the project use a replica limestone base. The finish was achieved by utilizing a custom form, which allowed for rotation of individual forms within the same piece to provide variations more characteristic of limestone. A deep relief was used in the joints to provide shadow lines that break up the uniformity within the precast wall panels.

Two colors of modular-size, embedded, thin brick allowed the design team to tone down the overall mass of the structure and bring it into scale with its surroundings. This also helped the structure blend in with a wide range of surrounding brick masonry that could never be replicated. Flash was added to both thin brick selections to further increase the color ranges across the façade.

Window openings with buff concrete banding and recessed arches along the architectural rhythm helped the façade become more reminiscent of a historical warehouse than a modern parking structure.



Photo: Design Concepts.

## **Kauffman Center for the Performing Arts**

Kansas City, Mo.

**Architect:** Safdie Architects, Somerville, Mass./BNIM Architects, Kansas City, Mo.

**Structural Engineer:** Structural Engineering Associates, Kansas City, Mo.

**Contractor:** JE Dunn Construction, Kansas City, Mo.

**Owner:** The Kauffman Foundation, Kansas City, Mo.

**Precaster:** Enterprise Precast Concrete, Inc. Omaha, Neb.

Although still relatively new to the city's downtown skyline, this Center for the Performing Arts is already a key recognizable addition. Form follows function in the dual domed facility that houses two performing art center auditoriums. The scaled appearance of the auditoriums is symbolic of a musical instrument.

The 286,031 square-foot facility utilizes approximately 89,000 square feet of architectural precast concrete. There was a combination of insulated and solid precast concrete panels. The design team paid close attention to adjacent buildings in the surrounding area, taking special note of the tone and finishes, which are mostly limestone. The design team decided on an acid-etch precast finish. Pieces of flashing to help support the adjacent metal panels were also cast into the precast.



Photo: John Powell Photography.

## **Paseo Altozano Mall**

Michoacan, Mexico

**Architect:** Taller Unico de Arquitectos, Mexico City, Mexico

**Structural Engineer:** Postensados y diseños estructurales, Mexico City, Mexico

**Contractor:** Grupo Altozano, Michoacan, Mexico

**Owner:** Grupo FAME, Michoacan, Mexico

**Precaster:** PRETECSA, Atizapan de Zaragoza, Mexico



This massive shopping center, with approximately 21 acres of commercial and entertainment establishments, is the most innovative development of its kind in the area. The project includes more than 2,500 architectural precast concrete panels in a wide variety of colors and finishes. Simulated slate, and other nature-influenced finishes, achieved a refined and consistent look in an environment surrounded by mountains and forests.

The various finishes were achieved using different forming techniques, combinations of aggregate, acid-etching, hammering, polishing, and staining. For example, the slate finish was obtained by using rubber molds made at the precaster's facility to develop the textures and manually tinting every "slate block" with penetrating, acid-based stains of various colors. The decision to use precast panels that look like natural slate was influenced by the short time frame in which to complete the project, which would have been impossible using natural stones and other construction methods. The desired slate finishes were achieved with an impressive degree of accuracy. The decision to use precast panels resulted in considerable savings, both in time and dollars.



Photos: ©FOTOSENCONCRETO.COM.

## Macy's Parade Studio

Moonachie, N.J.

**Architect:** Russo Development, Carlstadt, N.J.

**Structural Engineer:** Russo Development, Carlstadt, N.J.

**Contractor:** Russo Development, Carlstadt, N.J.

**Owner:** Russo Development, Carlstadt, N.J.

**Precaster:** J&R Slaw Inc., Lehigh, Pa.

For nearly 50 years, Hoboken was the home for the Macy's Parade Studio, where the floats for the parade were created and stored. Due to the growth that the parade has recently seen, Macy's needed a larger facility. The new facility is 72,000 square feet, which is 32,000 square feet bigger than Hoboken and has ceilings reaching 46 feet in height. Precast concrete was the perfect fit for this building as it not only allowed the project to be completed on a tight schedule, but it also provided for a thermally efficient envelope and beautiful aesthetics.

The front and side elevations use 50-foot tall, insulated, precast concrete sandwich wall panels finished with two contrasting shades of thin brick. A unique mortar color was chosen that coordinates with both colors of brick. This approach was much less labor-intensive than hand-laid brick, and provided a more durable wall system requiring less long-term maintenance. The rear elevation uses similar insulated precast walls, but with an integral color and sand-blasted finish. Deeply tinted glass used throughout the building compliments the brick colors and adds to the beautiful, modern look. Meticulous landscaping and exterior lighting add the finishing touches.



Photos: J&R Slaw, Inc.



## 88th Security Forces Operations Center

Cincinnati, Ohio

**Architect:** Emersion Design, Cincinnati, Ohio

**Structural Engineer:** Woolpert Inc., Dayton, Ohio

**Contractor:** Wilcon Corporation, Dayton, Ohio

**Owner:** Woolpert Inc, Dayton, Ohio

**Precaster:** High Concrete Group LLC, Denver, Pa.

This new security headquarters on a midwest military base establishes a strong formal presence at the main entrance of the base. The 52,000 square-foot facility provides a new headquarters consolidating base-wide security, and includes an armory, office space, dispatch center, detention area, and warehouse.

Insulated precast concrete wall panels, with a sand-blasted, limestone finish were used for the façade. Reveals in the precast formwork combine with false and real panel joints to create a block-like image that suggests real limestone. The blocks are scaled to give the illusion of height to the first floor of the two-story section. The second story is set back, enhancing this effect. Both stories have regular panel details that suggest columns with pedestals; a bullnose and cornice create a strong horizontal line above the column images to bring a human scale to the façade.

The exterior walls are highly articulated to match the precast of the adjacent training and maintenance facility that was completed ten years before. The precast concrete walls also provide the necessary anti-terrorism and force protection, as well as provide a thermally efficient enclosure which delivers an average R-10 rating. This contributes greatly toward the sustainable performance of the building, which is designed for LEED Silver Certification.



Photos: High Concrete Group LLC.