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Issue 32

Missouri State University Student Recreation Center

West Plains, Missouri

Precast concrete is a proven construction method for FEMA community safe rooms due to the inherent weight of the material, the long-span capabilities of both the wall and roof members, and the ability to integrate architectural finishes and insulation within the structural precast components. FEMA's Hazard Mitigation Grant Program (HMGP) currently allows for Federal funding of a portion of the costs of building a structure in hurricane or tornado-prone areas. Eligibility for funding is primarily limited to the components that provide life safety during an event, therefore integration of components such as finishes into the resistant structure assembly is key to maximizing the match from the HMGP grant, and an ideal fit for the use of precast concrete systems and components. Qualifying structures must be designed according to FEMA 361 design criteria.



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"Our choice to use precast concrete was informed by the fact that we had to meet the stringent requirement of FEMA 361 for tornado safe rooms, but it also provided a level of quality and speed that we would not have been able to achieve on this project with other materials. Once the decision was made to use precast, we were able to collaborate with the manufacturer to develop the exposed surfaces in such a way that adds meaning to the project, specific to its place. The way light plays on the surfaces of the material is really special."

Andrew Wells, FAIA, LEED AP
 Design Director
 DAKE | WELLS architecture



Design by: DAKE | WELLS architecture

Rose-Hulman Institute of Technology

Terre Haute, Indiana



"The design-assist delivery method is greatly responsible for the success of the project being delivered in a timely manner. This building was erected and fully enclosed in a two-month period. No traditional construction methods could have provided the same quality and construction speed."



Jake Wagle
Project Manager
Garmong Construction Services



The new four-floor, 70,000 square foot, 240 bed residence hall on the campus of Rose-Hulman Institute of Technology features suite-style apartments on the first floor, and the top three floors are designed for apartment-style living.

The residence hall will be the first structure on campus that meets Leadership in Energy and Environmental Design (LEED) silver certificate standards. Precast concrete contributed to the sustainability of this project by incorporating integrated design, using material efficiently, reducing construction waste and site disturbance, improving energy efficiency, improving indoor environmental quality and reducing noise.

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Architect: RATIO

Contractor: Garmong Construction Services

Lifeworks Medical Office Building

Michigan City, Indiana



"The use of precast concrete met our budget and the accelerated schedule for the Lifeworks Project. The erection of the precast system was completed in just over two weeks during one of the worst winters in recent history. The building's unique stamping, cross hatching patterns and color schemes were a result of the architect's thorough analysis of the many options available with precast concrete."

Scott Trueblood
Senior Project Manager
Holladay Construction Group

ATMI - INDY, LLC

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(317) 891-6280
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The Lifeworks Medical Office Building was built to offer the maximum amount of medical facility space within the design footprint. The precast concrete walls have a number of unique features cast into the exterior face of the panels to add depth and interest to the structure.

The panel represents limestone at the base, with reveal patterns. The upper panels feature a cross hatch pattern with additional reveals. These were created through the use of custom rubber liners used in the casting process. Color was added by the application of field applied stains. These walls also act as the load bearing members of the structure to carry the roof, allowing for the maximum amount of flexibility in designing and finishing the interior spaces.



Design by: MPA Architects

Developer: Holladay Construction Group

Indiana University Cyber Infrastructure Center

Bloomington, Indiana

“Precast concrete provided a flexible, innovative and cost effective alternative to natural stone on the Indiana University Cyber Infrastructure Building. Customized formwork allowed for an elegant design solution that abstractly replicated randomized limestone patterns common to the campus. The ability of the precast concrete panels to readily accommodate a variety of forms enabled design options that other building materials could not provide.”

Robert Bull
Principal
SmithGroup JJR



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Designer: SmithGroup JJR

Associate Architect: Ratio Architects

Structural Engineer: Fink Roberts & Petrie

Nationwide Children's Hospital

Columbus, Ohio

"Precast concrete gave us something durable, that would also give us contrast and added character. It provided horizontal accent banding, introducing a rib pattern that was cast into the 26 foot wide by 7 foot high panels, that make up the head and the system below the windows. We also have a roughly 9m (30 foot) column base facing on a single building radius point, for which we provided spandrel precast pieces that were connected to the columns"

Paul Saphos
Lead Senior Project Architect
FKP Architects

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River Rouge, MI
(313) 843-0073

Nationwide Children's Hospital is a primary pediatric hospital in Ohio and is also the pediatric teaching hospital for The Ohio State University School of Medicine.

This new thirteen-floor, 750,000 square foot addition includes a state-of-the-art level one trauma center and a new hematology/oncology/blood and marrow transplant unit.

The precast panels provided a cost-effective balance to the complex curtain wall used on the front facades. The radius precast concrete panels give a smooth line to the extensive exterior walls creating an elegant appearance.

The radius precast concrete wall consists of curved limestone colored panels, with a glass-blasted finish. A total of 487 long architectural spandrel panels, approximately 62,896 square feet, were used in the building. The exposed surfaces are also fluted below the windows, creating a louvered effect on the panels.



Architect: FKP Architects

Engineer: Jezerinac Geers & Associates

Construction Manager: Turner / Smoot Construction

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www.pcicentral.org/products/default.htm

You may also click through from our home website at www.pcicentral.org and follow this link



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