

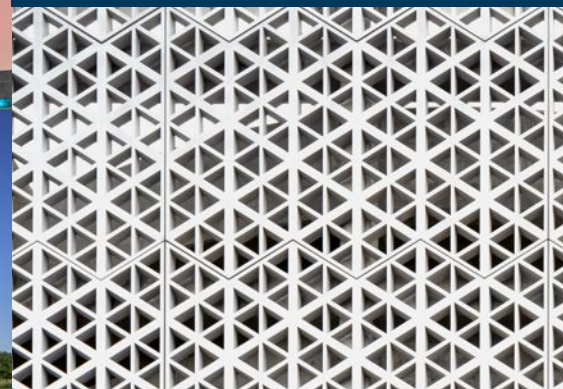
PCI.ORG

ASCENT[®]

DESIGNING WITH PRECAST CONCRETE

DIGITAL EDITION

SPRING 2025



2025 PCI
DESIGN
AWARDS



Photo: Michael Moran

Ohio State University's new, 66,000 ft² Energy Advancement and Innovation Center is a hub for energy research and technology incubation that aims to produce the next generation of smart energy systems and renewable energy technology, and green mobility solutions. The building, which was designed by Smith-Miller + Hawkinson Architects and features an architectural precast concrete façade, is intended to inspire and facilitate interdisciplinary collaboration and to provide a model of energy efficiency in architecture.

SUSTAINABLE INNOVATION

The Energy Advancement and Innovation Center's façade system includes interlocking cellular polycarbonate panels spanning 42 ft, a butt-glazed curtain wall system, and 38 architectural precast concrete panels. To create the four architectural precast concrete panel profiles for the façade, GATE Precast used just four custom forms, which were made in-house. Limiting the number of forms reduced project costs. Although all the architectural precast concrete components used the same concrete mixture and finish, dynamic movement of light and shadow across the vertical precast concrete relief creates the appearance of varying shades of gray.

Of all the façade elements installed on the project, the installation time for the architectural precast concrete panels was the shortest. The team carefully coordinated the design and fabrication process and arranged for "just-in-time" panel delivery. As a result, the panels could be installed in just 11 days, whereas weeks and months were required to install the curtain wall and polycarbonate façade elements. The just-in-time delivery approach also minimized the need for on-site storage, allowing for a cleaner, safer construction site and university campus.

With the innovation center focused on advanced energy research, including the development of new solutions that could accelerate a global energy transition to a zero-carbon economy, it was clear that sustainability was a key priority for the design and construction team. The building's cantilevered solar canopy design expands its capacity to collect solar energy. The photovoltaic array with 704 solar panels will supply 33% of the annual electricity needed to operate the building. Additionally, precast concrete's superior thermal performance when compared to competing systems contributes to the energy efficiency of the facility. To minimize carbon emissions during the project, Ohio State University deliberately chose a local precast concrete producer, so that the trucks delivering components to the site would not have to travel far.

Combining precision, efficiency, and aesthetic flexibility, precast concrete was the ideal choice for OSU's Energy Advancement and Innovation Center, helping OSU officials and the building deliver on its mission.

Honorable Mention

Building Information Modeling (BIM) Award

OHIO STATE UNIVERSITY ENERGY ADVANCEMENT AND INNOVATION CENTER

COLUMBUS, OHIO

PROJECT TEAM

Owner:

The Ohio State University, Columbus, Ohio

PCI-Certified Precast Concrete Producer:

GATE Precast, Ashland City, Tenn.

Precast Concrete Specialty Engineer:

GATE Precast, Brentwood, Tex.

Architects: Smith-Miller + Hawkinson Architects,
New York City, N.Y.;

Moody Nolan, Columbus, Ohio

Engineer of Record:

Thornton Tomasetti, New York City, N.Y.

General Contractor:

Whiting-Turner/Corna Kokosing JV, Columbus, Ohio

PCI-Certified Erector:

F.A. Wilhelm, Indianapolis, Ind.

Project Size: 66,000 ft²

KEY PROJECT ATTRIBUTES

- The 66,000 ft² Energy Advancement and Innovation Center at Ohio State University is a hub for energy research and technology incubation.
- The 704 solar panels installed on the facility's cantilevered canopy will supply 33% of the annual electricity needed to operate the building.
- Only four custom-made forms were used in the production of the architectural precast concrete panels, helping keep the project on budget.

PROJECT AND PRECAST CONCRETE SCOPE

- Custom architectural precast concrete panels are a major design component of the Energy Advancement and Innovation Center.
- The use of precast concrete helps meet service-life and sustainability goals for the center.
- Installation of the precast concrete panels was completed in just 11 days in September 2022.