

1200 INTREPID

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-  2016 PCI HARRY H. EDWARDS INDUSTRY ADVANCEMENT AWARD
-  2016 PCI LEED AWARD BEST OFFICE BUILDING
-  2016 Philadelphia Center for Architecture and Design LOUIS I. KAHN MEMORIAL AWARD
-  2018 ACI Excellence in Concrete Construction Award 1ST PLACE MID-RISE OFFICE BUILDING
-  2016 NORTH AMERICAN BIM AWARD

Owner

Liberty Property Trust
Philadelphia, PA

PCI-Certified Precast Producer and Precast Specialty Engineer

High Concrete Group
Denver, PA

Architect

BIG – Bjarke Ingels Group
New York, NY

Engineer of Record

Environetics
Philadelphia, PA

General Contractor

Turner Construction Company
Philadelphia, PA

PCI-Certified Erector

Precast Services Inc.
Twinsburg, OH

Project Cost

\$19 million

Project Size

99,450 ft²



Above: 1200 Intrepid Avenue, Philadelphia, PA Navy Yard
Left: Detail of faceted panel with window integration

Key Project Attributes

- Precast concrete elements include 421 architectural precast concrete panels at an average nominal size of 5 ft by 18 ft.
- The façade is 30% more efficient than the baseline ASHRAE assembly, contributing to the LEED Gold certification.
- The panels were also created using local raw materials and recycled content less than 60 miles from the project site, minimizing the greenhouse gas emissions.

The 2016 PCI Harry H. Edwards Industry Advancement Award winner proves that precast concrete enables the most innovative architectural designs while providing a highly energy-efficient and durable envelope.

One of the most prominent features of the building is the white precast concrete façade, which dips dramatically away from the walkway along the eastern edge, then tips back out again, much like the buildings in a Dr. Seuss story.

One of the key design challenges was to create that curved façade from precast panels. The curved load-bearing design was achieved by assembling flat, traditional precast concrete panels to form a complex faceted geometry. An interlocking structural system was embedded within the panels to eliminate the need for traditional precast concrete spandrel panels. The resulting façade creates an aesthetic versatility that is unique to the project.

The design breaks away from traditional architecture to better engage with the local surroundings, says Kai-Uwe Bergmann, FAIA, Partner, BIG. He argues that the curved white façade, and deeply reflective windows in this design were inspired by the city's rectangular city blocks and the adjacent circular park that sits just in front of the building. It also echoes the geometries of maritime architecture and nearby waterway. "You would really be hard-pressed to place this building anywhere else other than where it is, due to how it connects," Bergmann says.

Precast Solution

Along with being visually inviting, the owners wanted the building to achieve LEED Gold certification, which led to several sustainability measures enabled by the use of precast concrete. The panels were also created using local raw materials and recycled content less than 60 miles from the project site, minimizing the greenhouse gas emissions related to transport and adding more LEED points to the total.

Finally, the precast concrete façade solved the fact that the building's steel structure was designed to carry only lateral loads, which meant the precast concrete façade had to transfer the gravity loads directly through the precast concrete panels to the foundations. To achieve this, the engineers designed a structural steel system embedded into the precast concrete panels. Pockets were formed into alternating panels at the spandrel level to allow the interlocking of each panel during installation. All the gravity loads are transferred from any given panel to the adjacent panel on either side until they reach the foundation, in order to prevent a progressive collapse in the event that one connection should happen to fail, each panel also has a safety backup connection.



*"CREATE JUST BY DESIGN INTENT AND DESIGN
EXECUTION - IT BECOMES BEAUTIFUL"*

*- Lucien Lagrange, Founder,
Lucien Lagrange Studio,
Judge, 2016 PCI Design Award Committee*