



Precast Cladding Gives Dorm Terra Cotta Look

GFRC panels permit the rich detailing found in terra cotta masonry while eliminating the traditional material's erection and maintenance drawbacks

Architect
Booth Hansen Associates Inc.
Chicago

Engineer
Thornton-Tomasetti Inc.
Chicago

General Contractor
Wooton Construction Co.
Chicago

Owner
Art Institute of Chicago
Chicago

Precaster
GFRC Cladding Systems Inc.
Garland, Texas

Located on the corner of Randolph and State Streets in downtown Chicago, the new Residential Hall for the School of the Art Institute of Chicago looks as though it might have been constructed in the early part of the last century. That was the intention of architects Booth Hansen Associates, Inc. who wanted the building to fit in with its traditional neighbors.

"We were guided by old Chicago School of Architecture buildings with their steel frames and terra cotta cladding," says Laurence Booth, partner and design architect. But in fact, the building features panels of glass fiber reinforced concrete (GFRC) covering 75 percent of the façade. The project represents the largest GFRC project in the city to date.

The 300,000-square-foot Residential Hall is composed of three connected components: a new building replacing a demolished structure on the corner, the adjacent reconstructed Heidelberg building and a new link on the rear. Designing the dormitory in two main components prevented it from appearing as one massive building. The three lower levels of the 17-story building house retail space and a theater, with the dormitory rooms on the floors above.



This construction photo shows the delicate detail made possible by the use of GFRC panels.

DELICATE DETAILS

The architects selected GFRC panels for several reasons. "Most importantly, the plasticity of GFRC allowed us to design very articulated, delicate panels to recreate the aesthetic look of terra cotta masonry without terra cotta's inherent weaknesses and joint-maintenance problems," Booth says. "It also allowed us to achieve the same look without the labor-intensive installation process."

Molded window mullions could be designed because GFRC's fabrication approach of spraying the material into a mold permitted a greater depth of detail than in a poured precast concrete panel, Booth noted. This provided "the pliability and work-ability" designers wanted to create distinctive looks for the two main buildings. The structures were designed with different window and cornice treatments, adding visual interest to the façade. The corner buildings bay windows, with their fluted spandrel panels and delicate, molded mullions, are especially eye-catching.

GFRC LOWERS COSTS

The thin, lighter-weight GFRC panels resulted in a savings in steel-framing costs because the superstructure didn't need to be as heavy as if standard precast panels had been used. The GFRC panels also sped the erection process on the fast-track project. Panel erection took three months, and the entire building was completed in 16 months. The architects specified 27 different panel types. GFRC Cladding Systems Inc. in Garland, Texas, provided 1,042 panels, with a typical size of 14 by 12 feet.

The panel size was determined by the 13-foot room width requested by the School of the Art Institute. This 13-foot bay size is the same structural module used on the old Chicago buildings, Booth notes.

Design Award
Awarded in Architectural
and Engineering Design



Located in downtown Chicago, the new residence hall for the School of the Art Institute is clad in GFRC panels, which emulate the look of the Windy City's historic buildings finished in terra cotta. The dormitory is composed of two connected buildings and a rear link.
 Photo: ©Brian Fritz Photography



“Using GFRC panels gave us the best of both worlds, because we could achieve the finer articulation of terra cotta while also providing the durability, strength and simplified erection of precast concrete panels.”

**—Larry Booth, partner,
 Booth Hansen Associates**

“The fundamentals of the building are the same as those constructed 100 years ago. The Residential Hall can be regarded as a Chicago-vernacular high rise. Using GFRC panels gave us the best of both worlds, because we could achieve the finer articulation of terra cotta while also providing the durability, strength and simplified erection of precast concrete panels.”

— Anne Patterson

THE JUDGES SAID...

“This project is very nicely detailed. It produced a most interesting design that is perfect for downtown Chicago. It’s a solution that works well, showing the type of detailed work and returns that can be accomplished with GFRC. It lightens the structure’s weight, which reduces structural framing costs. That creates a particular advantage on a high-rise building.”