

# OPTIMIZED FOR CONSTRUCTABILITY CASE STUDY

1900 Arch St.  
Philadelphia, PA



## + PROJECT SNAPSHOT

**Architect / Designer**  
Varenhorst

**General Contractor / Installer**  
Fast Track

**Dealer**  
R-Tech Panel Systems

**Window Design Consultation**  
Nick Irwin, GAP Sales Representative  
Michael DeRosa, GAP VP Business and  
Product Development

**Product**  
GT6200

**Assignment**  
Manufacture 1,900 windows for a 14-story  
mixed-use development, with 26,000 square feet  
of ground level retail and second-floor office  
space, topped by 236 one- and two-bedroom  
units.

## + CHALLENGE

To optimize constructability, the architect incorporated a modular structural wall system that required Graham to develop a unitized receptor system and window that would be installed into a series of pre-manufactured EFIS wall panels, which would then be shipped to the construction site where they would be raised by crane and mechanically anchored to the building's substructure.

## + A MODULE OF INGENUITY

Asked to design the new mixed-use high-rise slated for construction on Arch Street in Center City Philadelphia, the architectural firm Varenhorst decided to "optimize constructability" by incorporating a modular structural wall system.

They turned to R-Tech Panel Systems, a Wilmington, NJ, manufacturer, which according to its owner Mark Saunders, "had always kind of flown under the radar." And while he found it hard to turn down a project of this size and scope, he admitted, "I took a big risk, quite frankly."

For the project to succeed, Saunders needed to find a window partner capable of producing the 1,900 quality windows necessary. But it went way beyond that. Saunders envisioned finding a window partner that would allow him to install the windows in pre-manufactured wall panels in his factory. The panels would then be shipped in a totally assembled module to the site, where they would be fastened on the steel substructure.

"I'm not a full-blown window guy," Saunders said, "so the search was kind of an open book to me." He pared an initial list of five or six window manufacturers down to three, and from that group he selected Graham Architectural Products (GAP).

GAP's Sales Rep Nick Irwin, VP of Product Development Michael DeRosa and Director of Technical Sales Bill Wilder met with Saunders, and they exchanged thoughts on modifying GAP's standard receptor system for this project. In time, GAP was producing the 40,000 square feet of operable and fixed windows for assembly in a custom unitized receptor system.

*"GAP has a very nice product. It's a good window and a good value. They were built quite well. By going with Graham, the project ended up with a much better window."*

*- Mark Saunders, President,  
R-Tech Panel Systems*

"Nick's a great guy. He gets the job done," said Saunders. "And GAP has a very nice product. It's a good window and a good value. They were built quite well. By going with Graham, the project ended up with a much better window."

This was Irwin's first experience with pre-manufactured wall panels. "It's not the norm," he said. "We've done similar types of applications, but usually with modular classrooms. Mark actually builds wall sections out of steel stud, insulation, and exterior skin whether it's EIFS composite panel, or whatever, and within that big panel is a punched opening.

"Working with Mark, we developed this unitized receptor system where we actually put the receptor together in our factory, so it's almost like a picture frame that we shipped to his shop. Then he basically took that picture frame, installed it into his pre-manufactured wall, put the window inside the unitized receptor, added the closure pieces, then shipped it to the jobsite."

The finished building has over two-hundred apartments, office space on the second floor, and about 26,000 square feet of retail space, as well as 1,900 of the Graham GT6200 Series windows.

And, Saunders said proudly, "We didn't break a single window." Irwin concluded, "It turned out really nice. It's a beautiful building. We'd be very interested in partnering with R-Tech on future projects like this."