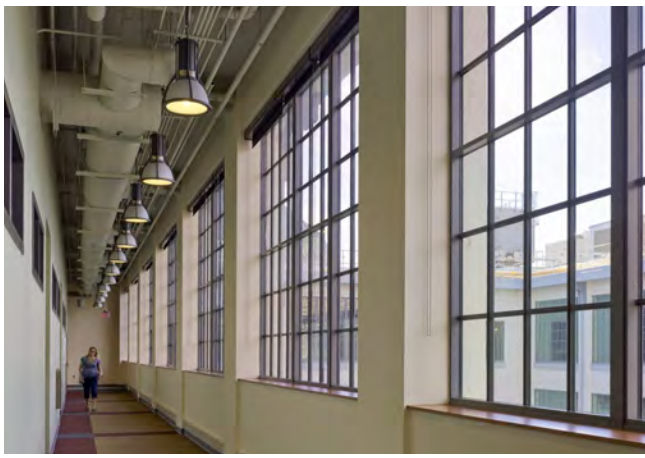
TALL CHALLENGE IN WINSTON-SALEM
CASE STUDY

525@VINE
WINSTON-SALEM, NC



GRAHAM
ARCHITECTURAL PRODUCTS

"That's the fight we face as the industry's premier manufacturer of architectural windows: how to morph current technology into antiquated design while meeting today's demanding standards for energy efficiency."

-Bill Wilder, Graham Architectural Products, Director of Technical Sales Products,

+ PROJECT SNAPSHOT

Architect
Gaudreau, Inc.

Construction Manager
Whiting Turner

Dealer
Charlotte Glass

Window Design Consultation
Donn Gallatin, Graham Architectural Products, Manufacturer Sales Rep
Bill Wilder, Graham Architectural Products, Director of Technical Sales

Assignment
Replicate and replace 1,259 85-year-old windows in an old RJ Reynolds warehouse building that is being renovated for use as a research center.

LEED® Certification
Platinum

+ CHALLENGE

Graham Architectural Products (GAP) was called on to replicate, manufacture and bring energy efficiency to more than 1,200 windows, including as many as 50 different sizes with the average being 4 ½ feet wide by more than 10 feet tall. A highly compressed timeline and the need for National Park Service approvals only added to the challenge.

+ INCORPORATING CURRENT TECHNOLOGY INTO ANTIQUE WINDOW DESIGN

The Roaring Twenties are remembered for a lot of things, but energy efficient windows are not among them.

Architectural designers of the era were not concerned with conserving energy, especially when it came to factory/warehouse facilities, the original function of the 525@Vine building, in Winston-Salem, NC. Designed and built for use as factory work spaces and a warehouse storage facility, this building utilized large window openings to achieve maximum natural light.

Now, however, that same structure was being repurposed for use as a research center with white-collar offices and laboratory space. Accordingly, redefining the window design criteria was a must, especially given today's more stringent building and energy code requirements.

So Graham Architectural Products (GAP) was called upon to replicate, yet bring energy efficiency to the project's 1,259 85-year-old windows – including as many as 50 different sizes averaging 4 ½ feet wide by more than 10 feet tall.

Specifically, GAP had to design and manufacture new aluminum thermally broken windows with high performance insulated glass, while maintaining the building's historic integrity. Two additional factors complicated the assignment: The windows had to pass National Park Service (NPS) review, and the timeline was dauntingly short.

The team comprised of the architectural firm of Gaudreau, Inc., construction manager Whiting Turner, Graham window dealer Charlotte Glass, and the window manufacturer Graham Architectural Products not only accepted this challenge, but embraced and worked within in it to ensure a successful completion.

First order of business was the NPS review approval, a key ingredient in the overall success of the project. The approval would afford the owner, Wexford Science + Technology, the opportunity to apply for and secure significant tax credits for the timely rehabilitation of this old RJ Reynolds warehouse building.

Bill Barrineau, from Charlotte Glass, contacted GAP Rep Donn Gallatin in December of 2012. Working closely with Gaudreau's Steve Leonhardt and Graham's Bill Wilder and Jim Hicks, the team developed a window system that would match the existing historic design and still meet the project's energy efficiency requirements. The first drawings were submitted in March for NPS review. Upon NPS approval, the final drawings were sent to the field project team the following month. With a completion scheduled for November, this didn't leave much time.

Said Tim Cooper, GAP's southeast regional sales manager, "The construction schedule was a major, major hurdle for all parties, especially for us. We essentially were brought on board the beginning of 2013. Then we had to design a brand new window system, get it approved, cut dies, build it and have it onsite by July."

Once Charlotte Glass began field measuring the existing openings, it became apparent that the existing building conditions were going to pose additional challenges. In several locations, the building had settled and many openings were badly deteriorated and in desperate need of repair. Working together, Charlotte Glass and the field staff at Whiting Turner resolved these issues expeditiously.

Now it was up to GAP to manufacture, and Charlotte Glass to install, the 1,259 windows in the remaining time frame. It wasn't an easy undertaking, but with everyone working together the project moved forward in a timely fashion to a successful completion. In the end, the project achieved its goal of LEED® Platinum certification.

The Graham window solution is a particular source of pride for Wilder, GAP's director of technical sales. The original windows were built with steel and single panes of glass. GAP was able to design and deliver aluminum replications using state-of-the-art thermal technology that met the often conflicting needs of both the National Park Service and the Department of Energy.

Said Bill, "That's what makes our niche hard to do. That's the fight we face as the industry's premier manufacturer of architectural windows: how to morph current technology into antiquated design while meeting today's demanding standards for energy efficiency."

GRAHAM
ARCHITECTURAL PRODUCTS

1551 Mt. Rose Avenue + York, PA 17403 + 800.755.6274 + grahamwindows.com