

NOISE REDUCING WINDOWS CASE STUDY

Edman Memorial Chapel,
Wheaton College
Wheaton, IL



+ PROJECT SNAPSHOT

Architect

Wheaton College In-house Architect

General Contractor

Krull Windows

Window Design Consultation

John Andretich, GAP Architectural Sales and
Chicago Business Development Mgr.

Product

Series 6800 Curve Top Fixed Windows

Assignment

Replace and replicate the nine Palladian windows in the Edman Memorial Chapel auditorium, maintaining historic integrity while dramatically reducing the seepage of noise to the outside environment.

+ CHALLENGE

The Edman Memorial Chapel auditorium is a center of student activity 24 hours a day, seven days a week, 50 weeks a year. Which means installation for the nine historic Palladian replication windows had to occur within a specific two-week period in June. And the order for GAP's complex solution didn't arrive until mid-March.

+ AT GAP, NO CHALLENGE TOO GREAT, NO JOB TOO SMALL.

You don't have to order thousands of windows to get the full attention of the Graham Architectural Products (GAP) team. Take Edman Chapel and its gorgeous auditorium on the campus of Wheaton College in Wheaton, IL.

John Andretich, Graham's architectural sales and Chicago business development manager, had worked with the College on several occasions, first for another company and then for Graham.

For years, the College had kicked around the idea of updating the auditorium's nine Palladian chapel windows. But now discussions were getting serious.

"The problem was," said Andretich, "this auditorium has a huge pipe organ, with these resonating low-octave tones, kind of like a 747 taking off. So they would have these concerts and they would have these plays and they would have these rehearsals, and the organ music would seep out through the old windows into the dormitories that surround the quad, and it would bother the students.

"This is one of the first jobs that I've ever encountered where they wanted to keep the noise in. Yet they wanted these windows to look like the old windows."

There were other issues, too. As the center of campus activity, the auditorium is in use practically 24/7. Ultimately, there was a mere two-week window for installation – a pocket of time in June between graduation and freshman orientation.

Then there was the complexity of the job. Not only would the windows have to retain the original windows' historic integrity, they would have to achieve a high OITC rating and a sound transmission class rating of somewhere in the 40s.

"This was kind of a design-build project, where they had a specific problem and we worked with them to get a solution that worked," explained Andretich.

"When the new window was put up against the colonial casing of the old window, it just nested up perfectly, the color match was seamless, and you couldn't tell where the old stuff ended and the new stuff began."

~ John Andretich, GAP Architectural Sales and Chicago Business Development Mgr.

John asked his colleagues in Graham's engineering department, "What do we have to do to get these numbers?" The answers included using 1- 3/8" double-laminated insulating glass unit, ensuring additional air space between the lites.

Said Andretich, "Now I'm thinking, how am I going to do this? How am I going to get these 10 pounds of stuff into a five pound bag?" Members of GAP's engineering department helped to answer that question.

Someone recalled Graham's work on the Accident Fund Insurance building in Lansing, MI. There, GAP had modified a stop to make room for an interior muntin. Using that same approach – without the muntin – would allow for the additional glass unit thickness necessary to create the acoustic value.

To replicate the historic look, Graham put together concept drawings and profile pannings, building out the transition bar with a mullion between the curved window and the windows below, and utilizing true divided lites.

The order was placed in March and by June the windows were ready for installation.

Despite the tight two-week window, and the challenges of working in a theater with seating, aisles and slanted floors, the installer, Krull Windows, "did a beautiful job," Andretich said. "When the new window was put up against the colonial casing of the old window, it just nested up perfectly, the color match was seamless, and you couldn't tell where the old stuff ended and the new stuff began."

And the auditorium could finally burst with joyous noise without interfering with students studying in the nearby dorms.