

Fire-Rated Glazing and Doors Satisfy Building Code and Design Intent

TGP



“ VOICE OF OUR CUSTOMER

These assemblies need to be planned by everyone involved. TGP helped with the front-end planning as well as the installation. Our field crew could call their experts to ask questions, ensuring installation went smoothly.

”

Project: William R. Murchie Science Building

Location: Flint, MI

Architect: HED Design

Glazing Contractor: Glasco Corp

Product: Fireframes ClearView® System with Pilkington Pyrostop® fire-rated transparent wall panels and Fireframes® Aluminum Series perimeter frame; Fireframes® Designer Series fire-rated doors

Fire-Rated Glazing and Doors Satisfy Building Code and Design Intent

Keeping pace with increased STEM enrollment, the University of Michigan-Flint recently finished its expansion of the William R. Murchie Science Building. Beyond adding 70,000 new square feet to the building, the renovation focused on creating a facility with almost no visual barriers to encourage both departmental collaboration and the visibility of STEM work. To accomplish these goals, the building's open stairwell and floor design was meant to facilitate idea-sharing and to display scientific innovations taking place in real time.

However, due to the size of the combined levels, fire- and life-safety codes required a fire-rated barrier between floors to inhibit the spread of smoke and flames. To meet these codes and provide the desired level of visual connection, the school and architects turned to Technical Glass Products' (TGP) Fireframes ClearView System with Pilkington Pyrostop fire-resistant-rated glass, Fireframes Aluminum Series perimeter frames and full-lite Fireframes Designer Series fire-rated doors.

CREATING A DESIGN THAT REFLECTS THE BUILDING'S PURPOSE

The William R. Murchie Science Building's open design highlights some of the mechanical systems that make a modern building possible. Exposed ductwork, data cables and light fixtures serve as reminders of the end products of STEM innovation. Similarly, the open floor plans reflect the process through which these technologies transform from breakthroughs to everyday necessities—all while contributing to an interior space that excites new students and encourages interdepartmental dialogue.



The floor-to-ceiling butt-glazed assemblies run for over 30 feet and turn multiple corners. "They show multiple floors and provide a substantial visual connection between what the students are learning and how it can be applied."

Due to the narrow perimeter frame and nearly colorless transitions between adjoining pieces of 60-minute fire-rated glass, TGP's Fireframes ClearView System with Pilkington Pyrostop fire-resistant-rated glass allows the assembly to all but disappear without compromising its level of protection.

"The scale of these systems is quite unique," says Jeremy Raymond, the Senior Project Manager of Glasco, the project's glazing contractor. The floor-to-ceiling butt-glazed assemblies run for over 30 feet and turn multiple corners. "With such long runs," Raymond continues, "these systems look great. They show multiple floors and provide a substantial visual connection between what the students are learning and how it can be applied."

However, at that scale, the small variances between material tolerances can create larger installation issues. "These assemblies need to be planned by everyone involved," Raymond states, "TGP helped with the front-end planning as well as the installation. Our field crew could call their experts to ask questions, ensuring installation went smoothly." Not only did the collaboration between parties help the installation go as planned, but it also helped this impressive design become a reality.

VISUAL CONNECTION THAT PASSES INSPECTION

TGP's Fireframes ClearView System with Pilkington Pyrostop fire-rated glass was able to maintain the level of visual connection the school and architects wanted for the project while also providing a barrier to radiant heat. In addition to the butt-glazed system, the full-lite Fireframes Designer Series fire-rated doors helped the renovation maintain visual connectivity while also meeting all the codes required of fire-rated egress systems.

Whereas another fire-rated door assembly may only be able to incorporate a small amount of fire-rated glass due to its weight and the stress it places on door frames, TGP's assembly allows for full-lites of glass within its strong but slender frames. With larger, uninterrupted glazing areas, these systems let more natural light filter through the building from adjacent, non-rated glass curtain walls. The doors were also able to continue the design aesthetic of large lites of glass that are code compliant while also promoting social connectivity. By contributing to increased daylight access and social connection, these assemblies helped the William R. Murchie Science Building Expansion prioritize occupant experience.

In addition to contributing to the full system's ability to enhance occupant safety and comfort, the Fireframes Designer Series fire-rated doors serve a secondary function. The die-rolled steel profile doors provide the appearance of narrow-profile aluminum storefront

Fire-Rated Glazing and Doors Satisfy Building Code and Design Intent

TGP

doors. They are able to provide a close visual match to both the adjacent butt-glazed system and the steel cable handrails that line the stairs.



DESIGNING FOR OPENNESS & COLLABORATION BETWEEN PEOPLE & PRODUCTS

“We were very impressed with the powder-coated frame. It used two types of coating to color match the handrails,” Raymond said. While the ability to provide a cohesive color scheme across the assemblies and neighboring architectural features may seem small compared to preserving design intent and providing a fire-resistant barrier, it is nonetheless an important detail. The assembly’s ability to match the color of the handrails helped keep the focus on the openness created by the large lites of fire-rated glass.

TGP’s products helped create a collaborative atmosphere within the William R. Murchie Science Building. They were also able to provide a seamless transition between what was updated and what remained unchanged, streamlining the renovation process and satisfying fire- and life-safety code requirements.

Learn more about:

[Fireframes ClearView System](#)

[Fireframes Aluminum Series](#)

[Fireframes Designer Series fire-rated doors](#)

[Pilkington Pyrostop fire-rated glass](#)