GLASS & METAL ALLIANCE

SOLOMON SOLIS-COHEN ELEMENTARY SCHOOL
PHILADELPHIA, PA

Glaziers overcame a major supply issue to finish on time.

By: Amanda Gibney Weko

CASE STUDY

GMA Glazier
Twindows, Inc. | Philadelphia, PA

Team
CM: Reynolds Solutions
GC: Ernest Bock & Sons, Inc.
Architect: Crabtree, Rohrbaugh & Associates
Owner: School District of Phila.

Scope
Complete exterior and interior glazing package for a new K-5 school

Project Size
140,000 square feet

Completion
September 2021

Main entry dusk view (All photos © Crabtree, Rohrbaugh & Associates - Architect)

INTRODUCTION

Designed and built to replace an existing elementary school that dated to the 1940s, the new Solomon Solis-Cohen Elementary School opened for classes in Fall 2021. Architects Crabtree, Rohrbaugh & Associates designed the 140,000-square-foot, two-story facility to emphasize collaboration between students, staff, teachers, and the community; to support sustainable design and long-term operational efficiency; and to balance educational spaces with a safe and secure learning environment. The entire school community participated in charrettes to influence the new school's design.

The resulting environment presents a fresh, modern approach to education. A grand stair forms the heart of the school, offering opportunities for learning and socializing. A cafetorium and gymnasium provide similar opportunities along with connections to the outdoors. Small-group common areas offer instruction potential outside the classroom environment. Glass is used throughout the school both to connect the building with its parklike campus and to provide enhanced, but invisible security.

GLAZING SCOPE

GMA member Twindows, Inc. performed a comprehensive interior and exterior glazing scope of work at Solis-Cohen Elementary School. "The project included almost every type of glazing system – curtainwall, storefront, windows, integral sunshades, and interior glass," described Twindows Project Manager Nick D'alicandro, who also served as field superintendent. The company installed 12,000 square feet of glazed aluminum curtainwall, 8,000 square feet of glass storefront and entrances, and 300 windows. Sunshades integrated into both the curtainwall and storefront glazing on the building's south and west sides help control solar gain and maximize the building's energy efficiency. All-glass entrances serve as design elements and focal points at the school's main entries.

Top to bottom: exterior view into plaza, open classroom showing interior and exterior glazing; learning stair with main entry glazing; exterior view showing curtainwall, windows, and storefront glazing

SUSTAINABLE TODAY & TOMORROW

The School District of Philadelphia mandated the architects not only meet the City of Philadelphia's Office of Sustainability goals for sustainable design and construction, but also ensure the school would operate with sustainable practices and cost-efficiency for decades to come. Energy-efficient HVAC equipment and lighting, a green roof, and stormwater management are some features that helped the project earn LEED Platinum certification from the U.S. Green Building Council and a $2 million Alternative & Clean Energy Program Grant from the Pennsylvania Department of Community & Economic Development.

SENSE OF SECURITY

The design thoughtfully incorporates security through the choice of glass. The entire building features laminated exterior glazing. Laminated glass – comprised of layers of heat-strengthened glass bonded with interlayer materials such as vinyl – retains its structure in case of impact. Laminated glass appears clear and doesn't present an obvious security look but is 100 times stiffer and five times stronger than other types of safety glass. Although not bulletproof, laminated glass can protect against attacks or forced entry; it does not shatter and will retain its structure even if a bullet penetrates, allowing valuable time for police to arrive.

MAJOR SUPPLY ISSUE

Covid-19 halted the project for several months during the spring and summer of 2020. Once the job restarted, construction supply chain issues were prevalent. Then Twindows experienced a bombshell. Glazing supplier J.E. Berkowitz went out of business with only half the project's materials delivered. "We had to source high-spec, sustainable laminated glass from other local suppliers right in the middle of the Covid-19 supply-chain bottleneck," D'alicandro said. "It was a huge obstacle that really kept me on my feet." Fortunately, Twindows was able to source the remaining materials from Blue Star Glass of North Brunswick, N.J.

SUCCESSFUL OUTCOME

Despite enormous hurdles – from a pandemic to a supplier closure – the Solis-Cohen Elementary School was completed on schedule for the Fall 2021 school year. And glass contributes to the building's sense of community, its long-term sustainability, and its security. "The architects really utilized the glazing products for everything they can do," said D'alicandro.