GLASS & METAL ALLIANCE

BRIDGE | PHILADELPHIA, PA

Unitized window wall systems provide sustainability and functionality for an award-winning tower.

By: Amanda Gibney Weko

CASE STUDY

GMA Glazier
GMI Contractors, Inc. | Bristol, Pa.

Team
Developer: Brown Hill
Architect: GLUCK+
Builder: JMB Associates

Scope
Four unitized window wall glazing systems on the residential tower

Size
169,900 square feet

Completion
Summer 2017

All photos © Joe Garvin

INTRODUCTION

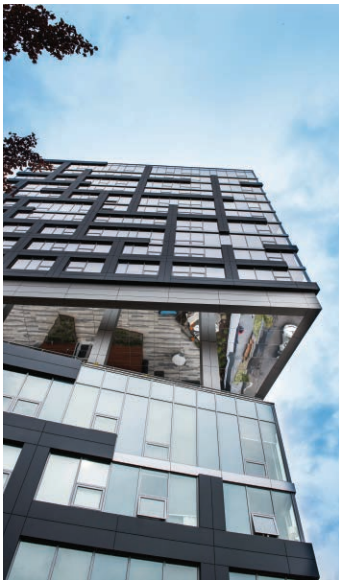
Winner of a 2018 Green Building United Groundbreaker Award and Curbed Philadelphia's 2017 Best New Building, Bridge rises majestically beside the Benjamin Franklin Bridge. The subtly tinted windows of the new residential development reflect and accentuate the blue of its namesake.

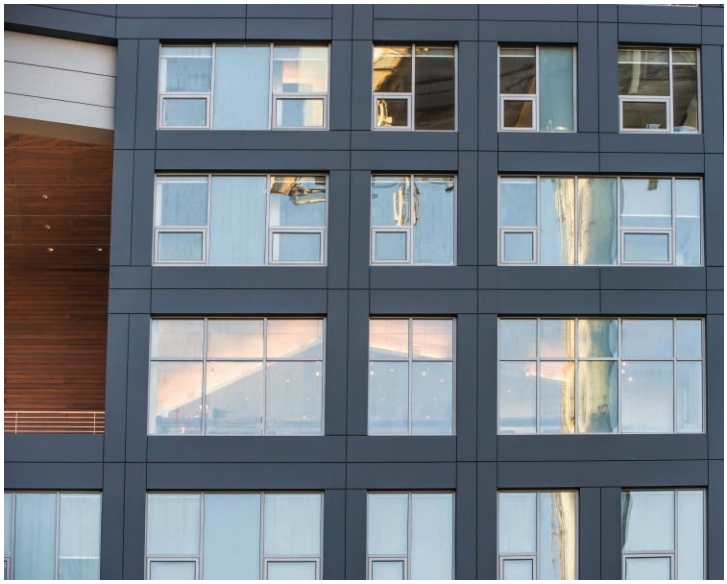
One of many new residential towers in the city, Bridge distinguishes itself by a dramatic appearance and commitment to high performance – it's one of few apartment buildings to achieve LEED Gold certification. It bridges the historic milieu of Old City and a contemporary style of architecture that blends beauty and performance. Both the aesthetics and energy efficiency were made possible by a series of unitized glazing products executed by GMA member, GMI contractors, Inc. GMI worked collaboratively with New York-based design-build architecture firm, GLUCK+, and construction manager JMB Associates.

ARCHITECTURE

Bridge features 146 apartments (10 percent affordable); 14,000 square feet of street-level retail; 8,000 square feet of green roof terrace; and resident amenities including a fitness center, parking, and oversize, operable windows in each unit. The building transitions between the large scale of the adjacent bridge and the residential scale of its Old City neighborhood through sensitive massing and thoughtful arrangement of public and resident spaces. The building's lower podium responds to the rhythm and scale of nearby rowhouses. A central notch creates an outdoor terrace for residents while preserving neighbors' views to the river and bridge. The uppermost residential floors capture dramatic skyline views across the city.

As GLUCK+ Principal Thomas Gluck explained, "Because the project was co-developed, designed, and built by the same team, we were able to deliver a high-design building without necessitating premium construction costs."





EFFICIENCY

From the start, Bridge targeted sustainable design objectives. Developer Brown Hill conceived the building to meet innovative standards and reduce energy costs for tenants (it touts 25 percent electricity savings over typical apartments). A high-performance building envelope specified high efficiency glazing for thermal insulation and sound attenuation.

DESIGN ASSIST

GMI was engaged early to assist with fenestration design. The solution incorporates four unitized window wall systems fabricated by ES Windows. GMI furnished and installed the tower windows, slab edge covers, aluminum terrace doors, window walls, and operable windows. ES W425 and W525 thermally broken, pre-glazed window wall systems are used in tandem with P250 and P251 operable systems. Solarban 60 Clear glass is combined with back-painted spandrel glass. Project Manager Mike Lopuszanski and Foremen John O'Brien and Charles Lopuszanski led field work for GMI while owners Stephen Gilchrist and Jim McDonald played key roles in design assist and project oversight.

"Due to the design and magnitude of the project, and the fact that this was a design assist, the design was very fluid," explained GMI's Heather Lutzker. "Our biggest success on this project was our ability to get involved early, not only achieving a superior product and design but also meeting all of the demands of LEED certification." At the end of the day, Lutzker is proud of the project and the intimacy afforded by a design-assist process that strengthened GMI's ability to understand the nuances of the product and design.

COMPLEXITIES

GLUCK+ designed the exterior facade in consultation with its engineering team to be 40 percent vision glass - the climate-specific sweet spot to optimize daylight gain vs. heat loss. Through strategic use of back-painted spandrel units with fully insulated, solid partitions on the interior, the building tower maintains an overall glassy expression to reinforce the architectural idea.

The building's large cantilevered section required unique engineering of the window wall system to ensure it would perform as expected. GMI, ES Windows, GLUCK+, and structural engineers from the Harman Group collaborated to create custom components that met demands for additional deflection. GMI performed onsite ASTM E1105 water testing and ASTM E783 air testing of installed windows for quality control.

BIGGEST TAKEAWAY

Cross-disciplinary teamwork among trades working in proximity to one another helped achieve the building's unique expression with an emphasis on quality. Through detailing, the glazing system was able to use off-the-shelf window wall components to achieve unique expression.

Gluck said his biggest takeaway from the project was the collaboration. He explained how architects have fewer and fewer opportunities to be heavily involved with construction. "As a design-builder, GLUCK+ recognizes the value and expertise that subcontractors, like GMI, bring to a project. We find that the closer we collaborate, the better the end result."