GLASS & METAL ALLIANCE

MERGE | PHILADELPHIA, PA

A design-build project between GMA, FTI, and Jefferson University

By: Amanda Gibney Weko

CASE STUDY

Team Leaders
Jeffrey Kansler | Jefferson University
Steve Metzger | FTI

Jefferson Students
Ryan Mann (competition winner)
Raymond Bracy
Rebecca Caddick
Michael Jose
Jessica Schell
Morgan Young

FTI Glaziers
Neil Amadio
Jerry Kots
Phil Rothwell
Patrick O'Connor
Joseph Wojtkielewicz

Project Managers
James Doerfler | Jefferson University
Stephanie Staub | GMA

MERGE installed on Lubert Plaza (all images © Joe Garvin)

MERGE

When DesignPhiladelphia 2017 kicked off with an opening night party at Jefferson University's Dorrance H. Hamilton Building in October, guests were greeted with a dramatic glass installation on adjacent Lubert Plaza. MERGE was the culmination of a collaborative design-build project between the Glass and Metal Alliance (formerly the Architectural Glass Institute), the Finishing Trades Institute of the Mid-Atlantic Region (FTI), and Jefferson University. Third-year architecture students, journeymen and apprentice glaziers, and a cadre of professionals worked together to execute the hands-on project.

FIGURATIVE & ARCHITECTURAL

MERGE represents a figurative and architectural link between Philadelphia University and Thomas Jefferson University, now known as Jefferson University. MERGE makes a symbolic gesture toward the newly combined university, providing a vantage point to look toward the future. Two glass walls, each representing a university, form a pathway that shimmers in the sunlight and reflects the surroundings. Each wall is composed of small square pieces of glass with different reflective qualities, providing different views and operating like the eyes of many insects seeing in all directions. The overlap of the two walls offers the greatest transparency. Multiple views and reflections perceived at this merge point are emblematic of the two universities bringing different disciplines together to form new views on the future of education.

ENGAGING THE CONTINUUM

MERGE was conceived and executed to engage the design continuum – linking architecture students, glaziers, and allied professionals to share real-world experiences and build long-term relationships that strengthen the industry. MERGE was conceived as a real-world learning experience. Jefferson Professor and Director of Architecture Programs James Doerfler, AIA, explained, "There is no better learning experience than drawing and making, connecting your brain to your hands."

Above: left to right: design competition participants; design studio collaboration; testing glass options; applying dichroic film; assembling the MERGE structure; right: the combined team in front of MERGE; detail of the installation showing the perforated metal walkway and glass panels

THE COMPETITION

MERGE began in January when GMA, FTI, and the Jefferson Architecture Program hosted the 2017 Architectural Glass Student Design Competition. Third-year architecture students participated in an intense 10-day charrette design contest in which they developed design-build proposals for two glass pavilions.

The original theme, Mirror/Mirror, intended a pair of matching pavilions to be installed on the East Falls and Center City campuses. Students were given parameters including a budget of $12,000; a constrained 8-foot-by-8-foot cube in which to build; and a fabrication and construction schedule of roughly six weeks. The winning scheme would be built during a hands-on summer design-build studio.

Jurors included David Murray of Bohlin Cywinski Jackson, Chris Boskey of KieranTimberlake Associates, alumnus Matthew Naugle of New Hudson Façades, Pat McIntyre of Synergy Glass & Door Service, Terry Webb of Eureka Metal & Glass Services, Inc., and Lyn Godley of Jefferson's Industrial Design Program. Ryan Mann took first place.

THE STUDIO

MERGE continued over the summer as a special design-build course. Six architecture students worked with five FTI glaziers under the guidance of Jefferson Assistant Professor Jeffrey Kansler and FTI Instructor Steve Metzger. Jefferson students included competition winner Mann, Raymond Bracy, Rebecca Caddick, Michael Jose, Jessica Schell, and Morgan Young. Glaziers included Neil Amadio, Jerry Kots, Phil Rothwell, Patrick O'Connor, and Joe Wojtkielewicz.

The group refined Mann's winning design for a single, larger-format pavilion. Thanks to coordination over the spring by Doerfler and Staub, DesignPhiladelphia selected MERGE as its signature project for the 2017 festival. That designation and identification of the Lubert Plaza site resulted in a redesign to a single pavilion with a larger plaza presence.

Architecture students began by participating in AGI's Architectural Glass Boot Camp at FTI, an interactive instructional program developed specifically for architects to interface with apprentice glaziers and exchange information. The program offered an introduction to the FTI shop and taught students firsthand how curtain wall systems go together. "The students really enjoyed Boot Camp," explained Doerfler. "It helped them understand the complexities of doing a weather tight system, and showed them how to look for opportunities for innovation with the details."

THE COLLABORATION

Glaziers joined the studio after the first week and immediately provided input on constructability and fabrication methods, helping to shape the final design. The combined team met regularly at FTI, obtained the input of industry sponsors who provided materials sourcing and digital fabrication, refined the final concept, and completed documentation.

"There was no resistance whatsoever to exploring, or pushing the envelope," said Doerfler. "Everyone was very open and collaborative. They were asking each other questions instead of needing me or Jeff to pose or moderate the questions."

Kansler agreed. "The collaborative aspect was more rewarding than I could have hoped at the outset of this project. The glaziers had such a pronounced and impactful influence on the process."

He and co-leader Steve Metzger add that this may offer significant commentary on the typical design and construction process where tradespeople often have little influence over design decisions except in cases of value engineering.

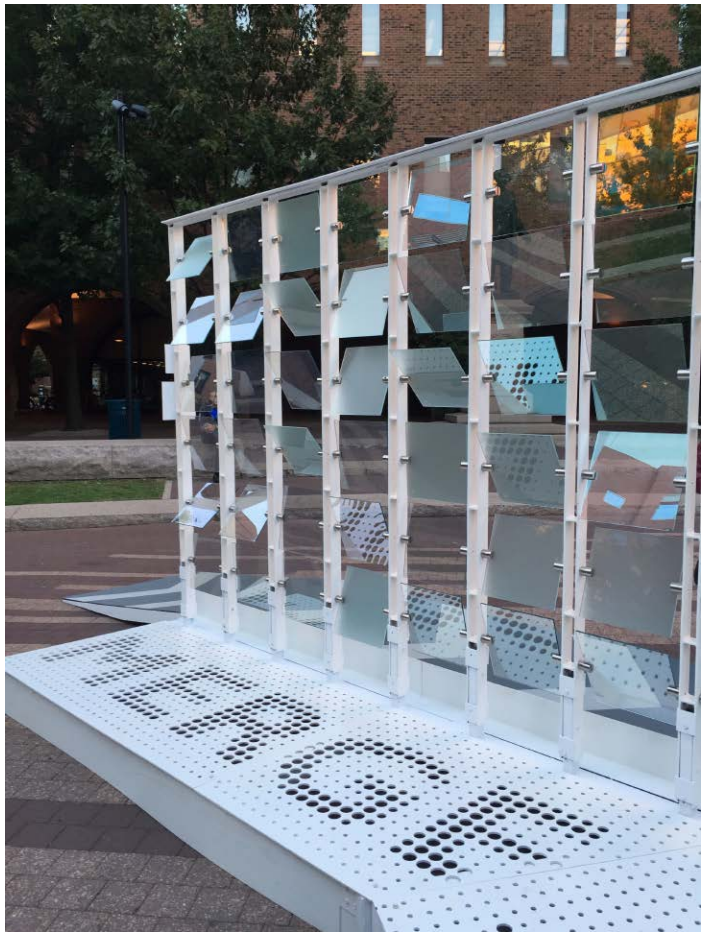
"The old adage that 'time is money' is perhaps truest when it comes to construction," explained Metzger. "Enormous amounts of money and time are wasted waiting for RFIs. When the fabricator/installer is involved with the design phase, s/he has a better understanding of the project and therefore fewer questions or problems that can be addressed early in the design phase, way before crunch time."

Kansler summarized the team's conclusion: "This project highlighted that maybe there's a better way; by incorporating more input early, you get closer to achieving the [shared] design vision and can find better ways of building based on the tradesperson's input. It's better for everyone involved."

THE BUILD

When the fall semester began, the team spent six Saturdays building the installation at FTI. On September 30, the full team dismantled, transported, and installed MERGE in Center City. Everyone involved with MERGE emphasized the same point – the design-build project was collaborative from start to finish. The architecture team didn't hand off to the glaziers for construction; responsibilities were shared, dialogue helped bring about simpler yet more elegant solutions, and the commitment level was mutual.

Jefferson student Jessica Schell described her hands-on role: "I helped grind down screws, cleaned up welds, applied the dichroic film to the glass. I learned a lot about what glaziers do. I really respect and appreciate all of the hard work they put into building and how much they care for the work that they're doing."

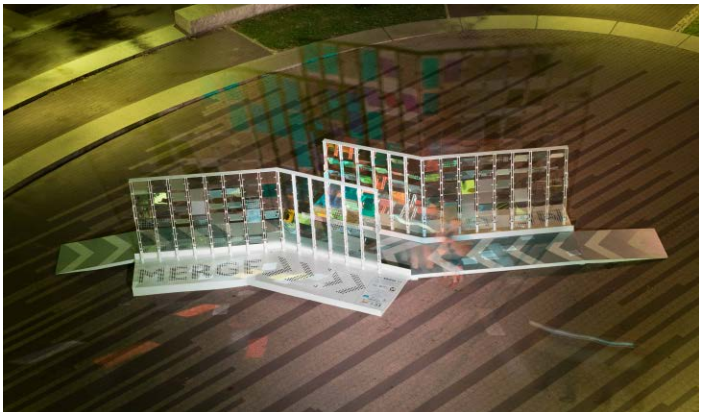


BIG PICTURE IMPACT

The Center for Architecture + Design hosted a MERGE panel discussion to recap the process and share lessons learned. Over 40 people attended the discussion, which focused on how design-build education can unite future generations of design and construction professionals. "We saw from the successful output that it might be a useful lesson to transform the professional environment," said Kansler.

The competition, course, and installation of MERGE were funded through a Federal Mediation and Conciliation Services grant received by FTI. AGI managed the program. The partnership initiated a relationship between FTI and Jefferson, leading to discussions toward developing articulation agreements that will allow the seamless transition of earning construction technologies associate degrees through FTI to bachelor's degrees through Jefferson.

"What is so compelling about this collaboration is that it is clear the educational institutions and industry should be moving towards models like this," wrote AIA Philadelphia Executive Director Rebecca Johnson in an August 31, 2018 blog post. "The more communication between designers and craftsmen, the more the design can be protected and more fully realized, and many times the project will be executed more efficiently and ultimately saving money by avoiding delays and change orders."



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