

Project Report

Mahwah High School STEAM Lab

Mahwah, NJ, USA



Architect: Tokarski Millemann Architects, Wall Township, NJ

Photos: Courtesy of Tokarski Millemann Architects

KALWALL®

high performance translucent building systems

KALWALL SPECIFICATION:

Panel: 2.75" | 70 mm

Grid core: shoji

Exterior FRP: blue

Interior FRP: crystal

System finish: aluminium #79

U-Value: .14 | .78 Wm²K

Solar Heat Gain Coefficient: .14

Visible Light Transmission: 6%

WHAT IS KALWALL?

A translucent, structural sandwich panel that provides:

Glare-free, balanced daylighting

Superior thermal performance

Energy + electricity saving

Low maintenance life cycle requirements

Safety + security through visual privacy

Durability + graffiti / vandal-resistance

Hurricane, explosion venting + blast rated options



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For unparalleled thermal performance in translucent daylighting, consider specifying Kalwall with **CABOT's Lumira®** aerogel insulation. Available in 2.75" (70 mm) panel formats up to: 4' x 12' (1200 mm x 3600 mm) and 5' x 10' (1500 mm x 3000 mm) maximum.

Mahwah High School STEAM Lab, Mahwah, NJ, USA

DAYLIGHT FOR SHOWCASING STUDENT SUCCESS

We have always recognized that daylighting is both an art and a science, which makes it an appropriate focal point for Mahwah High School's new STEAM Lab.

The STEAM (Science, Technology, Engineering, Arts and Mathematics) approach to education takes an important step in recognizing the importance of and integrating the arts into a science-and-technology-gear curriculum. The arts foster creativity and ingenuity that allows for successful application of other skills.

The 9,000-square-foot facility—designed by Tokarski Millemann Architects and fondly nicknamed the "Thunderbird Think Tank" in honor of Mahwah High School's logo—houses classrooms, indoor and outdoor labs and a gallery to showcase student projects.

Tokarski Millemann was looking for the perfect material to use for the art gallery component of the facility. According to principal architect, Michael Millemann, "The vision was to create a 'cube' shaped space for the display of the students' creative works which were previously tucked in a hallway. The material needed to create a beautiful glow from the exterior along with permitting only serene, diffused light to the interior."

Kalwall's museum-quality daylighting™ delivers full-spectrum, diffuse natural light to allow for high visual acuity and accurate color rendition within the gallery space. This creates a comfortable, welcoming environment for viewing artwork and other projects or hosting gatherings.

A custom blue face sheet was developed to match the school's logo. The blue is not a coating, but rather full-color thickness through the entire exterior face, utilizing Kalwall's super-weathering technology. Due to the panel's power of diffusion, the blue exterior does not affect the quality of light within the space, but it allows for a beautiful, soft glow at night that acts as a marquis for the school.

During the day, Kalwall's best-in-industry solar heat gain control prevents the cube from becoming a hot box and superior thermal performance ensures a comfortable environment all year long while lowering HVAC loads. Combined with daylighting's ability to reduce reliance on electricity, Kalwall plays a major role in the project's overall energy efficiency.

Cost efficiency is another benefit Kalwall provided. Panels are low maintenance with a self-cleaning surface, meaning normal rainfall helps to keep the exterior free of sediment while at the same time retaining its original color during the weathering process. The lightweight panel system minimized the need for additional internal structure for a very clean design, while rapid installation kept the project on schedule and on budget.

"The Kalwall translucent panels exceeded our vision," said Millemann. "We worked with Kalwall's Steve Del Guercio and their team to develop a daylighting and structural strategy, and the custom panel color. The Kalwall cube anchors the addition to the existing building and is a visual beacon located on axis with the entrance to the campus. Along with the client, we could not be happier with the final product."

The Mahwah High School STEAM lab will be an environment in which students can thrive for generations to come.



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