

# SchoolConstructionNEWS

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# Transforming Space and Education

Central Queens Academy and GLUCK+ bring new life to a former commercial building, creating a space where students and educators thrive

By Lindsey Coulter



CQA's classrooms were placed along the building's perimeter, benefiting from ample natural light. | Photo Credit (all): Here and Now Agency

In the borough of Queens, New York, where land for new construction is scarce, growing schools often struggle to find the right space or structure to support modern teaching and learning. Leaders at Central Queens Academy (CQA) experienced similar challenges when searching for the growing school's permanent home. Thanks to the partnership and ingenuity of architecture firm GLUCK+, however, for the first time in the school's more than ten-year history, the entire CQA community is now united under one roof.

## The Search for a Site

CQA opened in 2012 and for several years the middle school was located in small, temporary spaces as school leaders sought a facility to call home. "We knew that we were going to open our first elementary school in 2021, so our desire for a large, permanent school space increased even further," said Ashish Kapadia, Executive Director and CQA parent. The GLUCK+ team, headed by architect Charlie Kaplan, LEED AP, Principal, and Marisa Kolodny, Associate, was tasked with finding an existing facility that could be adapted and redesigned as a home for education, while also providing a welcoming space for the community. Having worked with the school for more than a decade, the GLUCK+ team had a deep understanding of the school's spatial needs and how the building needed to serve the mission. "We've been involved with CQA for about 12 years, helping them from their

properties, eventually selecting a portion of an existing mixed-use structure that includes a community health facility as well as a residential tower, with the school occupying the building's three expansive podium levels. The podium offers an impressive 83,000 square feet of space, enough to accommodate 50 classrooms and up to 900 students.

## Navigating Scale and Space

The podium level's massive 35,000-square-foot floor plate presented both a gift and a unique design challenge. To bring the space down to a more educational scale, the design team broke the space into smaller components, creating intimate, village-like neighborhoods of rooms. "We wanted to make sure that the scale of the space wasn't overwhelming for the students," Kaplan said. "Developing smaller zones allowed us to create more personalized learning environments." The building's existing structural elements, including low ceilings throughout, also forced the team to get creative, developing a visually dynamic space that also reinforced CQA's branding and mission. "We leaned into the low ceilings, lowering them even further in some spaces to create a more intimate, focused environment," he added. "In the classrooms, we used color, particularly CQA's signature orange, to highlight architectural features like the carved ceiling details. Instead of just painting the ceiling, we carved into it, using the orange color in these cut-out sections that drew the eye upward, making the space feel larger

**"GLUCK+ was able to take our programmatic needs and fit it into an unusually shaped space. They created a modern look with a school feel that allows us to offer a rigorous but nurturing program." – Ashish Kapadia**

very first temporary spaces to eventually landing in this permanent location," Kaplan explained. "New York's real estate market presents significant hurdles for not-for-profits, which often compete against for-profit developers. You're constantly looking for the right piece of land, or sometimes a lease, that suits the organization's mission and budget."

Together, the GLUCK+ team and school leaders evaluated nearly 100 different

and more inviting."

Kaplan also reflects on the challenge of balancing architectural concepts with real-world constraints. "One of the most rewarding aspects of this project was solving difficult design problems with limited resources and the joy that comes with figuring out how to achieve a lot with a little," he said.

## The Concept of Villages and Commons

A hallmark of CQA's design is the concept of "villages" and "commons," which emerged from the practical challenge of redesigning a building that was originally conceived as a commercial space. "When you have a floor plate that large, it's inherently very deep, and parts of it don't receive natural light," Kaplan said. "In our test fit, we arranged classrooms around the perimeter, where there was glass, but the central area became a conundrum. What do we do with the 'doughnut' in the middle?" The solution came in the form of the Commons: central spaces designed to foster community, learning and interaction among students. The concept was shaped not only by the building's physical constraints but also by the need to accommodate CQA's diverse population. As CQA serves one of the most culturally diverse zip codes in the United States, with more than 30 languages spoken by the students alone, the Commons became a natural fit to bring these groups together in a shared space. The design also accommodates the school's practice of allowing young scholars to step outside of their traditional classroom settings to learn in small groups. According to Kapadia, this method has led to a decrease in scholars falling behind academically. "We are able to do real science experiments in laboratory settings and offer four years of middle school STEM instruction, leading to higher scholar performance in math and science by the time they finish 8th grade," Kapadia said. "For example, 24% of our 8th graders got into a specialized or selective high school in the spring of 2025 and over 75% of our eighth graders passed two high school Regents exams this year." However, the idea of the Commons is also rooted in the historic notions of shared public spaces. "The Commons was once a shared agricultural space, and we thought about how this idea could translate to an urban school," Kaplan added. "It's a place for students to come together, learn and engage in ways that are different from the traditional classroom."

## Engaging Interiors

To celebrate the coming together of various populations, the GLUCK+ team developed the Entrance Commons, a greeting area located just before the main circulation space on the first floor. Further on and at the heart of the floor

The podium offers an impressive 83,000 square feet of space, enough to accommodate 50 classrooms and up to 900 students.



After evaluating nearly 100 different properties, the team selected a portion of an existing mixed-use structure, with the school occupying three expansive podium levels.





The GLUCK+ team upgraded CQA to a luxury vinyl tile that is more durable, easier to maintain and more eco-friendly, which aligns with the school's goals for sustainability.

plate, GLUCK+ inserted the Central Commons, the main gathering space which accommodates informal learning and features a grass-like turf carpet and a recessed ceiling that is painted blue to resemble the sky. Built-in bench seating surrounds the area, which also includes a white wall for projection and students' creativity. It is the main space for non-traditional learning activities where different grades and classrooms can gather.

Down the hall is the Kindergarten Commons, a more private and secure area with enough space to seat 100 young learners as well as a raised platform used as a stage. Further into the building is the Crossroads Commons, a dynamic space/intersection that includes a mix of classrooms and grade levels with access to the gym and the upper floors.

Each common area includes green flooring, while pops of the school's signature orange are integrated throughout the hallways and classrooms. Blue is also used to reflect a sky element, while soft gray in the hallways is accented with corkboards for posting student classwork, art and announcements. Each classroom has a cut-out above the door projecting natural light from the interior classroom windows. Seating arrangements within the commons have playful benches with open cubby spaces for shoes or books. The cafeteria is also used as a multipurpose space with long community tables and large windows.

"GLUCK+ was able to take our programmatic needs and fit it into an unusually shaped space," Kapadia said. "They created a modern look with a school feel that allows us to offer a rigorous but nurturing program."

Light, Durability and Maintenance

Given the building's design as a commercial space, CQA's classrooms were placed along the building's perimeter, benefiting from ample natural light. However, ensuring that the interior spaces received adequate light was an ongoing challenge.

"We designed the corridor walls that separate classrooms from the Commons with continuous clerestory windows. This allowed light to filter from the classrooms into the common areas, brightening the whole space," Kaplan noted.

Durability and ease of maintenance were also central considerations, especially in a school environment where wear and tear are constant. In typical school designs, VCT floors are standard, but the GLUCK+ team upgraded CQA to a luxury vinyl tile that is more durable, easier to maintain and more eco-friendly, which aligns with the school's goals for sustainability.

The team also carefully considered the materials used in the walls. "We did extensive research on paints, opting for super-durable paints that could still be easily repaired," Kaplan said. "For high-traffic areas like the classroom corridor, we used tile wainscoting up to three feet to withstand daily use."

The importance of a robust HVAC system also came into focus, especially as much of the project planning took place during the height of the COVID-19 pandemic.

"We were in the middle of the pandemic when we were designing the HVAC systems, focused on providing great air quality and above-code fresh air circulation," Kaplan adds.

The decision to use smaller, redundant HVAC units for every two classrooms was an important one, ensuring that if one unit failed, the rest of the building would continue to function smoothly.

"This redundancy is especially valuable in a school setting, reducing classroom downtime when a unit fails," Kaplan said.

PROJECT TEAM:

Architect: GLUCK+

Structural Engineer: Silman

MEP and Acoustics: GEA Consulting Engineers

Lighting Design: Lux Populi

Food Service: Kitchen Consultants

Structural Engineer of Record (Building):  
Times Building PC Engineering Service

MEP Engineer of Record (Building):  
EJC Engineering

PRODUCT MANUFACTURERS:

Curtains (on track): Europatex Casablanca 44

Carpet: Milliken

Floor and Wall Tile: Daltile, Nemo Tile

Wall Coverings: Koroseal Tac-Wall

Resilient Flooring: Tarkett

A School for the Future

Central Queens Academy is not just a school; it is a reflection of the community it serves. The design emphasizes flexibility, inclusivity and durability, ensuring that it meets the needs of students today while adapting to the challenges of tomorrow. As Kaplan notes, "The project really exemplifies how architecture can solve problems while staying true to a bigger vision. Every design decision was made with the goal of creating a space where students and teachers can thrive, regardless of background."

"Because of our new facility, for the first time, we are able to offer dance, art, music, physical education and recess for our elementary school all at the same time," Kapadia said. We are able to offer various arts and movement courses for our middle school at the same time. We are able to hold club activities, movie nights, game nights, and other fun events for scholars and families."

Through thoughtful design and a deep commitment to community values, Central Queens Academy has created an environment that fosters learning, connection and growth.



Students are able to do science experiments in laboratory settings, and the schools can now offer four years of middle school STEM instruction, leading to higher performance in math and science.

Advances in Prefabrication Lead to More Sustainable Campuses

By Doug Bevier

As mainstays of innovation and progress, universities are under growing pressure to address climate change. And with a profound understanding of the scientific imperative to act, many are prioritizing decarbonization across every facet of campus life, from operations and academics to community engagement. At the University of California, San Francisco (UCSF), transforming the physical campus by replacing traditional design and construction methods with prefabrication has significantly reduced the institution's carbon footprint. The Tidelands, a student housing project in San Francisco's Dogpatch neighborhood, showcases how this shift to prefabrication, combined with a thoughtful design-build process and rigorous performance targets, has helped lower carbon emissions, create healthier spaces and set new benchmarks for sustainable campus development.

Balancing Aesthetics, Carbon Emissions and Cost

In response to San Francisco's urgent need for high-density affordable housing, the Tidelands doubled the amount of housing available to UCSF medical students and trainees, offering 595 units across two buildings.

The need to balance aesthetics, environmental impacts and cost became a driver for thoughtful design solutions across the project, inspiring creative problem-solving rather than hindering owner priorities for a timeless building and minimized carbon footprint. The architect, engineers and UCSF officials came together early in the project, which allowed for the selection of healthy, affordable building materials, the integration of passive strategies and cross-team coordination for faster, informed decisionmaking.

Together, the teams determined that the Tidelands would use Clark Pacific's Infinite Facade with glass fiber-reinforced concrete (GFRC). The design team tested multiple materials for the building envelope, ultimately discovering that GFRC concrete had significantly lower impacts than other options. The Infinite Facade is a building envelope system, prefabricated offsite that is tested for ASTM and AAMA air, water and vapor penetration, and meets or exceeds Title 24 building code requirements for every climate zone in California.

Clark Pacific collaborated with UCSF to determine a window-to-wall ratio that would keep the cost within budget while also focusing on thermal comfort. The design team explored multiple scenarios and the effect each would have on energy systems, cost and performance.

Architecture firm Kieran Timberlake also conducted a façade sun exposure analysis to determine the impact of solar heat gain on the rooms. The design team selected billows, and horizontal and vertical sunshades were built directly into the prefabricated panels on the sun-facing elevations and flat panels on the others. This strategy, combined with the continuous insulation inherent in the Infinite Facade system, ensures the Tidelands project not only meets but surpasses Title 24 prescriptive requirements on performance. The ability to achieve the desired U-value from a single provider eliminated the need for additional subcontractors and consultants, and simplified energy analysis.

Windows were installed during the manufacturing process. The Tidelands project was completed six months ahead of schedule, and UCSF has one point of contact for the building envelope warranty.

Driving Sustainable Construction with Prefabrication

As recently as 10 years ago, sustainable buildings were considered experimental, but today they are increasingly feasible. At the same time, many owners and project stakeholders still find they need to choose between sustainability and cost. An owner may have ambitious sustainability goals, but if the cost of bringing them to life is too high, they may be out of reach.

Although achieving a balance between budget and sustainability is a complex challenge, prefabrication offers a solution through:

**Material Innovation:** Advances in low-carbon concrete that can reduce embodied

carbon, combined with more efficient designs that improve manufacturing efficiencies and results, can cut the overall environmental impact of a building before it opens its doors.

**A Controlled Environment:** A typical 50,000-square-foot higher-education building consumes more than \$100,000 worth of energy annually. Beyond embodied carbon, prefabricated systems inherently contribute to a reduction in operational carbon. Fabricating building components in a controlled factory environment enables higher precision and quality control, resulting in tighter building envelopes and superior insulation. This directly translates to lower energy consumption for heating and cooling once the building is operational, ensuring long-term energy savings and a smaller carbon footprint throughout the building's lifespan.

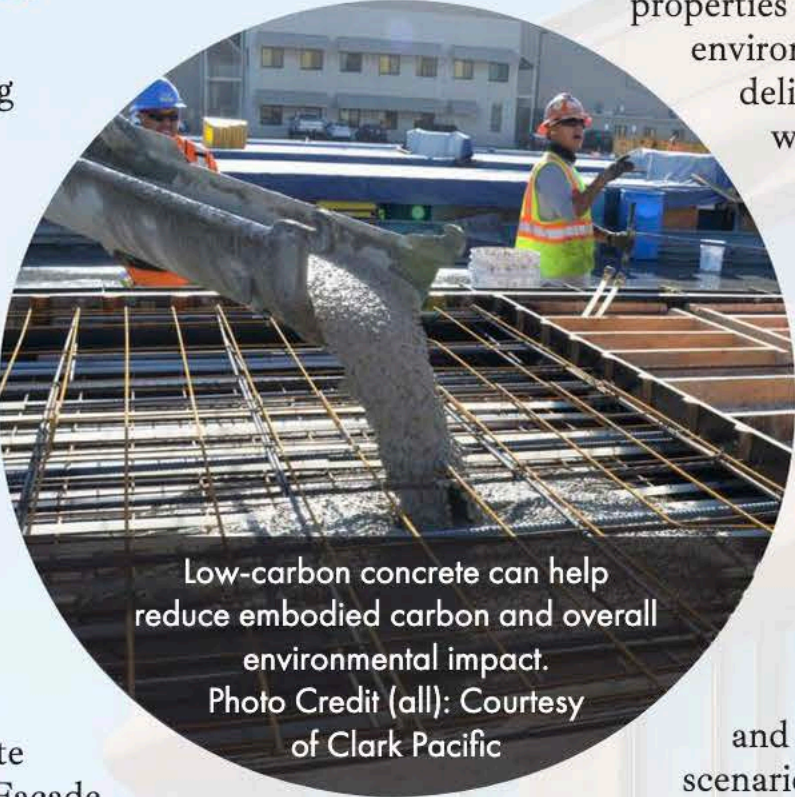
**Integrated Radiant Systems:** Radiant heating and cooling systems integrated into prefabricated concrete floor systems offer a highly efficient, comfortable and sustainable approach to climate control in buildings. The advantages stem from the inherent properties of concrete as a thermal mass, combined with the controlled environment of prefabrication. Heating and cooling energy are delivered to the slab using water. This water heats or cools the slab, which then radiates the temperature into the surrounding space.

By simply controlling the temperature and the flow of water circulating through the slab, owners can regulate the temperature of the mass. Then, based on the air temperature, they can force heat transfer in one direction or the other to absorb heat in the space in cooling mode, or radiate heat into the space in heating mode.

Sustainable Campus Development

Prefabrication is not just a construction method. It's a strategy for creating a more sustainable and resilient future for campus infrastructure.

As demonstrated by the Tidelands project, prefabrication and early engagement enable design teams to explore multiple scenarios for elements such as window-to-wall ratios and sun shades, assessing their impact on energy performance and cost in real-time. By prefabricating building envelopes with integrated insulation, windows and shading devices, the construction process becomes more predictable, minimizing the unforeseen costs and delays often associated with traditional multi-trade coordination on-site. This approach ensures that aesthetic goals are met without compromising energy efficiency or exceeding the budget, ultimately delivering highly sustainable buildings that prioritize occupant well-being and long-term operational savings.



Low-carbon concrete can help reduce embodied carbon and overall environmental impact. Photo Credit (all): Courtesy of Clark Pacific

Doug Bevier is Director of Preconstruction at Clark Pacific.



Designed for Learning

LIGHTBLOCKS Palette was chosen by architects to accentuate the study room walls at Delaware Community College. The use of the colorful resin products helped make the study area bright and fun. LIGHTBLOCKS non-porous, fingerprint- and scratch-resistant surface makes it especially well-suited for educational settings and other high-traffic environments.

Delaware Community College | LIGHTBLOCKS Palette



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