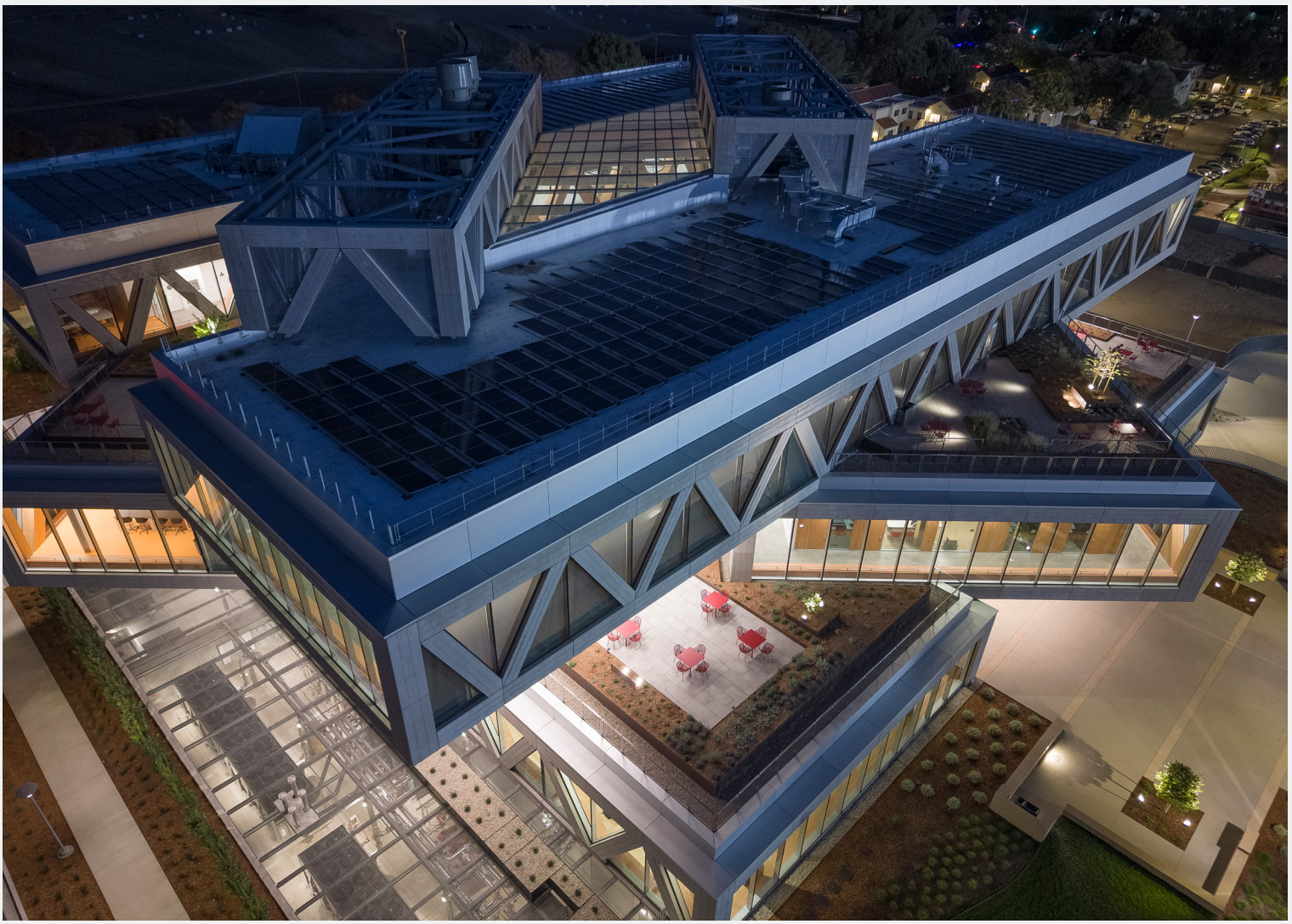
Building Legacies

CASE STUDY

ROBERT DAY SCIENCES CENTER, CLAREMONT MCKENNA COLLEGE CLAREMONT, CALIFORNIA

KAWNEER



THE FUTURE OF COLLABORATIVE EDUCATION

The Robert Day Sciences Center at Claremont McKenna College demonstrates how forward-thinking design and technical precision can reshape the way students learn, collaborate and engage with their environment. Spanning 135,000 square feet of classrooms, research spaces and shared gathering areas, the facility is designed to reduce academic separation and foster interaction across disciplines.

Defined by stacked, rotated floor plates and a facade composed of triangular glass units, the building presented a highly complex envelope in a seismically active region of California.. To realize this vision, Kawneer Collaborative was engaged early in the process, partnering with the project team to translate unconventional geometry into a coordinated, high performing facade system engineered for long term resilience.

The resulting facade delivers a striking visual identity while supporting long-term performance in a high seismic environment. Designed to hold both glass and stone, the custom-building envelope unifies the facade into a single system engineered to accommodate movement across the building's stacked floors without compromising resilience or architectural expression.

Architect: BIG Bjarke Ingels Group, Los Angeles, CA
General Contractor: KPRS Construction, Orange County, CA
Glazing Contractor: Aragon Construction, Montclair, CA

ANGLES, INNOVATION & INTERACTION

Designed by Bjarke Ingles Group, the Robert Day Sciences Center is composed of stacked stories, each rotated 45 degrees from the level below. This rotation strategy orients each floor towards a different vista, opening the building to the surrounding campus and landscape. The result is a dramatic central atrium and a series of indoor and outdoor terraces that support interaction across programs and disciplines.

To address the building's complex envelope requirements, Kawneer Collaborative partnered closely with the project team in a design assist role, providing facade engineering expertise and detailed shop drawings. This early collaboration was critical to resolving the building's geometry into a coordinated buildable facade system aligned with both the architectural vision and performance requriements.

A RESILIENT SOLUTION

Kawneer's custom unitized curtain wall was chosen for its superior performance, off-site constructability, ease of installation, and long-term durability. The system was designed to allow mounting of the GFRC (Glass Fiber Reinforced Concrete) accent panels, which was a distinctive architectural feature. Kawneer's unitized curtain wall system also provided greater movement allowance than conventional stick-built curtain walling, which was a key consideration because of the building's location.

The team had to address not only overall system movement, but also how the facade would respond to complex, multi-directional forces created by the building's stacked and offset floor plates. By modifying how the units were anchored to the structural frame, the curtain wall system was engineered to accommodate movement from multiple directions, including in-plane and out-of-plane forces. Shifting the deadload anchoring to the center of the unit, versus the corners, enabled the system to tilt in various directions under seismic forces, helping maintain facade integrity during structural shifts.

Alongside the bespoke unitized curtain wall solution, several Kawneer systems were incorporated throughout the building envelope. These include the 1600 Wall System®1 Curtain Wall, tested to AAMA 501.4 and 501.6 standards for seismic resilience and thermal performance, which also integrates seamlessly with Kawneer entrances. 300T Insulpour® Thermal Entrances were selected for their thermal performance and ability to accommodate high traffic along with their thermal performance. Each of these thermally broken solutions contributes to the building's overall efficiency while supporting its innovative design.

CHALLENGES

- The Robert Day Sciences Center presented a uniquely complex facade environment through its unconventional geometry and seismic context.
- Each floor is rotated 45 degrees from the level below, resulting in unique facade conditions at every story. The building's geometry also necessitated triangular glass units, an atypical configuration for curtain wall systems.
- Located in a high seismic zone, the project required a curtain wall system capable of accommodating movement in multiple directions without compromising architectural intent.

SOLUTIONS

- Kawneer Collaborative addressed the complexity of the building envelope through a fully customized, unitized curtain wall solution. Extensive shop drawings incorporating hundreds of unique details were produced to resolve the project's many geometric conditions.
- To support the building's complex geometry and movement requirements, the curtain wall system was unitized and shop glazed, allowing for greater quality control and precision with the triangular units. Framing members were configured in a Z shape to achieve the desired architectural expression while maintaining structural performance.
- The anchoring strategy was engineered to accommodate seismic movement from multiple directions. Curtain wall units were hung from the top and supported by a center point deadload anchor rather than conventional corner anchors. This approach allows the units to tilt in response to both in-plane and out-of-plane forces during a seismic event, helping preserve facade integrity while accommodating building movement across the stacked offset floors.

PRODUCTS USED

- Custom Curtain Wall System
- 1600 Wall System®1 Curtain Wall
- 250T/350T/500T Insulpour® Thermal Entrances

Technology Park
555 Guthridge Court
Norcross, GA 30092

www.kawneer.com