



Photography: © CJ Berg

ARCHITECT

SmithGroup
San Francisco, California

GLAZING CONTRACTOR

Royal Glass Co., Inc.
Santa Clara, California

FEATURED PRODUCTS

2250 IG (Inside Glazed) Curtain Wall System with custom head anchors
1600 Wall System™1 Curtain Wall
500 Wide Stile Entrances
7225 Non-Thermal Windows

Lawrence Berkeley National Laboratory – Molecular Foundry

BERKELEY, CALIFORNIA

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PROJECT PROFILE
EDUCATION

TAKING SUSTAINABILITY TO THE EDGE

Sitting high upon a steep hillside overlooking the city of Berkeley with views that extend to the San Francisco Bay, the Lawrence Berkeley National Laboratory – Molecular Foundry building immediately strikes viewers with its dramatic design, imaginative views and daring placement.

The Molecular Foundry is the first of five U.S. Department of Energy Nanoscale Science Research Centers and the only one on the West Coast. The \$85 million, 95,000-square-foot building serves as a center for collaboration among researchers from diverse disciplines. With cutting-edge amenities and unparalleled research capabilities, the Molecular Foundry encourages leadership in nanotechnology research.

The project's architect, SmithGroup of San Francisco, contacted Kawneer, who provided product information and system recommendations for the project's architectural aluminum elements. The Molecular Foundry was the first LEED Gold® certified building in the city of Berkeley. As a result of the energy-saving features throughout the building, it consumes 28% less energy than allowed by the already rigorous California building efficiency standard.

DESIGN HIGHLIGHTS

With a portion of the building hanging 45' over the hillside, it appears as though the slightest movement of the earth below would send the building careening downward. The bold use of steel, concrete, aluminum and glass throughout the building adds to the Molecular Foundry's overall impact and imposing appearance. Extensive access to natural daylight in the building design is a key green feature of the project. The building also features custom 11" deep mullion covers, which offer a creative way to provide sunshading and maximize energy conservation.

CHALLENGES

- The building is cut into the hill with only one side open onto the street and another section that cantilevers over the hill. This positioning made it difficult to place and navigate equipment onto the site.
- The site's high seismic force level added another layer of complexity of complication. Located within close proximity to the Hayward fault, the Molecular Foundry is susceptible to heavy earthquake activity, which could cause the building to slide down the hill. To prevent this from happening, the building is anchored at its base with concrete piers extending approximately 50' into the ground. Movement also needed to be accommodated into the system.

SOLUTIONS

- To address the movement needs within the building, Kawneer provided custom head anchors for its 2250 IG (Inside Glazed) Curtain Wall. They are incorporated into both the windows and curtain wall to allow interstory drift, or movement between floors, during earthquakes. The custom head anchors have a unique channel shape – with a leg extension, or protrusion, coming out of the channel – which enables them to be attached through the back side with a head clip.
- 2250 IG Curtain Wall also allowed for the frames to be preassembled in the shop and, because of the design challenges with the cantilevered floors, it allowed for a majority of the building to be glazed from the inside. In addition, 2250 IG Curtain Wall, with its narrow 2-1/4" sightline, provides a more streamlined appearance along with incidental water management capability.
- Kawneer's 1600 Wall System™1 Curtain Wall was used on approximately 10% of the building and has been tested according to industry standards for seismic performance. Kawneer's project-out 7225 Non-Thermal Windows were used to improve air circulation and provide natural ventilation, increasing occupant comfort, well-being and productivity. 500 Wide Stile Entrances from Kawneer help create a monumental visual statement and offer superior strength.



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Kawneer Company, Inc.
Technology Park / Atlanta

555 Guthridge Court
Norcross, GA 30092

770.449.5555
kawneer.com



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