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ARCHITECT

HMC Architects
Ontario, California

GLAZING CONTRACTOR

Carmel Architectural Sales
Anaheim, California

FEATURED PRODUCTS

1600 Wall System™1 Curtain Wall
Trifab™ VersaGlaze™ 451T Framing
8225TL Thermal Windows
190 Narrow Stile Entrances
350 Medium Stile Entrances
350 Medium Stile Auto Show Room Entrances
1010 Sliding Mall Fronts (with custom sill track)

Frontier Project

RANCHO CUCAMONGA, CALIFORNIA

Frontier Project

RANCHO CUCAMONGA, CALIFORNIA

PROJECT PROFILE

EDUCATION

INSPIRATION AND EDUCATION THROUGH GREEN DESIGN AND SUSTAINABLE BUILDING SOLUTIONS

Designed as an enterprise to utilize and display new sustainable technology, the Frontier Project's Leadership in Energy and Environmental Design LEED Platinum® certified building spared nothing in form to achieve its overall function. Located in Rancho Cucamonga, California, the 14,000-square-foot facility serves as a civic and commercial education space for water, energy and site conservation methods and technologies.

Created by the Cucamonga Valley Water District (CVWD), the Frontier Project Foundation is a non-profit organization dedicated to meeting environmental challenges in Southern California. The foundation enables the CVWD to provide a resource to the community for conservation-based knowledge and solutions. Along with local and national partners, the foundation developed building design ideas and solicited capital.

Kawneer was selected to provide products for the interior and exterior of the building and share its engineering and architecture expertise to accomplish the intricate and complex building design.

Construction was completed in August 2009 and the facility opened to the public that November. The building has been recognized with several design awards, including three American Institute of Architects awards.

DESIGN HIGHLIGHTS

The goal of the design was to take visitors on a journey of experiential learning from the time they enter the site. In order to do so, the design team stretched their imaginations and put conventions aside to reach a free-flowing place of thinking and inspiration. A key element of the design was the C shape of the building with a north-facing glass wall along the perimeter of the interior courtyard. Besides providing unique aesthetics, the glass curtain wall opened the space, maximizing views and allowing daylight to reach into the building, reducing dependency on artificial light.

CHALLENGES

- The glaziers and architects knew that the curtain wall would have to be flexible in order to successfully accomplish the design of an all-glass wall on a C-shaped building.
- A building whose purpose is to demonstrate sustainable practices must effectively employ them. Energy efficiency and thermal performance were key considerations in the design of the building and selection of products.
- To stay up to date with the most recent technologies, the project was constantly evolving, and indoor aspects would frequently be adapted to new ideas. This required solutions that were durable and could handle high traffic and visitor wear and tear, as well as provide enough width for large items to be moved in and out of the building.

SOLUTIONS

- To create the C shape, Kawneer produced a custom version of its 1600 Wall System™1 Curtain Wall. The curtain wall began at a slope of 14 degrees, and transitioning halfway around the building to a perpendicular 0-degree slope towards the roof. Additionally, to achieve the slope, each module on the curtain wall was its own unit, using back-to-back vertical mullions that required a miter cut at the bottom, most of which were compound miters.
- For increased thermal performance, Kawneer provided its Trifab™ VersaGlaze™ 451T Framing and 8225TL Thermal Windows. The windows feature cast white bronze locking hardware that provides superior strength and an attractive appearance and include a vent and frame design that impedes air infiltration and provides water resistance under the most severe weather conditions.
- Kawneer's 190/350 standard Entrances are located throughout the building, while 350 Medium Stile Auto Show Room Entrances and 1010 Sliding Mall Fronts (with custom sill track) were used to help in areas where larger items needed to fit in the building.



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