

**DESCRIPTION:**

The new California Academy of Sciences is a masterpiece in sustainable architecture and blends seamlessly with the natural setting. The new Academy is a single structure that contains multiple venues, including an aquarium, a planetarium, a natural history museum and a four-story rain-forest. After nearly a decade of planning, the Academy opened to the public in September. The building itself embodies the Academy's mission to explore, explain and protect the natural world. Due to the unique structure of the California Academy of Sciences includes a glass atrium - there were several different requirements for various lighting conditions and overall functionality that had to be met. Because the building is constantly moving, which is referred to as "breathing", the glass of the atrium is held in place by a built in post tension system. Shading and sound reduction systems must move in unison with the building structure to ensure the interior is protected from sun and weather damage and to reduce noise entering from the urban surroundings. Additionally the horizontal orientation and large area (36') that must be protected from a single axis added to the difficulty of the application. A two-prong solar control solution was devised for this particular project.

PROJECT:

California Academy of Sciences

LOCATION:

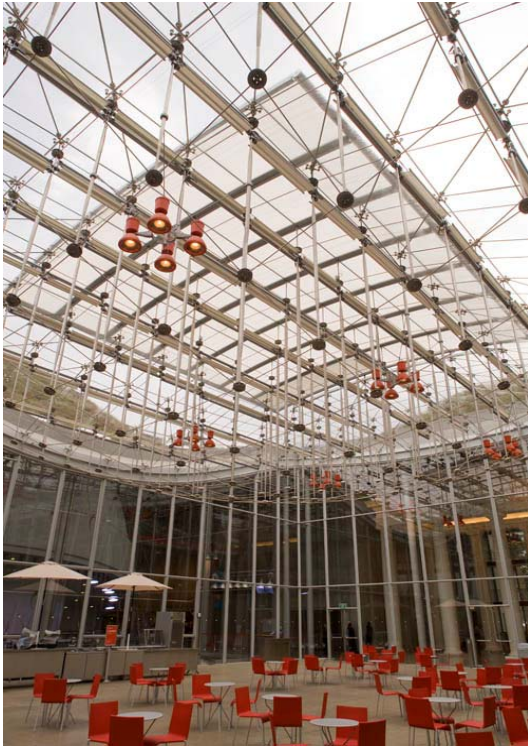
San Francisco, CA

ARCHITECT:

Renzo Piano

NYSAN PRODUCTS INSTALLED:

Exterior Motorized Shades, Sun Acoustic Tension System, and Rain Screen



Nysan Solar Control, a Hunter Douglas Company and RPBW joined forces to create a motorized, three layer shading system that incorporates a rainscreen layer to keep rain from entering the piazza, a glass fiber-based sunshade, and an acoustical fabric layer. Since a large section of the piazza is open to the outside, Nysan was contracted to design, manufacture and install a retractable rainscreen system with a rainproof fabric that can close in inclement weather. The sunshade layer provides protection from glare and solar gain. Finally, an acoustical fabric layer provides noise absorption generated within the piazza during public gatherings. Both the interior sunscreen and acoustical systems sit below the piazza glass structure, while the rain screen covers the non-glazed section. All the shades are mounted horizontally and controlled by an automated system. Climatic sensors were designed to extend the shades when in direct sunlight or unfavorable weather conditions, and retract them when not needed. The acoustic shade reduces the amount of noise with a noise reduction coefficient varying from 0.03-0.55 depending on the level of frequency. To meet the solar control needs for the vertical glass

walls, Nysan, designed, manufactured and installed exterior motorized fabric roller shades. These shades, when deployed, achieve a shading coefficient up to 0.15. The exterior roller shades are housed inside a custom round housing that attaches to an aluminum extruded channel that also functions as the raceway for all electrical wiring that power the roller shade motors. The raceway is attached to the curtain wall sections using specially designed brackets and fasteners to meet architectural design. The roller shades use an engineered external fabric, which is woven from PVC coated fiberglass yarns, providing superior strength and durability. In addition, the fabrics are manufactured and edge sealed with a flat reinforcement tape, adding stability. The roller shades are guided downwards by stainless steel guide wires and a weighted hem system to prevent excessive movements. Additionally, Architect Renzo Piano designed a 2.5 acre living roof, a green rooftop canopy that visually connects the building to the park landscape, while providing significant gains in heating and cooling efficiency. and a variety of other energy-saving materials and technologies, California Academy of Sciences was awarded LEED Platinum certification from the U.S. Green Building Council

