



Cabot Corporation

Aerogel

PRESS RELEASE

New daylighting technology provides a green solution for historic building restoration in downtown Oakland, CA

1759 Broadway is an elegant two-story commercial building located right in the heart of downtown Oakland, CA opposite the famous art deco Fox Theater. The new owners wanted to improve and update the property by giving the historic building a facelift while ensuring that the whole renovation was as green as possible. To achieve LEED certification, Division 7 Reps of California were invited to design a new green roof.

The LEED certified roof was constructed in a multi-layer process. First, expanded polystyrene panels (EPS) were placed over the existing roof sheathing. In a second stage, green standard Securerock® was placed over the panels and covered with the highly water-resistant, reflective-white membrane Duro-Last®.

The combination of these three products created a roof with an insulating R-value of 30. In spite of this being a very good rating, the problem was that about 20% of the roof was comprised of five large skylights. As the building was sandwiched between two other buildings and was only 30 feet wide by 150 feet long, the skylights were essential to introduce daylight into the upper floor. However, in order for the whole roof to be LEED certified, the existing skylights had to be removed and replaced with a daylighting system which would provide higher than usual insulating performance while being as environmentally friendly as possible.

The solution was to install Acralight International Skylights Nanostar™ skylighting system which includes Nanogel® aerogel (now called Lumira® aerogel) produced by the giant Cabot Corporation. This translucent granular form of silica aerogel comprises up to 95% air and is the world's lightest and best insulating solid material. Thirty-nine times more effective than the highest-grade fiberglass insulation, it can withstand the rigorous demands of both deep space and underwater environments. Used within Acralight's daylighting system, this space age ingredient increased the skylights' insulating properties from an R-value of 1.5 to R-6.5. In addition to providing the necessary insulation requirements for the LEED certification, Lumira® aerogel also met the strict environmental ones since the material is a Silver Cradle to Cradle CertifiedSM material. This stringent independent certification process by MBDC

examines a product's manufacturing characteristics, its ecological impact and recyclability. The aim is to eliminate waste entirely and to create a healthy and sustainable society.

At 1759 Broadway, not only has the Lumira® aerogel increased the insulation properties of the skylights by almost four times but it has also provided other important benefits. As Ted Jacobs of Ted Jacob Engineering Group, owner of the building explained, "We are thrilled by the way the skylights look and how they have changed the interior of the building. We really appreciate how the use of Lumira® aerogel has not only removed the harsh sunlight glare but has also eliminated the view of an ugly taller building on the right."

The translucent nature of the skylighting means that hot glare from the sun is converted into soft museum-quality diffused light. In the building, this creates a stunning interior ambience which highlights the beautiful period moldings and trim. The diffused daylighting also exudes a calming effect and improves the personal well-being of the occupants. In addition, the insulated skylights help to reduce external noise from the busy streets.

Lumira® aerogel can be used in a wide range of daylighting applications from skylights to glass walls. When used within translucent cladding systems, it can increase the insulation value up to an R-20 (equivalent to that of a solid wall) while still allowing diffused daylight to be transmitted into the building.

For more information about Lumira®, please visit www.cabot-corp.com/Aerogel.

1759 Broadway, Oakland CA
Architect: Jonathan Mansour
Photos: Chris Hemphill