

Ganahl Lumber Pasadena, California

Case Study



CLIENT
Ganahl Lumber, Pasadena, California

CHALLENGE
To bring natural daylight into a historical, adaptive reuse retail space, displaying building materials in an inviting and energy-efficient manner, while offering a cost-effective “high-end” presentation within a typically utilitarian retail environment.

RESULTS
The design objectives were met through a strategic daylighting design; the store’s revenues exceeded expectations and the project won an AIA Pasadena & Foothill Chapter Honor Design Award in the restoration/adaptive reuse category.

PRODUCT
60 Solatube SolaMaster 330 DS-O Tubular Daylighting Devices

ARCHITECT
Onyx Architects, Pasadena, California
Dale W Brown, AIA, Principal in Charge

Douglas D Joyce III, AIA/FARA, Design Principal
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BACKGROUND: Established in 1884, Ganahl Lumber stands as one of Southern California’s oldest and most respected businesses, known for providing quality hardware, lumber and building materials. In 2010, the company had the opportunity to return to its roots in Pasadena, Calif., when a 4-acre General Motors dealership on the famed Colorado Boulevard became available for sale.

CHALLENGE: Upon acquiring the parcel, the prospect of adaptive reuse, although exciting and promising, presented many complexities. The building also stands along the iconic Route 66. This meant that, alongside the challenge of converting the former automotive establishment into a lumberyard and accommodating its specific requirements, the architecture team at Onyx also had to adhere to the design standards set by the city and historical preservation society.

In addition to maneuvering through a labyrinth of codes and regulations, the architecture team grappled with the formidable challenge of reshaping the expansive interior into a space that exuded both comfort and aesthetic



allure. Embracing a philosophy centered on human-centric design, the objective was to depart from the conventional utilitarian atmosphere often associated with such retail settings, opting instead to craft an environment that offered a ‘high-end’ experience, one that would delight customers and encourage them to linger.

SOLUTION: To achieve this vision, detailed attention was given to the daylighting design. This is because studies have shown that natural daylight in buildings results in improved occupant comfort, which can directly affect consumer behavior. A comfortable shopping environment can encourage customers to spend more time browsing and ultimately leads to higher sales.

A pivotal study by Heschong Mahone Group (HMG), titled “Daylight and Retail Sales,” found that retail spaces lit with daylight experienced a sales increase of over 40% compared to similar spaces selling comparable products without natural light.

This is because not only does daylight provide psychological and physiological benefits to the occupants within the building, but it also accurately renders all wavelengths of light within the visible color spectrum, allowing merchandise to reflect its true colors with an even intensity, making it more attractive to the human eye.

With this knowledge, the architects at Onyx decided to use 60 Solatube SolaMaster 330 DS-O Tubular Daylighting Devices (TDD) to bring natural daylight into the deep center of the expansive retail space.

Unlike traditional skylights, TDDs harvest daylight on the roof and transfer it down a reflective tube, made of the world’s most reflective material called Spectralight® Infinity, and distributes it evenly into the interior space, without adding glare. Solatube TDDs work very well for high-bay applications like Ganahl Lumber as they can capture sunlight on both sunny and cloudy days.

In this application, the simple cylindrical shape of the TDD also seamlessly integrated perfectly with the other elements, including HVAC, electric lighting, fire-sprinklers and signage, resulting in a cohesive



and harmonious design in the open ceiling. To ensure the emitted daylight would not be obstructed, the Solatube TDDs were strategically placed with the diffuser lens close to the roof deck. Meanwhile, other systems were layered below, with signage positioned at the bottom, floating elegantly over merchandise displays and racks. This purposeful positioning not only allows the facility to maximize the natural light coming from the TDDs, reducing the use of electric lighting during daylight hours and contributing to a more sustainable retail environment, but also ensures that specific merchandising is highlighted, drawing customer attention and enhancing the overall shopping experience..

RESULTS: The meticulous attention given to the daylighting design not only met the design objectives but yielded remarkable results for Ganahl Lumber. The store's revenues exceeded expectations and the project won an AIA Pasadena & Foothill Chapter Honor Design Award in the restoration/adaptive reuse category.

“The Solatube Tubular Daylighting Devices have helped this Ganahl Lumber become a building materials ‘destination’ in the community, known for being visually appealing and a great place to get help with building projects. This store has also inspired a number of other new and remodeled stores in the Ganahl chains”

– Douglas D Joyce III, AIA/FARA, Design Principal, Onyx Architects

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