



Kalwall® and Museum Quality Daylighting™



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Art curators and conservators face a dichotomy when it comes to lighting works of art and museum pieces. Natural daylight is considered the best form of illumination for interior fittings and finishes of historic buildings, museums and, in particular, galleries as it is best in revealing true colours. However, natural light is also responsible for the degradation of objects, particularly those made from organic material and this is mainly caused by heat and ultraviolet light.

Ultraviolet light has serious repercussions for oil paints and varnishes, wood, textiles, pigments and dyes. These include 'free radical chain reactions', polymerisation and anti-oxidation which cause bleaching, cracking and fading.

Kalwall's inspiring Museum-Quality Daylighting™ offers a perfect solution. Its unique composition diffuses daylight so efficiently that even direct sunlight is converted into evenly-distributed light without shadows, glare and hotspots.

In addition, and unlike many other glazing products on the market, Kalwall provides beautiful, glare-free daylight which is perfect for viewing art and artefacts. It blocks harmful UV-A and UV-B rays, yet transmits the full spectrum of visible light for perfect colour rendition within interiors.

Furthermore, the translucent panels lead the industry in solar heat gain control materials available, preventing unwanted and damaging heat gain (G-value to 0.07).

Only Kalwall has an amazing raft of inherent traits to create effective lighting in these spaces. The combination of balanced, glare-free diffused daylight with an ability to penetrate deep into a space; blocking out harmful ultraviolet rays, and effective control of solar gain, eliminating any need for external louvres or internal blinds and shutters.

Kalwall offers the following benefits for Museum Daylighting:

Spectral distribution:

All Kalwall panels prevent transmission in the harmful UV-B range (between 280 to 315nm).

In the UV-A range (between 315 to 400nm), there is less than 0.1% of 1% transmission, while in the visible range there is a relatively flat, even distribution of all wavelengths.

Plant growth:

Plants do not require UV light for growth. Photosynthesis takes place in the 400 to 700nm range, well within the visible spectrum.

Interior preservation:

By eliminating high energy UV-B, fading of interior fabrics and art work is minimised. Solar Heat Gain control also minimises heat fading.

Accurate colour rendering:

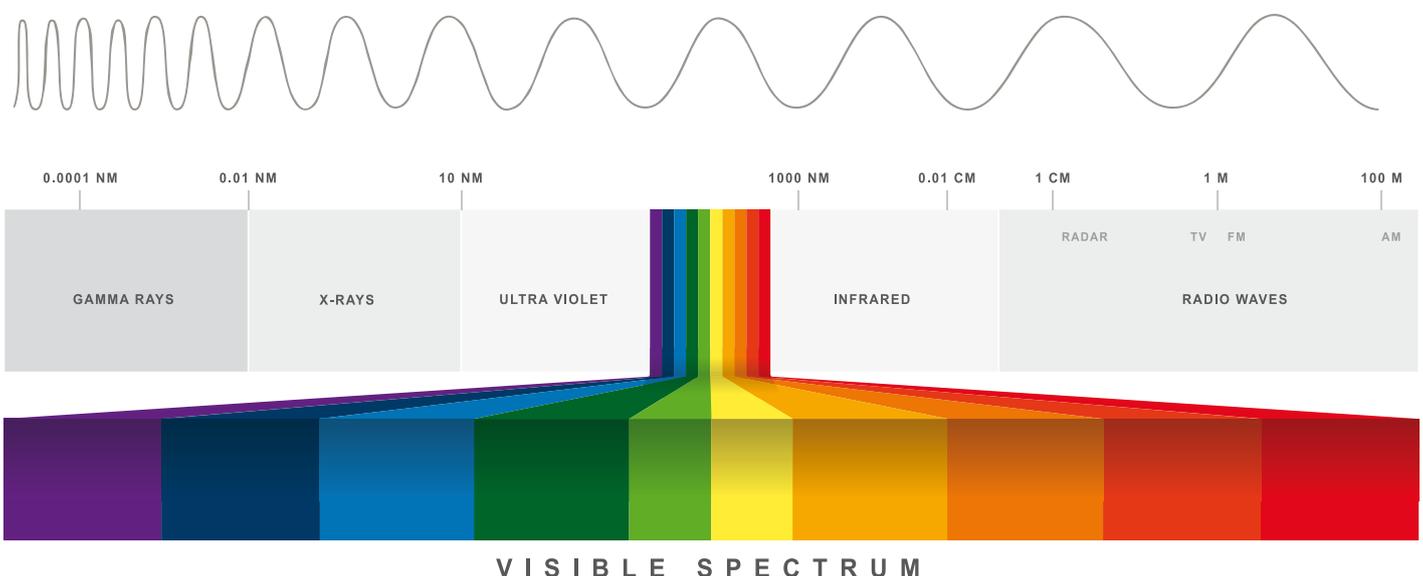
Full spectrum visible light from Kalwall allows accurate colour rendering, excellent visual clarity and has a soothing, diffuse quality.

Eyestrain:

The quality of light can be determined without bright and dark spots. High brightness causes contrast and this rough transition forces the eye to continually adjust resulting in eye fatigue.

Energy saving:

A greater quantity of quality usable light is driven deeper into the space reducing energy costs for both artificial lighting and temperature control.



Museum Quality Daylighting in Practice

Calder Foundation, New York

What was once three disparate rooftop sheds is now one breathtaking space that Calder Foundation president Alexander S.C. Rower compares to a Parisian artist's garret.

The Calder Foundation's new office suite/gallery in New York City has attracted the attention of the design world and architect Stephanie Goto's project was honoured with a 2015 Architizer A+ Award. Kalwall translucent panels are a key feature in the design, bathing the works of Alexander Calder and other artists on display in museum-quality daylighting™.

"Our mission was to light the spaces that we created effortlessly and naturally," Goto said. "We achieved this by the way we integrated Kalwall, it being an integral part of the architecture for the skylights and clerestories."

Rower said the space would have reminded Calder, his grandfather, of an artist's loft in France, where Calder had a studio. The space was featured in Architectural Digest and Architectural Record.

Goto said that Kalwall daylighting offered a perfect solution for the skylights and clerestories that line the 4,000 ft² (371 m²) space. She comments, *"The quality of the natural light illumination and the energy efficiency of the product were what attracted us"*.



Crocker Art Museum, California

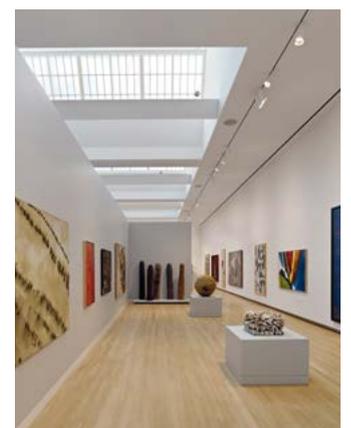
The Crocker Art Museum in California is world renowned. In 1872, Edwin Crocker built a gallery to house about 14,000 works of art including Early California art, Old Master drawings and Asian pieces. Recently it needed to be extended because its existing 45,000 ft² (4180m²) were cramped.

The solution was a dramatic 100,000 ft² (9,290m²) extension and renovation. One of the most important considerations was obviously daylighting. The architects' solution was to install 15 Kalwall shed skylights in the new galleries to provide all the lighting needed for daytime viewing.

Here, the Kalwall provides glare-free, balanced daylighting free from harsh shadows and offering true and accurate colour rendition. The Kalwall also filters out damaging rays, protecting both the interior space and the often priceless objects within.

The architect set the monitor skylights daylighting the new third-floor galleries into the roof at a sharp angle, creating a dramatic sawtooth profile when viewed from outside.

The museum now offers four times more space for travelling exhibitions and a threefold increase in exhibit areas for its still-growing permanent collection.



What is Kalwall?

Kalwall, developed and manufactured in the USA for over 60 years, is a highly insulating, diffuse light transmitting building panel system for walls and roofs and can be used for daylighting spaces from small units to large areas of up to 30 metres. The primary component is a translucent structural composite sandwich panel formed by permanently bonding specially formulated fibreglass sheets to a grid core constructed of interlocking thermally broken extruded aluminium 'I-beams'.

Panels are factory prefabricated to the exact size and configuration for each project. Panels can be flat or

curved while opening or fixed glazed window units can be incorporated using the integral Clamp-tite™ installation system. Kalwall's unique composition combines to reduce solar gain while at the same time maximising thermal insulation. Kalwall diffuses light so efficiently that even direct sunlight is converted into even illumination with reduced glare. Kalwall is able to transmit large amounts of usable daylight into a space with relatively low levels of light transmission. Panels can be selected to transmit various percentages of light according to individual project requirements. Kalwall has been tested according to the procedures of EN13830:2003 – Curtain Walling Product Standard for CE Marking.

