Case Study – Rolls Royce, Rotherham

Rolls Royce blades to be cast in natural light

Based at the Advanced Manufacturing Park in Rotherham is the Rolls Royce Advanced Blade Casting Facility.

Designed by Bond Bryan Architects in Sheffield, the building has a 13,000m² metal standing seam roofing system supplied by Euroclad. Zenon's triple skin barrel vaulted rooflights 'Archlight' were selected for the project as they are ideal for standing seam system roofs.

The liner panels for the triple skin rooflights are Zenon Evolution manufactured from high grade glass reinforced materials. This reduces the amount of resin required in their production, considerably improving the strength and reducing the embodied carbon. The outer double skin Archlight weather sheets make up the curved layers which are placed on an upstand that curves with the roof. These 100m long rooflights have been installed from the ridge down to the eaves. This minimises the number of metal to rooflight junctions and eliminates rooflight end laps to improve reliability and servicing.

The U-value of the rooflights supplied is 1.7W/m²k. The liner panels meet the highest fire grade of Class 0, higher than the typical requirement for liner panels in a roof assembly. The Archlight weather sheets are grade Ext S.AA. Robert Baines of Northern Cladding, who were contracted to the project by BAM Construction, commented, "As the structure of the roof was standing seam, the barrel vaulted rooflight option fitted perfectly". BAM Construction finished with a final note to say they are delighted with the result.

Research has shown that the inclusion of rooflights within a building can deliver a number of benefits by utilising the natural resource of daylight. It can enhance the internal working environment, making it a more pleasant place to work, and improve the financial and environmental performance of the building.

Internal view of rooflights

Close-up of Archlight
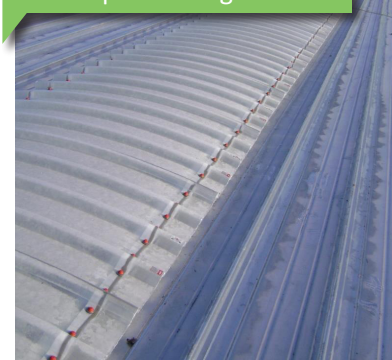
Close-up of rooflight fixings

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Ref: BAM Construction

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Building Products

Zenon Archlight barrel vaulted rooflights

Archlights are manufactured and supplied as individual pre-curved self-supporting rooflight sheets characterised by a trapezoidal ribbed profile following the curve of the sheet. They are available for daylight openings or support systems up to 4 metres wide and at a fixed sheet radius of 3150mm in natural translucent or opal tinted GRP and at a nominal weight of 2.4kg/m².

They are available to suit any length of construction or opening, and are easily installed in single, double or triple skin configurations using spacer brackets depending on thermal performance required, or in combination with flat profiled liners and insulation layers in built-up self-supporting metal sheet roofing systems.

Subject to specification, they offer expected periods of non-fragility up to 25 years subject to all other elements of the assembly or roof construction retaining their integrity for the same period.

Zenon Evolution rooflight sheets

Zenon is Evolution ideal for environmentally conscious industrial and commercial buildings or where superior strength is demanded. Benefits include;

- High strength rooflight sheet with lower embodied carbon
- Available in over 1000 profiles to suit new build and refurbishment projects
- Suitable for installing in single skin and double skin assemblies
- Insulated with either polycarbonate or our patented Insulator™ core
- Compatible with both site-assembled and composite panel cladding systems
- Stronger than conventionally reinforced rooflights of the same weight
- Better profile definition to suit the surrounding metal sheets
- Increased diffusion of natural daylight
- More reliable sealing, no special sealants required
- Carries Zenon Shield, a highly durable UV protection surface film
- Exceeds non-fragility requirements
- Manufactured and CE marked in accordance with BS EN 1013
- **Best for strength, durability, performance and peace of mind**