



Rooflight configuration construction &

Rooflighting should be configured and constructed so as to maximise light and heating benefits for a given building, as influenced by other factors like budget, roof access, building usage and alternative heat sources.

Rooflight configuration

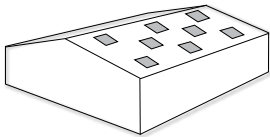
The factors to consider when designing the rooflight configuration are:

- Whether there is enough general lighting to create a pleasant and suitable internal environment.
- Whether there is a need for increased or controlled light levels in specific areas of the building (such as the play area in a sports hall).
- The relationship between the roof height and the diffusing quality of the rooflights to provide good general light at ground level.
- The degree of roof maintenance and roof access envisaged.
- Weatherability and minimising overlaps, especially between dissimilar materials.

There are a number of possible configurations for rooflights.

In summary

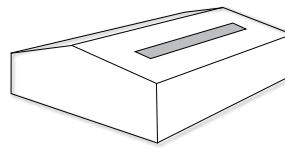
- Rooflight configuration refers to the positioning of the rooflight in the roof and is influenced by a range of factors such as budget, lighting needs, roof pitch, the need for roof access, wind exposure and the existing building design.
- Rooflight construction refers to the methods used to assemble the rooflight relative to the roof structure. The construction method used is heavily influenced by the configuration chosen for the rooflighting.



CHEQUERBOARD ROOFLIGHTING

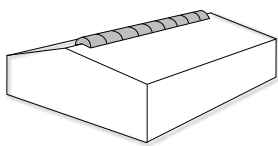
This option provides the most uniform distribution of light. Individual rooflight units are installed either in plane or out of plane. The rooflights are fixed on all four sides to the metal cladding or roof deck and are therefore well supported. However, this design is usually more costly since it requires the maximum number of end laps (flashings), which demand greater attention to sealing by the roofing contractor.

access if the metal roof is suitable for walking on. This design is now very popular on new buildings.



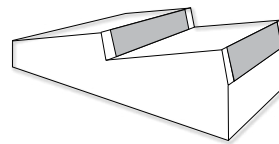
CONTINUOUS-RUN IN-PLANE ROOFLIGHTS

This configuration achieves good levels of lighting but is not commonly used in modern designs. Care needs to be given to manufacturing and fitting tolerances of the metal sheets and rooflights to avoid a build-up of tolerance difference. Replacing old reinforced glass fixed in T-bars with modern profiled rooflights or panel systems is common practice and very effective.



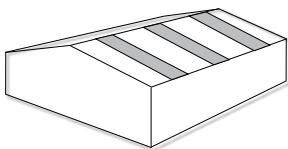
RIDGE ROOFLIGHTING: BARREL VAULT

Barrel vault rooflight along the roof's ridge provides an aesthetically pleasing design and relatively uniform light distribution if the roof slope is short. The major advantage over the chequerboard arrangement is that ridge rooflighting reduces the number of metal/translucent junctions to be fixed and sealed. However, at the ridge they are subject to high wind loads. Since rooflights should never be walked on, ridge rooflighting provides a safer option where roof access is expected and frequent.



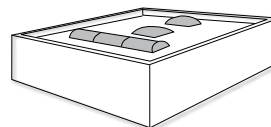
SOUTH LIGHTS IN-PLANE ROOFLIGHTS

This configuration is a variation of the continuous run as above, but is not subject to tolerance differences between metal sheets and rooflights. Using south lights on new buildings is no longer common, although refurbishment with modern rooflights or panel systems is easily achieved.



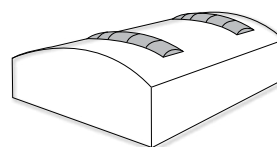
RIDGE TO EAVES: IN-PLANE OR BARREL ROOFLIGHTING

Both in-plane and barrel rooflights can be fixed from ridge to eaves, or from ridge downslope. This arrangement minimises the number of metal/translucent junctions and could eliminate rooflight end laps, thereby improving reliability and servicing. However, since the rooflight industry does not recommend walking on rooflights at any time, a ridge-to-eaves layout will limit access across the roof.



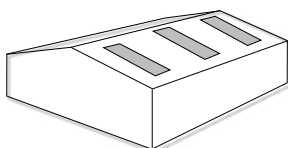
RANDOM DESIGN ON FLAT ROOFS: BARREL AND DOME ROOFLIGHTS

Used on flat or low-pitch roofs, rooflights are placed according to need and roof design on purpose-designed upstands.



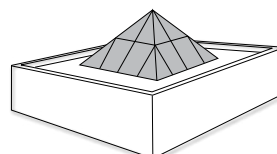
CURVED ROOF: BARREL VAULT ROOFLIGHTS

Barrel vault rooflights can be manufactured to run over the crown of a curved roof, stopping either mid-slope or down to the eaves. The rooflights are placed on an upstand that curves with the roof. This configuration is ideal for metal standing-seam-system roofs and single-ply membranes.



MID-SLOPE ROOFLIGHTS

This configuration is only possible with rooflights made to match the roof profile. It provides a compromise between chequerboard and ridge-to-eaves rooflighting in terms of light distribution and buildability. It avoids areas with high wind uplift and allows general roof



STRUCTURAL GLAZING

These bespoke structures can take on almost any shape or design. They

are normally constructed from aluminium or steel sections and glazed with ultra high impact (UHI) polycarbonate or glass. These custom-built structures are manufactured according to an architect's brief and allow immense freedom of design.

Rooflight configuration refers to the positioning of the rooflight in the roof

Rooflight construction

The way in which rooflighting is constructed is largely determined by the configuration in which the rooflights will be installed, which, in turn, is decided by factors such as budget, lighting and heating needs, whether the roof needs to be accessible and existing building design.

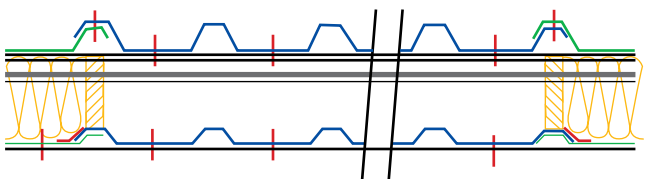
SINGLE-SKIN IN-PLANE ROOFLIGHT

As the name indicates, this kind of rooflight consists of a single skin or sheet. This sheet is shaped so as to match the surrounding ridges in the roof and is left exposed at the bottom to allow the maximum amount of light to travel through.



DOUBLE-SKIN, IN PLANE ROOFLIGHT

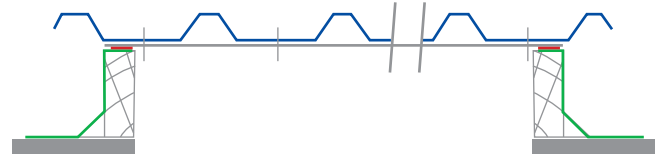
This type of construction usually consists of a shallowly profiled rooflight sheet that matches the interior liner of a building, topped by a more deeply profiled rooflight sheet that matches the outer weather sheet, with a spacer system in between. This complements the full assembly of the metal roof.



OUT-OF-PANE ROOFLIGHT

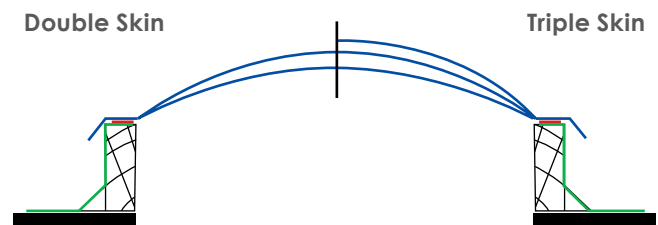
Here the sheet is fitted above the roof sheeting and has no contact with the main roofing element. The advantage of this construction is

that the profile of the rooflight does not have to be the same as that of the main roofing. Furthermore, it makes it easy to differentiate the more fragile rooflight sheeting from the less fragile metal roof sheeting.



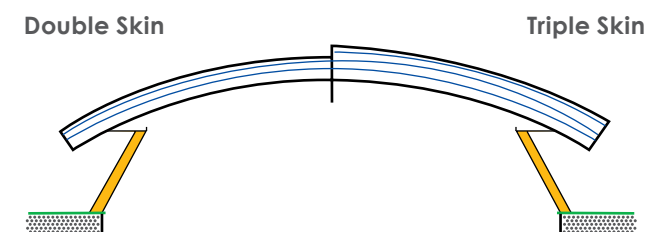
DOME OR PYRAMID ROOFLIGHT

Dome or pyramid rooflights in double- or triple-skin format are manufactured in standard sizes. However, they can also be purpose-made to suit existing dimensions.



BARREL VAULT ROOFLIGHT

A low-profile or semi-circular barrel vaulted rooflight in solid or multi-wall/double- or triple-skin format can be manufactured to suit specific dimensions and upstand heights to accommodate various thicknesses of roof insulation. Ventilator options not shown.



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