

---

BUILDING  
CONSIDERATIONS  
FOR COMMERCIAL  
ROOFLIGHT  
REFURBISHMENT

**VELUX®**

Commercial



---

## CONTENTS

Introduction	03
Section 1: Factors that influence commercial building refurbishment	05
Section 2: Commercial building types and refurbishment objectives	15
Section 3: Summary	21
Section 4: VELUX Commercial solutions and support	22



## INTRODUCTION

The provision of daylight has long been a part of commercial roof design. From small individual rooms to large open spaces, bringing in natural light from above has always been recognised for its benefits.

Providing illumination for work tasks, creating brighter and more pleasing indoor environments, or making an architectural statement – these reasons and more have informed the use of polycarbonate or glass rooflight solutions over the last few decades.

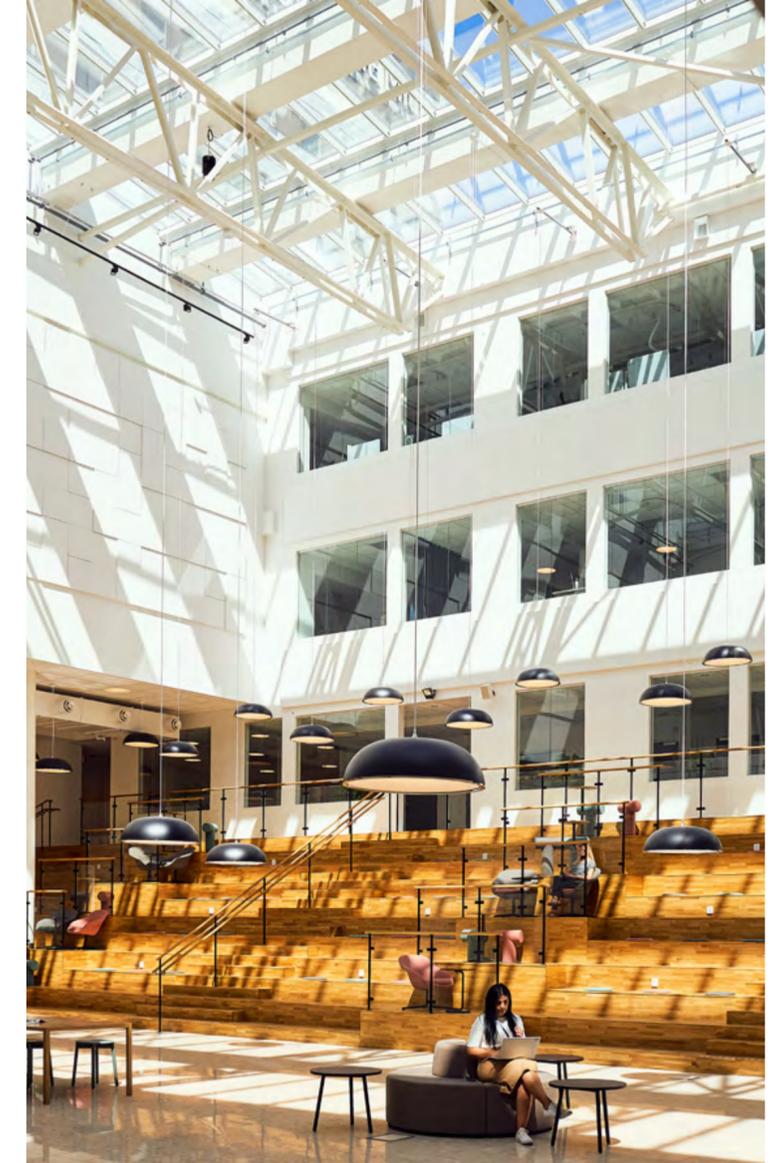
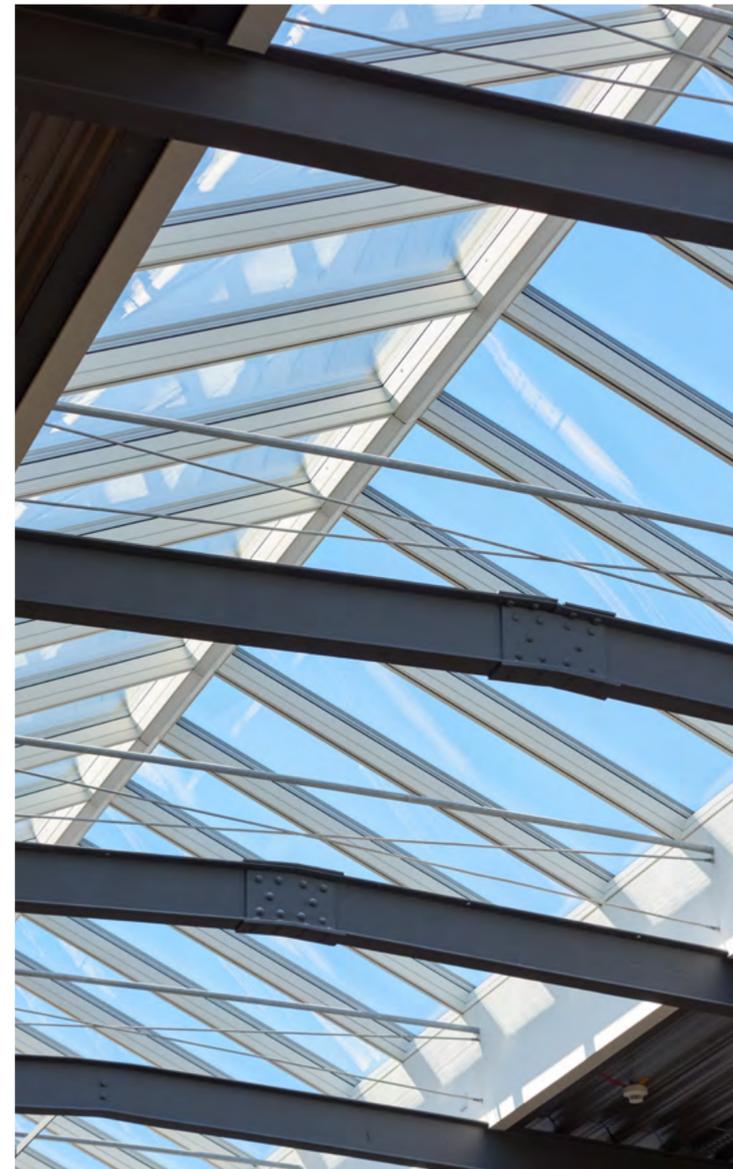
### ROOFLIGHT SOLUTIONS AS PART OF THE COMPLETE ROOF

Shelter is the primary function of a roof, placing significant demands on the roof structure and its components. As part of a roof, any rooflight solution must be capable of withstanding the elements. Seasonal weather cycles, combined with extreme weather events (which are becoming increasingly frequent), put a lot of strain on components as they age.

Even with regular maintenance and careful repair, roof coverings and rooflight systems eventually need replacing. Rooflight refurbishment can be carried out in isolation, or as part of a wider package of works involving other components like the waterproofing.

Our understanding of the benefits that well-designed rooflight solutions deliver has developed over time. Today, as part of the roof structure, rooflight solutions must contribute to a variety of performance and comfort measures that require a more balanced approach than simply providing functional shelter.

A roof must be considered as part of the whole building design, meaning commercial rooflight refurbishment offers a rare opportunity. It is a chance to significantly enhance the experience of using a building that may have stood for decades, or more than a century in some cases.



## GROWING REFURBISHMENT DEMAND

It is expected that **75% of the buildings we use today will still be with us in 2050**. The need for refurbishment design and specification solutions is only likely to increase, as a result.

Building owners and operators are faced with ensuring their assets remain functional and safe, while improving comfort for building users in the face of a changing climate.

Throughout this document, 'refurbishment' is mainly focused on this adaptation of existing buildings. It can be converting a disused production facility to a new hotel, improving the performance of an existing office building, or making a retail space a more pleasing experience for visitors.

Many of the topics discussed can also relate to restoration, however. For the purposes of this white paper, we are classing 'restoration' as the preservation of the built environment.

Rather than adapting buildings to meet current expectations, restoration seeks to maintain buildings in a way that retains their character and historical importance. Many of the guiding principles of refurbishment may still apply, but the solutions specified could be different.



## ABOUT THIS DOCUMENT

This white paper gives an overview of the entire refurbishment process, and how it offers opportunities to enhance daylighting and ventilation through the specification and installation of new rooflight solutions.

Setting performance targets for rooflight refurbishment first means assessing and understanding the existing building, and establishing the scope of the works to be carried out.

Those constraints must then be balanced against the requirements of national building regulations and health and safety legislation, as well as any supplementary or voluntary standards that apply.

Metrics for comfort and wellbeing also need to be taken into account, and how daylighting will be used to provide indoor environments that enhance the experience of building users.

The way in which all of these different factors interact varies depending on the use of the building. We go on to look at the drivers for refurbishment in different commercial sectors, before looking at the various daylighting and ventilation solutions available specifically for the refurbishment of commercial buildings.

Finally, we look at specialist technical support available throughout a refurbishment project that helps to achieve the best results - from design through to installation, followed by service and maintenance once the project is complete.

Commercial buildings present a variety of challenges, but modern rooflight solutions offer an option to suit almost any situation. Designers, specifiers, installers and building owners can, through the refurbishment of existing rooflights, breathe new life into commercial buildings.



# 01

## FACTORS THAT INFLUENCE COMMERCIAL BUILDING REFURBISHMENT

Selecting a new daylighting solution for an existing building first requires gaining an understanding of that building. Establishing the different factors that affect design and specification, and how they impact on one another, is an important first step.

Every project has its own combination of constraints, requirements and targets that need to be juggled. Balance is therefore key, ensuring priority is given to the areas that most need it. The correct balance for one project will not be the same for another.

The factors outlined in this section of the document are therefore not presented in any order of importance.



## THE EXTENT OF REFURBISHMENT

Compared to a new-build development, the obvious difference for a refurbishment project is working with an existing building. The level to which the building needs to be, or is going to be, refurbished influences what solutions are appropriate.

Refurbishment ranges from the like-for-like replacement of existing rooflights to a whole-building refurbishment. There can be a significant difference between what 'needs to be done' and what is 'going to be done'. From an early stage, the practicality of carrying out refurbishment works is balanced with the cost and available budget.

In the introduction, we used the example of converting an old production facility to a new hotel. Refurbishment on this scale means a complete upgrade of the building fabric, and remodelling of the building's interior to suit its proposed use. This type of work might also be driven by the need to repair an ageing building or to rectify fire damage, for example.

New rooflight solutions might need to fit existing openings, or could be specified as part of a completely re-built roof. Assessing the potential solutions in the initial design can help with subsequent planning, especially through the use of modelling to assess daylight distribution and illumination, as well as building fabric performance.

There is also the building's architectural style to take into account, whether seeking to retain an existing style or create a modern aesthetic. Certain features or appearance might need to be replicated for older, historical buildings. Assessing the different types of rooflight material available – glass, polycarbonate, fibreglass – can help to shape early proposals.

Before



After



---

## WORKING WITH THE EXISTING ROOF AND ROOF OPENINGS

Where wider building refurbishment works are limited or not needed, focus turns to the roof alone. In these cases, the age, condition and make-up of the existing roof structure, roof covering and rooflight solutions will direct the extent of refurbishment that is undertaken.

Thorough surveys of existing roofs are therefore essential to identify all possible issues.

Existing rooflights could have been subject to unplanned alterations, adapted to accommodate building services (including cables, pipes, and extract fans) that they were never designed to accommodate. These adaptations need to be identified and factored into the planning of the refurbishment to avoid similar happening to new solutions.

Most urgently, existing rooflights that are old and/or failing can present a health and safety risk to building occupants as well as a risk to the building fabric. If water ingress is presenting a slip hazard on the floor below, or reaching other parts of the construction and damaging materials and components, then prompt replacement is desirable.

If the roof covering is also at the end of its service life, however, then focus turns to a more extensive refurbishment of the roof. The cost of erecting scaffolding and setting up the site puts an emphasis on carrying out all necessary roof works in a single programme.

Schedules are often tight, so it helps to have the involvement of a rooflight manufacturer who can offer support,

knowledge and technical expertise that can deliver the refurbishment within the project time frame.

That same technical expertise can help to tailor solutions to the existing roof structure and rooflight openings. Existing openings are not always consistent in size, shape or squareness, and may not suit standard rooflight sizes.

The load-bearing capability of the roof also influences the weight of new solutions that can be installed, so being able to select from a wide range of available solutions is desirable. It might be necessary to 'mix and match' products; for example, using lighter polycarbonate solutions to achieve some performance requirements and heavier glass products to achieve others.



## BUILDING OPERATIONS AND MAINTENANCE

Alongside comprehensive roof surveys to assess existing installations, practical expertise underpins any refurbishment project.

For some buildings, achieving the best result from a refurbishment means allowing the building to operate as normally as possible while the work is carried out.

After the refurbishment, 'normal' operations can include accessing the roof. Regular maintenance and repair extend the service life of roof components, and it may be that one of the goals of the refurbishment is to provide better access to the rooflights than was available before. The roof may also feature plant and services that are also regularly maintained.

As well as protecting the building occupants below, new daylight solutions improve safety for maintenance operatives who access the roof. Non-fragile rooflights that meet all current manufacturing standards provide impact resistance and fall-through protection, either by the use of laminated glass or integrated netting systems.



---

## BUILDING REGULATIONS AND OTHER STANDARDS

So far, we have talked about understanding the existing building before a refurbishment takes place. High quality technical support - including on site roof surveys and assessing the needs of the building - helps in the specification of any new daylighting solution.

When we start thinking about the impact of new daylighting solutions on the building in use, we must also take into account factors such as regulations and standards. National building regulations set requirements for how buildings must perform, and refurbishment projects can present unique challenges.

The existing building - whether due to its age, condition, construction type or architectural style - can make it difficult to apply regulations fully. Regulations tend to recognise this, but it is nevertheless recommended to seek advice and technical expertise regarding the proposed scope of refurbishment works and how regulatory requirements will be met.

A refurbishment solution potentially represents a significant increase in performance standards compared to the existing rooflights. That will impact the performance of the roof it is installed in, and the rest of the building fabric more widely, which again emphasises the need to think about buildings holistically.

As part of achieving the balance we described at the start of this section, it's equally important to recognise the limitations of building regulations.

Regulations have to cover a wide range of building types. It is impractical for them to provide specific guidance for every building type. To meet the needs of specific

buildings and end users, building regulations often reference supplementary standards.

Individual aspects of regulations can require high levels of performance, but they are not necessarily designed to work together. Meeting each aspect in isolation does not necessarily achieve the complete solution of a comfortable indoor environment.

Building regulations are often written for the short-term rather than the long-term. In the context of climate change, installing new daylighting and ventilation solutions provides an opportunity to think about the building performance and occupant comfort not just today, but 30 or 50 years in the future.

For that reason, the client and design team might choose to adopt a voluntary standard. It could be performance-based or comfort-based, and/or might seek to improve the environmental impact of the project. Examples include BREEAM, LEED, DGNB and the WELL Building Standard.

New daylight and ventilation solutions contribute to the overall rating achieved. Applying these schemes fully can be difficult when working with an existing building, but many of them include refurbishment-specific guidance. Technical support from the rooflight manufacturer can also help to highlight areas where credits may be claimed.

The exact framework of regulations and other standards differs slightly from one project to another, but there are areas of performance that will always need to be met. Whether addressing fabric performance, occupant comfort or both, we'll now look at these specific areas.



---

## HEAT LOSS, ENERGY EFFICIENCY AND VENTILATION

A roof, and any rooflight solution in it, is part of a building's thermal envelope. We touched on the impacts of climate change above, and global efforts to reduce emissions of greenhouse gases mean that energy efficiency standards are one of the most significant drivers of rooflight specification.

From a performance point of view, regulations require daylighting solutions to meet a specific thermal transmittance value. The scale of the refurbishment might also require that the overall energy use and carbon emissions of the building are modelled.

Beyond that, there are a wider range of factors which need to be balanced to achieve a comfortable building. Well-designed daylighting can play a significant role in passive building design. The overall area of rooflights and their heat loss is important but, used correctly, solar gain can help to reduce heating demand and save energy, especially in winter.

The specification of accessories like shading features guard against summer overheating, which is critical for occupant comfort, as well as helping to avoid glare (see 'Daylighting' below).

A significant aspect of the energy performance of buildings is ventilation. An adequate supply of fresh air must be maintained while minimising the loss of heat energy overall.

A successful refurbishment looks to achieve better rates of controlled ventilation without a corresponding decrease in energy efficiency. New daylighting solutions

can be specified with ventilation provision to achieve a substantially improved active ventilation strategy compared to the existing installation.

From a comfort perspective, a controlled supply of fresh air provides connection with the outside. Comfort ventilation goes beyond simply providing a certain number of air changes per hour. Automatic operation and demand control mean building performance and comfort can be balanced without the need for user control.

The Covid-19 pandemic brought the topic of ventilation to the forefront, with widespread acknowledgement that ventilation in many commercial buildings was not adequate. Many building users, particularly in schools and offices, found themselves freezing cold because windows were opened to increase ventilation rates (in an uncontrolled way), while the heating system could not compensate.



## FIRE SAFETY

New daylight solutions must work in combination with the roof to meet fire safety requirements, which are detailed in both building regulations and supplementary standards. The building fabric must resist external spread of flame across the roof, penetration of fire through the roof, and fire spread internally.

In the event of a fire, smoke can be the deadliest risk to building users. Smoke and heat exhaust ventilation (SHEV), provided by automatic opening vents (AOVs) that have been designed, tested and CE-marked in accordance with EN 12101-2:2003, is a critical area of rooflight refurbishment specification.

All architects and contractors are aware of the importance of fire safety regulations and standards. Working with a trusted manufacturer who can provide expert advice on how their tested components help to meet fire performance requirements of a SHEV system gives confidence that the building will perform as intended should the worst happen.



## DAYLIGHTING

An **improvement in daylighting** is one of the biggest potential benefits of rooflight refurbishment. Better daylighting can have a positive impact on building performance, and on occupant comfort and wellbeing.

In addition to the benefits of controlled passive solar heat gain, high levels of daylight reduce artificial lighting use and, as part of a controlled lighting scheme, the corresponding energy consumption as well. Rooflight solutions also help to balance glare from vertical windows, meaning better all-round illumination and comfort.

From a **human perspective**, internal environments that work with our circadian rhythms, rather than against them, are better for our health. High levels of natural light promote alertness and concentration, and improve learning and productivity.

Good daylighting helps to provide a connection with the outside even though we spend around 90% of our time indoors. In the right situation, roof glazing can also provide views to the outside, enhancing the overall benefit.

Although the **daylighting standard EN 17037** focuses on new buildings, its metrics for daylight provision, assessment of view, access to sunlight and prevention of glare can be applied to existing buildings. For professionals less familiar with daylighting design, the standard is an excellent place to start for understanding a new way of thinking about indoor environments.



## OTHER AREAS OF REGULATION

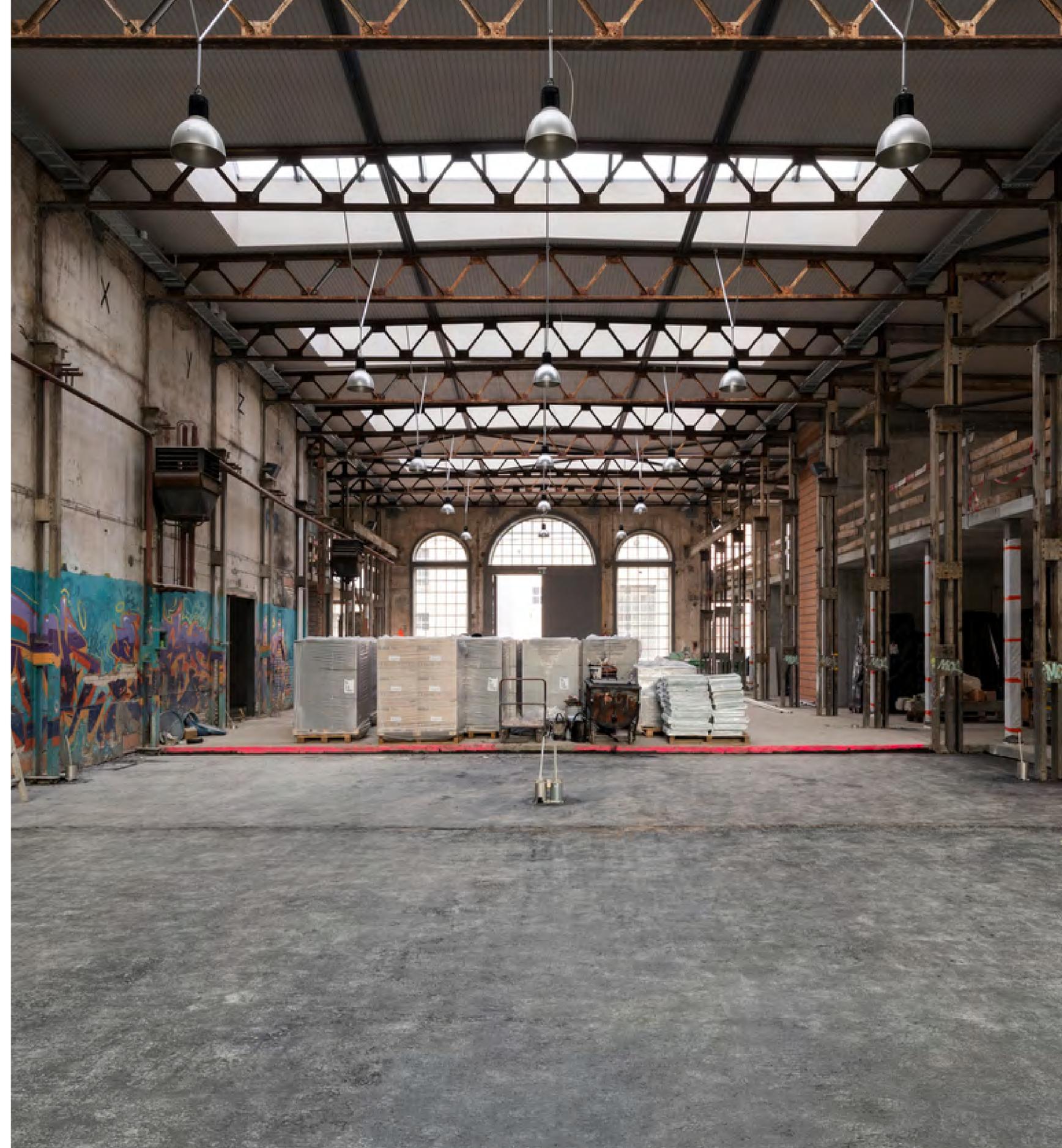
As part of achieving a functional, comfortable building that complies with regulations, there are other performance aspects to take into account when specifying new daylighting and ventilation solutions.

Building regulations include acoustic performance targets. At roof level, this means limiting the effect of both airborne sound (including air traffic and road noise) and impact sound (rainfall or hail). And while opening windows provide ventilation, they can also increase noise levels inside. The demand control discussed earlier opens windows only when needed, helping to maintain acoustic comfort.

Ventilation solutions should also not allow the ingress of rainwater, while rainfall onto a roof must be directed to a roof drainage system.

Daylight solutions also need to be watertight, and the compatibility with the surrounding roof construction is essential for a quality installation. The detailing of the junction between the roof and the rooflight solution is also a factor in thermal bridging calculations.

Finally, building regulations include structural requirements to guard against collapse and protect people in and around buildings. When undertaking the structural design of the refurbishment, in accordance with the Eurocode and using the different parts of EN 1991, daylighting and ventilation solutions need to be capable of resisting loads such as wind uplift forces and snow loads.



## IN SUMMARY

We started this section by describing the relationship between the existing building structure and new daylighting solutions. By coming full circle, it's possible to see how every aspect of the building and its performance is linked.

Every factor discussed in this section is likely to be relevant when specifying new daylighting and ventilation solutions, but the overall objective of the refurbishment guides the relative importance of each factor. In the next section, we look at typical objectives associated with different categories of commercial building.



---

# 02

## COMMERCIAL BUILDING TYPES AND REFURBISHMENT OBJECTIVES

The relative importance of the factors discussed in the previous section is different for every refurbishment project. The type of building that is being refurbished, and the overall objective of the refurbishment, helps to establish which factors are a priority.

This section looks at some of the main commercial sectors, and how building types and uses within those sectors drive refurbishment. It's impossible to cover every individual variation in building design, but we can show the ways in which the building type, together with the client's brief, influences the selection of new daylighting and ventilation solutions.





## SCHOOLS

Traditionally, the refurbishment of education buildings was restricted to school holidays to keep disruption to a minimum. The health and safety benefits were significant, with far fewer people on and around the site, especially if hot works were involved. Increases in the use of cold-applied waterproofing solutions, however, has made roof refurbishment more common during term-time.

Rooflight refurbishment is closely tied to general roof refurbishment because the two are often carried out together. The Condition Improvement Fund (CIF) is a UK government scheme where eligible academies and colleges bid for funding to help keep buildings safe and in good working order. Funds are awarded depending on the severity of the improvement needed, and the annual funding rounds are a significant driver for refurbishment works.

Whether carried out in holidays or term-time, careful planning is essential to keep to the programme, maintain site safety, and ensure everything is on budget. It

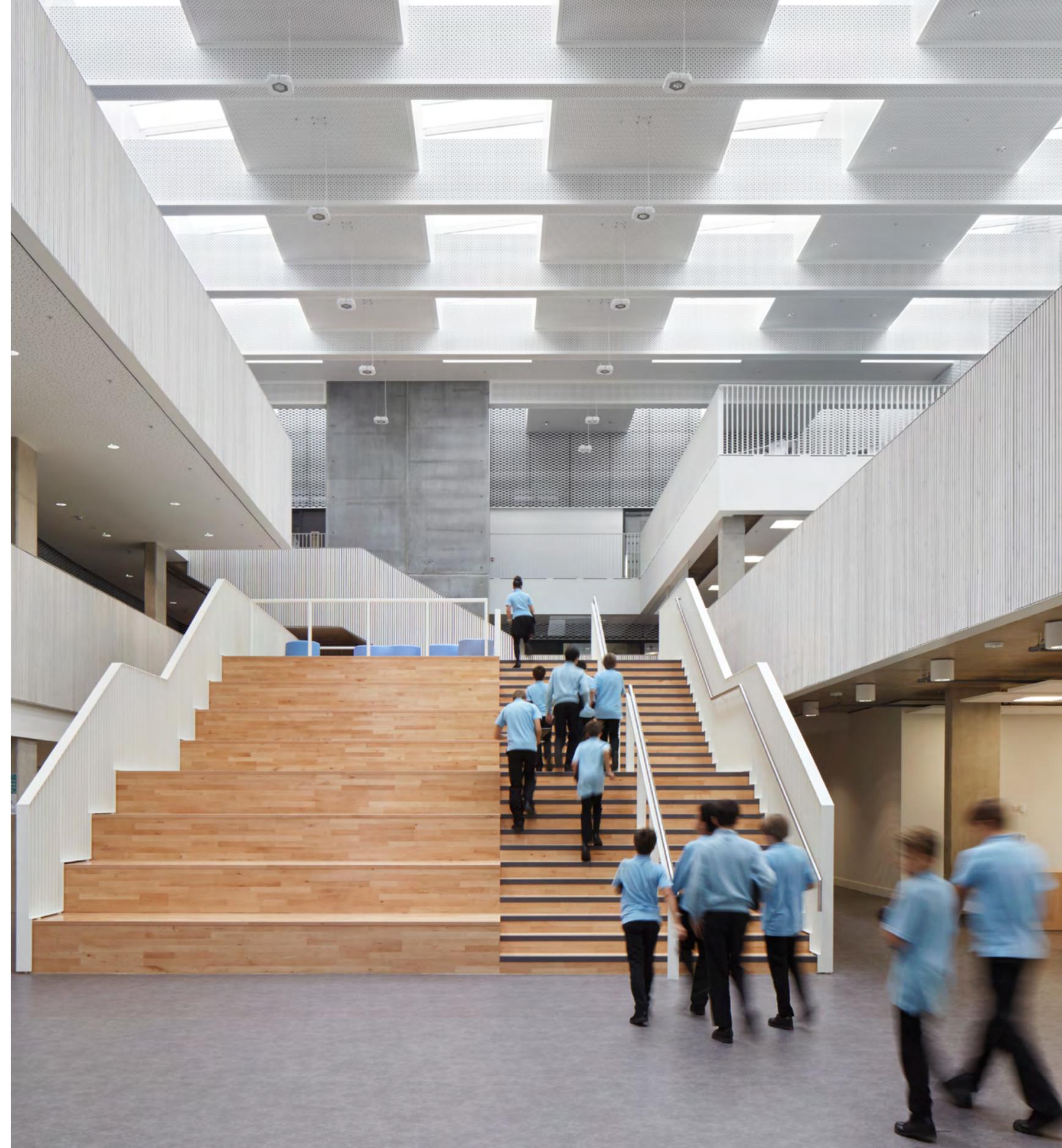
therefore helps to work with a manufacturer who can assist the project team on site as well as supply an appropriate range of daylight and ventilation solutions.

Different designs and layouts of existing school buildings require specific daylighting solutions. For example, large footprint single-storey buildings tend to have spaces where light from vertical windows alone cannot penetrate far enough. These spaces rely heavily on rooflights, including domes and continuous rooflights, to deliver appropriate illumination.

Refurbishment is therefore an opportunity to make a significant positive impact compared to the original installation.

Improving the performance of the building fabric to deliver an initial uplift in comfort may be part of the motivation for the works, but the quality of teaching and learning environments is a key aspect. This usually entails going beyond a like-for-like replacement. Daylighting solutions with a range of accessories, such as blinds or shading devices and ventilation control options, delivers an enhanced solution.

Achieving better and more consistent illumination of spaces, reducing glare from vertical windows, and improving ventilation levels can all be achieved through rooflight refurbishment, for the benefit of teachers and pupils alike.





## LEISURE AND SPORTS VENUES

Leisure buildings have peak usage times around which refurbishment works are generally planned. While it is for the client to decide when to schedule downtime and keep disruption to a minimum, health and safety remains the priority.

The nature of the activities taking place in a sports facility emphasises the importance of health and safety. Failed rooflights that allow water ingress need addressing in any building type, but arguably have particular urgency in a building where people are swimming, running around or otherwise doing physical activities in close proximity to one another and specialist equipment.

The choice of new glazing material can improve both safety and comfort. In a sports hall, glare through clear glazing can cause players to lose sight of the object they're aiming for (e.g., ball, shuttlecock). Light reflecting off the surface of the water in swimming pools, meanwhile, can

create a safety risk by hiding a swimmer in distress.

Programming the works to address any urgent issues while also taking a holistic view of the roof and its condition is essential. It is a common theme, but the cost of erecting scaffolding etc. offers an imperative for doing as much work - including refurbishment of the rooflights - as possible in one go, so that large expenditures only have to be made once.

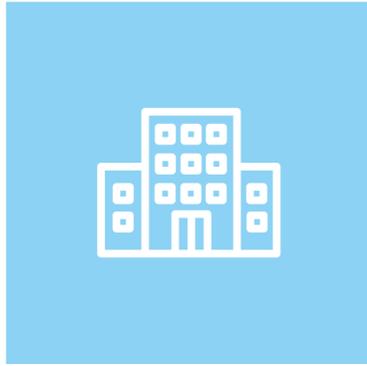
Hotels also fall into the category of 'leisure' buildings. The size and architecture of hotel buildings can vary enormously. Some larger hotel refurbishment projects involve the restoration and conversion of old buildings that are no longer used for their original purpose.

Daylight solutions in hotels can be a feature of public areas as diverse as lobbies, dining areas, and spa and leisure facilities (including swimming pools). These different areas require different aspects of performance from their glazing and are very much guided by what kind of 'look and feel' the hotel wants to convey, as well as regulatory and compliance requirements.

Overall, 'leisure buildings' can be seen as a broad category. Nevertheless, they can usually be categorised as large spaces, often with multiple uses and irregular occupancy patterns. They have high running costs, with heating and cooling being a particular challenge in such different types of space.

Specifying new daylighting and ventilation solutions on the roof means improving the thermal performance of the building fabric while delivering better comfort through natural light and fresh air. Running costs are reduced, as is the environmental impact of the building, while making the spaces more enjoyable for people to use.



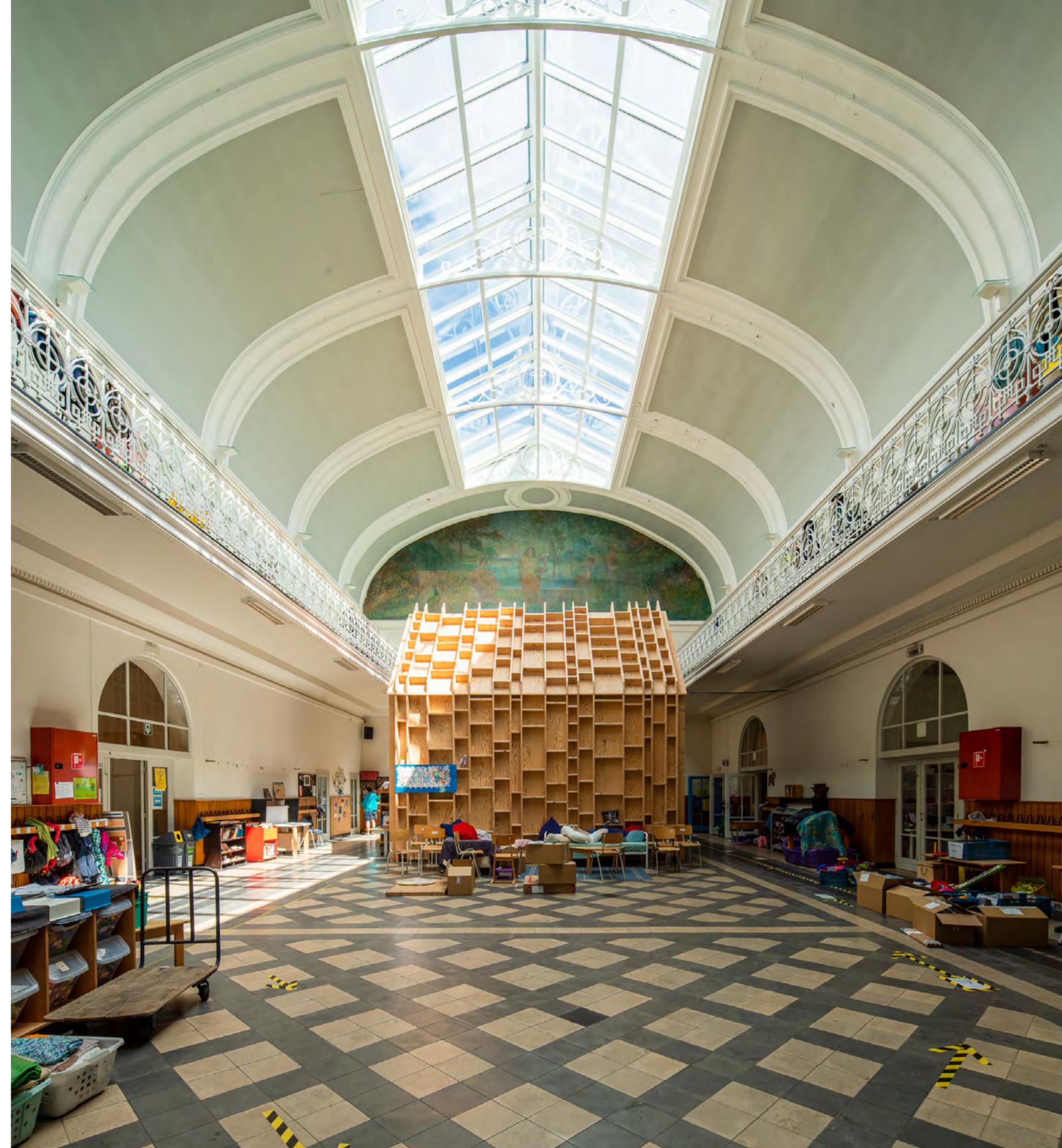


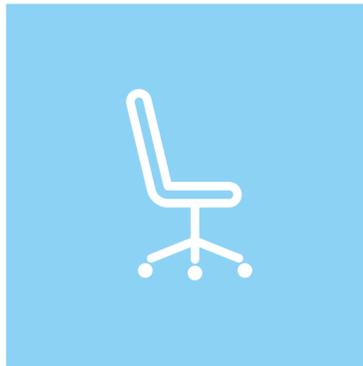
## HERITAGE / LISTED BUILDINGS

Dealing with buildings of historical importance tends to impose design constraints and limit performance improvements. The greater the range of daylighting solutions to choose from, however, the more that it's possible to deliver performance benefits while staying true to the building's history.

While there is, of course, a need to achieve a better level of fabric performance and achieve a comfortable user experience, the heritage aspect is likely to take precedence. The nature of the existing structure and the extent to which it can be strengthened dictates the weight of rooflights that can be incorporated.

Thermal and ventilation comfort is still important for these buildings. This is true not just for people working in or visiting the building, but also to help preserve the building fabric.





## OFFICE

The classification of 'office' covers a huge variety of building sizes and architectural styles. Many buildings that we now consider as offices were not originally designed as office buildings. Conversion of historic buildings continues to provide new office space, including large historic buildings that enjoy a new lease of life as conference centres and multi-use spaces.

Earlier, we briefly touched on the impact of the Covid-19 pandemic, and it is worth revisiting here. The relationship that many people have with their office has changed in a way that could not have been predicted prior to the pandemic. There were even times during the pandemic when it was questioned whether office buildings would continue to be needed at all.

As is often the case, the truth of the situation sits somewhere in the middle of two extremes. While more people are working from home more often than they did before the pandemic, the office still has a role to play for

many people in their working lives. It is still a place where they will spend time, even if not to the same extent.

One of the impacts of the pandemic is the recognition that office buildings do not necessarily provide comfortable working environments. Ventilation rates are often inadequate, but opening windows to provide uncontrolled ventilation is not a sustainable solution in terms of either energy use or occupant comfort.

Rooflight refurbishment offers a significant opportunity to deliver improved ventilation in a controlled way, while also addressing other comfort factors such as solar overheating and glare. Reducing carbon dioxide levels reduces drowsiness and improves concentration, creating an environment that is more pleasant throughout the day.





## RETAIL

A central challenge associated with retail buildings is keeping businesses open as much as possible, in order that those businesses can continue to make money.

As with other building types, it is a question of understanding the extent of refurbishment works required and devising a programme accordingly. That programme must balance specifying and installing solutions that minimise disruption and allow businesses to remain open, while meeting all health and safety requirements.

Risk assessments are, of course, unique to each building. Retail projects therefore benefit from working with manufacturers who can provide on-site support that helps the project team to deliver the works to the planned schedule.



## INDUSTRIAL

Where the industrial use of a building is being retained (rather than the building being converted to another type described in this section), daylighting options for industrial building refurbishment are heavily influenced by the existing roof build-up.

Profile sheet roofs with in-plane rooflights suit certain types of glazing. By contrast, a roof where the rooflight sits out-of-plane requires an alternative solution.

The age and condition of the existing structure, as well as any upgrades to the thermal performance of the roof as a whole, dictate which refurbishment options are most applicable.



# 03

## SUMMARY



Commercial roof refurbishment generally, and rooflight refurbishment specifically, has the potential to transform buildings. That may sound like an exaggeration, but our understanding of building physics and the benefits of good daylighting continue to improve as more research is carried out in both fields.

For buildings where the existing roof covering and daylight solution has been in place for 25 years or more, the installations do not reflect that improved level of understanding. It is likely that they do not make a positive contribution to either building fabric performance or occupant comfort.

The extensive range of daylighting and ventilation solutions, accessories, and services available today does reflect that improved level of understanding. Products and systems have been developed to suit the variety of buildings, client requirements and performance factors that have been discussed throughout this document.

When working with an experienced partner like VELUX Commercial, it's possible to achieve commercial rooflight refurbishments that are much more than a simple like-for-like replacement.

At a basic level, there is the need to achieve compliance with current regulations and standards, both mandatory and voluntary. Then there is the opportunity to improve levels of comfort for building users, using the refurbishment to make buildings more comfortable, healthier, and safer.

Children learn better at school; office workers are more productive; industrial workers are able to concentrate throughout the day; retail environments are more pleasant places to spend time; heritage buildings are preserved for the benefit of everybody; and leisure environments are more welcoming places to spend time relaxing.

Perhaps most importantly, a thoughtful refurbishment carried out now can contribute to long-term climate change goals - and mitigate some of the impacts of climate change on building users.

Rather than simply meeting minimum regulatory standards set for today, a rooflight refurbishment can help ensure the building continues to be comfortable in 30 years' time. Fabric performance, ventilation provision and shading measures can be designed for

a warming planet, ensuring sufficient ventilation, and protecting building users from the effects of overheating.

Daylight solutions manufactured to current standards can also be thought of as preventive maintenance. The building is made more weathertight, rather than hoping that existing, old units can cope with the increase in extreme weather events.

Overall, the refurbishment of commercial rooflights can be looked at as an investment, protecting and enhancing the health of the building fabric, and the people in and around the building. With options to suit almost any architectural or performance need, architects and contractors can be assured of technical expertise and installation support throughout the life of the product.

---

# 04

## VELUX COMMERCIAL SOLUTIONS AND SUPPORT

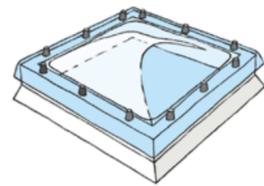


# GLOBAL PRODUCT PLATFORM

## Global product platform

VELUX Commercial's range of solutions offer complete flexibility for providing daylight and natural ventilation, smoke and heat exhaust ventilation (SHEV), as well as maintenance access, in refurbishment projects.

Our wide range of systems can be used to enhance the performance, safety, wellbeing and comfort of existing buildings, across all commercial sectors.



### Dome and flat glass rooflights

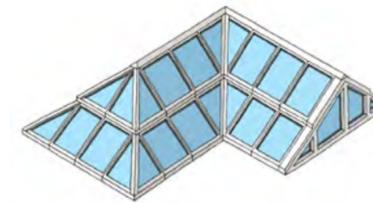
Dome and flat glass rooflights combine quality, performance, and aesthetics, with solutions also available for maintenance access and ventilation. Designed for both function and appearance, they provide single sources of daylight and are available in a wide range of shapes and sizes to suit a variety of applications.

Polycarbonate domes are strong, easy to install and have a long service life. Flat glass rooflights can be specified as single unit rooflights or as connected rows for larger areas. Access hatches enable safe access to the roof for inspection or maintenance.



### Continuous rooflights

Continuous rooflight solutions can meet the demands of commercial or industrial buildings, including warehouses, logistics centres, production facilities and sports and leisure facilities. Suitable for flat and sloping roofs, polycarbonate plastic is a durable, lightweight, and cost-effective alternative to glass.



### Glass roof systems

Glass roof systems can be used to create attractive rooflights in an array of shapes and sizes. They are the ideal choice for high specification roof glazing that looks beautiful and provides natural daylighting, fresh air and smoke and heat ventilation. Glass roof systems offer complete flexibility, and options can be configured to meet the most demanding design requirements.



### Smoke and natural ventilation

Comfort and smoke ventilation solutions can be integrated across the majority of the VELUX Commercial range of products. A design-led approach creates maximum specification flexibility to help meet the requirements of any building project. Automatic Opening Vent (AOV) rooflights can provide comfort ventilation, smoke and heat exhaust ventilation (SHEV) and roof access.

## END-TO-END SUPPORT

At VELUX Commercial we understand the importance of supporting you throughout a commercial project programme - from product selection and technical advice, through to installation and after sales services.

Our expertise, knowledge and support offering makes VELUX Commercial your preferred partner in providing the right daylighting and ventilation solutions to meet your specific needs, whether in an industrial, commercial, or public setting.

Specification tools like the VELUX Daylight Visualizer help architects and designers to see the impact of different daylighting options, and how the daylighting of interior spaces will benefit from a rooflight refurbishment.

On-site, support with roof surveys is available to assess the existing roof and its needs. Further specification support comes in the form of a full suite of technical documentation, giving complete product details for all VELUX Commercial daylighting and ventilation solutions.

Our technical experts are also available to answer your project queries. We offer CPD sessions to keep you up-to-date with current regulations, standards and solutions relating to daylighting and ventilation. Our comprehensive range of white papers also explain the benefits of natural light and explore daylight in commercial buildings in more detail.



Email: [sales@veluxcommercial.co.uk](mailto:sales@veluxcommercial.co.uk)

Find out more at  
[veluxcommercial.co.uk](http://veluxcommercial.co.uk)

Photographers: Front cover: A.V.S. Engineering B.V. Page 2: Joerg Tietje. Page 3: Joerg Tietje, Mads Frederik, Norbert van Onna, René Løkkegaard Jepsen. Page 4: Marcel Rickli Fotografie. Page 5: VELUX Commercial. Page 6: VELUX Commercial. Page 7: Imagizz communication. Page 8: René Løkkegaard Jepsen, STAMERS KONTOR. Page 9: René Løkkegaard Jepsen. Page 10: René Løkkegaard Jepsen. Page 11: VELUX Commercial, Mads Frederik. Page 12: Mads Frederik. Page 13: Marcel Rickli Fotografie. Page 14: René Løkkegaard Jepsen. Page 15: René Løkkegaard Jepsen. Page 16: Jack Hobhouse. Page 17: Torben Eskerod. Page 18: Joerg Tietje. Page 19: jürgzimmermannfotografie, Jürg Zimmermann. Page 20: Sally Ann Norman, René Løkkegaard Jepsen. Page 21: Torben Eskerod. Page 22: VELUX Commercial. Page 23: Rasmus Harnung. Page 24: Carsten Esbensen, Christian Geisnæs, René Løkkegaard Jepsen.