

# Daylighting & ventilation

from concept to installation



*ROOFLIGHTS*

*VERTICAL GLAZING*

*SMOKE VENTILATION*

*NATURAL VENTILATION*

*LOUVRE SYSTEMS*

*ACCESS SOLUTIONS*



# WELCOME

to Lareine Engineering Limited:  
a UK leader in engineered solutions  
for the building envelope

With a successful track record stretching back over more than four decades, Lareine Engineering is one of the UK's leading suppliers of rooflights, vertical glazing, smoke & natural ventilation and access solutions for all kinds of buildings. From our headquarters and manufacturing facility in West Lothian and offices in London and the Midlands, we serve a nationwide customer base that includes major contracting and engineering businesses, architectural practices, consulting engineers and building owners throughout the UK.

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### **OUR SOLUTIONS, SECTOR BY SECTOR**

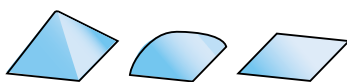
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# DAYLIGHTING

High performance solutions, from modular rooflights to self-supporting skylights & vertical glazing

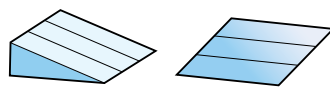


High levels of natural daylight are a 'must-have' feature in today's high performance buildings. Not only does natural daylight create more attractive, productive and healthy internal environments: it also lowers energy consumption and CO<sub>2</sub> emissions by reducing the requirement for artificial lighting. We offer a complete range of advanced, energy efficient daylighting solutions covering every kind of application, from small modular rooflights for domestic buildings and offices, to large custom-designed self-supporting skylights suitable for retail environments, factories, schools, hospitals and other public buildings. Typical configurations supplied by us are shown below.



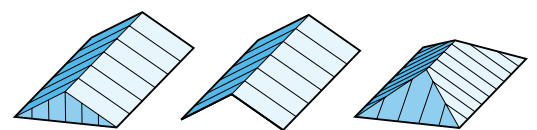
### Modular rooflights

Flat glass and thermoformed polycarbonate domes and pyramids



### Monopitch rooflights

With or without vertical end sections – up to 5m span with minimum 5° pitch



### Dual pitch rooflights

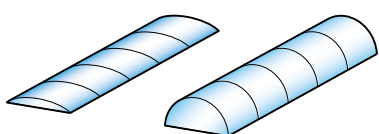
Open ended, hipped or with vertical end sections – self-supporting designs with up to 8m span



*GLASS OR POLYCARBONATE,  
OUR SOLUTIONS ARE  
CHARACTERISED BY  
OUTSTANDING AESTHETICS AND  
CLASS-LEADING U-VALUES*

### High performance & versatility

- Complete range of glass & polycarbonate glazing options and configurations
- Class leading U-Values
- UK manufactured, using high quality EU sourced materials
- Fully compliant with all UK Building Regulations and relevant standards
- Integrated smoke & natural ventilation options available
- Various access options available
- Installation by our own in-house teams under a fully managed quality control scheme



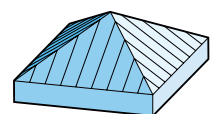
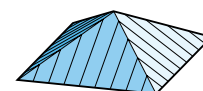
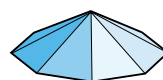
#### **Barrel vault rooflights**

High and low-profile continuous polycarbonate rooflights



#### **Segmented dome rooflights**

Curved polycarbonate glazing in a range of profiles and diameters



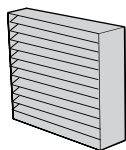
#### **Faceted pyramids and lantern lights**

Complete range of standard and custom designs and configurations available

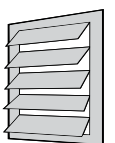
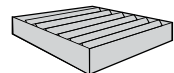
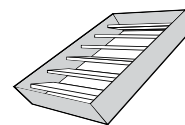
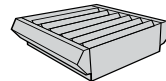
*WE ARE A BRAKEL  
NATURAL VENTILATION  
CERTIFIED PARTNER  
AS WELL AS SUPPLYING OUR  
OWN RANGE OF LOUVRED  
VENTILATORS*



We offer a complete range of smoke & natural ventilation systems, providing effective, energy-efficient solutions for all kinds of buildings. Natural ventilation is self-regulating and allows the building to breathe, with virtually no operational or maintenance costs – and with no fans, noise is never a problem. Our smoke ventilation solutions are also carefully designed to utilise natural thermal air movement to allow smoke to escape as quickly as possible in the event of fire.



**Fixed louvred ventilators**  
For plant rooms and other general applications



**Controllable louvred ventilators**  
For a wide range of smoke & natural ventilation applications

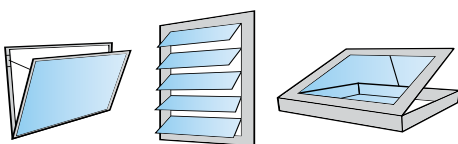


# VENTILATION

Smoke & natural ventilation:  
making internal environments  
safer and healthier

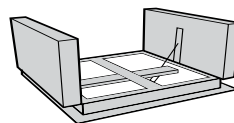
## Efficient solutions for buildings of every description

- ▀ Complete range of options and configurations for all building types
- ▀ Class leading U-Values
- ▀ UK or EU manufactured, using high quality EU sourced materials
- ▀ Fully compliant with all UK Building Regulations and relevant standards
- ▀ Installation by our own in-house teams or approved sub-contractors
- ▀ Smoke ventilators are CE marked and independently tested and certified to EN12101-2
- ▀ Control systems for Smoke & Natural Ventilation (EN 12101-10 controls when required)



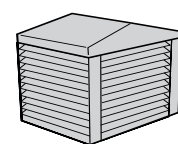
### Architectural ventilators

Glazed louvres and ventilation windows  
for facades and curtain walls



### Flap ventilators

Single or dual-opening units with a  
variety of actuation options



### Turrets & windcatchers

Bespoke structures for a variety of  
rooftop ventilation applications

## ACCESS & ESCAPE

Safe, secure solutions for regular traffic, occasional access or escape

In addition to our rooflighting and ventilation products, we offer a range of access and escape hatches, which can be supplied in various sizes and designs. They can also be motorised and have different security options included.

### No-compromise design & engineering

- Supplied with insulated aluminium upstands, suitable for all types of flat and pitched roofs
- Class leading U-Values
- UK manufactured, using high quality EU sourced materials
- Fully compliant with all UK Building Regulations and relevant standards
- Access and daylighting options available
- Installation by our own in-house teams under a fully managed quality control scheme



Our access and escape hatches can be supplied in a range of configurations, including single and double opening sections

A quality managed service,  
from design to installation

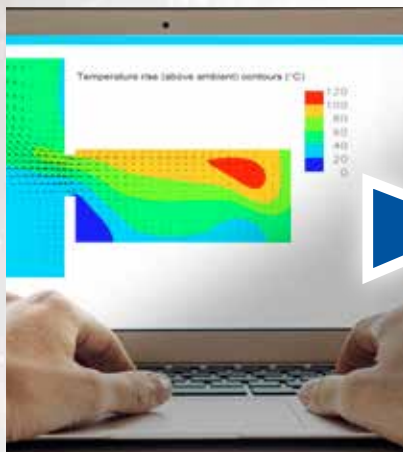


*"WE ARE AN ENGINEERING  
BUSINESS, PROVIDING  
SOLUTIONS FOR THE  
CONSTRUCTION AND BUILDING  
SERVICES SECTORS"*  
Tom Bates, Managing Director

We are proud that the majority of products and systems we supply are designed and manufactured in-house at our purpose-built factory in Armadale, West Lothian. This allows us to maintain close control over quality and every stage of every project, from initial design to installation.

**Trust Lareine Engineering:**

- We are a successful, financially stable business with an excellent reputation built over many decades
- Our solutions are compliant with Building Regulations and carry professional indemnity insurance
- We are an ISO 9001 registered company operating our own audited quality control programme
- We are approved suppliers to leading contractors and architectural practices
- We are active members of relevant trade associations and construction industry quality schemes, such as NARM, HEVAC and SCA
- We are an equal opportunities employer



Our in-house design and specification team provides expert support from the outset



Manufacturing is carried out at our ISO 9001 certified factory in West Lothian



Our experienced nationwide installation teams are directly employed by us

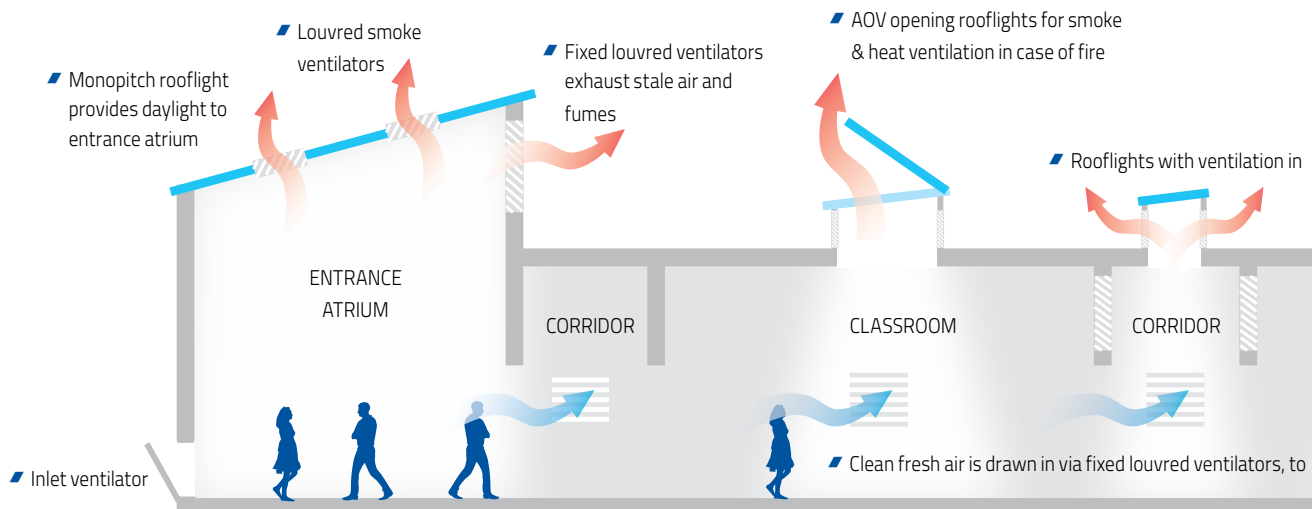
SELF-SUPPORTING  
GLASS ROOFLIGHTS,  
HANSON SCHOOL,  
BRADFORD



Glass northlight, Ashworth Laboratories, Edinburgh University



Glass monopitch rooflights, Falmouth University, Cornwall



**Schools and colleges** generally combine a wide variety of different sized spaces with widely differing uses and requirements. Our design experience and diverse product range allows us to provide effective daylighting and ventilation solutions that meet specific needs including high levels of diffused lighting, low energy usage, good thermal and acoustic insulation and high levels of safety.



## EDUCATION

Large halls and atria, corridors, small classrooms... we are a leader in supplying high performance solutions to meet the varied needs of the education sector



Glass rooflight, Lasswade School, Bonnyrigg

Our solutions bring high levels of evenly distributed, diffused natural light as well as efficient smoke and natural ventilation to all kinds of educational establishments throughout the UK, from primary schools, to academies, colleges and universities – in refurbishment and new build projects of all descriptions. The role that natural daylight plays in helping students to concentrate and perform is well documented, as well as the important cost and energy savings that can be achieved by reducing demands for artificial lighting.

### Sector-specific solutions & expertise

#### Rooflights & glazing

Our modular flat glass and polycarbonate rooflights offer specifiers a wide range of design and cost options for introducing daylight into classrooms, offices and other areas. For daylighting in larger spaces including libraries, lecture theatres and corridors, our glass monopitch and dual pitch rooflights offer a combination of excellent aesthetics and very high thermal efficiency.

We can also provide fully bespoke designs for large atria, stairwells and entrance canopies.

Our products reflect our commitment to roof safety. Our standard rooflights are non-fragile to ACR[M]001:2005 CLASS B and we can also supply specialist rooflights to 'walk-on' specification.

#### Smoke & natural ventilation

High-efficiency, low-cost natural ventilation is the ideal choice for educational buildings. High

throughputs of fresh air can be achieved with minimal impact on energy consumption and noise levels are kept to a minimum with no need for powered fans or actuators.

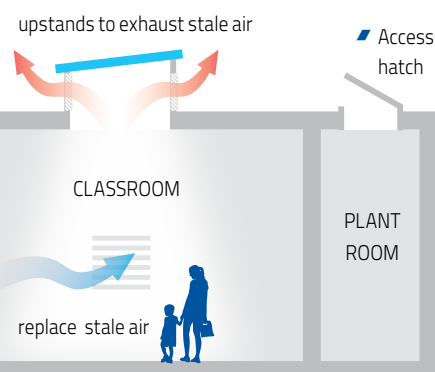
Our EN12101-2 compliant Smoke and Heat Ventilation (SHEV) solutions can operate independently or be integrated into our rooflights.

#### Access

We offer a range of hatches to provide access to roof areas, with a wide range of options for safety and increased security.

#### Working with you from design to installation

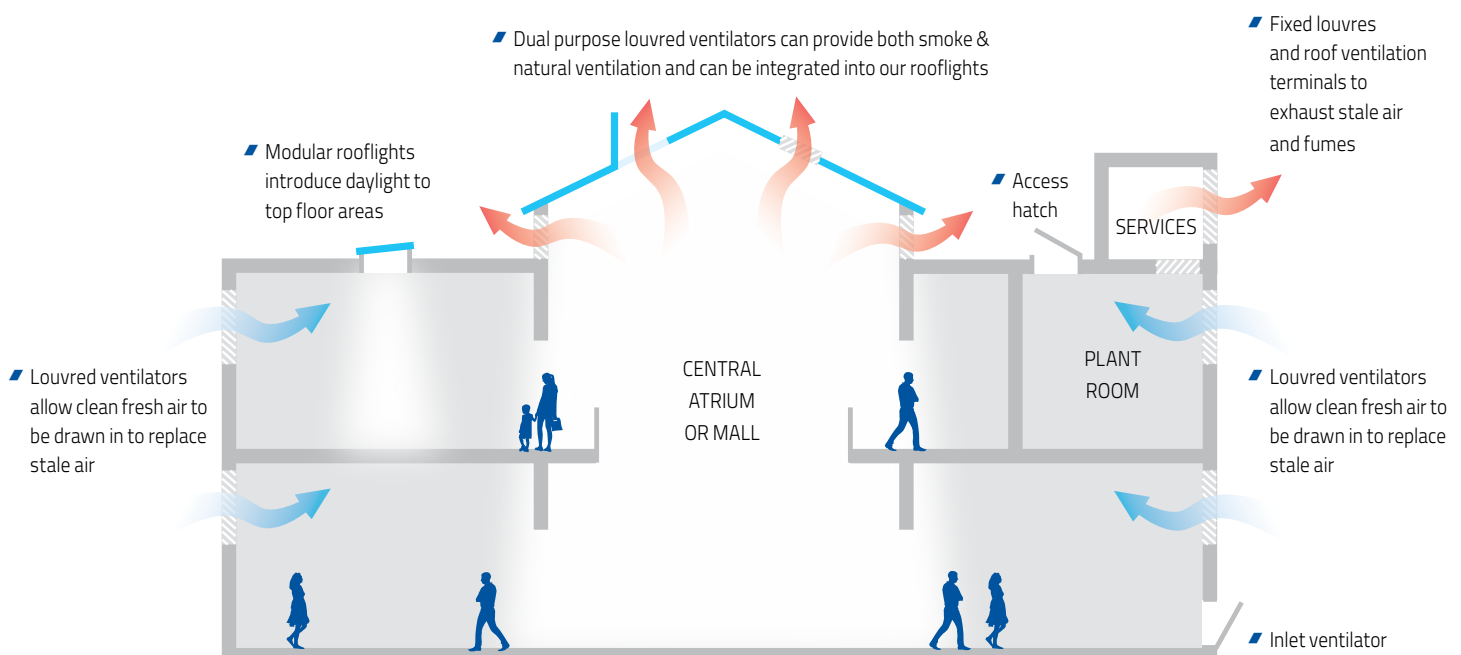
Draw on our education sector expertise at every stage of your project – from specification and design support, to on-site installation. Our trained installers are experienced at working to tight deadlines to avoid busy term times as and when required.



## RETAIL & COMMERCIAL

We help to create bright, safe, airy environments to which shoppers are drawn and where workers are more productive

Research has proven that natural daylight and a pleasant internal climate plays a positive role in improving sales in retail stores and productivity of personnel in offices. In these environments where large numbers of people spend time every day, high levels of comfort and aesthetics are required, as well as state-of-the-art fire & smoke control. We work closely with leading contractors in this sector, to provide world-class environments to meet or exceed all appropriate standards and UK Building Regulations.



**Today's typical shopping malls and office complexes** are busy and often multi-level buildings requiring high levels of natural daylight and often with complex requirements for smoke and heat exhaust ventilation. This diagram shows where Lareine Engineering design expertise focuses on integration with the building structure, to meet these needs.



*OUR SKYLIGHTS PROVIDE  
STUNNING FOCAL POINTS AT  
MANY WELL-KNOWN SHOPPING  
CENTRES AROUND THE UK*

## Sector-specific solutions & expertise

### Rooflights & glazing

From large structural glass skylights for public atria, to cost-effective modular polycarbonate domes, all our rooflights provide high levels of diffused daylight with very low U-values and excellent aesthetics, internally and externally.

With spans up to 8m, our self-supporting dual pitch glass rooflights are popular with contractors and developers in this sector, providing stunning central focus points in many of the UK's large retail malls.

### Smoke & natural ventilation

Natural ventilation is the perfect solution for retail and commercial environments, where high throughputs of fresh air can be achieved with minimal impact on energy consumption. We can design systems to provide integration with

zoned heating and cooling and other services. Our EN12101 compliant Smoke and Heat Ventilators (SHEV) can operate independently or be integrated into our rooflights.

### Access

We can provide safe secure access to roof areas with a range of access hatches which can include glazed panels to supplement daylighting.

### Working with you from design to installation

With Lareine Engineering, you can enjoy the peace-of-mind that comes from working with a supplier with decades of sector-specific experience. We understand the pressures, the targets and the legislation that drives your sector, so we can be a proactive and effective partner, from initial design to on-site installation and handover.



Glazing & ventilation, VAG Dealership

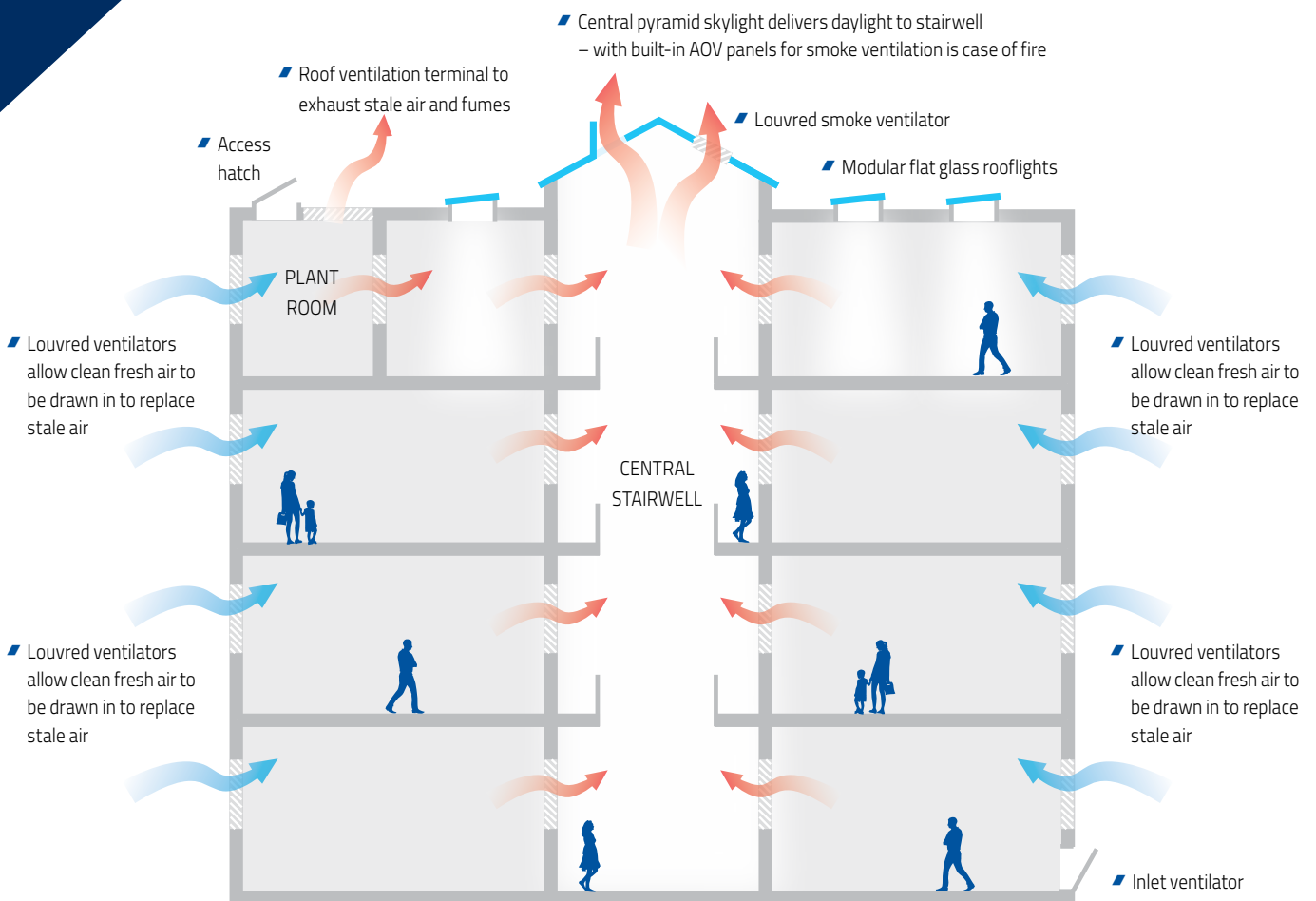


Glazed smoke ventilators installed at the Queens Square Shopping centre, West Bromwich



Smoke flap ventilators, IKEA superstore

NATURAL DAYLIGHT MAKES  
CENTRAL STAIRWELLS AND  
HALLWAYS SAFER, HEALTHIER  
AND MORE ATTRACTIVE



**Residential apartment buildings** can be greatly enhanced by introducing high levels of daylight to public areas. They also present specific challenges for ventilation system design, with many dividing internal walls and high demands for safety, privacy and security of individual units.



Architectural louvred smoke ventilators combine functionality with integrated aesthetics at this city centre hotel

## RESIDENTIAL & HOTEL

Our solutions combine safety and security with performance and aesthetics: essential factors for daylighting & ventilation in this sector

From social housing to luxurious privately-owned houses and apartments throughout the UK, we can provide daylighting and ventilation solutions that are appropriate to individual needs. Homes of all descriptions across the UK benefit from our expertise in providing high light transmission without glare or unwanted heat build-up, high levels of comfort ventilation or smoke ventilation with minimal heat loss, excellent thermal insulation and acoustic properties, and superior aesthetics.

### Sector-specific solutions & expertise

#### Rooflights & glazing

For housing of all kinds and hotel accommodation we offer an extremely wide range of daylighting products, from flat glass, monopitch and dual pitch rooflights often used to provide daylight to communal areas, atria and stairwells, to lower-cost standard polycarbonate rooflights often specified for refurbishment of social housing. Our 'walk-on' specification glass rooflights are popular with home-owners seeking to utilise roof areas or for internal use over cellars. We have installed many of these rooflights to discerning homeowners in recent years.

#### Smoke & natural ventilation

Effective day-to-day ventilation with minimal heat loss is vital in living spaces – and places where people live and sleep must be protected with smoke control systems. With so many potential fire hazards like cookers and electrical appliances

– together with often complex building layouts – smoke control systems need to make escape in the event of fire as easy as possible, for as long as possible. Our design teams are experienced in providing regulations-compliant smoke ventilation systems for all kinds of residential buildings.

#### Access

Whether the need is for occasional access to roof areas for maintenance, or for easy and regular access to roof gardens or terraces, we can supply a range of roof access products which can include glazed panels to supplement daylighting.

#### Working with you from design to installation

Residential installations place a special emphasis on factors like durability, aesthetics, ease-of-use and security. Our 'concept to installation' approach ensures that every project benefits from the same detailed quality control throughout, to ensure these requirements are met.

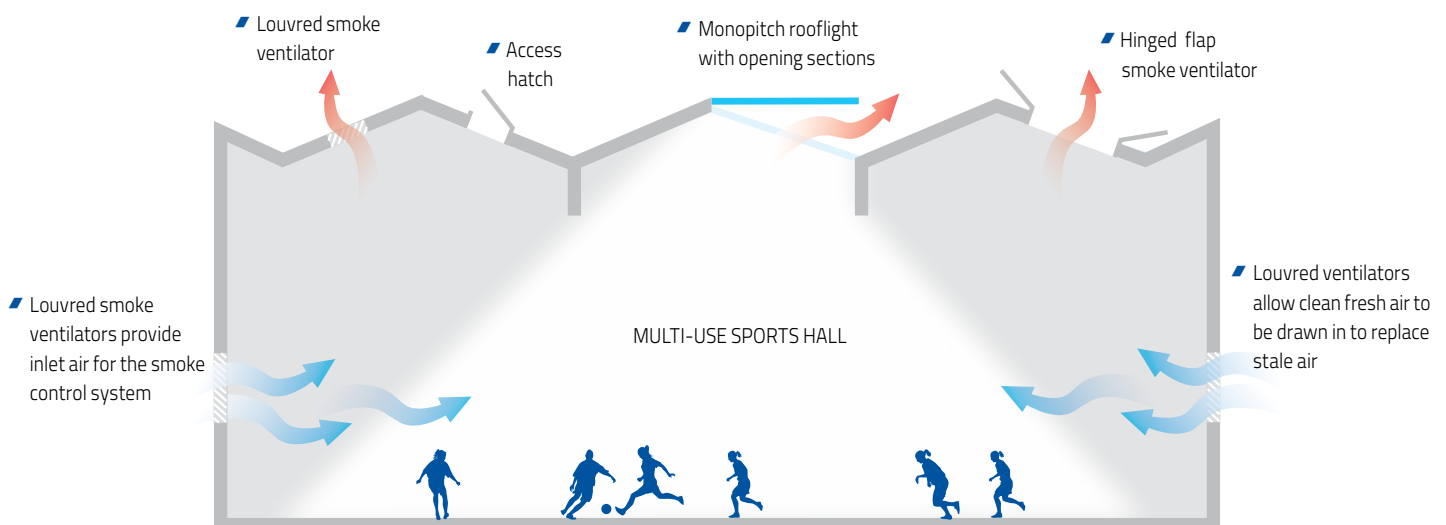


Bespoke flat glass rooflight, private home, London

## SPORT & LEISURE

Specifiers and contractors draw on our expertise to meet the specific daylighting & ventilation challenges presented by large sports halls, stadia, theatres and leisure parks

In large sporting and leisure facilities, there is often need to achieve different internal environmental conditions for participants and spectators/audiences. The recommended requirements for different sporting activities can also vary greatly. For example, indoor facilities for cricket or football will benefit from high levels of diffused daylight. However, for some sports such as badminton and gymnastics, daylighting is not recommended. Ventilation and temperature requirements also vary greatly between different activities and building uses. For these reasons, an integrated approach to lighting and building services is often required.



**For sports and leisure facilities,** acoustic smoke & natural ventilator solutions can be provided, to avoid intrusive noise in playing or performing areas



*WE DESIGNED AND  
INSTALLED THE ICONIC  
VENTILATION TURRETS AT  
LIVERPOOL'S NEW EVERYMAN  
THEATRE*

## Sector-specific solutions & expertise

### Rooflights & glazing

Our daylighting range covers the many varied requirements in this sector – from modular rooflights for smaller office and administration areas to dual and mono pitch rooflights, northlights and vertical glazing for larger internal spaces. We offer a huge range of glazing options to suit varying needs for diffusion, solar control and other factors.

### Natural & smoke ventilation

Sports halls may often need relatively low levels of heating but do require high throughputs of fresh air. Our natural ventilation solutions can be specified to meet this requirement with little or no energy consumption, low noise levels and minimal maintenance. We offer a complete range of solutions for all types of building construction.

### Access

We can provide safe secure access to roof areas with a range of access hatches which can include glazed panels to supplement daylighting.

### Working with you from design to installation

Our design team brings together industry expertise in smoke ventilation, natural ventilation, acoustically treated ventilation and daylighting, allowing us to provide integrated solutions based on years of hands-on experience of sports and leisure facilities.

Installation is carried out by our own in-house teams ensuring quality and continuity throughout every project.



Glass rooflight, York Racecourse



Smoke & natural ventilation solution for children's play centre

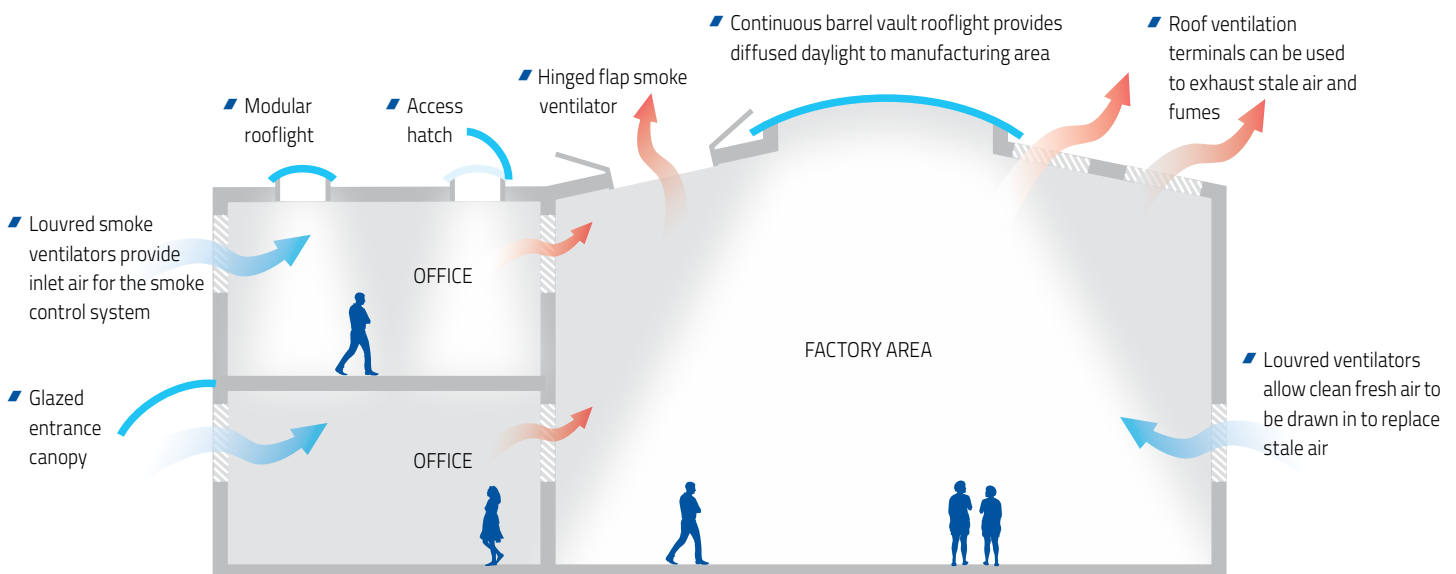
INSULATED LOUVRED  
SMOKE VENTILATORS  
INSTALLED AT THE NEW  
JAGUAR LAND ROVER  
PRODUCTION BUILDING



Lareine Eura R dual purpose smoke & natural ventilator with weathered side flaps



Our glass ridelights provide an ideal solution for introducing natural daylight into deep plan buildings



**Factories and warehouses** often require specialist solutions for control of fumes from manufacturing processes as well as smoke and natural ventilation for offices and production areas



## INDUSTRIAL

Workers in factories, warehouses and other utility buildings throughout the UK, are benefiting from our daylighting, smoke & natural ventilation expertise



Workplace (Health, Safety and Welfare) Regulations state that: “every workplace shall have suitable and sufficient lighting which shall, so far as is reasonably practicable, be by natural light”. Natural light provides optimal working conditions, as well as saving energy and cutting emissions by reducing the need for electric lighting. Ventilation is also a critical factor in the success of industrial buildings, with the need for provision of a safe and comfortable working environment.

### Sector-specific solutions & expertise

#### Rooflights & glazing

Our thermally-efficient glass and polycarbonate rooflights offer the specifier a wide range of options for introducing even, diffused daylight to the workplace – from modular rooflights for offices and administration areas, to continuous barrel vaults and monoptiches for larger spaces.

#### Smoke & natural ventilation

Busy factories and warehouses may be noisy and will often contain high levels of combustible materials and stored goods. This places high emphasis on smoke control systems to ensure a clear layer of smoke is maintained to aid escape from the building and allow fire brigade intervention. A properly designed smoke control system can also help protect the building by releasing the hot smoke out of the building. This action will also minimise smoke damage to stored goods and machinery.

Our design team focus on providing integrated solutions which combine effective day-to-day

ventilation with the need for carefully planned smoke control. Our system designs place the needs and safety of workers first, whilst also aiming to protect the fabric of the building to minimise production downtime or losses in the event of fire. Day-to-day ventilation in industrial buildings can also present design challenges with requirements for high throughput of fresh air with minimal heat loss – as well as specialist solutions for control of fumes from manufacturing processes.

#### Access

We can provide safe secure access to roof areas with a range of access hatches which can include glazed panels to supplement daylighting.

#### Working with you from design to installation

Draw on our expertise to ensure effective, safe and compliant daylighting and ventilation solutions for all kinds of working environments. You can see evidence of this in factories, warehouses and other utility buildings throughout the UK.



Lareine louvered smoke ventilators are available with insulated aluminium, glass or Isolux louvres, controlled electrically or via compressed air

## SPECIALIST

From museums & galleries to hospitals, transport hubs, prisons and other buildings, we provide bespoke solutions to meet diverse needs

Our design and specification teams are able to draw on a vast bank of knowledge to provide effective daylighting and smoke & natural ventilation solutions to fulfil specialist requirements. As a manufacturer with our own in-house facilities we can design and fabricate bespoke systems and solutions. Shown here are just a few examples of recent projects we have undertaken.



Dual pitch glass rooflights, Bristol Crematorium



Glass ridgeline, Kilwinning Library, North Ayrshire



Bespoke vertical glazing, St. Stephens Church, Birmingham



Glass ridgeline, Haddington Veterinary Surgery



*CALL ON OUR EXPERIENCE  
TO MEET YOUR CHALLENGES –  
FOR PROJECTS OF ANY SIZE  
IN ANY SECTOR*



Circular glass rooflights, St. Modwens



HM Prison, Pentonville



Lareine 75mm fixed louvre system available for screening or performance purposes

*LAREINE ENGINEERING:  
HELPING DESIGNERS AND  
SPECIFIERS ALL OVER THE UK TO  
REALISE THEIR VISION*



Exhibition hall daylighting



Elliptical rooflight, Grace Darling Campus, Northumberland



Circular rooflights, Worcester Hospital



Bespoke glass roof





DAYLIGHTING & VENTILATION FROM CONCEPT TO INSTALLATION

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