



DAYLIGHT IN THE BUILT ENVIRONMENT





THE IMPORTANCE OF DAYLIGHT IN DESIGN

Do you know what can be achieved through enhanced daylight levels?

Hospitals where less medicine is needed, where patients recover faster, where staff enjoy their environment.

Schools where academic performance is raised, where better behaviour blossoms, where futures seem brighter.

Workplaces where productivity is lifted, staff recruitment and retention increases, and the bottom line is boosted.

New homes with lower heating costs and happier occupants.

The benefits felt when building designs deliver ample daylight, and interiors are flooded with natural light, are innumerable. And more natural light means decreased energy bills and a lower carbon footprint.

Building regulations should be a baseline in building design. However, the right daylight solution in the design stage can enhance BREEAM and SKA ratings.

A rooflight draws in three times as much daylight as a vertical window the same size

As daylighting experts, we design and manufacture high-performance daylighting solutions for every sector.

THERE'S A LESSON TO BE LEARNT ABOUT DAYLIGHT

Two factors are guaranteed to influence educational outcomes for students and staff alike: quantity and quality of natural light, and the quality of the air they breathe.

When Alberta Department of Education analysed 21,000 students, sunlit classrooms saw 20% progress in maths tests and 26% faster in reading tests.

Building designs need to consider daylight solutions that feature passive or controlled ventilation to bring in fresh air and prevent CO2 build-up. Why does this matter? Sub-par ventilation causes drowsiness and impaired performance. Tests have found that cognitive function in rooms with high CO2 levels is up to 50% worse than in well-ventilated rooms.

Bringing optimum daylight into schools and educational facilities enhances the learning environment and greatly benefits the student population.

Cost savings are also realised with lower consumption of heating, lighting and power.

Bright, effective learning environments help pupils fulfil their potential.

Students achieve 25% better
test scores in daylit classrooms*

*Daylighting in Schools, Heschong Mahone Group







LIVING UNDER NATURAL LIGHT

Incorporating effective daylighting into domestic developments brings a host of benefits. Better sleep quality and better physical, emotional and mental wellbeing.

It's no secret that a naturally lit home is instinctively more appealing to homeowners and tenants. Offering financial benefits too. Artificial lighting in homes constitutes 15% of the average annual household energy bill. However, effective daylight design lowers energy use and energy bills substantially, without compromising on thermal performance and occupant comfort.

Of course, for house value or rentable rate to reach its maximum, roof glazing solutions need to be sleek as well as high-functioning. Low-profile and bespoke rooflights marry aesthetics with superior performance.

Outstanding rooflight design possibilities deliver beautiful and desirable homes.

Occupants of houses with daylit rooms
get 46 minutes more sleep per night*

*Impact of Windows and Daylight Exposure on Overall Health and Sleep Quality of Office Workers, *Journal of Clinical Sleep Medicine*

A HEALTHIER HEALTHCARE SECTOR

If better daylighting boosts wellbeing in homes and schools, what's the impact on human health in hospitals?

Exactly what you'd hope. Perhaps even better. Sunlight boosts serotonin levels, which decreases stress and increases positivity – more than 11 studies show that sunlight reduces depression in bipolar and seasonal affective disorder sufferers.

That's not all. It has an analgesic effect, reducing pain medication use by 22% and costs by 21%, according to the BRE's Daylight benefits in healthcare buildings report. Post-operative recovery rates speed up too – by up to 41%.

Add efficient rooflights with integral ventilation, and you'll cut the negative effects of CO2 build-up as well as enhancing public safety with smoke ventilation.

From post-op recovery rooms to care homes, healthcare facility designs should be looking to maximise daylight and deliver superior, restorative environments.

Bright daylight reduces agitation
in dementia sufferers*

*Daylight benefits in healthcare buildings, BRE





THINK OF A BUILDING, ANY BUILDING

Daylight's beneficial boost to physical, mental and emotional wellbeing is felt in all sorts of ways, in all sorts of spaces.

Better concentration, increased productivity, more motivation and morale, resurgent recruitment and retention levels. That's true across all industries: public sector and private, office staff or workers in a warehouse. Employers appreciate all of this as much as the reduced number of days' sick leave and lower energy bills that daylighting brings.

Daylit retail environments even report higher sales turnover - it's the third most important factor in increasing sales volume, according to HMG's Daylighting impacts on retail sales performance.

Wellbeing for employees goes beyond just 'wellness', important as that is. It's a complex blend of the physical, psychological, social and relationship aspects of employees' working lives. Bright working environments are essential for happy, healthy employees.

Lighting accounts for 33% of
office building electrical use*

*Energy consumption in the United Kingdom
Department of Business Enterprise & Regulatory Reform

BRIGHTER SOLUTIONS FOR HERITAGE BUILDINGS

Britain enjoys a fine and varied architectural heritage dating back centuries. Maintaining, restoring and refurbishing historical buildings requires respect and sensitivity.

Recreating original rooflights for such illustrious buildings as Somerset House and the Barbican Centre, we understand the complexities of delivering outstanding daylight ingress, solar control and impressive thermal performance in historic conservation buildings. Our bespoke designs fulfil today's strict environmental and thermal performance standards, maximise natural light and improve occupant comfort with historically sympathetic designs.

Galleries, museums, ancestral homes all benefit from the even spread of natural light into the dark corners which light through a window cannot reach.

Many historical buildings suffer neglect through lack of finance, yet choosing the right daylight solution can make significant energy savings, which helps owners manage costs. Since natural light improves internal aesthetic – and a sensitively designed rooflight suits its context – heritage buildings become more usable and more profitable too.



**HISTORIC
CONSERVATION**





THE DAYLIGHTING EXPERTS

Our daylighting team offers an unrivalled enquiry to installation service, tailored to your needs.

From initial design guidance, through to the complete consultation, including daylight condition reports, bespoke design and manufacture, we believe in total specifier support.

Our solutions are rigorously tested, compliant with current building regulations and legislation and are tried and trusted by professionals.

Our product range features: minimalist modular rooflights, ridgelights and bespoke skylights designed to the most demanding specifications. ECO models, tubular skylights, barrel vaults, vertical oversleeves and bespoke technical designs. Our continuous roof glazing options offer endless design possibilities for any project.

We also have the in-house expertise to integrate a complete roof access and smoke ventilation system into our skylights – to exceed all safety requirements and in complete compliance with all legislation.

We help our customers take their projects from initial design to total customer satisfaction. We are always ready with expert advice and technical input in designing, specifying and installing daylighting solutions.

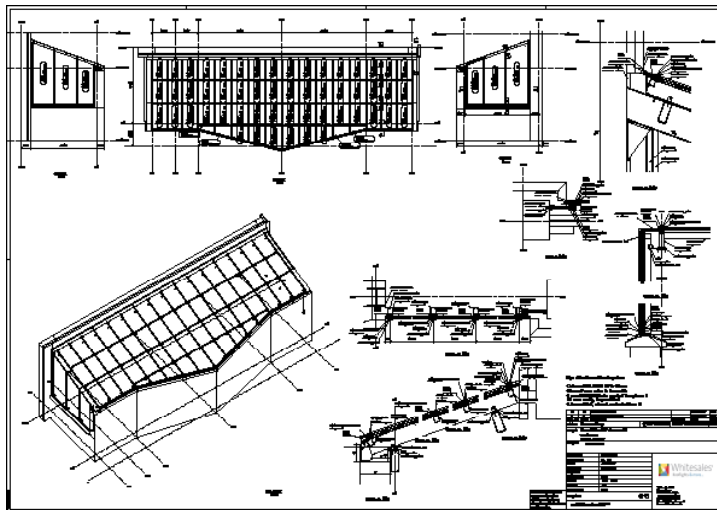
SPECIFICATION SUPPORT

Advanced BIM object models and an extensive CAD library – essential design tools.

We fully understand the complexities of designing daylight in the built environment.

Our comprehensive collection of BIM object models use real world data, are authored to National Building Specification standards, and allow designers and specifiers to fully integrate selected products into any project.

Our comprehensive range of CAD drawings is an invaluable resource for specifiers - our technical experts can also create bespoke drawings for any project.



A BRIGHTER LIFE

It can be difficult to keep up to date with ever-changing products and constantly evolving standards and regulations. With this in mind, we have developed our daylighting CPD seminars to provide you with the thorough knowledge you need.

Highlighting the importance of natural light for buildings and occupants, as well as the general principles of daylight, our CPDs advise on the design considerations involved and options available when incorporating daylighting systems into the built environment.

- Find out why natural daylight is so important and how it can help in different environments
- Learn about the principles and efficiencies of daylight and where it is required in regulations
- Understand how to identify different rooflights and their applications
- Explore other benefits and uses of rooflights and associated products





WE SPEND AN ESTIMATED 90% OF OUR LIVES INDOORS

While it can be difficult to measure the precise impact of daylight on working environments, homes and hospitals, the consensus from international research across decades is that people need daylight.

It makes us healthier in mind, body and spirit. It helps us heal, lifts physical and mental performance and productivity, and helps us reach our potential. It makes us happier in ourselves, and in the way we interact with others.

We work with building designers to create outstanding environments in which to live, work and play, rest, recuperate and reflect.

Discover more on our website: www.whitesales.co.uk

Rooflights increase daylight availability
by up to 45% of the occupied year*

*Institute of Energy and Sustainable Development
De Montfort University in Leicester



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