



Naturally bright

Paul Trace from Lumen Rooflight casts a light on the benefits of natural daylight in the classroom.

IT'S NO GREAT SURPRISE THAT PEOPLE ARE ATTRACTED TO NATURAL LIGHT AND THAT MOST OF US FEEL BETTER WHEN THE SUN COMES OUT. HOWEVER, BEYOND THE "FEEL GOOD" FACTOR THERE ARE MANY TANGIBLE BENEFITS TO INCREASING THE AMOUNT OF NATURAL DAYLIGHTING ENTERING A BUILDING.

This is particularly true of schools or places of learning as the use of natural light has significant advantages for both students and teachers.

Proven benefits of natural light

Numerous studies have demonstrated the benefits of daylight on the learning environment. Enhanced student performance and motivation, increased teacher and student attendance, reduced energy costs, as well as a positive effect on the environment are some of the improvements seen in school buildings that use well-planned day lighting concepts.

Most research on the subject of the benefits of natural daylight in schools has taken place in the US. One such study, completed by the Hescong Mahone Group, identified that exam results were up to 26 percent higher for schoolchildren in classrooms with plentiful natural light than for those in classrooms with little or no daylight. These findings are reinforced by Alberta Education's, 'A Study into the Effects of Light on Children of Elementary School Age', which showed that natural light also has a positive effect on the health of children, as well as on rates of attendance and achievement.

A further US study by Sacramento California, 'Light Helps Pupils Learn', is one of the largest ever undertaken on natural light in

schools. It also suggests that children learn faster and perform better in exams in classrooms with more daylight. Learning rates were comparable with the other aforementioned studies, with exam success rates improved by up to 26 percent.

Aside from the physical and psychological benefits, natural light also offers an environmentally friendly means of saving money on energy costs. It stands to reason that the more natural light entering a building, the less energy for lights and heating is required.

Looking at this compelling list of benefits, one might be surprised that optimising day lighting in schools is often regarded as a design preference instead of a basic responsibility.



What does the law say?

Legislation issued in 2002 recognised this by making it a legal requirement for buildings to have adequate natural daylight as part of the design. The legislation states that a minimum 20% of the wall area or 10% of the roof area must comprise of light transmitting elements.

For schools, specific guidance on natural lighting is available in Building Bulletin 90 (BB90) 'Lighting Design for Schools'. This provides essential guidance for both primary and secondary schools, whether for new or refurbishment projects. It stresses that natural lighting during daylight hours should always be the major source, supplemented by electric light when needed.

School designers should assume that daylighting will be the prime means of lighting in all areas unless there are specific, over-riding reasons for artificial lighting in certain rooms.

The role of the rooflight

The BB90 document contains a comprehensive section covering lighting design and the importance of rooflights. As it points out, rooflights let in light from the brightest part of the sky and are not generally affected by external obstructions, such as trees or other buildings. They also provide a more even pattern of light than vertical windows.

Rooflights can form part of an effective technical lighting scheme, particularly in conjunction with efficiently controlled artificial lighting, to produce specified illumination levels for particular tasks. According to leading consultants, horizontal rooflights provide two and a half times more light than vertical windows (the equivalent of 10,000 candles on a sunny day), which is more than 200 times the light needed for most educational tasks.

In addition, rooflights can also add to the more subjective qualities of spaces as an integral part of the building's architecture. They can provide views of the sky and promote a sense of well-being and connection with the outside without the distractions encountered with views through vertical glass windows.

For further information on the Lumen rooflight and its benefits contact Nick Crooks on 0845 050 8746, email info@lumenrooflight.co.uk or visit www.lumenrooflight.co.uk

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