

Building

The background of the cover is a photograph of a modern school hallway. The hallway features a long, narrow ceiling with recessed lighting. On the right side, there is a large wall of windows with dark frames, providing a view of the outdoors. A glass railing with a dark metal handrail runs along the length of the hallway. In the background, a doorway is visible with a green exit sign above it. The overall atmosphere is bright and clean.

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THINKING DIFFERENTLY ABOUT CEILINGS

By Andrew Jackson, Product Manager SAS International

As the impact of school design on the well-being of its users is becoming better understood, elements such as ceilings affect the key issues of lighting, acoustics, room comfort and appearance are being examined and new alternatives considered.

Design within schools should provide a good learning environment that is durable, functional, humane and attractive. Suitable acoustic control, good daylight levels and effective heating and cooling can raise staff and pupil morale, have positive health benefits and also provide more effective working

and learning conditions. The ceiling choices made can significantly impact on these elements and also play a role in ensuring that schools do not have a dull and institutional feel to them.

Acoustically, provision needs to be made at junctions to ensure



that sound doesn't travel from room to room, while sound reverberation needs to be controlled within classrooms, corridors and stairwells. Suspended metal ceilings can easily accommodate these requirements. Good sound insulation between rooms is achieved by ensuring partitions or internal walls pass through the ceiling membrane and combine with the structural soffit above, while acoustic absorption is provided by the use of perforations on the ceiling tile and/or the inclusion of acoustic pads. However, the advantages of metal ceilings is really demonstrated within classrooms; where a combination of sound reflection and absorption are required. By zoning 'plain' sound reflecting and 'perforated' absorptive metal ceiling tiles the sound quality within the room can be enhanced and good speech intelligibility ensured.

With regards to lighting, it is not surprising that a high level of

natural light is preferred, but the specification of adequate artificial lighting is also a key concern. The finish on a ceiling can impact significantly on the diffusion of light around a space and high levels of daylight can increase the chances of uncontrolled light reflection. In addition, lighting 'hotspots' can be caused by indirect light sources. To combat this SAS has just launched a new 'Fine Textured' finish that diffuses light throughout a room without any unintentional light reflection from both internal and external sources.

As an alternative to suspended metal ceilings, floating rafts or suspended beams are growing in popularity, particularly within the new 'Academies'. Apart from offering architects the option to create more interesting spaces they also offer reduced installation times and costs. Such prefabricated modules expose the soffit, and therefore also enable sustainable natural

mass cooling to function. Offering increased flexibility of design these types of solutions can be tailored to individual spaces at very little cost. Luminaries can be incorporated to provide natural lighting effects and acoustic control can

also be designed in. Where additional passive cooling elements are required within highly glazed facades to overcome solar gains, these can also be included.

Using a combination of these innovative prefabricated modules and standard suspended metal ceilings within educational buildings offers a particularly flexible way by which to create interesting spaces that meet required performance criteria. In addition, other metal solutions, such as acoustic wall panels, are also increasingly being used. These eliminate sound reflection from rear walls and are particularly common in drama and music rooms, but can also complete the acoustic solution for standard classrooms. Or dual function acoustic baffles and solar shading are being used within large glazed atriums, such as the solution designed and manufactured by SAS for the Business Academy, Bexley. With metal the possibilities are endless.

The school environment needs to be resilient and finishes must

have stable characteristics in relation to physical parameters such as light reflectance and acoustic performance. Metal with a polyester power coating offers a highly durable and easy to clean solution with an exceptional lifespan and minimal maintenance costs. The resistance of this coating to chipping, scratching and accidental damage ensures that the consistency of performance required is achieved.

SAS International designs and manufacturers a wide range of metal solutions including suspended ceilings and prefabricated modules which are available in a variety of different colours and finishes and have an expected lifespan of over 25 years. www.sasint.co.uk, 0118 929 0900.



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