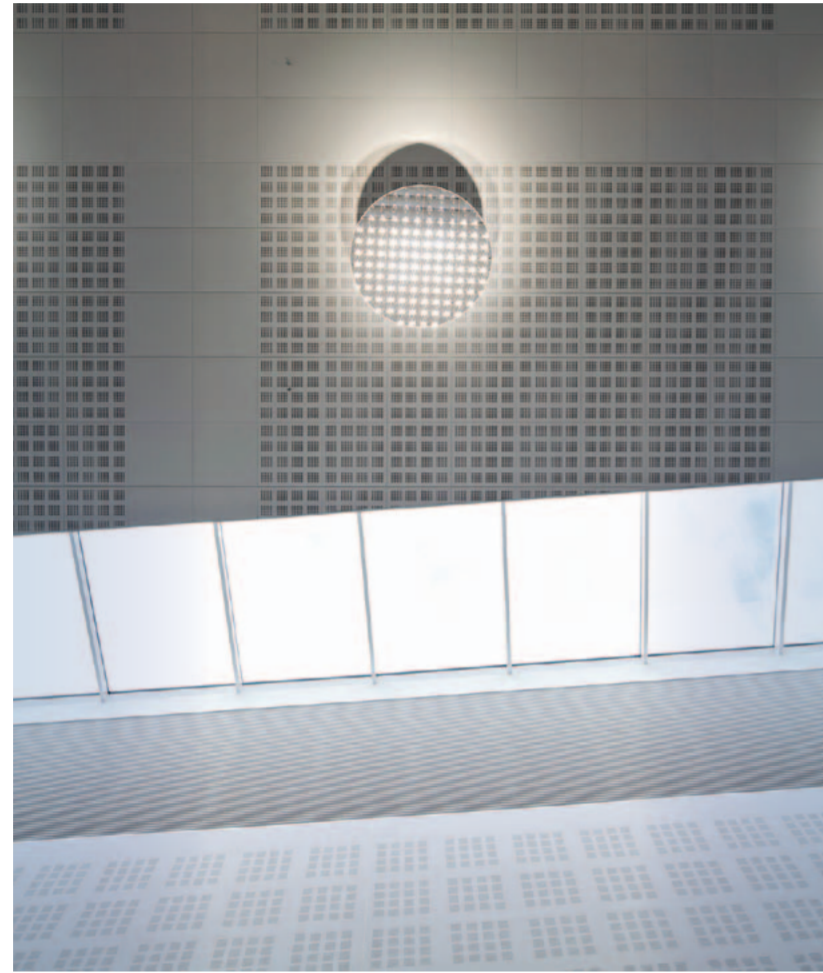


# SOUND SOLUTIONS



AIS MEMBERS HELP CREATE A MODERN CEILING SOLUTION WITH OUTSTANDING ACOUSTIC PROPERTIES FOR THE NEW ORDNANCE SURVEY BUILDING...

**Project**  
**Location**  
**Architect/designer**  
**Main contractor**  
**Specialist contractor**  
**Manufacturer**  
**Project completion**

**Ordnance Survey Building**  
**Southampton**  
**Broadway Malyan**  
**Kier**  
**Lakeside Ceilings and Partitions**  
**SAS International**  
**December 2010**

Over 2,750m<sup>2</sup> of SAS International metal ceiling systems with bespoke perforations were designed and manufactured as a feature element and a high performing acoustic solution for the new Ordnance Survey building in Southampton.

AIS members Lakeside Ceilings and Partitions and SAS International worked closely to deliver a suspended ceiling that would meet aesthetic requirements and acoustic demands.

This new three storey building has been designed to be energy efficient with low environmental impact as well as cost effective to maintain. With the building awarded a BREEAM Excellent rating the project represents how AIS supplier and contractor members can work together to achieve the optimum outcome for clients in terms of minimising environmental impact and providing solutions for enhanced occupant comfort.

Architects Broadway Malyan designed the building around a central atrium serving as a hub for activities such as meeting spaces, collaborative work areas and a place for announcements to be made to the 1,000 staff. In line with the architects design, the main atrium ceiling was installed at 3<sup>rd</sup> 15' from the grid line, which ran north to south, to reflect the true magnetic north which is a feature of all Ordnance Survey Maps. However, this truly stunning finish required a host of varied acoustic properties to be addressed within this vast open space.

#### Acoustic demands of an open space

When hard, sound reflecting surfaces are used this can reflect any noise, causing it to travel long distances and create nuisance where multiple reflections converge, such as within the atrium. As this space has multiple functions, solutions were required to manage the anticipated rise in noise level during lunchtime periods and that expected from meetings.

Stephen Coley of Lakeside Ceilings and Partitions comments: 'The creation of an ECO central heating system that doesn't independently burn fossil fuels or



have air conditioning systems in every room, but instead relies on exposed concrete soffits to cool the building, does in turn create an additional problem - noise! Combined with highly reflective plaster surfaces, and with limited quantities of soft internal finishes to soak up noise, the potential problem is an echo box or cave syndrome, due to sound reverberation.'

Together Lakeside Ceilings and Partitions and Broadway Malyan developed the specifications to create a space with the following properties:

- The correct acoustic balance of absorption and attenuation
- Aesthetically pleasing products
- Correct thermal ratings
- Correct fire ratings
- All within budget

#### Acoustic solution

There were specific considerations for this environment in terms of sound specification but performance demands had to meet and answer aesthetic requirements without diminishing the high quality functionality of the ceiling.

To combat increased reverberation times in the atrium and reduce the noise entering the open office areas, additional absorption was specified in the bulkheads between floors and the acoustic metal ceiling from SAS International.

Specifying a high performance sound absorbing product such as a metal ceiling system that incorporate perforations in the surface area, coupled with the inclusion of acoustic pads alleviates reverberation time in the space.

The magnificent atrium had numerous bulkheads around the perimeter, cloaked with six lined perforated plasterboard. The challenge for SAS International was to emulate this affect in metal to provide aesthetic continuity with the gypsum board bulkheads. SAS International's acoustic suspended metal ceiling was designed with a unique pattern to answer these aesthetic demands yet still provide outstanding acoustic qualities.

Stephen Coley adds: 'The perforated feature of the plasterboard was complemented with a 600 x 600 SAS System 120 metal ceiling. It provides a matching face pattern to the plasterboard and includes acoustic fleece and pads for Class A sound absorbing insulation.'



#### Aesthetics

SAS International created a bespoke ceiling with zoned perforation within the tile. A 50% open area was required to create a similar pattern to the plasterboard. Zonal interruption on the machinery at the manufacturing stage created the white open space around the oblong perforations. To match the plasterboard further the perforated tiles were intermixed with plain tiles to create the overall effect.

To further ensure consistency of design throughout the building and continuity to match the finished look of the different materials used, the metal tiles were finished with a fine textured architectural powder coated paint. The result is a similar look and feel to the emulsion on the plasterboard bulkheads.

#### Ongoing maintenance

The choice to use this metal ceiling system not only answered aesthetic and acoustic requirements, but the metal ceiling system also allows ease of access to the ceiling void for essential ongoing maintenance for services. A solution that provides flexibility and simplicity to alleviate any difficulties for necessary maintenance is essential in a commercial environment as it limits downtime and disruption to business and staff.

The square clip-in metal ceiling tiles are supported from a concealed SAS Spring Tee suspension grid to provide a flush finish. Because the tiles are clip-in

and downwards demountable, upward pressure can be applied to remove stubborn marks without disturbing the tile. The lifespan of these metal ceiling systems is in excess of 25 years with only very basic maintenance. This provides the durability and longevity that many clients are increasingly demanding.

Commenting on the choice of ceiling solution, Stephen Coley said: 'The SAS System 120 ticked all of the boxes. It had function with its acoustic qualities and provided an aesthetic solution with its wide perforated pattern.'

#### Fine finish

The result is an open plan office providing a high quality professional environment which will enable staff to work more efficiently and effectively, cooperating across teams and sharing information better. Through the use of acoustic solutions the building provides staff with an outstanding working environment.

Stephen Coley concludes: 'The end result is a very happy client with a state of the art, ECO friendly building, and a superb working environment with cost efficiency at the core of its design.'

**SAS**  
International

**LCP**  
Lakeside Ceilings & Partitions Ltd