Glam metal

Andrew Jackson compares the relative merits of metal versus mineral fibre ceiling systems for hospitals in terms of aesthetics, acoustics and function.

Metal ceilings can provide a sleek look while competing on cleaning and acoustics, eg by using perforated ceiling systems (top: SAS ceiling installed at Kidderminster Treatment Centre – MAAP Architects)

With hospitals requiring extensive services, suspended ceiling systems offer the ideal solution, allowing M&E services to be housed in the ceiling void. But with aesthetic appearance of hospitals becoming increasingly important, alongside PFI requirements, what considerations need to be taken into account when specifying such ceilings?

A good acoustic environment is one of the internal elements that have been identified as key to staff and patient well-being, and the type of ceiling installed can have a significant impact. The World Health Organisation recommends that continuous sound levels in patient rooms should not exceed 35 dB. However, UK studies have found that continuous background noise levels are commonly in the ranges of 65-80 dB. High levels of noise have been found to increase stress levels, reduce sleep quality and degrade speech intelligibility, thereby inhibiting patient recovery and reducing staff productivity levels.

Hard ceilings can reflect noise, causing it to travel long distances, creating nuisance where multiple reflections converge. The creation of such poor acoustic conditions can be alleviated by installing high performance sound-absorbing ceilings. While mineral fibre ceilings have often been promoted as offering the best acoustic control, metal ceilings can offer equally good acoustic control through the use of perforations and/or the inclusion of acoustic pads.

Metal ceilings also offer a more sophisticated look and are available in a variety of finishes which help enhance the perception of the internal environment by staff, patients and visitors. The finish on a ceiling can impact significantly on the diffusion of light around a space. SAS has just launched a low gloss finish that provides a plasterboard effect, diffusing light throughout a room without any unintentional light reflection.

Another key benefit of metal ceilings is their ease of cleaning. Whether plain or perforated, backed with aluminium foil for sound absorption, they render the tile a truly inert material. All that is required is simple washing. Most non-metal ceiling systems are generally manufactured from porous, liquid-absorbent materials with a form of paint sealant. At close examination, especially after the cutting of service perforations and accidental damage, claims regarding cleaning characteristics are significantly compromised. Metal ceilings can now be provided with anti-bacterial coatings, applied during manufacture, such as SAS AB.

Finally, the most persuasive argument is metal ceilings' life span – and minimal maintenance costs. This is increasingly important in PFI projects, where the private companies will maintain the hospitals for periods of between 25-30 years before ownership passes to the NHS.

The lifespan of SAS metal ceilings in normal interior conditions is in excess of 25 years, whereas mineral fibre ceilings are un-serviceable after 10-15 years. In hospitals, maintenance of the many services requires the ceiling void to be regularly accessed resulting in high demands on the durability of the ceiling. Polyester powder coated metal ceilings are not susceptible to paint chipping and accidental damage – they also have a high level of scratch resistance.

SAS has researched the overall costs of a metal ceiling throughout its expected lifecycle in relation to a mineral fibre one. Based on a projected 20 year period, the exercise concluded that cost savings of 47% are achievable. HD

Andrew Jackson is product manager at SAS International.