



**SUPPORTING
HEALTHCARE**
AND PATIENT
WELLBEING

+Cleanceil™

LLEDO by **SAS**
International



+
Cleanceil metal ceilings provide exceptional flexibility.



SAS' designers and technical consultants work in collaboration with clients and architects to develop the specification for manufacture. Through early involvement, we ensure the project requirements are met, whilst also being able to accommodate creativity; influencing health and wellbeing through unique and eye-catching shape forms and colour.

The ability to adapt is a necessary requirement for healthcare facilities, most recently we have witnessed the response to the Covid-19 pandemic which saw many hospitals struggle to provide secure areas for contagious patients. In addition to supporting our sustainable business objectives, SAS' materials and manufacturing processes enable the re-use of metal ceiling grids and tiles to allow refurbishments and reconfigurations to be carried out with minimal waste. (Any waste is 100% recyclable.) The durable nature of metal means our ceiling systems can withstand intensive cleaning, provide low-risk access to services through voids, and in general, allow for repositioning and upgrades, to adapt to changing needs.

SAS' metal ceiling systems deliver beyond regulation compliance. Our Cleanceil range of products have been developed specifically for the complex needs of the healthcare sector whilst allowing complete flexibility in design. Cleanceil offers a huge range of options to create stunning and impactful ceilings which deliver on the need to think beyond hygiene and to give more focus to wellbeing.

Comfort through temperature control and acoustic absorption has a huge impact on the experience had whilst in a healthcare facility, for both patients and healthcare workers. Metal ceiling systems set themselves apart by providing superior acoustic properties, as well as versatility through options of thermal and visual comfort, aesthetic finishes and building services integration. The future of healthcare facilities is in offering more than just hygiene and safety. In order to promote healing and response to treatment, the environment should meet all our human needs.

Creating a positive and healing environment that is non-institutional is the challenge for designers of healthcare facilities in today's world.

Whilst hygiene, fire and acoustic performance are essential standards to be met, and central to the objectives, fundamental elements of design can deliver the sought-after sense of wellbeing, for both patients, family and healthcare workers.

"Designing healthcare goes way beyond regulation performance", states **Richard White, Design Director at SAS.**

We are embracing the client's directive, that a patient's emotional wellbeing is negatively influenced by the stark, clinical and restrictive healthcare environment and so we are now designing with wellbeing in mind. A well-considered ceiling design can provide positive distraction. Particularly in inpatient rooms and corridors, patients spend most of their time looking at the ceiling. Ceilings

can and should therefore, be used to either literally or figuratively distract from the monotony and potential negativity the building user might be feeling.

A ceiling can be used as a focal point of the design. Exposure to pattern, texture and tone as well as unique ceiling features provide a view when looking up that can create emotional responses to stimuli and generate positivity and healing. Extensive scientific research backs this up, affirming that a patient's view can affect their recovery and influences their cognitive and emotional wellbeing.

Also, ceiling features in key public spaces and corridors can be implemented for wayfinding which helps to create rhythm (sense of stop and go) and works to eliminate an institutional feel.

SAS International have been delivering high performing metal ceilings for over 50 years. With technical expertise and understanding of acoustics and user comfortable environments, SAS' response

to a healthcare facility's brief is driven not just to meet the standards in performance criteria, but also to offer creative design solutions with the users' wellbeing in mind.



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The International WELL Building Institute now requires healthcare facilities to include specific design-led elements which promote mental health, for their WELL Building certification.





Occupant comfort, wellbeing and flexibility of space are key considerations for the long-term commercial viability of buildings. Metal ceilings offer the healthcare client and specifier a flexible, aesthetics-led solution to acoustic absorption, service integration and infection control demands.

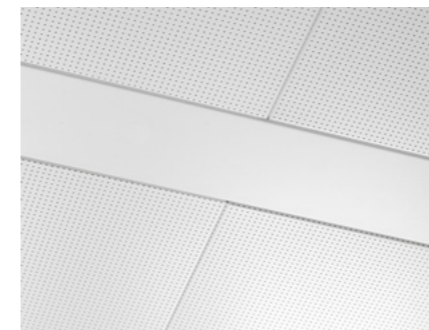
SAS International has established itself as the world leader in the design and manufacture of performance metal ceiling systems. Our interior solutions are beautiful, durable and sustainable.

As a ceiling manufacturer, we are often asked why we concentrate on metal as a material. The simple answer is:

- Steel and aluminium are two of the most sustainable materials used in construction
- Being highly durable and robust, in the long term, metal is far more cost effective than alternative materials
- To date, there is no better performing material that meets all building regulations and customer demands

Sustainability is a key focus for SAS and in general, for building for the future. We are proud to deliver ceilings that work towards zero carbon targets and are 100% recyclable. A metal ceiling significantly contributes towards your building's environmental credentials.

SAS have developed the Cleanceil range of products for our healthcare clients which incorporate technical, practical and aesthetic elements to support the needs of patients, family and healthcare workers. Our focus being to ensure comfort and a sense of wellbeing is maximised, whilst delivering to the required hygiene and safety standards for healthcare.



Superior acoustics

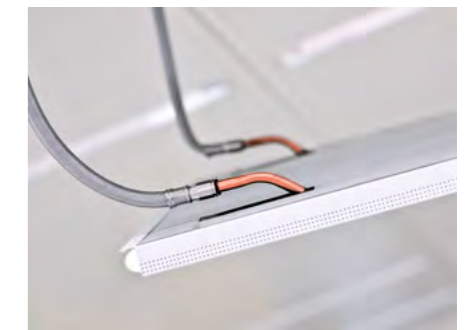
It is a common misconception that perforated metal is a poor sound absorbing material, outperformed by alternatives such as mineral fibre.

In fact, SAS systems exceed the HTM08-01 minimum acoustic performance criteria (Class C sound absorption). Class A can be achieved by using SAS' Ultramicro perforation pattern (S1003) which has an open area of just 3%.



Lighting balance

A metal ceiling can reflect daylight deep onto a building's floor plates to help maximise occupants' exposure to daylight for visual, mental and biological health, as well as reducing artificial lighting use and therefore energy consumption.



Thermal comfort

As durable and visually indistinguishable from standard metal suspended ceilings, SAS' room comfort systems can enhance or completely replace traditional air-conditioning and heating methods. Radiant heating and chilled ceiling systems are significantly more energy efficient than alternatives. They also remove that 'drafty' feeling delivered by the mechanical movement of air in traditional systems, providing patients with a more comfortable, quieter and calmer environment.

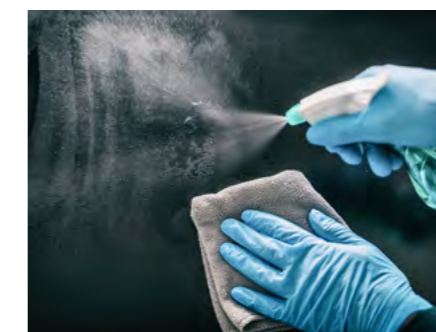


All our systems can be configured to allow for increased load capacity as required for integrated services, ensuring they are safe and suitable for maintenance and repair access.



Concealed but accessible building services

Metal ceilings provide the ability to fully integrate mechanical and electrical services within the ceiling void. Apertures can be formed during manufacturing to provide an engineered product for site installation. This alleviates the onsite labour costs and risk implications associated with manual cutting. Products can be factory-fitted with services and systems, supplied as one integrated unit for ease of shipment and installation. This co-ordination reduces the number of trades required onsite, minimising installation time, labour costs, waste and risk.



Hygiene

Critically, metal ceilings are both easy to clean and to keep clean over the course of their 25-year lifespan. Upward cleaning pressure can be applied to the durable, impact-resistant surface without fear of dislodging or damaging tiles, regardless of the frequency.

SAS' Cleanceil systems are manufactured with BioCote® technology, an antimicrobial finish to help provide lasting and effective protection against contaminant build-up.



Reassuring safety

Many building services need regular maintenance and occasional repair. SAS' Cleanceil tiles are easily demounted to allow for access to the building services above. However, when areas require security (eg. for anti-ligature), systems can be upgraded to ensure they cannot be removed without tools.





Healthcare facilities are now looking to other sectors such as hospitality to influence the design of spaces in consideration of enhancing the building users experience, to improve patient satisfaction, wellbeing and overall recovery times.



SAS' Cleanceil systems excel in this area, offering freedom of design. Clients can achieve multiple aesthetic results through the numerous designs options and finishes they can offer.

feel using lots of texture and colour, to a sustainable or eco focus by introducing a cross laminated timber finish. The options are limitless.

Our in-house design team is available to collaborate on the most ambitious schemes, pushing the boundaries, and requiring fully bespoke manufacturing.

Similarly, design can be used to create eye-catching and functional ceiling features, for wayfinding for example.

Recommended products
Linear ceilings
Bespoke / sublimated finishes

Through design, material choice or finish selection, we can accommodate the intent of any design brief. From a vibrant





The King's College Hospital Fetal Medicine Centre serves more than 10,000 mothers and babies each year. Home to the world-leading Harris Birthright Centre, the new building is a crucial treatment and research facility for the healthcare sector. The architects specified SAS ceilings with the intention of improving access to vital M&E services and for their acoustics, to complement the desired calm environment.



A peaceful environment, associated with wellbeing and patient recovery times, was required to provide a solution to reduce unwanted corridor noise. SAS Cleanceil rafts, with a bespoke zonal perforation give the appearance of floating above waiting areas and passageways. A half perforated and half plain raft, the modules match the plain SAS Cleanceil tiles and make a feature of the perforations required for acoustic absorption. Finished in a neutral colour, the products specified in this project achieved the calming aesthetic aims of the architect.



Application: Corridors

A common factor of stress in these high traffic areas is spatial disorientation or wayfinding which negatively impact on those of ways including integrating clear signage in the ceiling system as well as using colours, texture and ceiling features to help create rhythm (sense of stop and go). Our team are experienced in creating design strategies in order to offer intuitive wayfinding, cognitive mapping and orientation.

Radiant heating panels are an energy efficient solution to provide thermal comfort for long corridors. Safely out of reach of children, the elderly and people who cannot react appropriately, or quickly enough, to prevent injury caused by hot surfaces.

Recommended products

Suspended ceilings,
Raft ceilings,
Radiant panels



Application: Lobbies & break areas

The obvious space for freedom in design and therefore maximum impact on wellbeing. Having a space to take a break from clinical areas can make the overall experience of a hospital environment less intimidating or stressful and provide significant wellbeing benefits.

The use of colour, interesting finishes and ceiling features give contrast to other areas and can have a powerful effect on the overall environment.

Recommended products

Linear ceilings
Bespoke / sublimated finishes



Application: Patient rooms

Superior acoustics facilitate communication to support care co-ordination and information sharing.

The ceiling appearance should be attractive and non-institutional. Patient rooms are more than a space for a bed and medical equipment but should provide an environment that promotes mental health and healing.

Recommended products:

Suspended ceilings,
Room comfort systems

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A well-considered ceiling design can provide positive distraction. Particularly in inpatient rooms and corridors, patients spend most of their time looking at the ceiling. Ceilings can and should therefore, be used to either literally or figuratively distract from the monotony and potential negativity the building user might be feeling.



Application: Administrative areas

Ceiling design in these areas should provide the correct balance of acoustic absorption, reducing background noise to increase concentration whilst enabling conversation. The correct performance can play an important role in healthcare workers motivation, accuracy and efficiency.

Recommended products:

Suspended ceilings





The recently refurbished London Clinic Cancer Centre is one of the UK's oldest and largest independent hospitals. The clinic is designed to provide state-of-the-art care for cancer sufferers, with 47 individual bedrooms and 22 day-care 'pods'.



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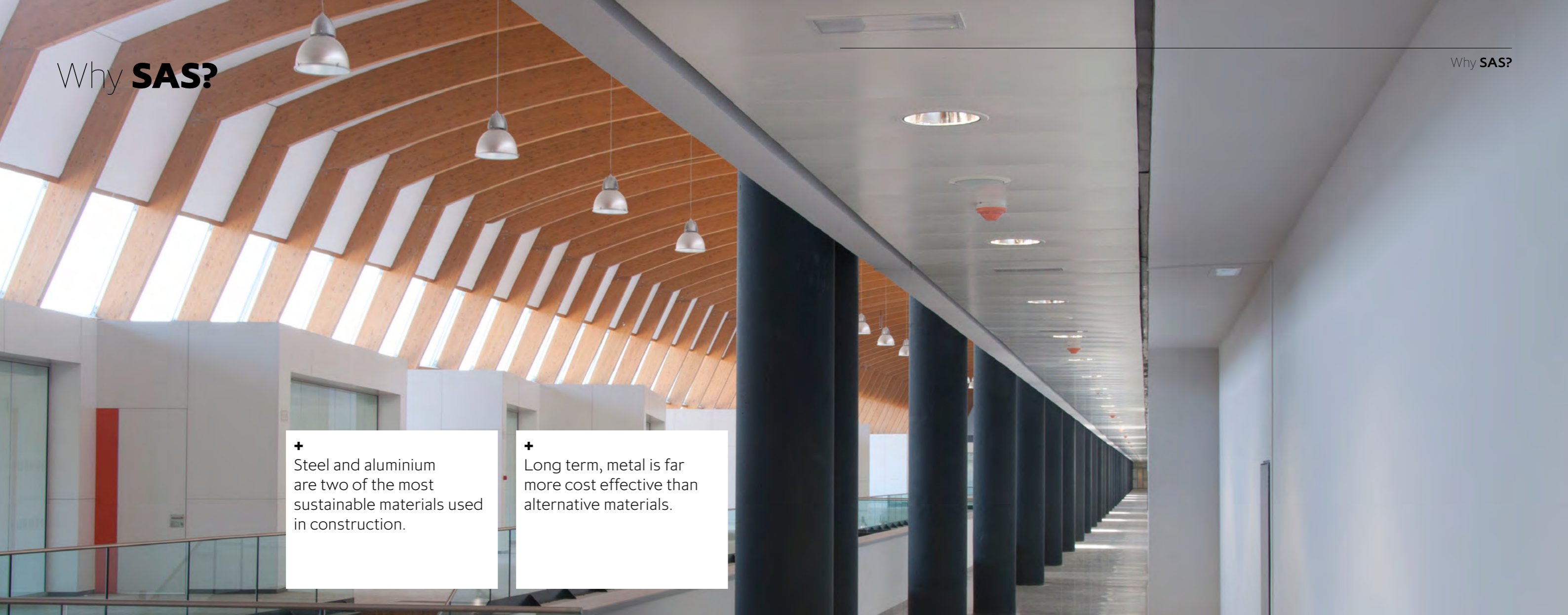
SAS worked extensively with both the architects and the engineers to design a radiant ceiling which would minimise airflow and provide optimum comfort to the patients. A heated radiant panel was used to offset the heat loss from the glazing and chilled radiant panels were used to keep the rooms cool during warmer months. These were all housed within a purpose made perimeter frame. There was also the requirement to integrate various services into the ceiling panels including luminaires, sprinkler

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heads, smoke detectors and speakers. SAS' experience in the integration of services proved to be vital in the design process in order to deliver this complex solution.

The radiant heated and cooled ceiling panels were incorporated into patient rooms, along with staff areas and communal spaces. SAS' Cleanceil system was also installed in the corridors, providing full access to the ceiling void above for maintaining the services.





+ Steel and aluminium are two of the most sustainable materials used in construction.

+ Long term, metal is far more cost effective than alternative materials.

Trusted UK manufacturing

We have manufactured ceiling systems in SAS owned and operated facilities in the UK for over 50 years. During this time, the company has built an unparalleled centre of expertise in the design and manufacture of metal ceilings and architectural metalwork. Our multi-site production capability allows us to successfully supply projects across the globe, and to all sectors.

The company operates via regional offices, with local technical teams working closely with our head office in Reading, England, creating the optimum design solution for every client, whether that is a standard system or a bespoke solution.

Green credentials

SAS' grid and suspended tile systems are manufactured from steel while our premium linear ceiling systems and trims are manufactured using aluminium. SAS will only source materials from suppliers with a progressive and innovative approach to sustainable material manufacturing. In addition, steel and aluminium are both 100% recyclable at the end of their life.

SAS' responsible approach to sustainable manufacturing ensures its products can help a project achieve environmental accreditations, including Estidama, BREEAM, LEED, WELL, SKA, Green Tag, AI SA'FAT, SASO and GSAS.

Life cycle costing/value engineering

Metal suspended ceilings are available in a wide range of modular and linear systems to enable the most appropriate, flexible and cost-effective solution to be selected for the application.

Research commissioned by SAS into the overall lifetime costs of ceiling materials projected cost savings of 47% for metal suspended ceilings compared with non-metal alternatives, based on a 20-year lifespan.

What's more, integration of mechanical and electrical services within the ceiling void and supplied as one integrated unit, reduces the number of trades required onsite, minimising installation time, labour, waste, risk and overall cost.

Quality testing

All SAS metal ceilings are designed, manufactured and tested in full accordance with the harmonised European Standard for suspended ceilings, BS EN 13964.

Fire performance

When it comes to fire, SAS metal ceilings are tested and certified in accordance with UK, European, American and Australian Standards.





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