

INSIDER

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Issue 19

Meeting
transportation
specifications:
Page 10



Muscat
contract win
Page 3



Rob Wilson MP
visits Reading
Page 4



Lean training
update
Pages
14–15



My Work:
Graeme
Thomson,
Maybole
Page 19



It seems entirely logical, when you consider that our company never stands still and is always looking to new horizons, that this issue of the SAS Insider has transport as its theme.

If there is a sub-theme, it's surely our increasing export strength – and you can see the link between transport and export in the global reach of our products in transportation projects around the world, from Spain to India to Qatar. What's more, it's because we have a skilled, highly-capable workforce here in the UK that we have become an exporting company: you'll read more about our 'Great British Team' in this issue.

An example of the continuing global demand for our design flexibility appears as one of our case studies (page 17) – a Catalan double-header about the System 330 ceilings in place in the Bassat Ogilvy and CMT buildings in Barcelona.

Our biggest recent contract is a transport project, Muscat Airport in Oman. In common with other airports around the world, Muscat demands facilities to allow for ever greater passenger numbers. That's why metal emerges as the practical material of choice for interior fit-outs. Services such as security can be integrated with metal ceilings, which also remain functional for the long-term. We have an impressive history of delivering design-led solutions to clients worldwide: more on this in our feature on pages 10 to 11.

With our On Site story (page 6), which we hope will have a regular slot in Insider, you won't have to wait for a completed project case study to find out what SAS is doing around the world. We have work-in-progress reports from Kolkata – another airport – to Blackfriars.

Even in the economic climate of the UK, where relatively few new public buildings such as schools have been built recently, transport projects – seen as drivers of the economy – continue apace.

Turning to our own sites, December's issue reported on visits to Bridgend and Apollo Park by local MPs – this time, it's the turn of the Reading HQ and SAS Direct depot which welcomed Rob Wilson MP (see page 4).

You'll remember that our lean training programme at Bridgend was introduced in our last issue. Lean is about getting the best customer value with fewer resources, and certainly doesn't mean cutting back on jobs – rather, it involves looking for greater efficiencies while still expanding. In this column in the last issue I wrote that we are investing in staff training as a means of planning for the future: I'm pleased to say that the investment is already reaping dividends, as our update on pages 14 to 15 shows.

As always, thank you for your feedback on SAS Insider and keep your own news stories for our Team SAS pages coming.

Malcolm Stamper, Group Marketing Manager

Malcolm

Your Insider

Insider is published every quarter and brings you news from every part of the SAS group. We would like to have your feedback and contributions, including your views about the changes we have made to this publication. Our email address is sasinsider@sasint.com.

SAS International's Muscat contract win



SAS International has been awarded a major new project to design, manufacture, supply and supervise the installation of a range of metal ceilings for the new terminal at Muscat International Airport in Oman.

On-site installation for the \$21.8 million project begins in September with final completion due in autumn 2013. As part of the project we have to provide on-site mock-ups of the major areas; these will be in manufacture in the coming weeks. The terminal is likely to be fully operational by late 2014.

The ceiling solutions will cover a total area of 220,000 ft². Involving a team of ten at Reading, including designers and on-site supervisors, the products will be manufactured at our Maybole and Bridgend facilities.

The main contractor for the project is Bechtel, partnering Enka in a joint venture alongside Oman's Bahwan Engineering Company. Located 32 km from Muscat, Oman's capital city, the airport currently has one terminal and provides connections to a number of international destinations. The project will increase the airport's capacity from 5 million to 12 million passengers per year. Further expansion of the airport is on the agenda, depending on future levels of passenger demand.



Local MP's insight into "excellent example of British manufacturing"



'Made by Britain' was devised by the Associate Parliamentary Manufacturing Group to boost the profile of the manufacturing sector and come up with a rounded picture of British industry in all its diversity.

Rob Wilson, MP for Reading East, came to see SAS International's HQ in January to find out how the business was performing in a challenging economic climate.

After hearing about the business from Andrew Jackson, our Marketing Director, he was taken on a tour of the Suttons Business Park premises. It was an opportunity for him to see the showroom for potential clients and the SAS Direct depot.

After his visit, Rob Wilson commented: "Whilst we have a proud history of manufacturing here in the UK, the industry has not been as strong as it once was. However, here in Reading East we have an excellent example of British manufacturing and how it continues to be internationally recognised. SAS International is attracting customers from across the globe and during these difficult times continues to grow. The success of companies like SAS are imperative to the growth in the UK economy".

Andrew Jackson fully agreed, adding: "SAS is a British interiors manufacturer proving in a tough economic environment that we can deliver quality, innovation

and value to both the UK and Export construction market. Our SAS Direct division now enables contractors to buy products direct from a manufacturer rather than relying on a third party".

All SAS International and SAS Direct employees were grateful that Rob Wilson took the time to come and visit, and were proud that he considered us a 'Great British manufacturer'. The MP's visit came just a few months after he nominated us as his choice for the 'Made by Britain' campaign, which challenged MPs to choose examples of UK manufacturing innovation and quality in their areas. The product range for which Rob Wilson nominated us were our energy efficient room comfort systems. As reported in December's Insider, SAS also received nominations from MPs Adrian Bailey and Madeleine Moon, who had visited the facilities at Apollo Park and Bridgend respectively. The products they chose as outstanding examples of British manufacturing were our office partitioning systems (Apollo Park) and our suspended metal ceilings (Bridgend).

The nominations can be found on the Policy Connect website at www.policyconnect.org.uk, along with the complete list of 'Made by Britain' nominees.

Taking shape: Maybole factory update

The expansion of the Maybole factory continues to make good progress, as these photos show. An order has been placed for the new Paintline, and electricity was connected during the Easter shutdown. Our investment in the project, which will include a two storey building to house machinery, office space and an R&D facility, will add capacity to our Architectural Metalwork production and service clients both in the UK and overseas.



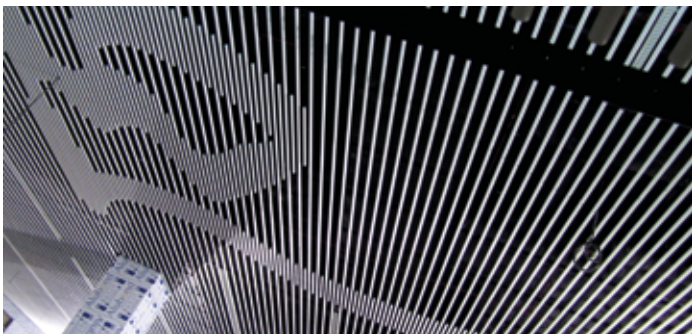
On Site with SAS

At SAS International we regularly announce new contract wins, and in due course produce case studies of completed projects. However, what is often lacking is news about the status of current projects – those confirmed project wins where we are either on-site or in the process of manufacturing.

So here is a globe-spanning update to give you an idea of what happens to the products, which so many of you have helped to design or manufacture, once they have moved from factory floor to final destination.

Kolkata Airport

SAS Tubeline, the eye-catching linear ceiling system, is currently being installed throughout the new terminal at Kolkata, India. The system is designed to allow air to flow through the ceiling plane allowing any potential smoke to travel into the ceiling void. Smaller tubes are being installed within the system to allow script patterns to be formed in the ceiling plane. Polybond were the sub-contractors for the six-level terminal building, which is spread over 233,000m² and has 104 check-in counters and 44 immigration counters. The landscaping and design is inspired by the Bengali poet and novelist Rabindranath Tagore, with his writing appearing as large patterns etched on the underside of the main roof. The new terminal (set to open this autumn) will handle 20 million passengers each year, which will meet projected needs until at least 2015.



Blackfriars Station Platform Level Canopy

A refurbishment of Blackfriars Station (London's first station over water) includes extending the platform along Blackfriars Bridge, a structure built in 1886. SAS Project Management has been contracted by Balfour Beatty to design and install trapezoidal soffit lining panels to the new station, covering an area of about 10,000m².

Queen Alia International Airport

Over the past 18 months SAS has been providing various ceiling systems, including curved tubeline, for the new build terminal at Queen Alia International in Amman, Jordan. The airport was built in 1983 and accounts for more than 97% of the country's air traffic. The new terminal will allow passenger flow to increase from 3.2 million to 9 million per year. Designed by Foster + Partners, it is being constructed by the Airport International Group (AIG) consortium and will be partially opened in June.

Raipur Airport India

SAS is currently manufacturing material (System 150 and System 200 ceilings) for Era Infra Engineering to use for a new airport terminal project in Raipur, central India.

Carpe Diem Tower

To date SAS has supplied 14,000m² of System 330 to French subcontractor Reflex for the new Tour Carpe Diem in Paris. Construction of the tower – which is set to significantly exceed French regulations for environmentally responsible development - is due for completion at the end of this year. Designed by Robert A. M. Stern, the development will include office and retail space as well as an 18m² conservatory. System 330 can be designed to any grid size, which makes it ideal for the building's unusual shape. The building was designed to allow light to be reflected, helping to make the tower a prominent landmark in the skyline of La Défense, Paris' business district.

Abu Dhabi Investment Council (ADIC) developments – Capital Tower and Al Bahr Towers

For the new build Capital Tower scheme in Abu Dhabi, Aedas Architects specified SAS to provide a System 330 ceiling. We also provided a part trapezoidal System 330 solution for the adjacent Al Bahr Towers – the headquarters of ADIC itself. This landmark development was designed by Aedas; Al-Futtaim Carillion are the main contractors. The 25 storey twin office towers will each house around 1000 employees. The design was conceived to be both culturally and environmentally sensitive to comply with the Abu Dhabi Development Plan. The geometric form of the buildings aims for the best 'wall to floor' area ratio to reduce heat, while the 'Masharabiya' shading system – adapted from a traditional Arabic lattice-work – is another interesting design feature.



Challenger, Bouygues Headquarters

As part of the refurbishment of its own head offices in the Challenger complex in the western outskirts of Paris, French construction group Bouygues has chosen a System 130 – to be supported from SAS Alugrid, which delivers a clean and completely flush ceiling plane. Bouygues Construction, a subsidiary of the Bouygues Group, is one of the biggest construction companies in the world and aims to lead the way in sustainability.



Repsol

SAS Project Management is currently working with main contractors Sacry Vallehermoso on a new headquarters in Madrid for Spain's largest oil company, Repsol, installing System 330 and Tubeline. SAS has also worked closely with the architects on the design details and provided over 42,000m² of ceilings.



Banco Popular

SAS Project Management are working with main contractors MC2 Estudio de Ingenieria on a new build HQ scheme for Banco Popular in Madrid. To date, SAS has manufactured over 12,500m² of System 330 for the scheme on a design, supply and install basis. Banco Popular Español (BPE) is one of Spain's five largest banking groups, and has representative offices in several other countries around the world.

Growing our French sales

Case studies enable potential clients to examine our past projects, and what we have achieved, in detail. As our company becomes ever more global, we need to ensure our case studies are available in languages other than English.

France represents an important market for us, and with our closest European neighbours in mind we produced 37 case studies in French. Industry professionals and contractors on the other side of the Channel can now read about projects including the City of London's One New Change, for which we created innovative mesh ceiling panels, and the bespoke architectural metalwork specified as part of the redevelopment of Heathrow's Terminal 4.

For many of the case study's readers One New Change – the shopping centre housed in a world-class contemporary building near St Paul's Cathedral – will have a particular resonance because it was designed by celebrated French architect Jean Nouvel.

The case studies can be found on our French website at www.sasint.fr.



Terminal 4 de Heathrow, Londres

Une métallerie architecturale sur-mesure répond aux exigences en termes d'esthétique et de performance du Terminal 4 de BAA Heathrow

Une gamme de solutions de métallerie architecturale sur-mesure de SAS International a été choisie par les architectes 3D Reids dans le cadre du grand projet de réaménagement du Terminal 4 de l'aéroport de Heathrow.

Pour ce projet de 70 millions de livres sterling SAS International a conçu et produit des disques profilés en aluminium filé, des panneaux muraux acoustiques en métal et des îlots de système 600 pour le nouveau terminal.

Les architectes de 3D Reich devaient faire en sorte que la structure du bâtiment soit lumineuse, aérée et moderne tout en s'assurant que la façade et les nombreux matériaux utilisés pour le terminal soient résistants en cas de toute atteinte à la sécurité. Tous les produits installés côté terre devaient être conformes aux exigences du Sécurité Aérienne des Aménagements des Aéroports, (ASIAD). Le résultat répond aux exigences en termes d'esthétique, tout en procurant le plus haut niveau de performance requis pour le bâtiment.

Avec un diamètre de 1.800mm, les disques sont installés sur toute la surface du hall des départs, et sont suspendus à la sous-face pour créer l'impression de flotter dans l'espace. Phil Oakes, directeur adjoint chez 3D Reid a commenté : « Cette structure de plafond en apesanteur présente un certain nombre d'avantages: l'installation est plus rapide, l'accès et la coordination des services est simplifiée et les éléments de plafond individuels se combinent pour former un résultat architectural spectaculaire.»

Pour que la dessin deviennent une réalité, des plaques carrées en aluminium ont été coupées en cercle par le fabricant et formées en un dôme. L'installation dans ce type d'environnement a exigé des câbles de sécurité sur chaque disque, panneau mural, dalles et îlot pour éviter qu'ils se détachent et blesse quelqu'un. La phase de conception a dû prendre en compte les sujétions des câbles de sûreté.

De larges panneaux muraux verticaux avec des ultra micro-perforations ont été choisis pour fournir les propriétés acoustiques nécessaires à ce type de grand espace ouvert. La perforation microscopique de 0,7mm, avec une section d'ouverture de 1%, aide à gérer l'acoustique dans un grand terminal ouvert comme celui-ci.

Les îlots Système 600 ont été installés dans les zones d'enregistrement des bagages des halls de départ existants. Les îlots comprennent un bouchon de conduite courbé, formé avec la toute dernière technologie de pliage; ce système empêche la formation de dépôts de saleté et de poussière et facilite l'entretien. Les îlots ont également été conçus avec des panneaux à bascule vers le bas pour permettre l'accès et la maintenance des équipements installés derrière.

La construction modulaire hors chantier des produits de métallerie architecturale ont permis une installation plus rapide, ce qui a occasionné moins de gêne dans un environnement à fort trafic comme celui-ci, et sans décaler sur le site.

La polyvalence esthétique des projets est rendue possible grâce à la métallerie architecturale de SAS International. Ces produits permettent également d'intégrer des installations mécaniques et électriques de manière harmonieuse dans le bâtiment, tout en répondant aux exigences de design et de durabilité. La gamme inclut des chicanes acoustiques, des panneaux muraux acoustiques, des unités de traitement d'air, des plafonds sur-mesure et des habillages de colonne.

| | |
|--|---|
| Nom du projet: Terminal 4 de Heathrow | Type de système: Disque en aluminium sur-mesure, panneau mural, îlot système 600 |
| Client: BAA | Exigences spécifiques: Résistance aux explosions d'une bombe et panneaux de grande |
| Architecte: 3D Reid | Superficie en m²: 4.625 |
| Entreprise générale: Taylor Woodrow | Lieu: Londres |
| Sous-traitant: Advanced Interiors | Année de réalisation: 2009 |

Installing suspended ceilings: a new guide to best practice

The Association of Interior Specialists has recently published a guide to promote best practice in the installation of suspended ceilings.

SAS International's products feature prominently in the photo-led guide, which is intended for use by contractors and subcontractors. The last version was published in the 1980s: an update, taking into account the many advances in the intervening decades, was clearly needed.

Today, most commercial building projects, whether new build or refurbishment, feature suspended ceilings as key elements of their construction. This is due primarily to the important contribution they make to the overall appearance and acoustics of the interior space.

A suspended ceiling is also a highly practical platform for integrating other services such as lighting and heating and ventilation systems. For the construction team the installation is a quick, dry and reasonably clean process.

However, the selection and installation processes do need to be fully considered and understood by the building owner, occupier, design professionals and construction team if the completed ceiling is to meet expectations.

The guide features recommendations for tendering and measurement, contract planning guidance, installation procedures, and information on how suspended ceilings conform to the fire requirements of the Building Regulations.

We worked closely with the AIS to develop the guide and were also responsible for many of the drawings used.

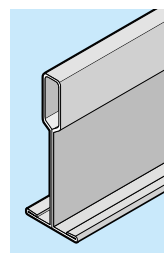
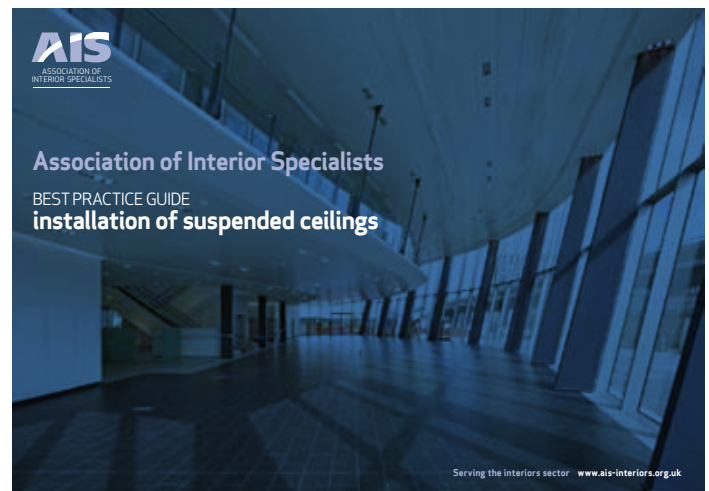


Figure 5: tee section with a flat base of 15mm

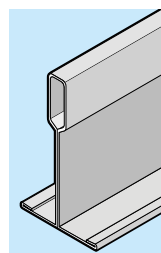


Figure 6: tee section with a flat base of 24mm

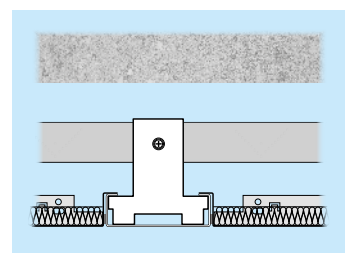


Figure 9: a 'C' profile main runner / cross runner sections

SAS Direct survey: listening to customers

SAS Direct received positive feedback from contractors in a customer satisfaction survey carried out in January.

The survey was a new initiative enabling SAS to get a better idea of how its service is performing and for its customers to offer their views.

The great majority confirmed that they receive quotations promptly. There were particularly high levels of satisfaction in the areas of 'product quality', 'value for money' and 'customer service'. A clear majority were 'satisfied' or 'very satisfied' overall with SAS Direct.

Email quotations an instant hit with customers

The Estimating Department at Reading has recently started to email quotations to customers rather than send them by post.

This change in delivery method has been very well received by customers to date, as they are now seeing their quotations (and copies of quotations) arrive instantly.

No longer sending out hundreds of hard copy quotations each week, our company is saving money on an ongoing basis. We are also becoming greener by reducing paper wastage.

Improving installation skills in Dubai

With over 60 delegates already through the door, our Product Training Centre in Dubai is fully operational. Located in Dubai Investment Park, the centre provides a unique facility to develop practical skills in handling SAS International's full product range, including display areas to demonstrate clients' requirements for different ceiling types and finishes. The training programme is coordinated by Mike Collins, International Sales Manager, and is intended to improve skill levels and achieve superior quality installations in a facility which sets SAS International apart as a supplier with a real commitment to the industry.

Training sessions are usually project specific. Operatives attend the training centre to address and practice ceiling installation techniques relevant to their particular project. Visitors are of all nationalities and many already have good basic skills. The centre provides training in handling SAS materials, setting out, cutting and band saw operations, and integration of light fittings into SAS ceiling systems. All delegates receive a certificate of attendance.

There is little doubt that having the opportunity to understand the practical challenges prior to starting installation on site leads to better quality installations and improved productivity.



The design and flexibility of System 8000

SAS International's new specification led System 8000, manufactured at Apollo Park, is a fully glazed, frameless partitioning system that provides excellent fire and acoustic performance along with outstanding aesthetic design.

We have made a major investment in the System, which strengthens our position as a company that constantly innovates. We identified an opportunity for an improved, high performance product, and then designed a solution to satisfy future customer requirements. Our experience gained in previous projects, and our investment in technology, underpin our drive to develop new products and allow us to stay ahead in the marketplace.

The advantages of System 8000 for specifiers were set out in a new brochure, published at the end of March. System 8000 offers greater design and architectural flexibility than equivalent systems on the market: constructed in single, double and narrow glazing it can also be integrated into a seamless drywall to construct a part glazed, part drywall partitioning system. The system also offers contractors the opportunity to create partitioning without vertical mullions to a maximum height of 4200mm.

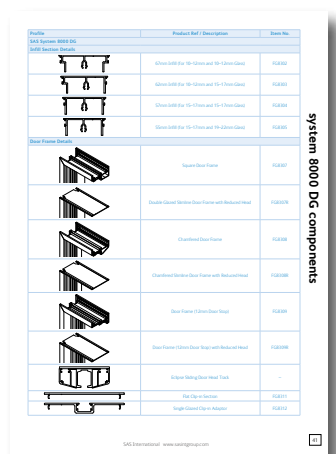
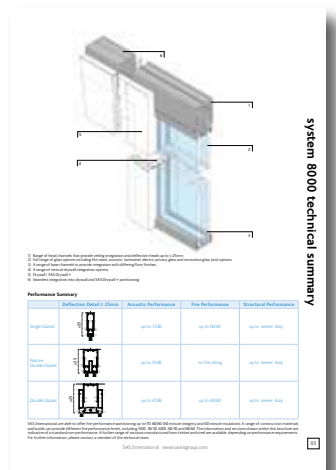
Metal ceilings, along with other building services, are fixed to a building slab using rigid hangers. When designing and installing partitioning systems, allowances must be made for building slab deflection which has to be handled by the partition. In most new build projects, both dead and live loads can cause significant movement in some long-span floor systems. A live load is almost certain to cause at least some degree of movement affecting the space between the floor and the ceiling plane. The integration of System 8000 with our metal ceilings, enhanced by shallow base channels as well as a wide selection of head tracks, provides varying degrees of deflection – up to +/- 25mm – to suit project requirements. The head detail allows for the same deflection movement across the whole partitioning system for a uniform result and a clean integration of a single, narrow or double glaze module to recess into drywall.

There are a range of integrating door options, including single glazed doors and wood flush doors. The use of multiple junctions can be used to provide innovative design layouts, and glass to glass jointing methods for the system include SAS International's revolutionary C-Joint. This near-invisible dry joint provides a consistent compression connection between glass modules, giving the impression of butt jointed glass.

Where acoustic privacy is a requirement, there is no need to compromise on design: with the fully glazed System 8000, open plan visibility is retained while achieving acoustic attenuation of up to 47dB. This, coupled with high attenuation metal ceiling systems, means that noise leakage can be prevented. System 8000 also provides fire performance options of up to FD 60/60.

System 8000 offers architectural specifications across a variety of commercial sectors around the world. As new projects and ambitious architectural design are demanding products to integrate seamlessly with interior fit out components and suspended ceilings, System 8000 proves that we continue to anticipate the requirements of the modern market.

System 8000 is available nationwide from SAS Direct depots. Contractors have access to a straight-to-market solution, without the need to deal with a third party: a benefit of buying directly from the company responsible for the product is that the glass (installed by our glazing specialists) and other applications – all manufactured by SAS – are readily available too.



Material comforts: why metal is the solution for modern travel



It is often said that you never get a second chance to make a first impression.

For obvious reasons it is generally airport or railway station buildings that make the first impression on the visitor arriving in a new country or city. Therefore, for both new build transportation projects and refurbishments, the challenge is to combine aesthetic considerations with functional performance: the interiors must appeal to the eye, and the choice of material must be fit for purpose to ensure comfortable surroundings for passengers and workers.

Transportation hubs are in constant use and therefore in a constant state of change and development: this, along with the huge projected rise in passenger numbers over the next 20 years and the demand for revenue-generating shopping malls and restaurants, means the design and construction of public areas in stations and airports comes under ever more scrutiny.

A look at our portfolio reveals the large number of transport projects for which we have designed and supplied bespoke metal product solutions, from our work on a new bus interchange in Derby to Doha's new airport.

Just as many railway stations have stood the test of time, so their modern equivalents must prove equally long lasting. Metal ceilings, in particular, are easy to clean and maintain, which is a factor in their longevity. Station concourses are especially subject to fluctuations of temperature, so the good thermal conductivity of an aluminium ceiling helps to create a more pleasant environment.

Metal ceilings incorporate storage space for services and conceal cables. In a public area in 24 hour a day use, there has to be provision for frequent access for maintenance to services without causing tile damage. In a context in which security is paramount, ceiling systems are available which require the use of an access tool to remove tiles. To minimise the disruption caused by closing off a corridor when the ceiling is undergoing maintenance, a system such as SAS International's 'Drop & Slide' allows tiles to be pivoted down and hung in place to provide access to the services behind, without obstructing the movements of people along the floor. A solution was designed by SAS especially for Dublin Airport's new terminal.



Among the range of services vital to the building's function that can be integrated into a metal ceiling are lighting, fire prevention and public address. Public address announcements need to be heard clearly without sounding excessively harsh to the waiting passengers. Metal ceilings can alleviate potential acoustic problems through their high-performance, sound-absorbing qualities: within the large open space of a station concourse, good acoustics can be achieved through a combined perforated and non-perforated metal solution with integrated acoustic pads (such as metal wall panelling and acoustic rafts).

One of the greatest challenges that we face at SAS is designing a bespoke solution that blends well with the existing infrastructure. This challenge ensures that every solution is specially worked out for the needs of that project. An example of this can be seen in the Architectural Metalwork we designed for Heathrow's Terminal 4 – bespoke spun aluminium discs, acoustic metal wall panelling and System 600 rafts. A key ingredient in the success of this project was the off-site manufacture of products: this meant that installation was far quicker, with little disruption to the busy airport operations.

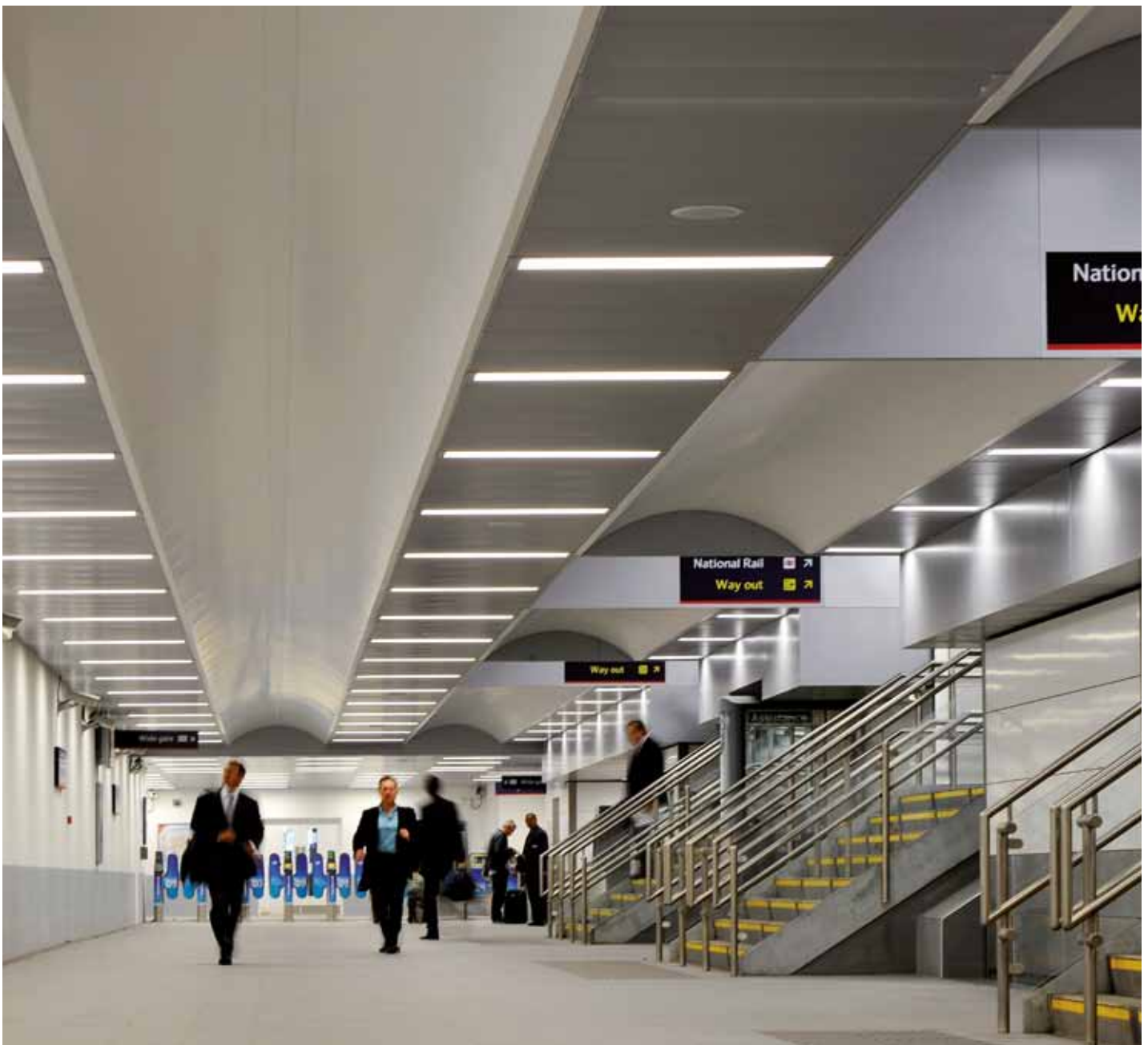
At London's Waterloo Station, SAS International installed vaulted metal ceilings and stainless steel wall cladding – fulfilling the remit to create a sleek modern environment, as well as a ceiling solution with the strength to absorb the potential impact of a three tonne vehicle. Lozenge-shaped columns were designed with hinged access panels for service maintenance: the columns complement the

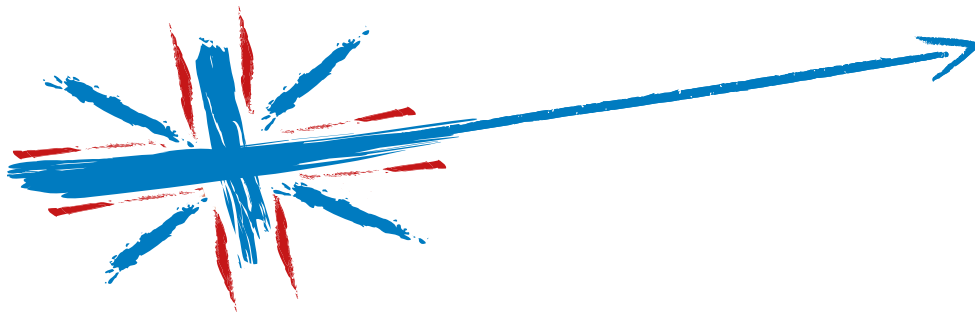
original cast iron supports in the concourse area and, where the two are located near each other, provide an interesting contrast.

There was a similar mix of original and new at St Pancras (London's Eurostar terminus), where architectural metalwork is complementing the historic fittings. The materials for the completed formation include aluminium and brushed stainless steel. In The Undercroft, which was formerly used to store beer barrels and now houses retail units, cast iron columns support a grid of wrought iron girders.

In one of the most recent examples of an SAS International design solution, the Project Management team has installed a bespoke soffit lining for the new Blackfriars Station. Triangular metal panels are suspended from the structural steel work, providing the station with a robust solution which is less prone to damage than other materials.

Speaking ahead of the recent Public Infrastructure UAE conference, SAS's Andrew Jackson remarked, "There's great opportunity and scope to look afresh at the architecture and design of these transportation hubs to meet the demands of today's and tomorrow's travel needs". Through its innovative products, design-led project management and expert installation, SAS International has set the standard for metal ceiling solutions in transportation hubs – often symbols of national pride – across the globe.





“I am particularly impressed with the company’s focus on, and investment in, skilled UK labour.”

Rob Wilson MP

Our Great British Team

At SAS International, we can take pride in belonging to what can truly be called a Great British Team.

We are certainly 'British', with a highly skilled manufacturing workforce in Scotland (Maybole), Wales (Bridgend) and England (Apollo Park) – not forgetting our head office teams in Reading. The spread of our SAS Direct depots is nationwide too, and they give contractors the opportunity to buy quality British products direct from the manufacturer – with an extensive range to hand, from metal ceilings to dry lining products: another reason to label ourselves 'Great'.

What makes SAS stand apart is its design-led, innovative approach. This feeds into the development

of British-made new products to fit the requirements of complex fit out projects worldwide. We have proved our capacity to come up with solutions to meet the most rigorous contemporary demands in the areas of energy efficiency and longevity, and to tailor a design in consultation with architects and engineers – wherever they are in the world.

We represent the Best of British too. We can see evidence of this in our unrivalled three 'Made by Britain' nominations by MPs last year, and by the growth of our export orders despite the challenging economic situation currently faced by the construction industry.

Our people make SAS International what it is. That's why, for a series of advertisements in this year's

issues of AIS Interiors Insight magazine, employees at SAS Direct depots have starring roles.

By focussing on employees – the human side of our business – we are putting the spotlight on our high-quality customer service, which includes the advice we give on products available from SAS Direct, the after sales service for our bespoke products, and the start-to-finish project management of complex projects.

Finally, where does the 'Team' come in? We can answer this by pointing to our success in working as one team across all our sites. Our team-working means we can bring together our diverse ranges – metal ceilings, partitioning and doors, room comfort and architectural metalwork – into one company: SAS.





ASK RAFAL IN THE FACTORY,
SAS BRIDGEND, PART OF
OUR GREAT BRITISH TEAM

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OUTSTANDING VALUE DIRECT FROM OUR DEPOTS

ASK MIGEL IN THE DEPOT,
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BARKING BIRMINGHAM BURGESS HILL LEEDS READING



Getting LEAN – the results so far

In the last SAS Insider we introduced the culture of lean manufacturing and outcomes from the first four workshops. Now that we are further down the line we are in a position to measure the early results.

Eleven Bridgend teams have completed their training, with a progress review set up four weeks after the training and a second review after another month. In a further development, most of the teams now have a team white-board in place (see photos below): this board tracks all their performance measurements and is being used for their daily Lean Group meetings.

For each team, annual labour costs savings are being calculated. With some results still to come, the total amounts to more than £42,000. When the time savings for each team are added up, the figure is an impressive gain of 75 hours per week. This fulfils one of the main objectives of 'lean thinking', which is to eliminate waste from all processes.

The tracking and reporting of outcomes means that the business benefits of training can be clearly assessed. So far, it looks like any inconvenience resulting

from taking employees away from their workplaces for the training sessions is easily justified by the long-term improvements made.

As the table opposite shows, improving and streamlining processes leads to real efficiency savings, while also getting the best possible output – and customer value – from the resources we have.

Training courses often conjure up images of irrelevant theory-based classroom lessons. The key to lean training, in contrast, is the transferring of personal and skills development to the reality of the work environment and helping established teams to adopt a Continuous Improvement way of working. Classroom activities are followed by two or three days applying what has been learned back in the workplace.

Employees at Bridgend have found the lean experience a positive one, and can see the difference it is making to their teams. Our Lean Facilitators are Rob Benes and Geraint Lewis: we plan to continue to look at improvements they and the factory teams are implementing in the next Insider.



A 5S cleaning station. SAS has manufactured one for each of the lines in the Roll Form department – they hold all the equipment operators need to carry out their daily clean down routine.



Lean training – how we are streamlining work

| | Team | Solution |
|----|---------------------|--|
| 1 | Roll forming | With a revised 'clean and inspect' regime, production could start more quickly. Downtime was reduced by 8 hours per week for motion and waiting waste on Cross-Tee lines. |
| 2 | Roll forming | To prevent motion waste, tools were provided for each machine. Set-up times were reduced by 15 hours per week for motion and waiting waste on T4 line and Stud/Track. |
| 3 | Perforators | Shadow boards with rules were placed on each perforator. Set-up times were reduced by 15.5 hours per week for motion waste. |
| 4 | Perforators | The tooling rack was repositioned to a more efficient location, and visual controls applied. Special type tooling was located at relevant machines. Punches were relocated. Set-up times were reduced by 7 hours per week. |
| 5 | Wemo | Tooling was relocated: tools were split in half and placed either side of the machine. The hand tool was replaced with an air tool for speed when removing bolts. The monitor was repositioned. This led to a time saving of 1.18 hours per set-up. The result was a reduction in set-up time of more than 10 hours over the course of a month. This was calculated using the average number of aperture set-ups each month. |
| 6 | Assembly | To make the best use of the spacers, they were identified and colour-coded according to size. Receptacles were colour coded to match. Suitable storage was found for foil to prevent damage: there are plans to change the size of foil. There has been a 20% improvement in throughput by allocating correct rods, controlled and colour coded, and applying the correct foil size. |
| 7 | Press shop | More hand tools, clamps/bolts and loading tables were put in place. Reduction in set-up of 4.5 hours per week |
| 8 | Production Planning | A process map for Sales Order Processing (SOP) was put in place, highlighting the SOP framework for departmental skills. |
| 9 | Logistics | A redistribution of fast and slow moving stock between block 2 and unit 5 minimised transport damage and led to a saving of 12 hours per week. |
| 10 | Design Planning | To speed up the time taken to carry out 0,0 activity, a 0,0 issue level was introduced at drawing creation to eliminate this activity later on in the process. Placed new printer/copier within the design department to eliminate waiting, sorting and transport waste. Liaised with IT on new procedure for Sync drawings to Reading overnight. A saving of around 1.5 hours per day. This will also apply to Design at Reading where the impact is far greater. |
| 11 | Logistics | Pack size was increased from 240 to 432, resulting in an approved loading time of 78%, a 57% increase in Stud & Track line output, a reduction in packaging cost by 22%, the average transport ratio for full load improved by 3.8%, and a Health and Safety score moved from 24 to 6. |



The team constructing a shadow board, used to hold the tooling required on a particular line. These boards are very effective because they indicate when a tool is missing or in use, and minimise motion waste resulting from operators searching for tools.

Sunderland Central Railway Station

As part of a £7 million renovation of Sunderland Central Railway Station SAS International supplied new ceilings for the refurbished platforms.



Suspended ceilings, along with the installation of heated waiting areas and improved access, were key elements of the overall design for the underground station overseen by Reid Jubb Brown (now Sadler Brown Architecture).

The Tubeline system installed provides an open area to allow smoke to pass through the ceiling plane. This meets the requirements for smoke extraction and fire handling within the station. With a minimum 25-year life expectancy, Tubeline is a visually striking linear ceiling system constructed from circular extruded tubular sections clipped to a simple suspension system.

A key entry point to the city of Sunderland, the station's appearance had become increasingly tired and dated. Its modernization is intended to contribute to the city centre's ongoing regeneration.

As we report in our feature on metal ceilings in transportation hubs (see pages 10–11), attractive design and architecture are seen as key components of modern station refurbishments. Sunderland Station's new animated 'virtual platform' is a good example of how a creative artwork enhances the environment still further.



Bassat Ogilvy Group and CMT headquarters, Barcelona

SAS International has provided a System 330 metal ceiling for both the headquarters of Bassat Ogilvy and the new base for the Telecommunications Market Commission (CMT) in Barcelona.



The buildings belong to the 22@Barcelona scheme, an urban redevelopment in the San Marti district. Home to the factories of Barcelona's textile industry in the 19th and 20th centuries, 22@Barcelona is a business complex bringing together innovative and dynamic companies (as well as universities and lifelong learning centres). It has benefitted from €185m in investment and its developers intend it to become one of the main centres of strategic and technological developments in Europe.

Bassat Ogilvy Group is part of the worldwide Ogilvy network and is one of the largest communication groups in Spain. Its building was designed to reflect the values and vision of the Ogilvy brand – in particular, it allows the company's different divisions to work together, which is integral to their work style. Fully glazed, its unique shape captures the sunlight.

The sail-shaped CMT building has offices on ten floors and, next to it, a refurbished warehouse which preserves the original early 20th century structure and features an auditorium, meeting place and crèche.

Although both buildings are very different, SAS System 330 was the ideal choice for the projects as it can be designed to any building grid size. Its lay-in tile system provides both functionality and outstanding performance, and its tiles are available in a range of shapes and sizes to meet the individual requirements of a project.



Carrick Colts

South Ayrshire team Carrick Colts 2002 received their new SAS International strips in February. As their name suggests, the team is open to anyone born in 2002. In June they will be travelling to Dumfries to take part in the Sheston Cup competition.



Christmas revelry at Reading

Staff from SAS International and SAS Direct in Reading celebrated the run-in to Christmas with a meal and drinks at the town's Malmaison Hotel. Thank you to Gemma Bowers for organizing this successful get-together.



Bradley's big break with Cardiff Youth Team

Lee Flay, Maintenance Technician in the Roll Form Department, must be the proudest Dad at Bridgend following Cardiff City FC Youth Team's signing of his fifteen-year-old son Bradley.

Bradley was just five when he started playing for a local side coached by his father. He has represented Bridgend schools for the past two years, and it was during this time that he was spotted by Cardiff City and invited for a series of trials.

As a trialist, he was part of the Welsh Super Cup winning team last summer before gaining a youth development contract. He now has the chance to develop under the supervision of the best coaches with first class facilities. He currently trains four times a week with matches at the weekend, and in his short time with Cardiff City he has already played against teams such as Liverpool, Aston Villa and West Bromwich Albion.

This exciting opportunity is also a huge commitment for Bradley and his family – so best of luck to them all.



My Work: Graeme Thomson, Production Worker

“ I’m a Production Worker at Maybole currently employed in the Welding and Dressing area, but a usual day for me involves working in other areas such as Assembly, Brakepress or Punching Machines – as and when required.

I first joined SAS 25 years ago as a Dresser. Before that, I had been a Panel Beater. I’ve now been employed in the manufacturing industry for more than 30 years.

I got a job with SAS when my employer Douglas Manufacturing went into receivership and was bought by SAS. The management at the time contacted and eventually employed many other former Douglas workers. In the mid 1980s, the Maybole factory was fairly small. Looking at it now, with the new extension nearly complete, it’s clear just how far SAS has taken the factory through big investment in plant and machinery.

In fact, the investment in new machinery and tooling has removed many of the challenges we used to face concerning the welding and dressing of products. The most challenging of our past projects was probably Chek Lap Kok Airport in Hong Kong. It was a tough job, with all the seams fully welded; at one point we had a team of ten dressers over two shifts. New technology and techniques would make this project a lot easier if it was being done these days.

We’ve got a great team of lads (and girls) at Maybole, which is one of the best things about working here.



New Roles

ALAN COSSEY has moved to the role of Design Technician in Reading’s new Muscat Airport Export Department, having been part of the Export Department design team at Bridgend for the past two years. He had originally started his SAS International design career at Reading, so this represents a return to his roots.

Since taking up his role he has been working on the Muscat Airport project, which gives him the scope to find design solutions for the more bespoke ceilings that a major project such as this requires. Among the biggest challenges he envisages for this and the other projects ahead of him are getting approval for mock-ups, meeting unique specifications while still ensuring the solutions remain cost effective, and providing setting-out drawings to assist on-site assembly and installation. He anticipates getting used to early mornings and late evenings in the office.



Welcome to the following who, like Alan, are existing employees starting new roles within the Muscat Team:

| Name | Role | Previously |
|----------------|--------------------------|---|
| Dan Bland | Designer | CAD Designer – SAS Partitioning |
| David Booth | Designer | CAD Designer – SAS Partitioning |
| Charlie Gale | Materials Scheduler | Assistant Project Manager, Project Management |
| Bob James | Muscat – General Manager | Senior Sales Executive, UK |
| Arwel Williams | Chief Designer | Senior Designer, Project Management |

New Faces

We would also like to welcome all those who joined SAS over recent months:

SAS International

Apollo Park

Samantha Duroe – Receptionist/Administrator

Bridgend

Stephen O'Neill – Production Shift Manager

Mark Polley – Trainee Scheduler

Gary Winters – Buyer

Maria Zegar – Project Estimator

Maybole

Carl Robinson – Production Engineer

Reading

Michael Evans – Project Coordinator

Matthew Horne – Design Technician

Richard Overhill – Design Technician

Joanne Perkins – Office Manager

SAS Direct

Barking

Elaine Gardner – Sales Coordinator

Gauthier Kabasele – Driver

Birmingham

Adam Clarkson – Warehouse Operative

Robert Lynch – Driver


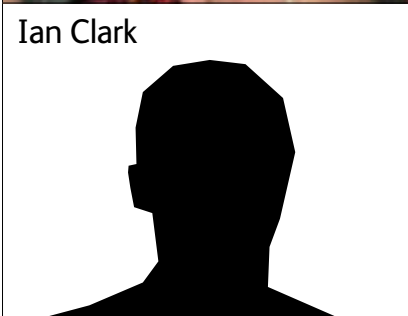

Burgess Hill

Adrian Kettyles – Estimator

Natalie McCoughlin – Sales Order Processor

Long Service Awards 2012

Congratulations to all those who have become Long Service Award Winners so far this year.

| Name | Location | Service | Starting Job | Current Job |
|---|----------|----------|------------------------------|---|
|  <p>Brigid Matthews</p> | Reading | 35 years | Administrator | Executive Assistant & Company Secretary |
|  <p>Ian Clark</p> | Maybole | 25 years | Painter (Paint Line Area) | Shift Team Leader (Production Area) |
|  <p>Graeme Thomson</p> | Maybole | 25 years | Dresser | Production Worker, Welding/Dressing |

Long Service Awards 2012 – continued

| Name | Location | Service | Starting Job | Current Job |
|--|-------------|----------|----------------------|---------------------------------|
|  <p>Carl Brown</p> | Bridgend | 15 years | Press Operator | Soenen Team Leader |
|  <p>Tony Criger</p> | Bridgend | 15 years | Press Operator | Slitter Operator |
|  <p>Ricardo Dowrick</p> | Apollo Park | 15 years | Partitioning Foreman | Partition / Doors Sales Manager |
|  <p>Duncan Flavell</p> | Apollo Park | 15 years | Machine Operator | Charge Hand Aluminium |
|  <p>Darren Parry</p> | Bridgend | 15 years | Assembly Operator | Assembly Supervisor |
|  <p>Craig Slater</p> | Apollo Park | 15 years | Machine Operator | Lead Hand |
|  <p>Jonathan Wood</p> | Bridgend | 15 years | Project Manager EMJV | Export Director |

Meet the team

The Roll Form Department in Bridgend manufactures the ceiling grid, Tee grid, stud and track, and the fixing brackets that make up the various system components.

We caught up with six of the team and asked them about their roles, the people and departments they work most closely with, how the department fits in with the company as a whole, and their day-to-day challenges. Just as importantly, we found out what they like to eat.

Lee Flay

As a Maintenance Technician, my core responsibility within the department is to carry out preventative maintenance and keep production downtime to a minimum. The colleague I work closest with is Nick Biggs, who is the Maintenance Supervisor.

As with all departments, the work we do is important to SAS International as a whole. We ensure that all machinery complies with the latest legislation and satisfies our operational requirements.

Potentially, the biggest issue to be dealt with in a typical working week could be any production line breakdown. We make sure we're prepared for any eventuality.

Our facilities here are good, and the workplace is challenging but rewarding.

Spare time? Coaching my son's football team. My family and I enjoyed a proud moment recently when my son Bradley signed an academy youth development contract with Cardiff City FC.

Favourite food? Indian – any dish washed down with an ice cold bottle of Corona.



Damian Lewendorska

As a Line Assistant, I'm responsible for running the line at the correct speed and carrying out the quality checks on the product, working closely with all the Roll Form team operators and also the Roll Form toolmaker. I currently work a normal day shift, but often work mornings or afternoons when required. I have dealings with the tool room for set-ups and tooling repairs.

I see our department as being important to SAS as a whole because we make all the suspension items for the ceiling systems and the sections for the plasterboard partitioning systems. As for my main challenge during a typical week, it is to keep my line working at the correct speed to achieve the targets and to maintain quality.

One of the best things about the department is the friendly atmosphere.

Spare time? I like to work out at my local gym and I also play in a Sunday six a side football league.

Favourite food? Home cooked Chinese-style meals.

Dewi Williams

I'm an Offline Roll Setter and Toolmaker. I set up the roll combis and do repairs to the Roll Form tools. I also check that all the required tooling is ready for when the next job is to be run. All our tooling and rolls need to be in absolutely top condition in order to maintain a high degree of quality.

The managers let me know what job is needed, and I work with the other roll setters when the job is put on the machines. I work normal day shift hours – 7.30am to 4pm.

Spare time? Lots of reading and also walking my dog.

Favourite food? Any meat plus pasta.



Dave Jones

I arrived at Bridgend relatively recently, in September 2010, and I'm the Production Shift Manager – I coordinate production schedules in line with customer requirements. This includes manning our production lines. Communication is an important part of my job, and it comes to the fore at the team production meetings we have before starting work. Within the department I am also a Lean Manager, and am responsible for working with the team to implement lean practices throughout the department. Roll Form teams have completed their Lean Training here at Bridgend and are implementing their ideas on the shop floor – they have been sustaining their progress very well since the training came to an end in November.

As well as working with my immediate line manager and with line leaders, I deal with managers in the other Bridgend departments that rely on our components for final assembly before shipping to customers. Planning and Scheduling, Engineering, Carpentry, and Warehouse Shipping are the departments I work with most frequently.

The biggest challenges in a working week? Ensuring orders are manufactured on time and to the customer's specifications, and also having the correct quantities of raw material available. In addition, our area has to be ready at all times for any contractor visits.

I find the facilities here are very good – my office is now closer to the shop floor which makes it easier to deal with any issues that come up.

Spare time? I watch my son play rugby, and get involved in most of the rugby club social events: this includes the hectic end-of-season tour and the fund-raising events. DIY is a hobby too.

Favourite food? Chinese is my favourite. Mention should be made of the food served here at Bridgend by Mark the chef and his staff.



Karl Roberts

I'm a Toolmaker in our new roll forming tool room: I work on tool maintenance and repairs, but my main responsibility is to develop, manufacture and assist the Engineering Department in their quest to develop new products for SAS International.

I liaise with colleagues Dewi Williams and Mark Evans within the department, and work especially closely with Andrew Edwards from Engineering.

I see our department's role as important to SAS's long-term future because we are developing new products and tooling. But meanwhile it can be a tough challenge to hit targets and meet deadlines when developing new products – there are often unforeseen problems to overcome.

Spare time? I do fitness training and am also a DJ and producer. 'How Good Your Love Is' (Karl Roberts and Frankie Ferrell) is my new track, released on the Escape Recordings record label. Earlier, my karate took me all over the world – I won the British Karate Championships six times.

Favourite food? Steak or chicken.

Przemyslaw Narewski ('Shammy')

I'm a Line Leader and Roll Form Setter, responsible for setting the six rolling lines to produce a variety of sections and managing my team to achieve production targets and quality standards. I work closely with all the operators in my team, as well as the toolmaking and maintenance teams and the departmental managers. Our role within the wider company is to provide the sections that integrate with other SAS International products.

At the moment I work mornings and afternoons but when we get busy I sometimes work for longer and at weekends too.

Of those in other departments, I have the most dealings with Carpentry for our wood (for packaging) and the tool room for servicing and maintaining our tools.

My focus during the week is on keeping my team working efficiently to achieve the daily production targets for the department. Life at SAS is very busy.

Spare time? I keep fit by going to the gym and relax by playing PS3 games.

Favourite food? I like all food but my favourite meal is barbequed ribs, potatoes and salad washed down with plenty of cold beer.





metal ceilings | partitioning | doors | room comfort | architectural metalwork

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