



July 2016

# adf architects datafile

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# From the Editor



The Brexit result was something of a shock to many people, not least David Cameron, who must secretly rue the day he nailed his election campaign to what turned out to be an even more divisive issue than he could have imagined. The many forecasters of economic upheaval including the Bank of England have started to be proved right, although how things will turn out in the longer term is far from clear as the UK goes it alone.

Whatever the causes of this momentous decision, our industry now has to adapt to a different world, and the only certainty will be uncertainty for the foreseeable future.

Some of the first casualties of the UK's vote to leave the EU and falls in sterling have been seen in the construction industry, with major housebuilders' shares plummeting and commercial property investment firms closing their funds in the light of a sharp increase in withdrawal requests from jittery investors. At the time of writing, six major funds had been suspended, belying mantras that London was some sort of unstoppable economic engine.

The fact that housebuilders have been hit hard suggests that the growth construction has been enjoying following the last recession had become particularly fragile in recent months, and pre-Brexit PMI data showing a seven-year low in output (on the heels of the Markit report showing a slowdown in housebuilding) only corroborates this. Many small builders went out of business following the 2008 recession, and as we face a prolonged lull in investment decisions and warnings of another recession, many of the firms at that end of the sector must feel nervous to say the least.

Analysts are predicting a 5 per cent drop in house prices in 2017 in line with consumer confidence dropping, this might represent a rebalancing in the market for some, but will be grim reading for housebuilders.

For some architects the fallout of Brexit has been tough so far, with firms already having to lay off staff amidst concern about future workloads. Make has let go of 7 per cent of its people, cutting back its London office significantly, and others are starting to follow suit. At the same time, firms benefit hugely from the expertise staff from EU countries bring to practices, but they are now concerned about future prospects. A mass of problems have been created overnight.

Economic uncertainty is the enemy of investment and innovation. We can't ever have absolute certainty but what we are now faced with is an extended period of questions; how will we fund new construction short term? How and when will new trade deals get signed? What will the UK construction industry look like following all of this?

Once the new PM finally begins to negotiate with a far less co-operative EU, the answers might not be very palatable.

**James Parker**



## On the cover...

Facade of Snøhetta expansion, San Francisco Museum of Modern Art

© Henrik Kam, courtesy of SFMOMA

For more information, go to page 30.

## 2016 RIBA NATIONAL AWARDS

# Rollcall of the year's best new buildings revealed



RIBA has announced the winners of the 2016 RIBA National Awards, claiming it to be “the most rigorous and prestigious awards for new buildings in the UK.” The shortlist for the RIBA Stirling Prize will be drawn from the 46 award-winning buildings.

The winners include Alder Hey Children's Hospital in Liverpool with its striking, undulating grass roof, The Avenue, a development of 76 new homes in rural Essex which, said RIBA, “challenges the blight of uninspiring new housing estates by incorporating the character and pattern of the local town,” and the “beautifully-detailed” Gloucester Services.

The new shimmering stainless steel library for the Investcorp Building at St Anthony's College, Oxford by Zaha Hadid Architects was another winner, as was the elegant transformation of ARK All Saints Academy and Highshore School in south London, by 2015 Stirling Prize winner Alford Hall Monaghan Morris.

Other highlights include the Drawing Studio in Bournemouth, a cave-like curved steel small pavilion, 60 new cost-effective single-storey council homes for elderly and disabled people commissioned by Greenwich Housing on the site of former garages, and the conservation and renewal of Wilton's Music Hall a cherished Grade II\* Georgian building in London's East End.

Further buildings in the list include the Saunders Centre, a new college building at Glasgow Academy, the extension

of York Art Gallery, Regent High School's colourful re-working of a Victorian inner-city secondary school in London, Wirral Metropolitan College and a new office building at 8 St James's Square in London.

RIBA President Jane Duncan commented: “The awards are a great indicator of UK design, economic and construction trends. One stand-out trend from this year's crop of winners is the huge scale of investment and ambition shown by many of the UK's universities and colleges; almost one quarter of the winning projects (11 buildings) are in this category.”

She added: “I am pleased to see a strong selection of schools and new housing developments amongst our winners, including new models for public housing and semi-rural development. The awards also put a spotlight on some of the smaller and unique, but no less ambitious, projects. They show that budget, location or many other challenges are no constraints to the production of superb quality architecture.”

For a full list of the award winners, please visit [www.architectsdatafile.co.uk](http://www.architectsdatafile.co.uk) and enter ref number 65251.

## events

### CONFERENCES & SEMINARS

**Zero Carbon Design Conference**  
08 – 09 September, Birmingham  
[www.zerocarbonbuildings.world](http://www.zerocarbonbuildings.world)

**Historic Stonework**  
13 September 2016, Oxford  
[www.architecture.com/WhatsOn](http://www.architecture.com/WhatsOn)

**Breathing Buildings**  
28 September 2016, Oxford  
[www.architecture.com/whatson](http://www.architecture.com/whatson)

### FESTIVALS

**London Design Festival**  
17 - 25 September 2015, London  
[www.londondesignfestival.com](http://www.londondesignfestival.com)

### TOURS

**Open House London**  
17 - 18 September 2015, London  
[www.openhouselondon.org.uk](http://www.openhouselondon.org.uk)

### TRADE SHOWS

**100% Design**  
21 - 24 September 2016, London  
[www.100percentdesign.co.uk](http://www.100percentdesign.co.uk)

**Restaurant Design Show**  
27 - 28 September 2016, London  
[www.restaurantdesignshow.co.uk](http://www.restaurantdesignshow.co.uk)

**Timber Expo**  
18 - 20 October 2016, Birmingham  
[www.ukconstructionweek.com](http://www.ukconstructionweek.com)

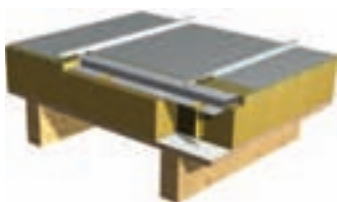
**Surface Materials Show**  
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[www.ukconstructionweek.com](http://www.ukconstructionweek.com)

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## AWARDS

# Passivhaus award winners announced

The Passivhaus Trust (PHT) has announced the winners of the UK Passivhaus Awards 2016, with low-energy homes in London and the Scottish Highlands coming out on top.

PHT members voted online and at an awards ceremony showcasing the shortlist on 7 July in London to determine the winners of the competition, which was established to encourage uptake of the Passivhaus standard within the selfbuild market.

Tectonics Architects and HLM Architects were named winners in the Urban and Rural categories respectively.

Tectonics' Lansdowne Drive is a zinc clad two-story Passivhaus home and thought to be the first Passivhaus certified dwelling to be completed in Hackney, east London. The practice created a building "with the generic simplicity, flexibility, light and character found in industrial or studio spaces."

The structure was prefabricated in cross laminated timber and erected in two days. Internally, the structural materials and their assembly are left exposed, from concrete or timber to galvanised conduits and ducts.

HLM Architects' Tigh na Croit (shown right) nestles into an area of former crofting land in Gorstan in the Scottish Highlands. This contemporary low energy building is inspired by the rural landscape and is one of the most northerly UK homes to receive Passivhaus certification.

The primary material for the house is white render with limited areas of stained timber cladding. Recognisable details of highland rural forms are used in terms of chimneys, roof pitch, verges, eaves and carefully placed openings.

This year's shortlist also featured RDA Architects' Chiswick Eco Lodge – a bespoke semi-sunk Passivhaus home set



Pictured: Tigh na Croit, (winner, Rural category)

in a dense urban space; Anne Thorne Architects' L-shaped brick Meeting House built within a York conservation area; Green Building Store's detached Golcar Passivhaus home with clean, simple lines and narrow timber windows; Gresford Architects' Old Water Tower in rural Newbury and Parsons + Whittle's curved Lime Tree Passivhaus built on a tight arc-shaped garden plot near a protected lime tree.

The shortlist was compiled by a jury featuring Passivhaus experts, architects, journalists and researchers.

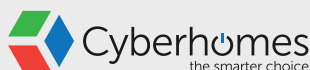


Pictured (L-R): Golcar Passivhaus, Lime Tree Passivhaus, Lansdowne Drive (winner, Urban category)

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CONFERENCE REPORT: BY JAMES PARKER

# Vision London 2016 reveals the sky's the limit for CLT

by James Parker

Vision London 2016 was the second instalment of the new annual event dedicated to architects, and it captured several of the key themes currently exercising designers' minds across the UK and internationally.

Several conference speakers focused on the innovative steps being taken in the industry to expand the potential for using cross-laminated timber (CLT), including in multi-storey projects.

In an enlightening talk, architect Fabrizio Rossi of Rossiprodi Associati described the genesis of what were, on completion, Europe's tallest CLT buildings, part of the 130-apartment Via Cenni development in Milan, for social housing (see image). He said that in the practice's attempt to create "a rich social relationship, richness of spatial density and richness of the natural scheme, CLT was the natural choice."

Rossiprodi places a big emphasis on the transitions between external and internal space and providing spaces for people, to help ensure social housing projects can bring benefits to their community. The four nine-storey towers plus linear low-rise blocks form a flowing whole, with pedestrian access only, and landscaping fully worked into the plan from the start. Entirely CLT structurally including frame and walls, the project even has timber lift shafts.

Matt Stevenson, managing director of design consultants Carbon Dynamic, described how his firm was using modular CLT to provide a "seamless" way to achieve flexible buildings need in various sectors as occupancy requirements change in the short and longer term. He told delegates: "We need buildings that can adapt over time, with walls that can be moved." Stevenson gave the example of healthcare environments which "can take away people's dignity due



to all the equipment which may be needed to be brought in, but that can be hidden behind walls."

He said that CLT was ideal for use in such flexible buildings for its dimensional stability, and also explained how hybrid versions and wood fibre panel structures can avoid expensive overuse.

In a session on offsite construction focused around the potential to create efficient CLT buildings, Stevenson said in a climate of austerity client expectations needed to be raised: "It's about leveraging the change that they didn't know they needed." He also explained how his firm was promoting and using co-design approaches with clients including hospital end-users to positive effect.

Legal and General Homes' business development head of CLT solutions Craig Liddell revealed how the company has created the UK's first CLT plant near Leeds, a 650,000 ft<sup>2</sup> facility housing the what's thought to be the world's biggest press producing panels up to 5 m wide. He said that the company's approach was "heavily BIM orientated" and "akin to the automotive industry." He said the move means the UK now has a homegrown CLT supply providing the ideal means to create high quality affordable modular housing.

Finnish architect Anssi Lassila of Ooepa presented the country's first

high-rise CLT building, a lightweight eight-storey structure designed by Ooepa and built by Stora Enso in six months. He said that the only limitations placed on designs were those from the CLT factory itself, so co-operation in creating such projects was "damn important". He also explained that while such modular timber approaches were more expensive in terms of materials, savings could be had by not having to isolate concrete against the weather, in addition to substantial time savings and reduced disruption.

Other key issues in focus at Vision included BIM and the Internet of Things; Antonio Pisano, director at Marcel Mauer Architecture, spoke about the design implications of clients' requirements in terms of the IoT: "Architects need to understand the dataset that is relevant for the client and design around it." He also described how smart devices can be used "to measure where the world is going," showing how heat maps for example were used to show "social value" at the King's Cross development in London.

Finally Chapman Taylor Architects revealed a scalable solution to address the UK's housing crisis – Umbrellahaus – which is seeing a Chinese firm supplying fully fitted steel containers to the architect's specification for rapid assembly into modular housing blocks up to 22 stories high.



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# ask the architect

Norman Hayden finds out what makes Simon Baker, director of Nash Baker Architects, tick.

*'Linking the building with a garden is key to the flow of any house'*

Simon Baker of  
Nash Baker Architects



## Why did you become an architect?

My father's English and my mother's Norwegian, and on the Norwegian side of the family there are quite a few architects. My grandparents designed and built their own house in Norway shortly after they married, and I have vivid childhood memories of running around in their contemporary, light and flowing home, or looking out over the fjord below from the 10 m of glazing in their living room. My grandmother is 92 and the only thing that makes her house look dated is the small kitchen – everything else still feels relevant to modern living. So, even before I knew what architects do, I was interested in the design of dynamic spaces which everyone can enjoy.

## What can we learn from foreign architects?

There's a definite Scandinavian influence in our work – a clean aesthetic with lots of light that responds to its context, setting and environment. The house in Norway exerted a huge influence on me, and helped me to understand how the built environment can affect people's moods. Going back to our dark, cold houses in England after holidays spent in Scandinavia made me wonder why we don't design better homes in the UK. Every country has its own architectural challenges, and understanding how other countries tackle theirs can give us new insights into different methods of thinking, designing and building. Innovation is everywhere if we are curious enough to see it and learn from it.

## There's often a strong connection with the garden in your projects. Is it a deliberate philosophy?

Yes; for me, linking the building with a garden is key to the flow of any house. I can't always take credit for the garden designs, but my schemes often lead outwards and treat the garden as a continuation of the internal spaces. For example, we created a rear extension on the Newton Road House, a semi-detached Victorian house in London's Westbourne conservation area. The contemporary addition not only helped solve the property's dysfunctional layout but provided a large, flowing modern space with plenty of natural light that had a strong connection to the garden. In such a multi-level house, it's all about creating easy movement from one level to another and the garden was another very important level to play with.

## As a practice you also seem particularly interested in conservation, is that the case?

That is true. A lot of our work is with listed buildings, piecing together their history – which is fascinating, challenging and rewarding. Our recently completed restoration of Church Farm, a Jacobean dwelling in Suffolk, involved the conservation of the remaining historic features and building fabric while sensitively adding contemporary alterations and extensions using authentic traditional materials and craftsmanship. We are based on High Street, Kensington, and The Royal Borough of

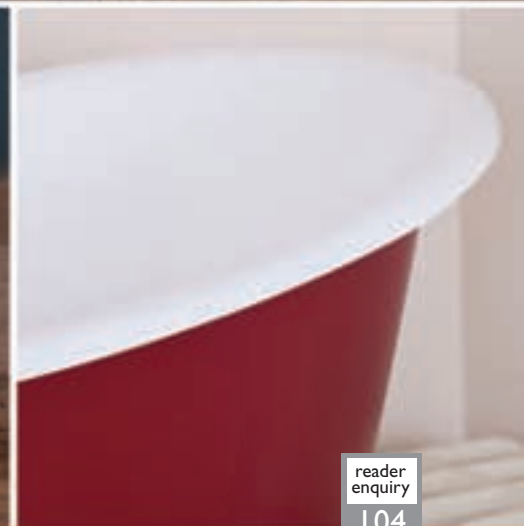
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# JIG

BATHS



**The Normandy**  
Copper Exterior & Nickel Interior



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Garden views: a key role in Nash Baker's work

Kensington and Chelsea is an engaging place for architects, with 35 conservation areas covering 70 per cent of the borough, and some 3,800 listed buildings. It represents a significant slice of England's cultural and architectural history; a continual source of inspiration.

I think most would agree that we have a responsibility to preserve our unique historic environment; after all, it is a shared and finite resource we all benefit from on some level. The challenge we frequently face as architects is to agree the most appropriate method for preserving or adapting historic buildings, while creating properties which meet the needs of modern life.

### **That balance between contemporary design and conservation must make planning a challenge?**

London planning officers are very professional and we like to initiate a dialogue with them as early as possible in the design process. Naturally we don't invite them to perform the role of a designer, but neither do I want nasty surprises for the client, so it is sensible for them to be involved throughout the process. Our ongoing success has, in part, been built upon this track record and many clients – particularly developers – come back to us because of our knowledge and experience of this area.

### **The practice can often be found working on old houses and fixing piecemeal alterations and extensions. How can such factors affect a project?**

We are often confronted with historic alterations that were probably attempts to address the needs of their time. Unfortunately, these ad hoc alterations are often unsympathetic, poorly built and no longer fit for purpose. At Nash Baker we try to unravel the layers of historic alterations and assess what original fabric remains and its historic significance before we consider designing interventions. Church Farm, in Suffolk, had seen centuries of sub-division and alterations which needed rationalising in order to make it work today as a

functioning family home, and it was a time consuming job – but the result is hugely rewarding.

### **Does offering a full architectural service help on the trickier projects?**

Traditionally, architects have seen themselves as the conductor of an orchestra and we probably still think a bit like this. At Nash Baker, we like to be involved with all aspects of a project, even the less glamorous unseen parts, because we are interested in the process of creating buildings in their entirety. From our perspective, the success of a project lies as much in the detailing and the coordination of works as it does in the quality of the initial design concept. For our clients this also ensures the highest quality of finish and a more pleasant experience all round. We consider architecture as a job without limitations and enjoy taking a holistic approach to design.

### **What will be the next 'big thing' for the industry?**

I am glad people are increasingly keen to use traditional vernacular materials, and have a healthy respect and appreciation for craftsmanship again. We have responded to that; a good example being our Broad Street House project which is up for a RIBA regional award. It was built using traditional materials including locally-sourced oak cladding and handmade bricks laid with lime mortar, although the house design itself is entirely contemporary.

### **How has the practice evolved, and what are your hopes for 2016?**

Nash Baker has changed beyond recognition. When we started it was just myself and Howard Nash, the other director. Our first project was designing a staircase; we had to build up the business from scratch. As to the future, building a reputation takes time, and every project and referral counts, so delivering an excellent service to clients is paramount. We're not necessarily focused on growth, more on constantly improving and honing what we do.



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# view point

Rory Bergin reflects on the UK's vote to 'Brexit' and ponders the future consequences for architects and the wider construction sector.

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Now that the dust has settled a bit, and some issues are a bit clearer, it is still uncertain what exactly is going to happen regarding UK membership of the EU. The most desirable outcome for most sensible people is to remain a member of the common market, at least, but it is clear that for most EU politicians this also means that we must accept freedom of movement, something that many voted against. One thing that is clear, is that the decision to hold the Referendum was a political miscalculation on a grand scale.

It is also clear that this vote was not just about the EU, it was about much more than that. It was an emotive campaign for both sides with the Leave campaign focusing on immigration, the Remain side focusing on the economic risks, and this strategy worked for the Leave campaign. The people who voted to leave were unmoved by the economic risks and were more concerned about the impact of future immigration. Older voters are less exposed to economic risks, and those who haven't benefited from economic upturns are equally unmoved.

By appealing to the large number of disaffected voters who have probably not benefited from a post-recession rise in living standards, and by using immigration as the whipping boy, voters have been conned into thinking that the UK can have the best of both worlds, trade links with the EU and the rest of the world, and restricted movement for immigrants. Time will tell if this is possible, but all the signals are that it

won't be, leaving the UK in a worse international trade position for the foreseeable future.

The decision is likely to leave our children with a less flexible future, cutting off many trade and cultural ties with our nearest neighbours, reducing the number of foreign students and workers who come to the UK and reducing opportunities for UK citizens to work, live and study abroad. With the possibility of Scotland leaving the union, the news gets worse for England which risks being left in economic and political isolation as it struggles to reconcile the pressures of a fast-changing world with a conservative electorate unable to cope with it.

The voting was split along new fault lines which have opened up in the electorate, crossing traditional party boundaries, and pitting the educated metropolitan classes against the working and non-working suburban and rural population, the young against the old. Since most architects would consider themselves among the metropolitan group, and our clients are almost certainly among them, most of the profession and its clients will have voted to Remain and will be disappointed by the result and fearful about the impact on their livelihoods and employees.

The construction industry as a whole takes about 10 per cent of its workforce from the EU, and their future is now uncertain. It is unlikely that they will be forced to leave, but additional workers will become increasingly hard to



bring in from across the EU. This will damage the industry's ability to cope with changing market conditions, and reduce flexibility in the sector. More positively, it will force the industry to focus more on creating and running training schemes for UK-based employees who are some of the people who voted to leave because they have not fared well in the jobs market. What is less clear is whether there is a large group of people already in the UK who want to work in the construction sector.

The architectural profession is in a similar situation, where the recent recession forced many people out of the industry and into other careers or into early retirement. They are not returning



**'The construction industry as a whole takes about 10 per cent of its workforce from the EU, and their future is now uncertain'**

to work in the profession, so the increase in workload over the last few years has been met by an influx of EU trained graduates, many of who are as well trained, or better trained than their UK counterparts. Again, it is unlikely that they will be forced to leave, but like the wider industry, the profession will find it increasingly hard to employ trained graduates from abroad.

If the UK adopts the Australian points system for visas, it is likely to favour the more highly trained graduates who have more chance of getting through the system than the less educated lower skilled people. While this is potentially more positive for the architecture profession, it will continue to make things difficult for contractors

to find the site operatives they need.

On the contracting side, this seismic change in the freedom of movement is likely to add further momentum to prefabrication as a positive direction for the UK construction industry. Creating jobs in parts of the UK where there is a ready workforce is naturally going to take the pressure off construction sites, and because factory productivity is much higher than site productivity, fewer jobs will be needed to meet the demand for homes.

For materials the picture is much more complex. We import a great deal of construction materials – roughly 60 per cent of construction imports come from the EU, and this proportion is about double the material we export to the EU.

It is almost certain that the price of these materials will rise, and the uncertainty of pricing will make it less attractive to specify such materials in the short term. We import roughly £800m of sawn timber every quarter, and this is one of the areas that will be most severely affected by price changes. European sub-contractors and specialist suppliers, often highly valued for the high quality of their work, will also become more expensive.

While this uncertainty will be softened by the fact that China is now the largest source of construction imports, the next four countries in terms of import values are all EU members, Germany, Italy, Spain and the Netherlands.

We had four months to prepare for this decision, I anticipate that we will spend many years regretting it.

*Rory Bergin is a partner at Sustainable Futures, HTA Design.*



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## AWARDS

# Tall Building Awards winners reveal a diverse group of global giants

The regional winners of the Council on Tall Buildings and Urban Habitat 2016 Tall Building Awards have been announced, bringing together some of the globe's architectural behemoths with less extravagant but equally innovative achievements.

The winning buildings are VIA 57 WEST in Manhattan by Bjarke Ingels (Americas), Gensler Architects' Shanghai Tower (Asia & Australasia), The White Walls, Cyprus by Ateliers Jean Nouvel (Europe), and The Cube, Beirut by Orange Architects (Middle East & Africa).

The organisers commented: "The regional winners are inventive solutions that respond to demanding site constraints and drivers such as sustainability, seismicity, wind forces, mixed functionality, and a vibrant urban habitat. They include groundbreaking structural solutions and spatial arrangements at height."

Winners across five categories (also including the Regional Urban Habitat Award, Innovation Award, Performance Award, and 10 Year Award) will be recognised at the CTBUH 15th Annual Awards Symposium at the Illinois Institute of Technology, Chicago, on 3 November. The Best Tall Building award will be announced at a dinner that evening.

"Courtscraper" VIA 57 WEST is a new addition to the Manhattan skyline that also offers a new typology of skyscraper.

Shanghai Tower is currently the world's second tallest building at 632 m, and China's tallest. Its twisting form provides a 24 per cent saving in structural wind loading compared to a rectangular building of the same height.

Best Tall Building Europe Winner, The White Walls has transformed the urban silhouette of Nicosia, delivering a residential-office tower that is



VIA 57 WEST © Nic Lehoux

"unmistakably Mediterranean yet globally influential with its highly successful environmental considerations."

The Cube employs a residential design concept that offers residents outdoor areas and panoramic views of Beirut. The structure is thought to be unique in its use of self-consolidating concrete, allowing loads to be directed to four areas of rotated girders on every floor, with no additional structural slabs.



Shanghai Tower © Connie Zhou



The White Walls © Yiorgis Yerolymbos



The Cube © Matthijs van Roon

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Architect: Red Box design



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# future watch

Norman Hayden looks at how Building Biology, an established design methodology for creating healthier environments, is seeing a comeback as architects look to increase user wellbeing.

Creating green buildings, but also being able to accurately assess their environmental properties, is going to be one of the key issues for the construction industry in the future.

Most environmental assessments have concentrated on levels and forms of carbon consumption, and the effect this has on our surroundings. But, increasingly, the focus is on indoor quality of life and health, with assessments including requirements to reduce the quantity of toxins used in construction, and ensure that a sufficient amount of fresh air is supplied to homes.

Buildings constructed today often contain inherent chemical, physiological and biological risks as a result of materials and processes employed by the construction industry in a drive to minimise costs and build times. The UK currently falls behind European and global standards of best practice concerning the use of many materials.

Previously, this has led to what became known as 'sick building syndrome' producing chronically ill occupants. But the Building Biology ('Bau-biologie') movement goes further than toxin reduction; its science-based research reveals buildings made of natural materials, in addition to being environmentally friendly, boost health and well-being.

## What is Building Biology?

Building Biology is the holistic study of the relationships between humans and their man-made environment; the science of creating healthy, life enhancing buildings. The concept began in Germany in the early 1960s as a reaction to the growing numbers of chronically unwell people living in the mass-produced industrialised housing of the post-Second World War years.

This prompted the creation of a set of scientific standards for evaluating indoor environmental quality and 25 principles for building new homes and workplaces. These principles cover factors such as location, noise, emissions, site density, air quality and light.

The 1970s energy crisis saw insulating and sealing homes become a priority. In these tightly-sealed, poorly-vented homes moisture and air quality problems became rampant – and allergies and asthma gained ground.

In the 1980s, homes with lighter timber-framed homes came to the fore. However these were problematic in terms of



Building Biology criteria as they contained glues and timber treatments, and air tight barriers used were generally permeable to chemicals. Mitigating this to some degree, mechanical ventilation provided controlled outside air to neutralise potential pollutants and moisture created by the building and its occupants.

In Northern Europe, Building Biology has become synonymous with built environments that are healthy and ecologically sound. Born from its unique sociological and building context, the movement developed a standard for health and ecology.

Much of the wider green movement, in working with conventional materials and methods of construction, has sought to achieve healthier and more energy efficient homes via the introduction of increasingly sophisticated technology. This pointed to a future with sensor-driven equipment controlling temperature, humidity, light and ventilation, creating the optimally efficient 'machine' for living.

Building Biology also advocates eliminating toxins from the building process. By contrast it views the home as an organism that interacts with its natural environment, and regards the natural environment as the gold standard against which indoor environmental quality should be measured.

As part of seeing the building as a fundamental part of how our bodies function, exterior walls are seen as a sort of third skin, with the second being our clothing. As natural organic cottons and wool clothing create a more comfortable 'biological interface' than most synthetic fabrics being breathable and





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**'The Building Biology ('Bau-biologie') movement says its science-based research shows that buildings made from natural materials are healthy, green and create a sense of well-being'**

anti-static, natural building materials are viewed as the ideal solution within Building Biology for the same reason.

Following the Building Biology concept, wall materials are selected for their capacity to allow for the passage of vapour without deteriorating but this does not mean that additional synthetic vapour barriers will not be needed. In light weight constructions they will be an absolute must. The result is a comfortable interior climate from moderating natural conditions including the removal of outdoor pollutants.

The concept is unique in that it considers a variety of environmental quality parameters. According to followers of Building Biology, an ideal home environment should achieve a natural balance of ionisation, reduce the influence of human-caused electromagnetic fields, and avoid building over naturally occurring geopathic (subterranean) disturbances. Heat should be radiant without creating heat monotony, dust, noise or heat stratification, light and colour should be as found in nature, humidity should be balanced with natural heat and cooling provided – to name only some of the factors.

Building Biology principles are enshrined in the SBM 2015 standard which provides measurable targets for a healthy, risk-free living environment and allows clients to specify a certain environment and have it tested before practical completion.

#### The Green standards context

But there are of course other green building standards and rating systems in the marketplace to help guide, demonstrate, and document efforts to deliver sustainable, high-performance buildings. Among the better known are the BRE's BREEAM and the US Green Building Council standard Leadership in Energy and Environmental Design (LEED), as well as Energy Star, Green Globes, Living Building Challenge, and the new international WELL people-focused standard. They each aim, in different ways, to mitigate the impact of buildings on the natural environment through sustainable design.

With nearly 2.3 million buildings certified over its 25 year history, BREEAM is the most widely-established global sustainability standard. LEED has continued to grow in prominence and now includes rating systems for existing buildings and entire neighbourhoods. Others who have also responded to the growing interest and demand for sustainable design including the Green Building Initiative (GBI), which was created to assist the National Association of Homebuilders (NAHB) in promoting its Green Building Guidelines for Residential Structures.

Based in the UK, the Building Biology Association is an independent organisation whose purpose is to promote the awareness, understanding, design, construction and use of healthy buildings. And to promote the subject it recently



Peter Buckley Learning Centre, RHS Rosemoor, Devon © Joakim Borén



launched an English-speaking IBN Building Biology Consultant course (see below).

Working closely with the association, and one of the leading proponents of Building Biology in the UK, is Gale & Snowden Architects, based in Exeter. Established in 1992 by David Gale and Ian Snowden, the award-winning practice focuses on "regenerative design based on permaculture principles" and designs for all scales and types of projects. Its multi-disciplinary team provides architecture and mechanical engineering services and includes experts in sustainable, low energy and healthy building design. Projects combine principles of ecology, Building Biology, physics and landscape design principles with elegant, efficient architecture.

The practice's designs focus on a fabric first and optimal orientation approach based on Passivhaus principles to first minimise the energy demand of a building, reducing its carbon emissions, before adding renewables where appropriate. The result is low carbon solutions for the commercial, residential, culture and leisure, community and education sectors that respond to a changing climate and tackle fuel poverty at the same time.

Commercial sector projects include the restoration of Hallsannery country mansion near Bideford, Devon, to its former glory, and an outstanding recent education example is the Peter Buckley Learning Centre at RHS Rosemoor. The practice is also developing a series of ecological kit houses for self build or for complete prefabrication.

The practice is just one of many noticeable examples of the industry's increasing focus on healthy buildings. As this continues to grow, so the focus on Building Biology is likely to increase as clients demand greener, healthier environments.

*An online course offers professional certification as a Building Biology Consultant, registered with the IBN Building Biology Institute in Germany. For more information visit [www.buildingbiology.co.uk](http://www.buildingbiology.co.uk)*

# international focus

Visit the website [www.architectsdatafile.co.uk](http://www.architectsdatafile.co.uk) and enter the reference number for more information



**CALYPSO, JOUNEIH BAY, LEBANON**  
SOMA ARCHITECTS

SOMA has delivered an outstanding private residence in a significant milestone for the practice. Calypso hovers over the water like a crystal emerging from the rocks. The project weaves together architecture, lighting and landscape in a unified sculptural whole that fits perfectly into the site. The building's three distinct levels manifest themselves as glass strips 'folding' out of the surrounding rocks. The strips expand and contract, moulding each space to its particular function, and the spaces have been sculpted with extreme precision to allow for maximum views.

Ref: 29610



**HOTEL AM FISCHMARKT, RHEINBERG, GERMANY**  
JOI-DESIGN

JOI-Design has recently completed the interior design for this 37-bedroom boutique hotel. Contemporary design features have been integrated within existing traditional facades to form a skilful connection between old and new, inside and out. Materials such as steel, wood and glass are used to translate the typical architectural features of 19th century market halls into modern hotel spaces, while several interior details and finishes reference the town's maritime associations. This combination of elements conveys a loft-like aesthetic in the public areas, which is ideally suited to the hotel's warehouse district location.

Ref: 10149

## exploring architecture

showcasing the latest projects from around the world



**WATERGATE HOTEL, WASHINGTON D.C., UNITED STATES**  
**RON ARAD ARCHITECTS**

London-based practice Ron Arad Architects has re-designed the key public spaces for this hotel, made famous by the 1970s political scandal. Originally built by the Italian architect Luigi Moretti, Ron Arad Architects' design echoes and complements Moretti's original curves, and clean modernist palette of white plaster and marble. Repeating motifs are expressed continuously through the use of curved tubular bronze-patinated brass, polished copper and stainless steel, accompanied by sweeping oak-lined walls. This rich palette of metal and timber fashions and re-arranges the circulation route through the building, opening up a fluid sequence of spaces. A discreet polished stainless steel frame supports a sweeping array of 2,450 whisky bottles, which define the whisky bar; and wash it with rich amber light.

Ref: 83847



**AYHAN SAHENK FACULTY OF AGRICULTURAL SCIENCES, NIGDE, TURKEY**  
**PAB ARCHITECTS**

PAB Architects created socialising areas for the students with a courtyard design integrated with the landscape in Ayhan Sahenk Faculty of Agricultural Sciences and Technologies building. The wheat pattern on the facade (which was designed by PAB and graphic designer Didem Ates) is the first example in Turkey of an implementation with digital printing at such scale. The project, the winning proposal in an invited competition process, is now in use. It was awarded Second Prize in Turkey's 2013 national Most Successful Real Estate Investments competition.

Ref: 27280



**GÖTEBORG LANDVETTER AIRPORT, GOTHENBURG, SWEDEN**  
**NCC**

NCC has been commissioned to expand the international terminal at Göteborg Landvetter Airport, outside Gothenburg. The project is being carried out in the form of a partnering arrangement with the client Swedavia. The terminal building needs to be expanded due to the increasing number of passengers travelling to and from Landvetter Airport in recent years. NCC's assignment involves adding three gates for airplanes and two for buses to the existing terminal. When finished, the terminal will be approximately 10,000 m<sup>2</sup> and it will be possible to separate arriving and departing passengers.

Ref: 42160



# cpd focus

## BREATHING LIFE INTO CITIES



**Scotscape's** living wall CPD 'Breathing Life into Cities' is now available via webinar. The webinar is led by our living wall expert Niall McEvoy and takes approximately 1 hour with a 15 minute period for Q&A. As specialists in the design, supply, installation and maintenance of Living Wall systems, we are delighted to be able to offer CPDs on this topical subject. The Webinar is presented in real time, making it interactive and easy to exchange and discuss information. Niall McEvoy will be on camera and will take viewers through a visual power point presentation on the design, installation and maintenance of Living Walls. There is a live chat at the bottom of the webinar session which allows you ask any questions you may have, and there is also a microphone Q&A session at the end of the presentation which also allows you to speak with Niall and your group. Attending our webinar is very simple and there is no need to download any software. Scotscape specialises in the design, installation and maintenance of living walls across the UK and Europe. Our long experience in the living wall market allows us to bring considered insight into best practice and straight forward installations to maximise the introduction of vertical greening into the built environment and create more sustainable urban environments. Along-with our proactive CPD programme for architects we also train other committed professional landscapers to use our system via interactive training days and full understanding of the construction of living walls can be shared. To find out more about Scotscape's installations and to register on a training day, please visit the website.

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enq. 112

## TWO NEW RIBA ASSESSED CPD SEMINARS FROM COMAR



In two RIBA assessed seminars, **Comar** outlines:  
**'Stand & Deliver: a Study of curtain Walling'** – the design of curtain walling, it's properties and how it is used by specifiers. This seminar aims to offer an understanding of the points of Hill in the NBS specification system, and how best to make use of it.  
**'Designing functions & reliability into entrances'** – the issues that influence the function of main entrance design and technology. This seminar aims to offer an understanding of how user expectation influences door design and links this with hardware selection, entrance configuration and floor finishes.

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## SPECIFYING, INSTALLING AND MAINTAINING IRONMONGERY FOR FIRE DOORS



**GEZE UK's** new RIBA approved CPD seminar focus on the importance of fire safety on manual doors. 'Specifying, Installing and Maintaining Ironmongery for Fire Doors' defines what fire doors are, identifies their various components, how they work, why smoke is so dangerous and the standards and regulations which surround them. The subject is part of the core curriculum for RIBA and is included within two of its ten subject areas – being safe: health and safety and Designing and building it: design, construction, technology and engineering.

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## UNDERSTANDING U.K BUILDING REGULATIONS RELATING TO RESIDENTIAL VENTILATION AND VENTILATION WITH HEAT RECOVERY



This CPD from **Airflow Developments**, specialists in air movement for over 60 years discusses the reasons why we need to improve indoor air quality in residential buildings and the Building Regulations that need to be adhered to for delivery of an effective, compliant ventilation strategy.

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- Understanding Compliance Guides and their place in the specification process
- Good, better, best – From a simple extractor fan How Mechanical Ventilation with heat recovery can provide the complete ventilation solution
- A system is only as good as the ducting installation – The do's and don'ts of installing a system
- Sign off by Building Control is mandatory – How to comply

Advise clients on the aspects of a poor indoor environment that can effect occupant health and degrade the fabric of a building  
 Explain the principle of operation of a Mechanical Ventilation with heat recovery system and where it will provide the most suitable ventilation solution.  
 Fully understand that proper attention must be paid to the correct installation of ducting and the consequences in energy loss and fan performance when it is not.  
 An overview of how to commission a fan system so that 'Installed Performance' standards are met and Building Control will sign off the project.

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## A CPD JOURNEY: THE FLEXIBLE SPACE ROAD MAP



Karl Stauss, Sales Manager at **AET Flexible Space** is taking Architects and Consultants on his tailor made CPD Journey. Many designers and engineers are unfamiliar with underfloor systems and there is a tendency to specify familiar and known systems. This latest CPD has been tailored to encourage designers to think differently when specifying air conditioning; answering frequently asked questions and unravelling the myths. Karl Stauss will demonstrate the features and benefits that can be applied to a wide range of design challenges.

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## A GUIDE TO LIQUID ROOFING SYSTEMS



Common flat roof problems such as persistent leaks are simply not an issue when using quality liquid systems. Now the fastest growing sector within the flat roofing market, liquids are increasingly being specified in place of traditional roll-applied systems, such as felt and single-ply. **Polyroof's** free certified CPD Seminar 'A Guide to Liquid Roofing Systems' is the ideal solution to stay in touch with the latest technology and advances in the field. Available with a practical demonstration showing the abilities of liquid roofing systems, the seminar can be held at your offices or a location of your choice.

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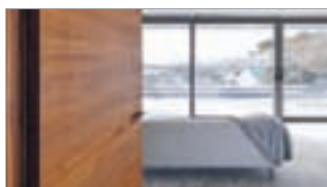
### POLYFLOR'S UPDATED VINYL FLOORING CPD SESSIONS



**Polyflor**, has announced the launch of three new CPD seminars, including updated sessions on the "Specification of Vinyl Floorcoverings", "Specification of Safety Vinyl Floorcoverings" and a new seminar about the "Specification of Dementia-Friendly Flooring". New for 2016, the dementia-friendly flooring session also includes helpful information on understanding more about the condition and the appropriate design principles which need to be considered when specifying flooring for dementia-friendly environments.

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### URBAN FRONT NEW WORKSHOP TOUR



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### SUSTAINABILITY AND ITS IMPLICATIONS ON SPECIFYING ALUMINIUM SYSTEMS



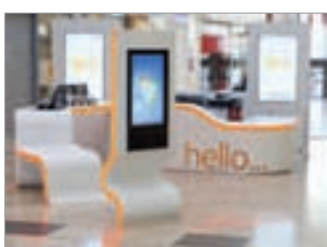
### STEP ON IT!



**Quantum Flooring Solutions'** CPD looks at the guidelines for the specification of a safe stairway. The presentation deals with the subject of how to make commercial stairways safe and meet with all current building regulation guidelines. The CPD presentation includes: What stair nosings are designed to achieve and how to select the right one; Key Legislation and Industry Standards; How recent BRE and Equality Act (Formerly DDA) guidelines affect specifications; Environmental and Health and Safety considerations; Examples of best practice. The seminar lasts 45-60 minutes including time for a Q and A session. All seminars are part of the RIBA core curriculum syllabus and earn double CPD points for those attending the seminars.

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### SOLID SURFACES CPD SEMINAR



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**Reynaers** has proved its commitment to provide high quality CPD material to architects and specifiers with its new programme, which is independently certified and approved by RIBA and the CPD Certification Service.

The latest in the company's modules of CPD presentations covers sustainability and aluminium systems.

The new Reynaers RIBA-approved CPD module is now available to help architects and specifiers develop their knowledge and earn points. The material is exclusive to architects and specifiers and is offered as a 45-minute seminar across the UK.

The latest CPD module – 'Sustainability and its implications on Specifying Aluminium Systems' – will cover:

- Aluminium systems, including background and industry information
- Aluminium as a material
- Drivers in the growth of

sustainable glazing, including Doc L and BREEAM

- The evolution of aluminium window design and thermal performance.

It will aid architects in specifying the right product with the optimum level of performance for their project. Full details of the seminars and how to register can be found on the website.

Marketing manager at Reynaers Rebecca Cope said: "This is the first CPD programme we've undertaken with RIBA and it really showcases how innovative and sustainable architectural aluminium systems can be."

As well as a wide range of standard solutions, Reynaers also develops bespoke solutions for all market sectors – from residential to commercial and industrial projects. Read about the latest project in Barcelona on the website.

0121 421 1999  
www.reynaers.co.uk/CPD  
enq. 123

## NEW MEDICAL CENTRE

# Alison Brooks to design Taunton Maggie's Centre

The latest Maggie's Centre for supporting people with cancer to feature a leading architect is a building in Taunton, Somerset, which will be designed by Alison Brooks Architects.

Design and architecture have always been central to Maggie's Centres, which have seen an impressive list of major architects leading their design including Frank Gehry, Zaha Hadid, OMA, Rogers Stirk Harbour and Steven Holl. The centres commonly offer a calm as well as uplifting environment as well as an evidence-based programme of support.

Brooks and team will design Maggie's Taunton for a site on the fringes of Musgrove Park Hospital, and the architect has joined forces with Johanna Gibbons of JLG Landscape Architecture and structural engineers Webb Yates for the project.

Laura Lee, chief executive at Maggie's, which is a registered charity, commented: "We are excited by the designs put forward by Alison Brooks and JLG. Great design and architecture are integral to what we do as every one of our centres is specially designed to welcome people and offer them a place to seek practical advice, talk to others with cancer or just sit quietly with a cup of tea while awaiting appointments."

Alison Brooks said: "We're honoured to be working with Maggie's to design a new centre in Taunton. Our project will build on Maggie Keswick Jencks' legacy of extraordinary and uplifting spaces for cancer patients and their families."



*'Our project will build on Maggie Keswick Jencks' legacy of creating extraordinary and uplifting spaces for cancer patients and their families'*

Alison Brooks, architect

## New team members reflect Sto's UK success



The appointment of two highly experienced recruits to the Sto UK technical sales team has underlined the increasing popularity of the company's range of external wall insulation, rainscreen cladding and facade render products.

Brendan Culleton and Melanie Hayman will expand Sto's presence in the UK marketplace, and increase the level of support which the company supplies to architects, contractors, developers and applicators. Brendan brings a wealth of experience to his new position as Key Account Manager. Melanie is appointed to the role of Technical Consultant and will work throughout the London and Home Counties region.

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enq.124

## New, improved and accessible on the move!



Remmers UK Ltd has given their website a fresh new look and the fluent, responsive design means that it can now also be viewed on both desktop and mobile devices easily. The new site enables all visitors access to a wide range of detailed information quickly and efficiently. Highlights include Remmers product catalogues, technical data

sheets, in-house and NBS specification guides, colour charts, literature and system specific project references along with a host of other helpful product and system information. The website also has an up-to-date news section and integrated social media links to Remmers Twitter, Facebook and Linked-In pages.

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enq.125

## Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. [architectsdatafile.co.uk](http://architectsdatafile.co.uk) is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

[www.architectsdatafile.co.uk](http://www.architectsdatafile.co.uk)

## illbruck's TP600 turns 20



illbruck is celebrating its TP600 Compriband joint sealing tape's 20th birthday. illbruck TP600 Compriband 600 is a joint sealing tape for outdoor use. It is highly flexible, which allows it to provide a weather-tight seal for facade joints with a depth of up to 40mm. TP600 fulfils all the requirements of BG1 in accordance with DIN 18542 and bears the CE mark. Tremco illbruck has been testing TP600 in real-life circumstances in Bodenwohr, Germany since 1995 and, after 20 years of weathering, TP600 is still going strong. The tape has survived harsh weather conditions such as ice, snow, driving rain and UV radiation

and still has the same movement qualities as it did 20 years ago.

enq.126

## Three decades of quality and innovation



PVC-U systems supplier The VEKA UK Group is marking its 30th year of manufacturing in the UK with a host of celebrations. MD Dave Jones believes that The VEKA UK Group's success can be largely contributed to its 'partnering' approach with customers. "If we're not providing the perfect products for the market, we don't deserve to

succeed. That's why we develop our PVC-U systems and services based on valuable feedback." The VEKA UK Group marks the anniversary with a celebratory staff event at Burnley FC's Turf Moor, a promotion in the local paper, and the official unveiling of the NEW M70 profile system.

01282 716611 [www.vekauk.com](http://www.vekauk.com)

enq.128



# Rewards for young professionals

The winners of the annual Construction Development Alliance (CDA) Awards were revealed recently at Burnley Mechanics Theatre, during a ceremony hosted by television personality Dominic Littlewood.

Developed to support the future of the property and construction industry in the North West, the awards, sponsored by Sika Sarnafil, recognise the hard work, determination and growth of young people in the sector.

Bobby Bolton, 23 year old construction manager at LendLease, was crowned Young Construction Professional and Overall Winner at the awards.

Sika Roofing, single ply roofing manufacturer, has continued its support of the event this year and is looking to help drive the development of future construction workers.

Rod Benson, Sika Roofing said: "Our involvement ensures that the CDA can continue to maximise the potential of young professionals in a sector that is suffering a major skills shortfall. Encouraging people into the industry through

offering apprenticeships will help to close the gap and ease the pressure on the existing workforce."

A recent report from the Construction Industry Training Board (CITB) predicts that thousands of new roles will be required to meet demand in the next five years.

"The lack of construction apprentices is something we are actively lobbying in Westminster in conjunction with the National Federation of Roofing Contractors (NFRC)," added Rod Benson. "The awards are another positive way of tackling this issue."

The remaining category winners are as follows: Pearl Cavaney, Young Designer (Burnley College); Lucy Anderson - Young Construction Environmentalist (Sheffield Hallam University); Franchesca Hurn - Young Construction Apprentice (M's Touch Female decorators) and James Eastham - Overcoming Adversity (Eric Wright Construction)

Reid Lewis, speaking on behalf of the CDA North Manchester region, said: "It's so important that we celebrate the exceptional young talent

Left to right: Reid Lewis (RGP); Morgan Rothwell (D&M Creative); James Eastham; Pearl Cavaney; Franchesca Hurn; Lucy Anderson; Bobby Bolton; Dominic Littlewood. To the rear - Duncan Ray (Raydar Safety)



within the North West. We received triple the amount of nominations compared to last year from all sections of society, from colleges and industry and the standard of entry was extremely high, so we want to congratulate all of the winners and nominees."

As part of the awards event attendees raised over £2,500 for a local Blackburn YMCA housing project, a charity close to the CDA's heart as it supports the personal growth and development of vulnerable young people.

01707 394444 [www.sika.co.uk](http://www.sika.co.uk)

enq.129

## Rodger Allan joins GEZE UK sales team



GEZE UK has reinforced its presence in Scotland with the appointment of Rodger Allan as area sales manager for automatic door systems. Rodger has 13 years' industry experience encompassing all aspects of the sales process, from inspiration through to specification, design and purchase negotiation. Throughout his career he has specialised in developing markets for Scotland and Northern Ireland. In his new role, Rodger will be responsible for building and developing relationships with clients and working with them to find the best solution for each project. He will work closely with fabrication companies as well architects, specifiers and contractors to recommend the right products from the company's comprehensive range.

01543 443000 [www.geze.co.uk](http://www.geze.co.uk)

enq.130

## High hygiene characteristics of tiled surfaces



The Tile Association and its members are promoting the hygiene advantages of correctly installed tiled surfaces, especially in commercial kitchens and food preparation environments. Tiled surfaces are entirely safe to install and use in hygiene-sensitive installations, particularly if large format porcelain tiles are used with epoxy grouts. Tiled surfaces can safely be cleaned at temperatures in excess of 60°C, since tiles are fired to temperatures far above that during the manufacturing process. This means that tiles are a good solution in an environment where boiling liquids might get spilt on them.

0300 365 8453 [www.tiles.org.uk](http://www.tiles.org.uk)

enq.131

## Construction United welcomes Morgan Sindall partnership



Construction United, a coalition of some of the construction industry's key stakeholders which aims to change perceptions of the sector, has recently welcomed leading UK construction and regeneration group, Morgan Sindall plc, to its ranks. As one of the initiative's partners, Morgan Sindall will support Construction United in its three key objectives; improving public perceptions of construction, encouraging young people to consider careers in the industry and maximising the health and wellbeing of its workers. Formed in February 2016, Construction United has already gained the support of influential product distributor SIG, trade bodies including the Finishes and Interiors Sector (FIS) and the Thermal Insulation Contractors Association (TICA), and leading skills certification scheme, CSCS. The initiative has also selected The Prince's Trust, Crash and Time to Change as its key charities, which it will support through fundraising activities which will be held from the 17th to the 23rd of October this year. Graham Edgell, Director of Sustainability and Procurement at Morgan Sindall plc said: "Public perceptions of the industry have an effect on all of us, and it's vital to address this if the sector is going to continue to grow."

@ConstructionUtd [www.constructionunited.co.uk](http://www.constructionunited.co.uk)

enq.132

# Jackoboard awarded BBA Certificate for total system



**T**ileBacker Limited is delighted to announce the award of a BBA (British Board of Agreement) Certificate for Jackoboard products and systems. British owned TileBacker Limited is the sole distributor of German manufactured Jackoboard products in the UK and Eire.

The Jackoboard BBA Certificate covers the full range of Jackoboard XPS (Extruded Polystyrene) cored products including construction boards, shower bases, and sealing systems – a rarity in this type of product. In addition, Jackoboard's Certificate covers usage of the construction boards to achieve high thermal insulation values – again almost unique for this type of product.

The British Board of Agreement, based at the Building Research Establishment, is a non-profit distributing organisation which has developed rigorous inspection and certification services to provide reassurance to the construction industry



that manufacturers' products are 'fit for purpose'. Only products that have passed a series of comprehensive assessments – including laboratory tests, on-site evaluations, quality management checks and production line inspection – are awarded an Agreement Certificate.

With XPS products a particular area of concern is that gases used in manufacture are legally compliant with environmental legislation related to ozone layer depletion. This is currently a major issue with recent tests showing that boards

manufactured in China are being produced incorporating banned and toxic substances.

For architects, specifiers, building control, construction companies and government departments the BBA Certificate is a mark of quality, safety, reliability and 'peace-of-mind' and, crucially, that the product is all a manufacturer claims it to be.

Colin Higham, Managing Director of TileBacker said "We are delighted to be awarded a BBA Certificate after only three years activity in the UK marketplace. Jackoboard's reputation for very high quality in both materials and processes is well-established throughout Europe and our BBA Certificate now confirms this position in the UK. The inclusion of thermal values in the Certificate opens up further exciting opportunities for Jackoboard in the insulation fields."

01204 221089 [www.tile-backer.co.uk](http://www.tile-backer.co.uk)

enq.133

## New coating helps prevent static build up



Engineers from a leading water company occasionally felt an electric shock when undertaking maintenance work on sewerage tanks. This highlighted a significant potential risk as the tanks contents are vented to release flammable gases. A build up of static was occurring when operators wearing rubber boots walked across the roofs of

the metal tanks. **Delvemade** has created a conductive coating that could effectively protect the tank and help dissipate the static build up. The new product called Delcote ASC, has been shown in tests to help prevent the build-up of static. The meter shows electrical flow across Delcote ASC coating.

01204 868604 [www.delvemade.co.uk](http://www.delvemade.co.uk)

enq.134

## Wraptite-SA protects historic church



Wraptite-SA airtight membrane from **A. Proctor Group** has demonstrated its outstanding flexibility to offer high performance protection, in the restoration of a historic church building, damaged by the earthquake, which hit Japan in 2011. The arched windows

presented a challenge when specifying a suitable water resistant membrane, which was flexible, yet resilient to resist punctures and tears, and provide high performance protection for the building. Mr Kusumoto selected Wraptite-SA, which was perfectly suited to work around the window arches, achieving full water protection. Wraptite-SA, is a self-adhering, airtight, yet vapor permeable barrier, which is fully water resistant and was applied externally to the walls, and the windows.

01250 872261 [www.proctorgroup.com/air-barriers](http://www.proctorgroup.com/air-barriers)

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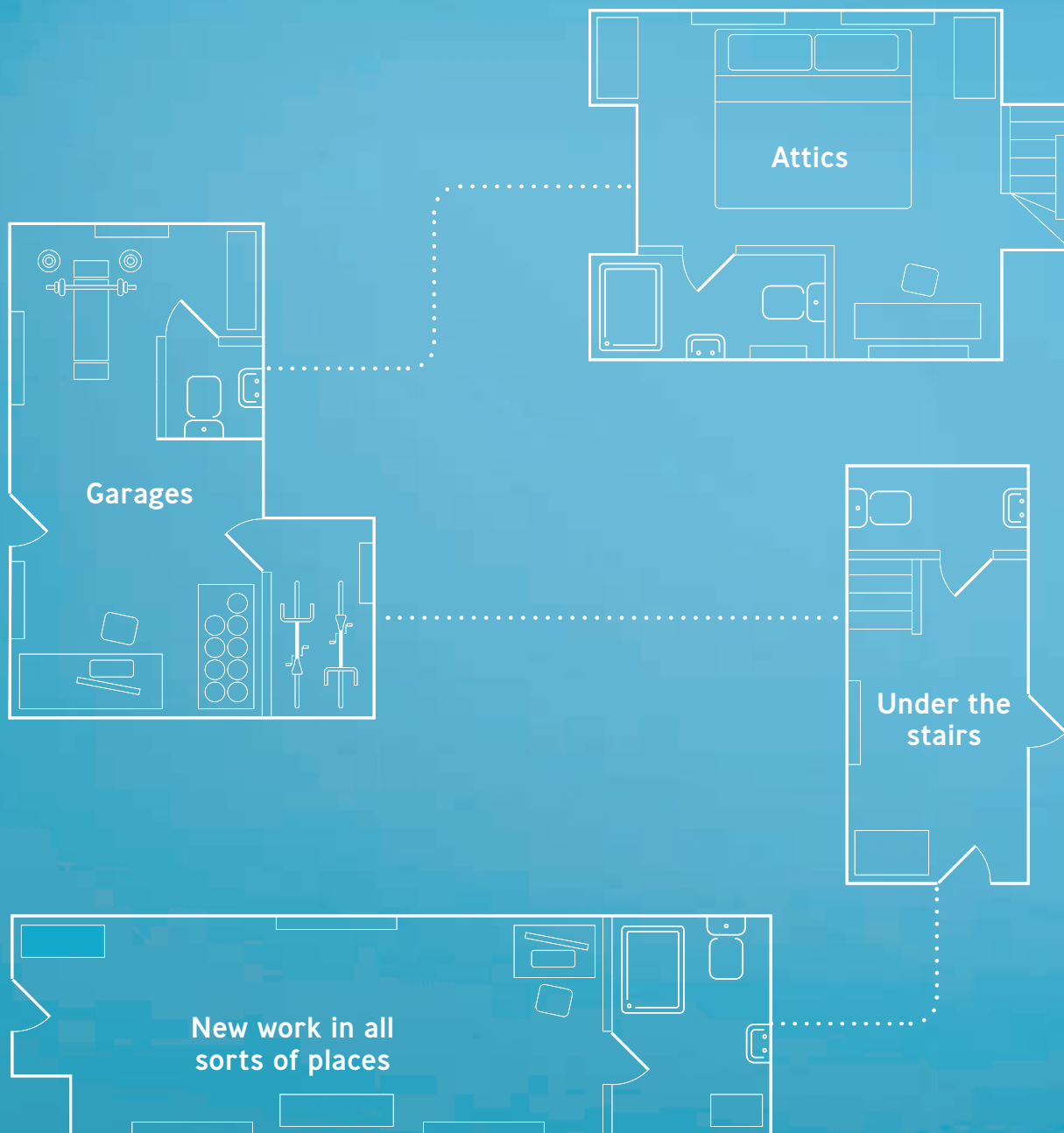
## Dramatic Water Savings by Ambassador Theatre Group



Six famous London Theatres have now installed Falcon Waterless Urinals from **Relcross** in their gents' toilets. The Savoy Theatre, The Harold Pinter Theatre, The Playhouse Theatre, The Duke of York's, The Fortune and The Trafalgar Studios are now enjoying water savings of up to 150,000 litres of water per year, per urinal – a massive saving in water charges. They are soon to be joined by The Apollo Victoria. The Falcon Flax urinals are designed to optionally carry advertisements across the top of the urinal. This maximises the commercial opportunity presented by a captive audience while removing a hygiene problem of wall mounted advertisements. The urinal mounted ads are easily cleaned with the urinals and offer no nooks or crannies to harbour bacteria. Venues such as theatres, sports stadia and conference centres are enthusiastic users of waterless urinals as so much water is currently wasted by automatically flushing urinals all day, every day but with actual usage concentrated into short, busy periods followed by further inactivity. The Ambassador Theatre Group joins the Dolphin Stadium in Miami, the Nou Camp in Barcelona, the Riverside Stadium in Middlesbrough and many others who have installed Falcon Waterless Urinals.

01380 729600 [www.waterlesscartridges.co.uk](http://www.waterlesscartridges.co.uk)

enq.136



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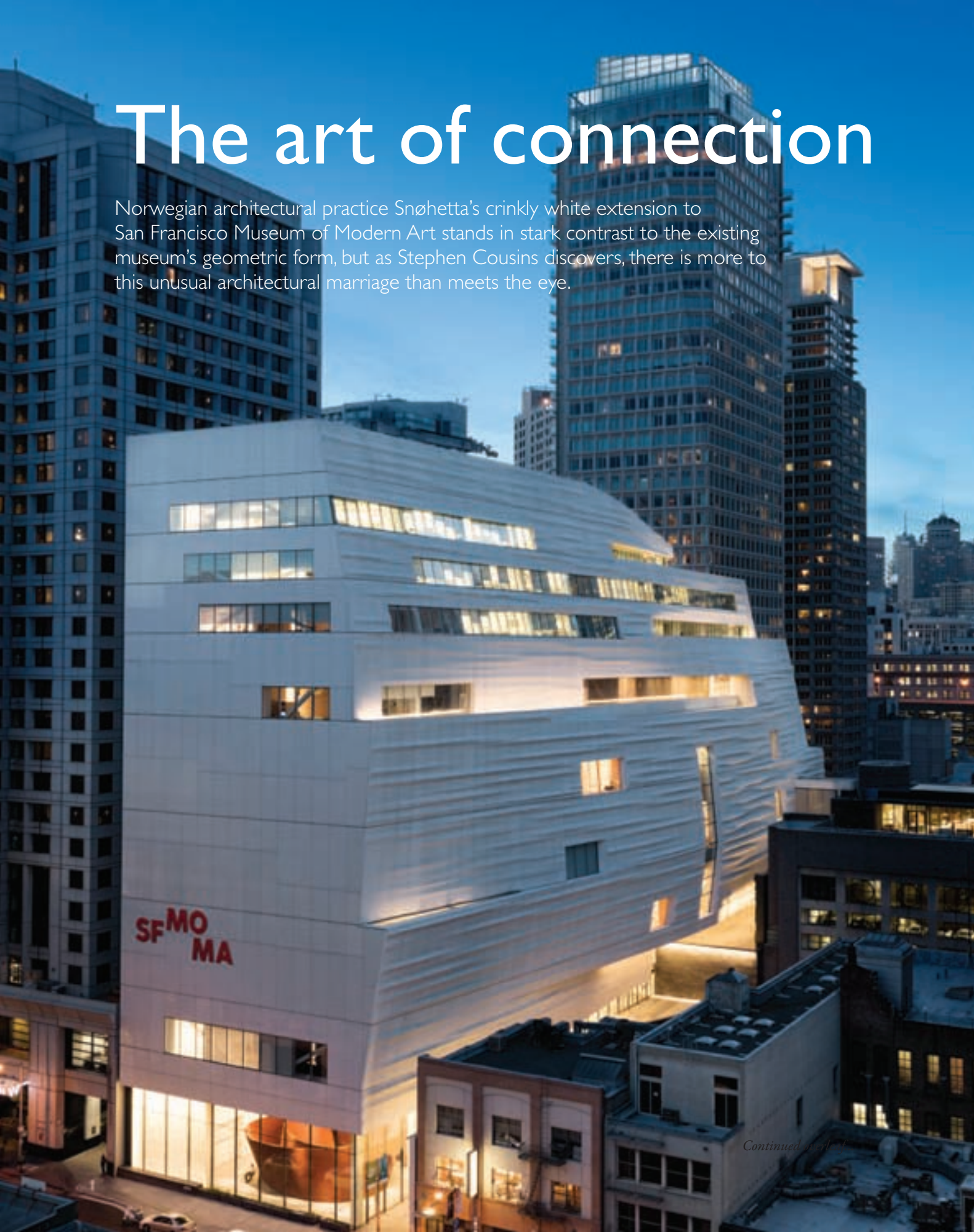
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# The art of connection

Norwegian architectural practice Snøhetta's crinkly white extension to San Francisco Museum of Modern Art stands in stark contrast to the existing museum's geometric form, but as Stephen Cousins discovers, there is more to this unusual architectural marriage than meets the eye.



*Continued next page*



The new extension by Snøhetta contrasts with architect Mario Botta's 1995 redbrick SFMOMA building; Photo Jon McNeal, © Snøhetta

Rising like a giant cliff face over the streets of San Francisco, the \$305m extension to the San Francisco Museum of Modern Art (SFMOMA) represents a radical departure from the original museum to which it is attached.

When it was opened in 1995, the museum was the first US building by renowned Swiss architect Mario Botta. Its robust, angular postmodern geometry and squat profile were initially greeted frostily by critics, but the building went on to become an iconic and familiar presence in the South of Market neighbourhood.

Snøhetta's addition looms up behind the original and almost triples the amount of gallery space. Its elongated profile and striated white cladding contrast markedly with Botta's flat red brick facade and oculus of zebra-striped granite, manifesting a unique and unmistakable presence in the city.

### Dancing partners

But Snøhetta's intention was never to copy Botta's design, instead the firm wanted to create what it has described as a 'dancing partner' that complements the older building, while trying not to step on its toes.

Jon McNeal, project architect at Snøhetta told ADF: "On the exterior, the buildings represent two different attitudes from two different times, they maintain their own distinct identities and don't look like they are trying to merge into a single statement. On the interior, we wanted to create a

relatively seamless experience so the spaces linking the buildings flow together enabling free movement and easy experience of the art."

The 21,832 m<sup>2</sup> extension runs contiguously along the back of the existing building, it includes seven floors of gallery space capped by three levels for administration departments.

Entering the new Howard Street entrance, visitors ascend an amphitheatre staircase overlooking San Francisco-native sculptor Richard Serra's epic 13-foot-high work, *Sequence*. A wide lobby stretching across the second floor creates an open connection between that space and the original building's entrance, along Third Street.

Here, Botta's huge sculptural staircase under the oculus has been removed, replaced by a much smaller staircase, also clad in maple. Aside from the galleries, there is a multipurpose performance space, two restaurants and a spacious third floor dedicated almost entirely to photography, plus terraces for viewing sculpture.

### Ripples and fog

On the exterior, Snøhetta wanted to evoke a sense of both the local landscape and the collection of art housed inside. The longest (east) facade is covered by over 700 fibre-reinforced polymer panels which create an extended pattern of ripples mirroring the choppy waters of San Francisco Bay.

The facade undulates and bulges at its centre, reflecting the hilly topography of San Francisco and the clouds of white fog





Snøhetta's major extension offers a naturalistic approach the firm has employed in some previous projects  
photo © Henrik Kam, courtesy SFMOMA

that occasionally roll off the hills, pushing between the high rise buildings as if cutting the city into slices.

This naturalistic approach is one Snøhetta has used before, notably for the glacier-like opera house in Oslo, where the firm was founded.

The sheer scale of the new wing was needed to exploit the influx of visitors and tourists to the South of Market district of the city. Back in 1995, when Botta's building was erected, the neighbourhood was a rundown area, characterised by dilapidated buildings and little development. In the intervening 21 years, hotels, cafes, restaurants, shops, and other cultural buildings have sprung up, plus a large convention centre that pulls in millions of visitors from out of town each year.

McNeal comments on the expansion: "It is an active cultural and tourist destination in a way that was never envisioned when the original building was constructed. The museum's mission has changed too, it is no longer there just to develop and protect the art, but to make sure it is accessible to more people, which meant taking a very different approach to the street frontage."

A dizzying total of 1,900 works went on display when the new museum opened, designed to show off the greatly expanded collection.

### Large and opaque

As well as being physically large, the extension had to be very opaque to prevent sunlight from damaging the sensitive

artwork inside and to meet strict sustainability requirements under California's Building Energy Efficiency Standards, which discourage the use of extensively glazed facades in order to mitigate cooling requirements. The facade is punctured by just a few strip windows at locations where daylight and views don't impinge on the artworks.

Snøhetta developed over 100 concept models for facade treatments in effort to identify one that would give the building a strong personality and make it more friendly to its neighbours.

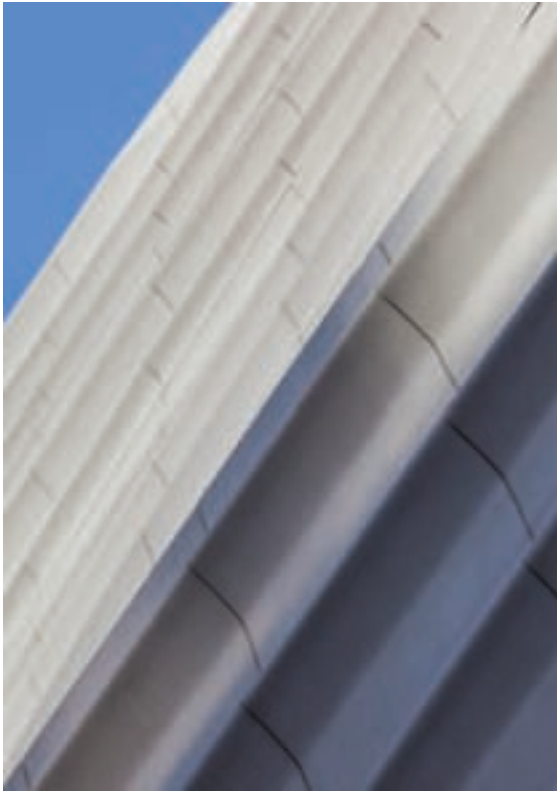
"The idea for the 'ripple-scape' won out over other ideas because we saw that it would self-animate the building, compared to having a flat facade, or a repeat pattern, creating different shadows at different times of day as the sun moves around the site," says McNeal.

More dynamism was introduced by curving the facade, vertically and from north to south around the centre, which increases the amount of shadow on the northern end and, by cutting off views along the length of the museum, helps break down its volume to a more human scale.

The bulging centre accommodates the vertical stair and lift circulation, minimising the need for corridors and hallways. This allowed the corners of the building to be pushed back from the street, to bring in more daylight and improve views.

Rather than clad the expansion with stone or precast concrete, which would increase weight and cost, Snøhetta worked with cladding contractor Enclos and facade manufacturer Kreysler and Associates to develop a





© Henrik Kam,  
courtesy SFMOMA

*'The longest (east) facade is covered by over 700 fibre-reinforced polymer panels which create an extended pattern of ripples mirroring the choppy waters of San Francisco Bay'*

lightweight substitute material option for the facade.

Their solution is an elegant hybrid curtain wall system made up of FRP (fibre-reinforced polyester) cladding panels, almost all of them unique and malleable enough to hold the ripple design.

Each panel is around three eighths of an inch thick and comprises layers of FRP matting covered with a layer of epoxy and a surface layer of sand. The ripples, in combination with the epoxy, increase strength and stiffness, and a shallow return perpendicular to the surface attaches it back to an aluminium curtain wall sub-frame.

### Standardising the facade

The sub-frame is similar to that used in office blocks, but instead of panes of glass, blank aluminium panels backed by a layer of insulation are installed between the mullions. The standardisation of the frame helped minimise costs as well as achieve the curving geometry in the FRP skin.

The sub-frame is composed of just two different types of panels; the vast majority are flat, around 5 ft 4 in wide and anywhere from 14 ft to 25 ft tall, depending on the floor to floor height. The rest are transition panels, creased from one corner to the other and designed to accommodate the curvature of the facade.

The combination of flat panels and transition panels made it possible to wrap the building with a seemingly continuous skin of FRP over the top. The FRP was attached to the aluminium curtain wall panels in Kryslar's factory, then delivered to site on a flatbed truck and hung straight on the building.

The modular design enabled easy installation by operatives stood on the edge of the floor slabs, with no need for scaffolding, or post-installation exterior sealants or gasketing.

"The extremely aggressive construction schedule and a very tight site meant there was little space or time to build scaffolding, so it was key for us and the contractor to develop the facade system the way we did," says McNeal.

### Whole lotta shakin'

Snøhetta's dance partner analogy extends to the way the two buildings respond to one another in the event of an earthquake.

Each moves differently during tremors, due to the fact that Botta's building is wider and more squat in shape, whereas the extension is thin and relatively tall. A physical gap between



SFMOMA viewed from Yerba Buena Gardens;  
photo © Henrik Kam,  
courtesy SFMOMA

the two therefore had to be maintained to prevent damage to one another during a quake – wide enough to allow horizontal movement of 1 per cent of the building's height above the ground.

Specialist joint covers were installed where the buildings connect to enable continuity of floor and wall surfaces. For example, special interior floor panels are designed to kick up during an earthquake, like a hinge on a door, enabling the concrete slabs underneath to move closer together. The same panels fall down onto the slab edges when the buildings move apart.

"It is very unusual to have a system like this installed in a building as tall as ours," says McNeal. "The Botta building is over 100 ft tall, the surface geometry has lots of ins and outs, and different massing, and we had to develop a system to cover all those different conditions. There are about 50 different types of connections between the two."

It's another example of how the two buildings come together but simultaneously maintain a distinct separation. It's an architectural marriage for certain, but is it a match made in

*'The combination of flat panels and transition panels made it possible to wrap the building with a seemingly continuous skin of fibre-reinforced polyester'*

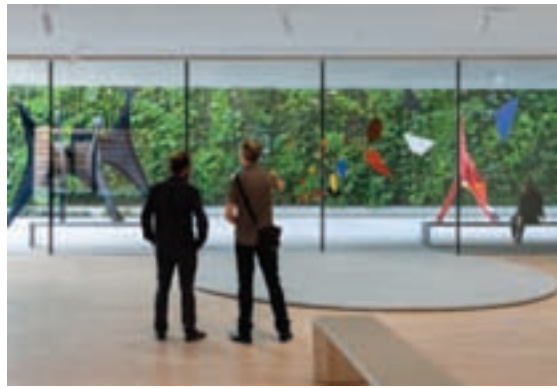
heaven or the equivalent a bad blind date? Mario Botta's last statement was that he would reserve judgement until he sees the new building in person.

In some ways it is understandable that he would have concerns, says McNeal: "The original was his first and only building in the US and it is not a particularly old building, so he was sensitive to any modifications. What should not be lost in the media chatter is that we were able to build an extension because of the success of the original building and not in spite of it. Some people look at an addition as a knock to the original, but I always saw it as the opposite," he concludes.





Far left: Alexander Calder's mobile sculpture *Untitled* (1963) on view in the atrium; photo © Iwan Baan, courtesy SFMOMA



Top right: Helen and Charles Schwab Hall featuring Sol Lewitt's 1999 sculpture *Wall Drawing 895 Loopy Doopy*; photo © Henrik Kam, courtesy SFMOMA

Left: Alexander Calder Motion Lab in the Fisher Collection exhibit; photo © Iwan Baan, courtesy SFMOMA



Bottom left: Sculpture Terrace featuring Alexander Calder's sculpture *Maquette for Trois Disques*, formerly *Man* (1967); photo © Henrik Kam, courtesy SFMOMA

Bottom right: *California and the West* – Photography from the Campaign for Art exhibition; photo © Joe Fletcher, courtesy SFMOMA

## Project details

**Architect:** Snøhetta

**Client:** San Francisco Museum of Modern Art

**Structural engineer:** MKA

**Mechanical engineer:** Taylor Engineering

**Electrical engineer:** The Engineering Enterprise

**Facade contractor:** Enclos

**General contractor:** Webcor

**Facade engineer:** Arup



# Lunar Copper

At the heart of the renovation and upgrading of 'the Moon' children's art centre in the Belgian city of Mechelen is a new, small theatre complex – a golden cube defined by its extraordinary, creased Nordic Royal copper alloy cladding.

The project's designers, Antwerp based import.export Architecture, were inspired by associations of 'the Moon' with the Apollo 11 Lunar Module and its crumpled golden metal underside. This aesthetic is presented as a contemporary reflection on the intricate stone tracery of the neighbouring medieval cathedral tower, despite being achieved within a modest budget.

The architects worked with specialist fabricators Ridder experimenting with pressing and folding flat metal over a blade, resulting in a series of gentle creases – almost, but not quite, 3-D. Then, seven different designs of panels were produced using press moulds, each with folds running across at various angles and intensities. By rotating and

intermingling different panels a rich, random effect was created. The verticality of the overlapping panels is retained, giving structure to the facades, but most transverse joints are not horizontal, further fragmenting the surface.

Nordic Royal is produced by Aurubis, part of the world's leading integrated copper group and largest copper recycler. Nordic Royal is an innovative alloy of copper with aluminium and zinc, giving a rich golden through-colour that is very stable. The surface retains its golden colour and simply loses some of its sheen as the oxide layer thickens with exposure to the atmosphere, resulting in a protective matt finish. It behaves differently to other copper products over time and does not develop a blue or green patina.

Other copper alloys from Aurubis include Nordic Bronze and Nordic Brass – now also available pre-weathered. In addition to Nordic Standard copper, other Aurubis Architectural surfaces include Nordic Green and Nordic Blue factory-applied patinas – developed with



properties and colours based on the same brochantite mineralogy found in natural patinas all over the world. Nordic Brown pre-oxidised copper gives either light or dark brown oxidation that otherwise takes time to develop in the environment.

01875 812 144

[www.aurubis.com/finland/architectural](http://www.aurubis.com/finland/architectural)

enq.138

## Kingspan TEK travels through time



The Kingspan TEK Building System and Kingspan TEK Cladding Panel have been installed as part of the new Seaton Jurassic visitor centre in Devonshire, forming the gateway to the region's historic Jurassic Coast. Kingspan TEK Delivery Partners, Glosford SIPs, erected the Kingspan TEK Building System to

form the walls of the centre. The firm then installed the Kingspan TEK Cladding Panel on to a steel frame for the centre roof. The highly insulated core of the 142 mm Kingspan TEK Cladding Panel and Kingspan TEK Building System panel can allow them to achieve U-values of 0.20 W/m<sup>2</sup>.K and below, whilst their OSB/3 facing and unique jointing system help to minimise unnecessary air loss.

01544 387 384 [www.kingspantek.co.uk](http://www.kingspantek.co.uk)

enq.139

## IKO plc wins UK Roofing Award



IKO plc has won the UK Roofing Award for Best Mastic Asphalt/Hot-Melt project for its work on Westminster Cathedral with Knight Asphalt. IKO's and its partner contractors' experience in working on historical buildings was carefully examined by St Ann's Gate Architects. The Westminster project involved replacing 600-

700sqft of the existing asphalt with IKO Permaphalt, a polymer modified mastic asphalt. IKO was also shortlisted for two other impressive projects in the Mastic Asphalt/Hot Melt category: the British Museum (with Briggs Amasco) and Guildhall Southampton (with Survey Roofing).

01257 255 771 [www.ikogroup.co.uk](http://www.ikogroup.co.uk)

enq.140

## TORMAX automates glass arch access



Delivering invisible automation to a new arched glass doorway, TORMAX was contracted to install their technologically advanced iMotion 1401 operator into the stone floor entrance to the Porter's Lodge, Christ Church at Oxford University. Ideal for period properties such as this, the iMotion 1401 makes it possible to benefit from the convenience of an automatic entrance, without interfering with an historic facade. The new entrance was part of a re-design of the Lodge carried out by Montgomery Architects, in conjunction with Christ Church, English Heritage and an OCC Conservation Officer, bringing the facilities into the 21st Century whilst safeguarding the historic character of this Grade I listed building. Replacing a wooden door, aluminium and glass specialist, Openwood, was contracted to design and manufacture an all-glass frameless arched doorway, with TORMAX providing specialist automation with the iMotion 1401 door drive. Bringing light to the interior, the new door undoubtedly enhances the aesthetics of the building whilst also being a practical solution. Entirely unique in the marketplace, the TORMAX range of iMotion door operators are recognised for their exceptional life expectancy. This is due to the fact that their high torque motors do not feature any of the parts that generally wear out, such as gears and brushes. This significantly improves reliability in the long term and dramatically reduces required maintenance.

enq.141



# Sitting comfortably in the Hart of the community

GT+3 Architects is set to complete an ambitious project for a contemporary leisure centre which has to provide distinctive architecture as a community hub but also blend with its parkland surrounding. Steve Menary explores further.

**I**n the current political environment, building on greenfield sites near swathes of open countryside can be a difficult proposition.

Yet that's exactly what Hart District Council hopes to achieve in Fleet, Hampshire, where work is underway on a new leisure centre near a 24-hectare country park.

Located 40 miles south west of London near the M3, Fleet may tempt those looking to move within the commuter belt as it's an hour from the capital. Another positive is that the town's

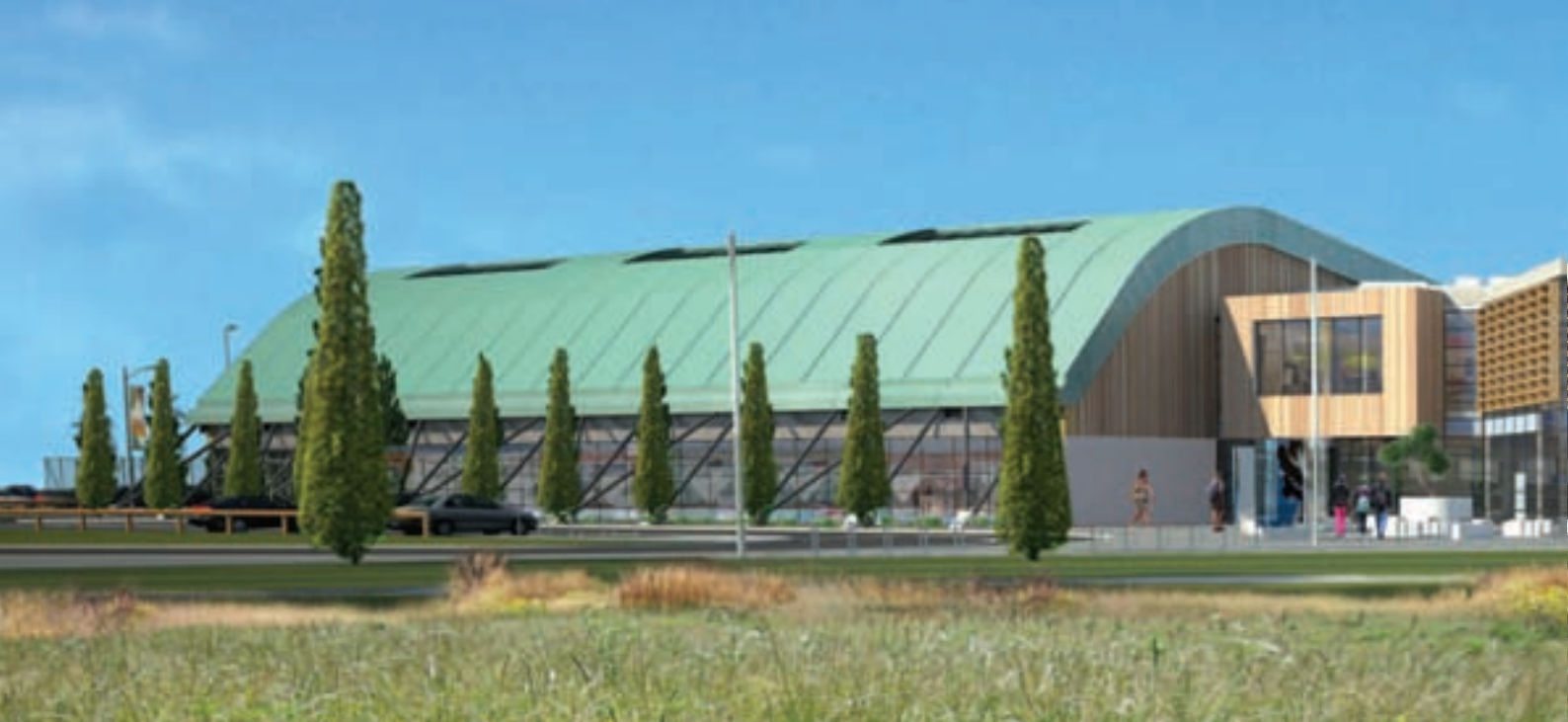
old leisure centre is currently being redeveloped into a new sports complex.

## A challenging brief

The £23m scheme is located next to Edenbrook, a major residential development by Berkeley Homes, and this context posed a significant design challenge.

"The client (Hart District Council) wanted something that was different from a 'standard box' but would stand out as it's





***‘The leisure centre had to look distinct enough among the housing but also be able to respond to the nearby country park’***

going to be at the centre of the community,” explained Richard Weaving, senior building manager on the project for main contractor Willmott Dixon.

The firm was recruited through the Scape framework and novated the architects, GT+3 (formerly GT Architects), onto their construction team, but the specification continued to be tweaked. In search of inspiration, the council’s procurement team even went on a fact-finding mission across the country before setting a brief.

“The client looked at leisure centres across the country to see what was good and bad,” adds Mr Weaving. “They had very particular ideas, from the types of tiles to the width of the corridor. There was a leisure centre in St Albans where the corridor was too narrow for people coming off the pitches.”

At the end of 2014, the first designs were unveiled and in September 2015, Willmott Dixon started construction work. Once completed in February 2017, the leisure complex will provide a wide range of facilities. These include three indoor swimming pools – a teaching, intermediate and a larger eight-lane pool with moveable floor – as well as a sports hall, wet changing area, a 120-station gym, sauna and steam rooms and grass and 3G pitches.

A major external design feature is the curved roof. GT+3 director Mark Gowridge said the architects had to “create a pavilion-type building in the park which sits well within the landscape setting, yet at the same time create an iconic building that delivers modern standard leisure facilities with great flexibility.”

Gowridge explained: “The building has been designed as three interlocking pavilions. The two sweeping curved roofs accommodate the pool hall and the sports hall and the fitness suite and climbing wall sits in between the two wings. The curved roofs frame this central space and help advertise it.

He added: “The pool hall and the sports hall are large box spaces and we wanted to curve the roof to slope and flow into the landscape and reduce the impact and feel of the building’s height. The copper colour of the roof helps to seamlessly blend the roof form into the contoured landscape and creates the iconic language to the building.”

## Design specifications

The roof was designed to achieve a column-free environment through the specification of a standing seam design, which comprises a structural steel frame that has been manufactured and supplied by Condor Allslade.

The pool hall has a tied arch roof with aluminium perforated acoustic deck and a suspended timber ceiling. The ceiling is a Corogrid bar and bracket/acoustic deck system, which is similar to the Thermohalter system but slightly deeper in construction design and can offer clear spans of up to 9 m – making it ideal for a sports hall.

The standing seam roof sheets are weathered copper and supplied by Rigi Systems, with the sheets sent through a curving machine to form the profile, seams and curves.

An acoustic insulation slab was installed after the deck and top hats before the Corogrid bar and brackets. A vapour control system runs over the side of the roof lapping around the galvanised flashing and behind the cladding.

The roof’s “flowing” design created a challenge for the construction team in getting the levels correct to form the desired effect.





© Steve Menary

“If each ridge is more than 12 mm higher than the other layer, the roof won’t fit,” added Weaving. “We had to take a couple of sheets off the roof and adjust the steelwork.”

Internally, GT+3’s design specifies in situ concrete walls with precast staircases and terrace seating. Dry-lined partitions have been used with ceramic tiles and glazed screens. The client specified a timber ceiling and Hunter Douglas has supplied African Ayous, which will be one of

the final elements of the fit-out as this light wood needs to acclimatise to the temperature in the pool area before being fitted.

Externally, brickwork was specified at lower ground level on the walls. Purple bricks were used up to three metres and Kawneer’s AA100 curtain walling and Rockwool were installed above. Render was used on the walls but not at low levels. Willmott Dixon changed this element of the design,



fearing that low level render would be a target for vandals and instead opted for Trespa panelling. The construction team also switched the internal camera suppliers to Poolview. The changes were achieved without friction as the client, architect and contractor hold fortnightly meetings to go through any design changes.

An illuminated climbing wall at the front of the leisure centre is another key design feature, while there are three full-size football pitches with both grass and artificial surfaces supplied and installed by S&C Slatter.

Sustainability is also central and the project features a combined heat and power system using waste heat from the pool hall, photovoltaic panels on the roof and landscape planting to encourage diversity. With a seven-acre site bordering on fields, landscaping was particularly important to the project.

As part of the construction work, 20,000 m<sup>3</sup> of spoil was stripped off the site early on by Willmott Dixon's construction

team, who used a cut-and-fill analysis to ensure none of this went to landfill. Instead, the levels were adjusted to accommodate the excavations. This made the landscape design particularly important.

Consultant Oobe is carrying out the landscape design work. This package will cost around £800,000 and include the planting of 4,800 trees and 50,000 shrubs around the site.

### Marking a new beginning

For GT+3, the project will symbolise the start of a new era, as when design work began on the project, the designers were known simply as GT Architects. In April 2016, the Nottingham practice merged with Tyneside-based +3 Architects to create GT+3 Architects and the newly formed practice will be credited with the Edenbrook design.

The quality of the design work evidenced on this project appears to have been noticed already – soon after the merger, GT+3 landed a commission to design another new leisure



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*‘For the architects and Hart District Council, Edenbrook Leisure Centre should be a local landmark that will be valued for many years to come’*

centre, this time at Horsham in West Sussex.

For the architects and Hart District Council, Edenbrook Leisure Centre should be a local landmark that is valued for many years to come.

“It’s definitely going to be a flagship for the area and for the operator it’s going to be one of their prime centres,” vowed Steve Mirtle, GT+3’s senior architectural technologist on the project.

## Project details

**Project:** Edenbrook Leisure Centre  
**Location:** Hitches Lane, Fleet, Hampshire  
**Cost:** £23m  
**Client:** Hart District Council  
**Architect:** GT+3 Architects  
**Structural, civil & geotechnical engineer:** Engenuiti  
**Quantity surveyor:** Artelia  
**Mechanical & electrical consultant:** Jones King  
**Early stages consulting civil engineer:** Hamson JPA  
**Landscape architect:** Oobe  
**Sports pitches consultant:** Labo Sports  
**Pool design:** Shearwater  
**Main Contractor:** Willmott Dixon  
**Roofing contractor:** Southern Industrial Roofing  
**Leisure centre operator:** Everyone Active

A picture of a finished floor would be good,  
but our advice at this stage would be better.



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## Sika makes waves in Snowdonia



An innovative and comprehensive concrete reinforcement and waterproofing system from **Sika**, was specified for use on Surf Snowdonia, a revolutionary inland surf lagoon in Dolgarrog, North Wales. The 300m x 113m long lagoon is able

to generate the longest artificial waves in the world through unique wave-generating technology. This outdoor adventure park also features a hub building, lodges, restaurant, retail and play facilities. The lagoon has been built to strict profiling and contours in order to create perfect waves. SikaProof® A together with 200m² of Sika's cementitious fibre reinforced Sikalastic®-1K waterproofing system delivered outstanding levels of watertightness to the central channel.

01707 394 444 [www.sika.co.uk](http://www.sika.co.uk)

enq.143

## Deep acoustic and aesthetic design know-how



Rawlins Academy College in Leicestershire is proud of its new Deep End Activity Centre that opened this year to huge acclaim. To help create a healthy acoustic environment, ROCKFON® VertiQ® A wall absorbers and ROCKFON® Eclipse® ceiling islands were installed throughout by ROCKFON. The Centre was built with hard surfaces that are highly reverberant. Eclipse offers the highest performance in sound absorption as both sides of the island absorb sound and contribute to reducing reverberation time. ROCKFON VertiQ A wall absorbers provide additional acoustic control to limit the transference of unwanted sound between the two areas.

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enq.147

## Impressive school building timber cladding



**A. Proctor Group** has been used in an impressive new sports hall and performing arts complex at Manor Lodge Independent School, set in the secluded Radlett countryside. The brand new £2million complex was designed by the Aedifice Partnership, and constructed by T&B Contractors over a 50-week project period. The design features

an impressive steel frame with brick and timber cladding and a sedum roof, to provide a natural finish, and perfectly complement the local conservation area. The architects specified Canjaere Classic Timber Cladding in a bespoke black colourway, in order to blend in with the surrounding environment.

01250 872261 [www.proctorgroup.com](http://www.proctorgroup.com)

enq.144

## Innovative engineering goes swimmingly



**Hunter Douglas** used its engineering expertise to create a stunning curved feature wall at a £16 million leisure scheme. Haven Point in South Shields, South Tyneside, which picked up one of just two North East regional RIBA awards 2015, includes a striking Hunter Douglas feature wall above the reception area. Constructed from wood grill in Magma Firestop-treated American White Oak, the wall provided an engineering challenge because it curves around and leans forward, which necessitated modification to the grill system and the creation of flexible, bespoke panels. Hunter Douglas also manufactured a Luxalon 84R linear ceiling, which allows for fluid lines and precise directional control, in the main pool area.

01604 766251 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

enq.146

## Derry centre of sporting excellence



The £12.7m Foyle Arena, designed by architects Samuel Stevenson & Sons, features VMZINC single and double lock standing seam roofs and facades in QUARTZ-ZINC® and QUARTZ-ZINC PLUS®. Funded by Derry City and Strabane District Councils, it will be a centre of excellence for climbing, judo and wrestling, though its extensive facilities include a 25m swimming pool with movable floor, a separate children's pool and 12 floodlit, synthetic five-a-side football pitches. VMZINC PLUS has a protective underside coating which enables a warm roof, non-ventilated construction to be used and provides a compact roof build-up.

01992 822288 [www.v zinc.co.uk](http://www.v zinc.co.uk)

enq.148

## In the swim of things with Gerflor



Lochee Swim and Sports Centre in Dundee has re-opened to the public with an upgrade of over £1million. In making numerous improvements to the centre the flooring would need to be upgraded to a standard matching the quality of the overall refurbishment. It was a challenge where international flooring and interiors specialists **Gerflor** would step in with a variety of solutions. The new refurbishment would see Gerflor's highly successful slip resistant Tarasafe™ Ultra H<sub>2</sub>O chosen for the changing rooms, with the main reception area benefiting from specifying Gerflor's Taralay Premium Compact. No sports centre is complete without a state-of-the-art fitness suite. Taraflex® Sport M from Gerflor would be the ideal choice for this area.

01926 622600 [www.gerflor.co.uk](http://www.gerflor.co.uk)

enq.149



# Metrotile gives new life to Parc Bryn Bach

**L**ightweight steel roofing company Metrotile UK has completed the renovation of a leaking roof at the lakeside visitor centre of a countryside park in South Wales.

The innovative roofing solution was selected to provide a new covering for the building on Parc Bryn Bach, near the Blaenau Gwent village of Tredegar.

The previous porous roof tiles were found to be letting water into the café area and the popular facility now has an impermeable roof made of high quality lightweight steel tiles.

With a 40-year-guarantee, the new Metrotile roof has given the facility a new lease of life and an attractive makeover, in time for the busy summer season.

Metrotile UK is based in Chippenham in Wiltshire but, as a UK leading supplier of lightweight steel roofing, deals with renovation and new-build projects all over the country.

The project at Parc Bryn Bach was overseen



by Cheltenham-based Barry Jordan, Metrotile's sales director for the South of England and Wales.

The new roof was installed by Swansea roofing contractors MA Hartley, working with main contractor Merthyr Tydfil-based M Delacey and Sons.

Mr Jordan said:

"This was an excellent project to be involved with for us, not only because of the scale of the job but also because of the impact the new roof has had on the facility as a whole.

"Bryn Bach Park is an aesthetically pleasing location but the previous roof was not doing the visitor centre justice. Now it has a smart new Metrotile roof installed it provides a stunning finish to an impressive building.

"We are delighted to help give a new lease of life to the facility, working with our excellent local partners."

Jonathan Kivell, Park Manager, said:

"The visitor centre is the showcase building and focal point of the park. We are delighted with the new roof and excited about the future of Parc Bryn Bach."

Metrotile UK's performance in the past two years has been stunning, growing 30 per cent to £7.1m turnover in 2014/15 and witnessing further growth during the subsequent 12 months.

Growth has largely come from new markets, as homeowners, architects, specifiers and contractors begin to demand more sustainable products.

01249 658 514 [www.metrotile.co.uk](http://www.metrotile.co.uk)

enq.150

## Hauraton drainage channels used at new Cardiff City Stadium and Retail Park



Officially opened in July 2009 the 26,500 seat Cardiff City Stadium is at the heart of major new infrastructure project in Leckwith, west of the Welsh Capital. The stadium's extensive concourse and car park are drained using 800m of Hauraton's fibre reinforced concrete FASERFIX® KS surface water drainage channels. In addition 400m of KS units were also installed to provide pitch-side drainage. The Stadium is part of a multi million pound development that also includes the 43,964m² Capital Retail Park, a 5000 capacity, IAAF approved International Athletics and community sports venue and a 70 room hotel. Landscaped roads into the Retail Park incorporate over 600m of Hauraton ENVIROKERB kerb-side drainage. Having the appearance of standard concrete kerb, the components are in fact made from 100 per cent recycled material that weighs far less than concrete, allowing units to comply with the maximum 25kg "one-man-lift" legislation. The drainage in the 1500 space retail car park was a tricky problem. Because of its position between the Stadium and Retail development it was essential that rainwater run-off in this highly used area would be effectively drained. 530m of Hauraton RECYFIX® HICAP® high capacity, slotted drainage channel was the answer. A further 495m of HICAP® were used to drain the commercial access areas.

01582 501380 [www.hauraton.co.uk](http://www.hauraton.co.uk)

enq.151

## Schlüter-Systems makes a splash at award-winning water sports centre



Llandegfedd Visitor Centre and Watersports Centre in South Wales has recently been crowned RSAW (Royal Society of Architects in Wales) Building of the Year in the 'RIBA Regional Awards 2016 - Wales'. Llandegfedd is a water supply reservoir owned by Dwr Cymru Welsh Water which opened in 2015. Glynn Davies from Schlüter-Systems was consulted on the specification with Contractor Anthony A Davies Group whom praised the popular tile and stone substrate Schlüter®-KERDI-BOARD, used throughout the building, for its ease of installation. Schlüter®-KERDI-BOARD was chosen for the project because of its waterproofing qualities and was installed throughout the ground and first floor on all of the walls and floors which were to be tiled. The unique substrate offers a revolutionary approach to tiling and acts as a multifunctional tile substrate for floors and walls, meaning it can be used, not just to create bonded waterproofing assemblies with tile coverings, but it also acts as a structural panel. There are a whole host of benefits to using Schlüter®-KERDI-BOARD, for example, it is waterproof, temperature resistant, vapour retardant, thermally insulating, quick and easy to install, lightweight and contains no cement or fibreglass, making it eco-friendly. For more information, visit the company website.

01530 813396 [www.kerdi-board.co.uk](http://www.kerdi-board.co.uk)

enq.152

# Flitwick Leisure Centre installs Mapei's waterproofing products

A range of Mapei's waterproofing and ceramic products have been utilised at Flitwick Leisure Centre, based in Bedfordshire. Tiletex Group were appointed as main contractor to deliver wall and floor tiling to the new build, which also included the pool areas.



The £14.7m new build leisure centre comprises a 25m<sup>2</sup> competition pool, 13m<sup>2</sup> learner pool (with raised floor) and confidence water pool. In addition to the pools, there are four discrete changing/shower areas which have been fully tiled; wet change, dry change, outside change and fitness suite changing, along with floor tiling to circulation areas and staircases amounting to a further 750m<sup>2</sup> of tiling.

Mapei products were specified alongside the porcelain tiles, which were installed throughout the floor and wall areas as well as the pool areas. Mapei products spanned from screed, render and waterproofing to a range of different tile adhesives. Products installed included: 4,000m<sup>2</sup> of Mapei's high performance flexible rapid-set adhesive Granirapid, Planitop Fast 330, Ultraplan Renovation Screed and Mapeker Rapid-set Flex.

Flitwick Leisure Centre is a superbly equipped 'wet and dry' centre offering a wide range of leisure



activities for all the community. The project was completed in early March 2016. For more information on Mapei or training days, please visit the website, or contact the company directly.

0121 508 6970 [www.mapei.co.uk](http://www.mapei.co.uk)

enq.153



## William Penn Leisure Centre

William Penn Leisure Centre in Rickmansworth has a newly refurbished gym with over 60 stations, fitness studios, swimming pool, sauna and steam room, sports hall and an all-weather pitch. After new state of the art fitness equipment has been installed at William Penn Leisure Centre, the air conditioned gym has also benefitted from a makeover including a lighting refurbishment in the studios and surrounding corridors. LED LuxPanel luminaires from Luceco have been installed ensuring a well-lit environment to work out in. With 50,000 hours of maintenance free life and significant energy savings over traditional light sources, the LuxPanel is supplied with remote 'plug and play' drivers and are quick and easy to install and produce consistent light output over their entire life, with 100 per cent instant light with no warm up time as required by fluorescent lamp luminaires. With such attractive vital statistics, the LuxPanel installation has proved totally "fit" for purpose and "worked out" well for all concerned!

01952 238100 [www.luceco.uk](http://www.luceco.uk)

enq.154



## Flotex provides formula for fun

National pub-restaurant chain, Brewers Fayre is using Forbo's Flotex floor coverings to refurbish its indoor play areas. The family dining brand has commissioned a bespoke Flotex Vision design inspired by The Beano to create vibrant recreation spaces for younger guests. Flotex offers a unique flooring solution, combining the hardwearing, durable characteristics of a resilient floor with the warmth and comfort of a textile covering. The only truly washable textile flooring product, it is strong, hygienic and totally waterproof, making it ideal for children's activity areas. It carries the Allergy UK seal of approval and contains Sanitized® treatment to inhibit bacteria and prevent the development of stale odours. For more information on Flotex Vision and other products, please visit Forbo's website.

enq.155



## Hunter Douglas ceiling delivers for school



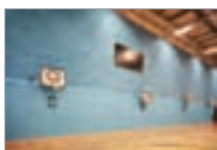
A stunning new cricket pavilion at one of Britain's top schools features a striking bespoke ceiling from leading architectural products manufacturer **Hunter Douglas**. Oundle School's JM Mills Pavilion features 200m<sup>2</sup> (2,152 ft<sup>2</sup>) of Hunter Douglas suspended ceiling panels, which create a

showpiece ceiling in the main area and which extend to the exterior soffits. The design used Hunter Douglas Prestige FR MDF 16mm concealed grid panels, finished in birch veneer to complement the modern glass structure of the pavilion, and are decorated with a slot pattern (8mm x 88mm ctc 48mm).

01604 766251 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

enq.156

## Heradesign works out for Leisure Centre



Heradesign wall panels from **Knauf AMF** have played their part in ensuring the success of a project by providing the highest acoustic and durability specifications required for Oldham Leisure Centre's eight-court sports hall. Heradesign's unique textured surface helps make the hall visually appealing and

enhances the contemporary interior. Umesh Mistry of GT Architects specified Heradesign commenting: "Heradesign is strong and robust and can cope with substantial wear and tear to meet user and client demand. Heradesign's Class A sound absorption helps control noise in this highly reverberant area enabling us to create a comfortable space where people can play sport without intrusive noise."

0191 518 8600 [www.amfceilings.co.uk/heradesign](http://www.amfceilings.co.uk/heradesign)

enq.158

## ASSA ABLOY sees BIM uptake



**ASSA ABLOY Security Doors**, a UK division of ASSA ABLOY, a global leader in door opening solutions is beginning to see the uptake of BIM. As one of the first doorset manufacturers to launch a BIM offering, ASSA ABLOY Security Doors has begun to receive requests for its BIM objects, following the deadlines passing for both the use of

BIM on all Government projects and the adoption of the Government Soft Landings process. ASSA ABLOY Security Doors' BIM offering contains 72 door objects that can be used in standard applications such as corridors, toilets, offices and fire exits. The BIM objects will also aid maintenance activities in order to make whole life asset management possible.

enq.160

## Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. [architectsdatafile.co.uk](http://architectsdatafile.co.uk) is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

[www.architectsdatafile.co.uk](http://www.architectsdatafile.co.uk)

## Hollo-Bolt gains more approvals



Lindapter's Hollo-Bolt recently gained the LARR (Los Angeles Research Report) and the full seismic approval from ICC-ES for use in all Seismic Design Categories (A to F). Following these approvals, the CE Marked

Hollo-Bolt was specified for Wilshire Grand Center in Los Angeles, the tallest skyscraper in Western U.S. Lindapter's Hollo-Bolts allowed a quick installation of circular structural hollow sections, forming the atrium framework. Avoiding drilling and welding saved the contractor time and money and gave a neat finish which complemented the architecturally exposed steel design.

01274 521444 [www.lindapter.com](http://www.lindapter.com)

enq.157

## Rå Build meets the need for speed




H+H's Rå Build method has been used by design and build contractor Canning Ericsson to speed construction of a three-storey apartment block on a confined site in Brighton. Canning Ericsson was already familiar with the advantages of H+H's Rå Build method of large format aircrete blocks, the

Thin-Joint System and quick-drying Celfix Mortar having used the modern construction method on several of its previous schemes. Aircrete's structural strength was important because the weight of the project's cast in situ reinforced concrete first and second floor slabs is carried by the High Strength Thin-Joint Blocks that form the inner leaf of the building's external cavity wall.


01732 880520 [www.hhcelcon.co.uk](http://www.hhcelcon.co.uk)

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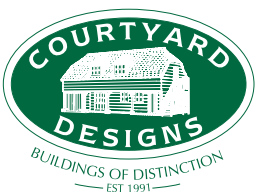
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# Using oak, with confidence

Oak-framed buildings are enjoying a renewed popularity due to the material's strength characteristics. Ed Hamilton of Oakmasters explores why green oak has a place in modern construction and addresses structural questions.

**C**enturies-old barns, houses and churches all prove that oak can withstand the test of time. According to European standards, which classify timber into five classes from very durable (1) to not durable (5) based on a number of biological tests, oak gets a score of 2, surpassed only by a handful of tropical hardwoods.

In bending tests, steel proved to be three times stronger than oak, however, it is also ten times heavier, which works in favour of oak in terms of its weight/strength ratio.

Other tests looking to establish comprehensive and shear strength place oak in the medium to high strength category. It is notable that oak's strength increases as it dries.

## Strength-graded timber

It is important to use strength-graded timber in order to ensure its structural suitability. TRADA, the leading authority on wood, allows timber to be graded visually by certified organisations. Many oak-framing companies are certified to stress grade oak during the production process. There are four stress categories – TH2, THB, TH1 and THA – in increasing order of strength. Main oak frame beams and posts will typically be in the THB category while THA is usually applicable to oak flooring.

## Moisture and drying

As oak dries, it shrinks and cracks until it reaches its equilibrium level of moisture content. The majority of shrinking occurs in two directions. Typical shrinkage values from green to 12 per cent moisture content are as follows:

- longitudinal shrinking (along the grain)  $\approx 0.15$  per cent
- radial shrinking (across the grain)  $\approx 4.5$  per cent
- tangential shrinking (parallel to growth rings)  $\approx 7$  per cent

Fissures tend to appear only from the centre to the outer edge of the log, which means that any beam will retain a minimum of half of its structural integrity at any one time. Skilled craftsmen take this into consideration, while advances in design technology for oak framing mean that allowances are made for loading stress and shrinking very early on in the process.

## Air-dried vs green

This age-old conundrum still seems to create confusion but it all comes down to the environment for which the oak is intended.



Typically, oak placed in an indoor heated environment will eventually reach a moisture content equilibrium of approximately 7-9 per cent. Oak placed in an indoor unheated environment will stabilise at around 12-14 per cent and where exposed to sun and rain, it will vary between 12 and 20 per cent.

In short, an oak frame will carry on shrinking and expanding whether it is green or air-dried. However, the combination of hardness, drying time, drying movement and pre-existence of fissures makes air-dried oak a less viable commercial proposition.

Provided that shrinking and cracking are taken into consideration when designing the frame, the main difference is that air-dried oak takes longer to produce due to storage requirements; is harder to work with due to existing fissures and hardness and is ultimately more expensive, while offering the same structural guarantees as green oak.

## Creating an energy efficient building envelope

In creating a seamless envelope, conforming to tightening Building Regulations is the first requirement. While an oak frame can be combined with conventional wall build up methods including masonry, render or cladding, more sophisticated methods using structural insulation panels (SIPs) are gaining popularity.

The combination of the SIP system and oak frame provides the structural strength and aesthetics of the oak superstructure with the speed, rigidity and thermal advantages of SIPs. The use of SIPs can also avoid the need to use softwood studwork

***‘Compared to alternative construction methods, the open structure of an oak frame pairs up perfectly with roof and wall panel insulation systems’***

and rafters or trussed rafters, which reduces time spent on site.

Compared to alternative construction methods, the open structure of an oak frame pairs up perfectly with roof and wall panel insulation systems. Once the oak frame has been constructed, the next step is to apply SIPs which fit on the outside of the frame, creating an extremely energy-efficient, uninterrupted envelope.

On top of this layer is a waterproof membrane and external cladding, whereas on the inside the oak frame is exposed while incorporating a service void and interior wall covering. This high level of insulation is excellent at allowing a building to retain heat. The encapsulation can easily be increased in specifications towards meeting Passivhaus standard, making the oak frame a perfect complimentary material to a high performance building envelope.

#### Leak-proof glazing system

Traditionally, oak frame glazing solutions invariably incorporated PVCu, aluminium glazed systems or varnished

hardwood frames. Contrary to popular belief, it is possible to successfully glaze a green oak frame.

The solution comes in the form of a TRADA-approved encapsulated glazing system (EGS). Our own EGS uses drip profiled, fully air-dried oak capping, which is carefully conditioned for outside use. Spacer bars, routed drainage channels and weather strips are combined with a high plasticity sealant, flashing and EPDM (Ethylene Propylene Diene Monomer) rubber seals. There is even a cavity for humidity venting and extra insulation if required.

This highly sophisticated system eliminates the possibility of leakages either around the glass or through the oak frame itself. Furthermore, the insulation properties of this system are far superior to other systems, greatly reducing cold bridging, thermal resistance and keeping the building warm and dry.

The system is designed to work with any glass, including acoustic, triple glazing and various coating options, although a typical solution will involve toughened 28 mm double glazing filled with argon gas, creating high levels of insulation. This is then bedded onto EPDM black rubber glazing tape. The whole system provides the necessary flexibility needed to accommodate the movement of the green oak frame.

*Ed Hamilton is managing director of Oakmasters*

enq.164

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## Blower proof liquid from White Haus



Blower proof liquid is the first and only Airtight Vapour Control Layer Membrane that can be sprayed on to any form of construction from timber frame to masonry buildings old and new to provide a completely air tight membrane. When installed and designed by White Air, it guarantees an air test result of 0.6 arch. The Blower Proof Liquid is also ideal for patching up any holes that are made in the air tight envelope, if follow on trades make holes (for installation of boiler flue's etc) then the Blower Proof Liquid Brush can simply be painted on to ensure that the airtightness is maintained throughout the building. For more information on blower proof liquid and other products, please contact **White Haus** or visit its website.

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## Bespoke service from Capricorn Eco Timber



**Capricorn Eco Timber** are a Stafford based timber merchant, sawmiller and machining specialist offering a bespoke service supplying grown in Britain timber species. With our Weinig Moulders and own machine shop, we can produce any pattern and any quantity to order. The main species are Western Red Cedar, Larch, Douglas Fir, and English Oak. All of which are sustainable and most are FSC certified. These species are naturally durable and do not need to be treated with potentially toxic chemicals to enhance their longevity. Capricorn Eco Timber also produce their own brand of seared and burnt Larch called Tiga Wood, which is made from locally grown Larch but can also be produced from Western Red Cedar and other British Species.

enq.172

## Over the 'try-line' for AkzoNobel



The grunt and grind of professional rugby league may not be everyone's half time orange, but as a player for over 10 years Adrian Goodall of A Plus Joinery in Harpenden knows what kind of graft and commitment it takes to get over the business try-line. It's this kind of dedication to excellence that also ensures that A Plus Joinery only deal with quality, reliable suppliers like **AkzoNobel**. A Plus Joinery recently supplied a new client who wanted an existing number of Meranti redwood products to be a lighter oak colour. AkzoNobel suggested their Sikkens CETOL® WF 952, a satin sheen joinery product that provides a spray applied translucent mid and top coat for exterior wooden joinery components offering the highest level of UV protection.

01254 687950 [www.sikkens-wood-coatings.co.uk](http://www.sikkens-wood-coatings.co.uk)

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## HR Prof the eco-friendly fire retardant



The unique patented technology permits **Fire Retardants'** HR Prof to help extend the lifetime of treated wood, transforming it into a more fungal, blue stain and fire resistant substrate. Once absorbed into the surface of the wood HR Prof combines chemically within the cell structure, but does not form a surface finish, which allows the wood to breathe naturally. In the event of fire, carbon char is restricted to the immediate area restricting the spread of flame. HR Prof achieves Euroclass B-s1-d0. HR Prof treated substrates were tested at SP Technical Research Institute in Sweden and passed the rigorous NT 053 external use weathering tests, where fire retardant treated wood is exposed to 1000hr accelerated weathering before testing according to the cone calorimeter.

enq.174



## Westwind Oak are delivery partners

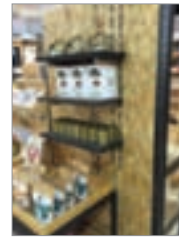


Westwind Oak are delivery partners of the Kingspan TEK Building System. This partnership allows the company to design and deliver the Kingspan TEK Structural Insulated Panels (SIPs) to enclose its green oak frames, giving clients the option of a highly insulated, airtight, dry shell building, all direct from

Westwind Oak. Westwind designs the oak frame and the SIPs concurrently, so its clients have the comfort of knowing the two building systems will fit perfectly together. While the oak frames are made by hand in the company's Somerset workshops, the SIPs panels are cut at Kingspan's fully automated plant. For more information, visit the Westwind Oak website.

enq.175

## SterlingOSB steals the spotlight



Norbord's SterlingOSB is traditionally associated with building sites and boarded up windows and shop fronts yet it is becoming increasingly popular as a design element in trendy retail outlets. High-street retailer, Urban Outfitters, is the latest outlet to have used SterlingOSB to create an industrial and raw feel throughout its UK stores. The material has been left exposed and is used for innovative, environmentally-friendly shelving, backing boards and window displays. David Connacher

comments: "It's a really versatile, environmentally-conscious product and it's good to see that being demonstrated." Norbord products are FSC-certified and used extensively in the construction, DIY and furniture sectors.

enq.176

## Quik Drive First for DeckMark



Simpson Strong-Tie's Quik Drive collated screw system has become the first ever tool to be awarded DeckMark® Plus accreditation from the Timber Decking and Cladding Association. The leading construction connector manufacturer has previously also achieved DeckMark® Plus for its range of CE marked decking and cladding fixings.

DeckMark® Plus is a quality assurance and performance scheme run by the Timber Decking and Cladding Association, the recognised authority on all matters that relate to creating high performance, timber decking and cladding structures.

With a huge range of applications, from decking to drywall, modular homes to mezzanine floors the Quik Drive is the world's most advanced screw system. Built to last, all moving parts are coated with Teflon®, which is one of the reasons it comes with a lifetime warranty.

Sales Director Jon Head says, "We're proud to have achieved DeckMark® Plus accreditation and demonstrate our commitment to quality, as well as supporting the industry to help ensure good quality standards are met."

The Quik Drive brochure can be downloaded from the website.

01827 155600 [www.strongtie.co.uk](http://www.strongtie.co.uk)

enq.177

## Oak Frame – Green or Air Dried Oak?



Green Oak is usually the automatic choice for an Oak frame, however, you need to consider the advantages of Air Dried Oak from Whippletree. Green Oak will result in movement, shrinkage and twisting and this gives rise to call backs for maintenance to adjoining plaster, render and brickwork. By using Air Dried Oak, movement is minimised.

Air Dried Oak can be 're-sawn' prior to delivery to provide a 'fresh finish' and can be 'cut square' where a more contemporary style is desirable. Air Dried Oak – very worthy of consideration.

enq.178

## Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. [architectsdatafile.co.uk](http://architectsdatafile.co.uk) is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

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enq.179

# Triton supplies Type C waterproofing for landmark London scheme

The White Collar Factory will be a mixed-use area of workspace, residential and retail, designed by architects, AHMM. The development, sited on London's City Road, comprises a new 16-storey office tower, a new public square and refurbished existing buildings to the rear.

The new 2-storey basement has been waterproofed using a Type C system applied internally, to provide drained protection in accordance with BS 8102: 2009. The waterproofing system has been supplied by Triton Systems.

During demolition of the existing structure, the sub-contractor (Dunne Group) worked closely with Triton's CSSW qualified technical team, to design the most appropriate and cost effective waterproofing system that was subsequently approved by all relevant parties as the most suitable protection against potential ground water ingress. 2,000m<sup>2</sup> of Platon P20 cavity drain membrane was



subsequently specified for all earth retaining basement walls on both levels and the ground bearing slab at lower level. BBA certified Platon P20 membrane is a high capacity drainage membrane recommended for use where it is important to significantly reduce the risk of blockages behind the membrane caused by lime deposits.

Prior to the installation of the membrane, all fresh concrete at earth retaining elevations was

treated with Triton's Anti Lime solution. This treatment hardens and dust proofs the concrete as well as locks in free lime to further reduce the risk of blockages in the drainage elements of the system.

Any water entering the construction at upper and intermediate basement levels is gravity drained behind the studded P20 membrane down to a waterproof concrete bund/upstand which provides a 100mm cavity, onto which internal block walls can be built.

A series of 40mm holes at 900mm centres were drilled within the bund to allow any water to drain down behind the membrane installed to the walls at lower level. The bund was also waterproofed with Triton's cold liquid applied TT Vapour Membrane (TTVM) that will prevent potential damp patches being visible on the internal block wall faces.

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# Double success for Bauder

**F**lat roofing specialist Bauder was recognised at this year's UK Roofing Awards, winning two of the prizes on offer for its work on Byker Wall in Newcastle and ROM's manufacturing facility in Sheffield. The award winners were announced on May 13th at the Hilton Metropole in London, an event hosted by TV presenter Steph McGovern and overseen by the voice of the National Lottery Alan Dedicoat.

Now in its eleventh year, the Roofing Awards are an industry-wide competition that celebrates outstanding standards of workmanship and safety within the roofing industry. This year the level of competition was particularly high with almost 300 project entries being submitted for the fourteen award categories available. A wide range of criteria are taken into consideration by the judging panel when determining category winners including: degree of difficulty, aesthetics, problem-solving and environmental qualities.

Bauder's first win of the night came for its photovoltaic (PV) installation at the landmark, Grade II listed Byker Wall estate, which won the



'Solar on Roofs' category. As part of the £26 million refurbishment of the residential properties, work was required to not only repair the failing roof but to also bring Byker Wall to the forefront of modern-day roofing technology with the addition of a photovoltaic system. The works included converting the pitched metal roof back to its original flat roof status and replacing the waterproofing with Bauder's high quality reinforced bitumen system.

Following on from this success, ROM Ltd was then chosen as the winning project for the 'Reinforced Bitumen Membranes' category from a group of four finalists that included two other

Bauder projects. The phased roof refurbishment at the manufacturing facility involved replacing the failing waterproofing with Bauder's premium bituminous system, BTRS, which was installed by Mitie Tilley Roofing. The project had various health and safety implications, with the main-substructure proving unstable due to corrosion and the facility remaining operational throughout the works, however all remedial work was completed on time and to budget much to the delight of the client.

Bauder's Managing Director, Andrew Mackenzie, expressed delight with the company's success, "Bauder is always delighted to be recognised by the Roofing Awards, which serve as an industry benchmark for quality. Byker Wall and ROM's manufacturing facility illustrate the exceptional levels of workmanship that our approved contractors deliver and we are extremely proud of the work performed by everyone involved with these projects."

01473 257671 [www.bauder.co.uk](http://www.bauder.co.uk)

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# Strategies for tackling vibration in free cantilever balconies

With the growing demand for cantilevered balconies, architects and structural engineers need to ensure a structurally sound construction to provide safety and comfort. Chris Willett of Schöck examines the challenges they face.



In many sectors of the market, free cantilevered steel balconies are becoming larger, more lightweight and more cost competitive. With such a demanding specification these balconies can be prone to undesirable vibration when people move about on them more heavily than usual; and as a result the vibration behaviour of a structure is taking on greater importance.

Building Regulations Part L defines the limit values for thermal bridges, but Eurocode 3 specifies the required verifications, such as for vibration, in serviceability limit state. Because vibration is considered to be a serviceability issue and the perception of discomfort varies from one individual to another, no

precise limit can be imposed that will guarantee satisfaction for everyone during the balcony's lifetime. Assessment of acceptable vibration is therefore not straightforward.

## Striking a balance between efficiency and safety

A sensible approach is to design structures which have a natural frequency sufficiently beyond potential excitation frequencies. Architects and structural engineers need to consider a whole host of influencing variables in the development and structural design of steel balconies to make sure the solution is both safe

The first natural frequency for a cantilever beam can be calculated as follows:

The calculation produces the total spring stiffness ( $k_{ge}$ ) that results from the distortion of the connection and the bending curve of the balcony construction. The total mass ( $m_{ges} = m_g + m_q$ ) results from the dead load of the construction (steel beam, covering layer, railing etc.) and the percentage of live load to be expected. This share is assumed to be 30 per cent of the total live load, corresponding to the quasi-permanent load combination which is used for serviceability limit state designs.

*'Adopting a limit frequency of 7.5 Hz for steel balconies not only eliminates the possibility of undesirable vibration, it also enables the design of cost-efficient structures'*

and efficient. When selecting the method of connection to the building slab, the challenge lies in choosing a component that will ensure both an effective thermal break and a structural and design solution that is safe – and all still compliant with the necessary serviceability requirements.

In the case of cantilever steel balconies, with a thermally broken connection to a concrete slab, the elements are normally exposed to both vertical and horizontal bending moments and shear forces. To meet the various criteria demanded in these circumstances, the optimum solution is a heat-insulating load-bearing element that can bear extremely heavy loads for the thermal partitioning of free cantilever balconies.

### Natural Frequency Calculator

To assess how prone to vibration the chosen solution might be, a software package which calculates the frequency of the steel balconies that can be employed. One example, the Natural Frequency Calculator, uses geometric and material variables. Depending on the type and utilisation of the structure, published data indicates limit frequencies of between 4 Hz and 7.5 Hz. Experience has shown that adopting a limit frequency of 7.5 Hz for steel balconies not only eliminates the possibility of undesirable vibration, it also enables the design of cost efficient structures.

As has been established, a number of factors can influence the natural frequency and therefore the vibration behaviour of

free cantilever steel balconies.

It is recommended that particular attention should be paid to the following factors when planning and designing thermally broken steel balconies:

- balcony geometry: the cantilever length and spacing between the connections
- rigidity and proper execution of the stub bracket, especially on stepped thresholds
- sufficient transverse rigidity of the balcony construction
- incorporation of the stiffness of the chosen thermal insulating element into the planning process.

### Case study: Rathbone Market, Canning Town

An example of large cantilever balconies incorporated into a project is the third and final phase of the Rathbone Market scheme in east London, part of the Canning Town and Custom House regeneration programme. The scheme is delivering a new library, around 652 new homes and a new market square bordered by around 35,000 ft<sup>2</sup> of shops, cafes, offices and community facilities. This final phase will see 216 new homes in a mix of one, two and three-bed designs within three blocks, ranging in height from six to 14 storeys. The apartments on the upper levels are designed with large 2.3 m depth balconies, which is a demanding specification, and use of natural frequency calculation was crucial in delivering the right balcony specification.

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## Sto solutions bring new life to London project



A project to bring new life to a landmark building in London's Covent Garden has turned the spotlight on the products and technical expertise available from **Sto Ltd.** A variety of Sto products were used on the exterior of the Dukelease Properties Hop House building. The project saw the five-storey, 1980s office building converted into 29 luxury apartments, with a new

two-storey penthouse roof extension added. Brimelow McSweeney Architects remodeled the exterior facade to enhance its original Viennese-style design, and this included re-defining the original cast stonework on the front elevation.

0141 892 8000 [www.sto.co.uk](http://www.sto.co.uk)

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## Specifiers go for gold with ROCKPANEL®



**ROCKPANEL® Group** is giving specifiers even greater creative freedom with the unveiling of a new eye-catching ROCKPANEL Metallics design. The mellow opulence of ROCKPANEL Metallics Gold will equip architects with an even greater choice of facade cladding boards,

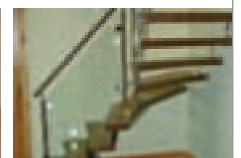
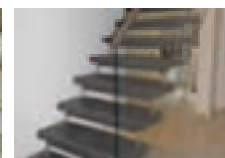
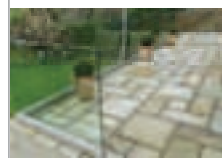
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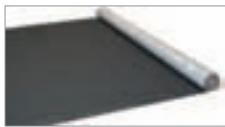
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## New Facadeshield UV protects building fabric



The A. Proctor Group is launching a new membrane Facadeshield UV, which is designed specifically to protect the building fabric behind open jointed rainscreen cladding. Architects, developers and contractors can be reassured that

the application of Facadeshield UV will ensure that the building fabric maintains good water resistance and breathability behind open jointed cladding. Facadeshield UV is a non-woven breathable membrane that combines exceptional water resistance and UV resistance with the aesthetically pleasing dark colour to provide a 'shadow' appearance within open jointed rainscreen facades. It enhances the air tightness of the building, whilst reducing the risk of condensation.

01250 872261 [www.proctorgroup.com](http://www.proctorgroup.com)

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## Kawneer helps take BREEAM to The Edge



Kawneer's curtain walling features on the building with the highest-ever BREEAM rating in the world. A building clad in Kawneer's unitised curtain walling has won top honours in the global BREEAM Awards 2016. 'The Edge', the new headquarters for Deloitte in

Amsterdam, which made use of 17,000m<sup>2</sup> of a re-engineered, custom-made Kawneer curtain walling solution, won the office new construction category against four other projects in the organisation's 25th anniversary awards. More than 40 buildings were shortlisted for this year's BREEAM Awards, each of them showing excellent sustainability credentials, representing some of the best examples of building design, construction and management throughout Europe.

01928 502500 [www.kawneer.co.uk](http://www.kawneer.co.uk)

enq.193

## RENOLIT EXOFOL Smooth 2: Style with performance



RENOLIT has launched Smooth 2, a new architectural surface texture with improved scratch-resistance into its RENOLIT EXOFOL MX range of exterior films. A smooth emboss with increased scratch-resistance opens up new perspectives as well. It offers a pleasant feel while being resistant against contact. The surface geometry has been developed so that the raised areas are slightly rounded, which improves performance whilst maintaining the uniform surface structure. The new emboss is available ex-stock in seven shades and can also be produced in any other RENOLIT EXOFOL colour on request. Year on year foiled window installations are growing and within that growth the percentage of installations which are solid colours has also increased. As demand for solid colour continues and so does the trend towards smooth surface solid colours which create modern architectural statements on new builds or refresh older buildings with a modern facade. This new trend is reflected in the UK where sales of the RENOLIT EXOFOL MX solid colours with smooth surfaces have grown by 35 per cent in 2016 compared to the same period in 2015. The many colours reflects the requests from increasingly design-led consumers. It is no longer enough to only offer one or two shades, this new generation of discerning customers want far more choice.

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## Ancon extends balcony connector portfolio



Ancon has extended its STC steel-to-concrete balcony connector range with two new high performance products and a standard series of connectors manufactured from stainless steel. Ancon STC connectors anchor an external steel balcony to an internal concrete floor slab while minimising heat loss through thermal

bridging at the interface. This range extension comes just weeks after Ancon's launch of its new stainless steel SSTC series at Ecobuild 2016. Featuring an integral high-tech thermal pad, these Ancon connectors are proven through thermal modelling to help prevent condensation and mould growth in buildings.

0114 275 5224 [www.ancon.co.uk/STC](http://www.ancon.co.uk/STC)

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## Timber cladding enhances office development



Canjaere timber cladding from the A. Proctor Group has been supplied for an impressive office development, which is being promoted as Aberdeen's premier business location. Canjaere Classic Timber Cladding in the golden natural colourway, Tongue and Groove finish has been specified. The timber is treated with a unique

process, which improves its performance, and protects the wood against moisture and preserves the finished look, backed by a 30-year maintenance warranty against rot and decay. Canjaere Classic provides the architect, developer and client with total confidence in the longevity of the product. Canjaere is available in a range of profile finishes, and a selection of colour matched trims and accessories to suit.

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enq.198

## Award-winning regeneration project



Girdwood Community Hub in North Belfast brings together physical regeneration and eco-design principles in the creation of a state-of-the-art, socially inclusive centre offering leisure, community and education facilities. Part of the overall regeneration of the former Girdwood

Barracks site, the Michael Whitley Architects design achieves high levels of thermal performance without compromising aesthetics using an integrated range of products from leading aluminium systems manufacturer **Metal Technology**. Both System 17 SP curtain walling with concealed vents and System 17 capped curtain walling were specified for the project, complemented with System 5-20D Hi+ doors and System 4-20D Hi+ windows from the THERMAL range.

0208 9448 7777 [www.metaltechnology.com](http://www.metaltechnology.com)

enq.199

## Renovated steel windows stand out



For nearly two decades, **Steel Window Association** member, Steel Window Service and Supplies, has been involved with work relating to the windows of Freemasons' Hall, the headquarters of the United Grand Lodge of England and the principal meeting place for Masonic Lodges in London. The latest project has seen the renovation of 15 large windows complete with leaded lights and coloured glass on one of the building's main staircases. The nine-week renovation project saw Steel Window Service and Supplies manufacture new steel frames using W20 sections that closely replicated the original medium universal profiles. The frames, which are in a range of sizes with the largest around 1m wide by just over 2m high, were polyester powder-coated in RAL 5010 gentian blue to match the original colour.

enq.200

## Levolux keeps researchers in shade



The new BREEAM 'excellent' rated Manchester Cancer Research Centre (MCRC) building, harnesses the latest building technology, including a custom solar shading and screening solution from **Levolux**. As a leading UK solar shading and screening specialist, Levolux was invited to develop a custom solution, utilising its Infiniti

Fin system, Contour Ventilation Louvres and XL

Screening Louvres. Aerofoil-shaped aluminium fins, each measuring 200mm wide, have been used extensively at the MCRC. All fins are fixed at an angle of 90 degrees to absorb and reflect the sun's rays most effectively during the summer months. The openness of the fins helps to maximise daylight levels, while retaining good outward visibility for occupants.

enq.201

## Seaford Library complex, East Sussex




**Comar Architectural Aluminium Systems** recently completed the new Seaford Library complex in East Sussex. This mixed use project was completed using Comar 5P.i Tilt & Turn windows, Comar 6EFT Curtain Walling, Comar seven Folding Sliding Doors and Comar 7P.i CD

doors in both Pivot and Sliding configurations. The architect's design vision was to create a continuous wall of glass to the libraries ground floor facade. Comar 6EFT was selected as it offers architects a flexible system, providing a structurally glazed solution, with options for facets, concealed vents and an extensive range of profiles that cater for large structurally glazed panes.

0208 685 9685 [www.comar-alu.co.uk](http://www.comar-alu.co.uk)

enq.202





# It takes a long time to create perfection.

Once in a while a product comes along and changes everything, from the way it's crafted to the way it works. Products are often copied and many are great ideas that never really see true success in their application. Many years are spent searching for a product that will ultimately surpass expectations, stand the test of time and become recognised as the leader in its field.

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## Ahead of the curve with Library Walk Link



Manchester's stunning new elliptical library walk link was designed to connect two of the city's historic buildings – it needed doors that not only allowed people to enter and exit with ease, but reflected the dramatic glass architecture. **GEZE UK** was appointed

to install Slimdrive SC automatic curved sliding doors to create the two main entrances in to the Library Walk Link, as well as four Slimdrive SL NT automatic sliding doors providing access in to Manchester's Library and Town Hall. The link building echoes the curve of the passageway and features 26 glass panes of 7.4m high. Perhaps the most spectacular feature is the rooftop sculpture of a cloud formation created from 30 tons of mirror-polished stainless steel.

01543 443000 [www.geze.co.uk](http://www.geze.co.uk)

enq.204

## Quality and innovative fittings



A new name in quality door hardware is set to make waves in the architectural ironmongery market. **Total Door Hardware** is the UK distributor for door hardware from **OZONE**, an India-based international architectural hardware brand. Offering certified hardware with innovative

technologies and functionality, Ozone products are becoming established globally. The product portfolio includes the new generation of concealed floor spring, better known as the hydraulic patch, along with fittings for commercial doors, shower rooms, balustrades and point-fixed frameless facades. Rajiv Agarwal, Head of International Business, Ozone Overseas, says "The UK has always been a growing market in the EU. As well as meeting UK standards, Ozone's portfolio has been designed to answer British design tastes."

enq.206

## Vortice launches Punto Evo Flexo



Ventilation systems manufacturer **Vortice** has launched the Punto Evo Flexo, a new, extremely quiet, energy efficient axial fan. Punto Evo Flexo is the next stage on from the popular Punto Evo bathroom fan and features a stylish curved front grill which is very easy to clean. Technical and

Marketing Manager Jennifer Quinn said: "Punto Evo Flexo combines beautiful Italian styling with practical energy efficient extraction. At 26.9 (db) A it is extremely quiet, so it's a perfect choice for a domestic bathroom." The Punto Evo Flexo's low power consumption makes this an ideal selection for energy efficiency. Full BIM and specification details can be found on the Vortice website.

01283 492949 [www.vortice.ltd.uk](http://www.vortice.ltd.uk)

enq.208

## Portmeirion district heating scheme



**ESP energy** recently completed a 2.2MW district heating scheme in the picturesque tourist attraction 'Portmeirion' in North Wales. A total of 27 properties have been linked together with over 3.5 miles of underground pipework.

This project tested ESP energy skills, due to the difficult terrain, location of properties and their delicate architecture. This project was carried out during the wet winter months, whilst the village was open. The project was finished on time and on budget. Contact ESP energy to discuss your project or requirements.

enq.210

## PURe windows give new resi-tower a view!

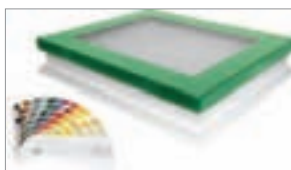


As well as offering its residents some of the most spectacular views across London, the energy-efficient windows of the latest phase of the Pavilions development in Tottenham Hale also provide some of the lowest U-values available thanks to the use of **Senior Architectural System's** new **PURe** system. The **PURe** windows have been fabricated

by A Plus Aluminium and used alongside Senior's thermally enhanced SPW600e door systems, which provide access to the apartments' external balconies and terraces. Senior's innovative **PURe** windows have had a positive effect on reducing the overall carbon calculations of the building and perfectly complement the other 'green' features of the scheme.

enq.205

## Roof windows in RAL colours



**FAKRO's** DEF flat roof window redefined the visual aesthetic for such products but the launch of **ColourLine** has taken the offering a stage further by enabling its outer cladding to be specified in any RAL colour from the 'Classic Palette'. The **ColourLine** option can also

now be specified for inner surfaces of standard FAKRO windows so whether to blend with landscaping on a flat roof or interior design features in a loft extension the scope is virtually limitless. For flat roofs, the DEF U8 offers a window U-value of 0.76 W/m<sup>2</sup>K – ideal for Passivhaus and energy-efficient construction.

01283 554755 [www.fakro.co.uk](http://www.fakro.co.uk)

enq.207

## UK patent for PURe® windows and doors



Leading fenestration designer and manufacturer **Senior Architectural Systems** has been awarded a UK patent for its market-leading **PURe** range of energy-efficient windows and doors. The new patented system is the first on the UK market to benefit from an enhanced thermal barrier manufactured from expanded polyurethane foam (PUR). Traditionally used in cladding and insulation products, the innovative use of PUR as a thermal barrier in windows

and doors gives the **PURe** range the potential to achieve U-values as low as 0.71W/m<sup>2</sup>K when calculated as a commercial CEN standard window and 0.93W/m<sup>2</sup>K when calculated as a CEN standard door. The system has been positively received by both fabricators and specifiers alike.

enq.209

## Improvements for Paragon P4 Gas Fire



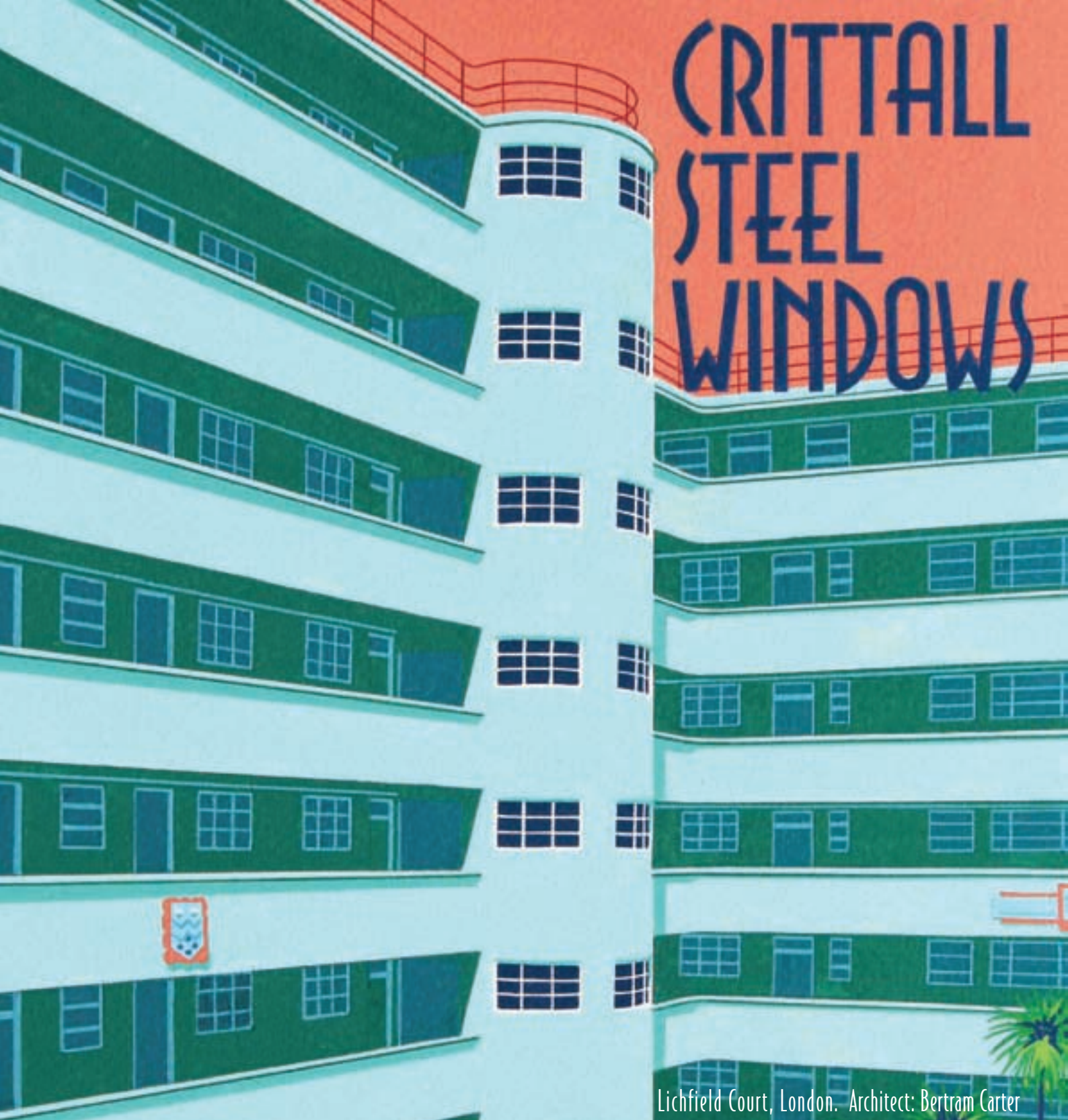
Following on from the successful launch of the Paragon P4 **Charlton and Jenrick** have introduced a new highly realistic log set which further enhances the appearance of the fire. The fire is available in either Natural Gas or LPG fuels and offers an 82 per cent efficiency meaning it is not only pleasing on the eye but also the pocket! The versatile fire can be fitted into a fireplace, frameless in the wall or in the wall with a trim or slip around

it. Controlling the fire is made easy using the infrared remote handset provided. In addition to the new log fuel bed there is now an option on firebox liners: the existing black ceramic or the new beige vermiculite liners.

enq.211



# CRITTALL STEEL WINDOWS



Lichfield Court, London. Architect: Bertram Carter

# TIMELESS

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BRIAN JAMES



## Kingspan installed on Scotland's hospital



Glasgow's £842million 'super hospital' is on course to achieve a BREEAM 'Excellent' rating with the help of premium performance Kingspan Kooltherm K15 Rainscreen Board from Kingspan Insulation. Queen Elizabeth University Hospital combines cutting-edge laboratory facilities with a 166km<sup>2</sup> adult and children's hospital

designed to manage 110,000 A&E patients every year. Kingspan Kooltherm K15 Rainscreen Board was specified to insulate a range of facade systems on the external walls of the project. The product delivers outstanding performance with thermal conductivities as low as 0.020 W/mK.

01544 387 384 [www.kingspaninsulation.co.uk](http://www.kingspaninsulation.co.uk)

enq.213

## Recticel launches a self-supporting roof system



An innovative pitched roof system has been launched by Recticel Insulation. The innovative new product, L-Ments®, comprises cable gap, breather membrane, counter battens and integral structural timber in one PIR insulation panel as a single lightweight cost-effective modular roofing element, making it exceptionally quick and easy to

install. The future-proof system has been designed for ultimate thermal performance, with U-values of between 0.13 and 0.19, as well as fast installation and reduced construction costs, with maximum savings on space and energy usage. Available in four thicknesses and five lengths, the panels feature shiplap joints.

01782 590 407 [www.recticelinsulation.co.uk](http://www.recticelinsulation.co.uk)

enq.214

## SIG360 provides insulation support for residential project



An innovative offering by SIG Insulation has provided cost and space savings for a new residential project. The technical experts at SIG360, who offer energy efficiency expertise for new build and retrofit projects, have provided insulation guidance for the four-bedroom family home in Wellesbourne, Warwick. Appointed by the project's developers, the SIG360 Technical Centre was tasked with ensuring the building met the Approved Document Part L of the Building Regulations without using products that would add to the width of the walls, reducing the internal living space available. Due to the 100mm cavity width already in the property, SIG360 was required to find a solution that would ensure the correct U-Values were achieved, without using thicker insulation products. By specifying a new fulfil Celotex 100mm cavity wall insulation product, the energy experts were able to guarantee the house met its desired thermal performance without adding to the cavity width, maximising saleable floor area. Neil Harrison of Harrison Project Ltd said "By working with the SIG360 Technical Centre who recommended a new type of cavity wall insulation, we were still able to achieve the required U-Values without having to use thicker insulation and compromising on floor space." Work on site started in January 2016, and is expected to be complete by May 2016.

01274 696974 [www.sigassured.co.uk](http://www.sigassured.co.uk)

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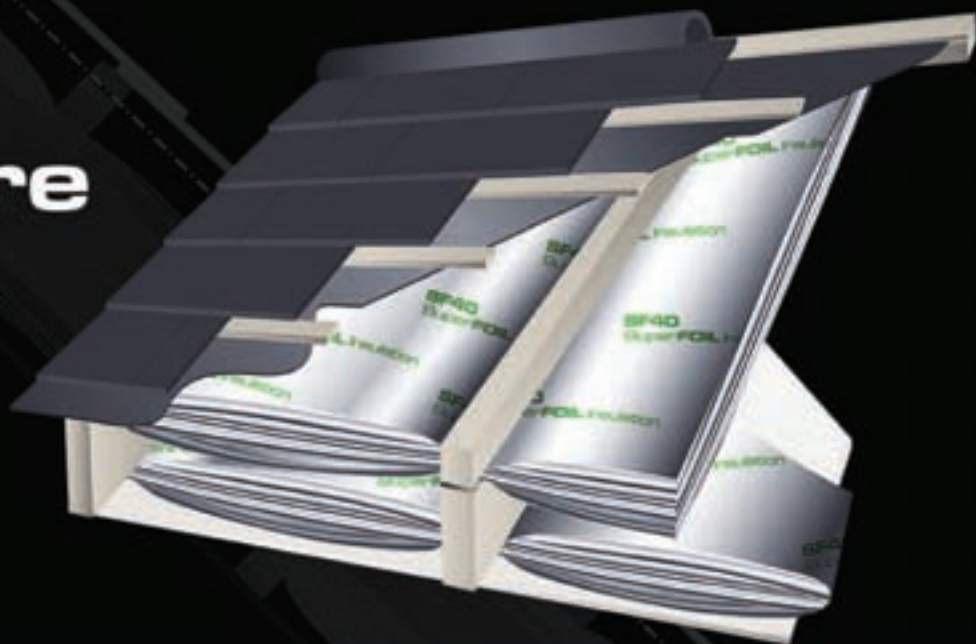
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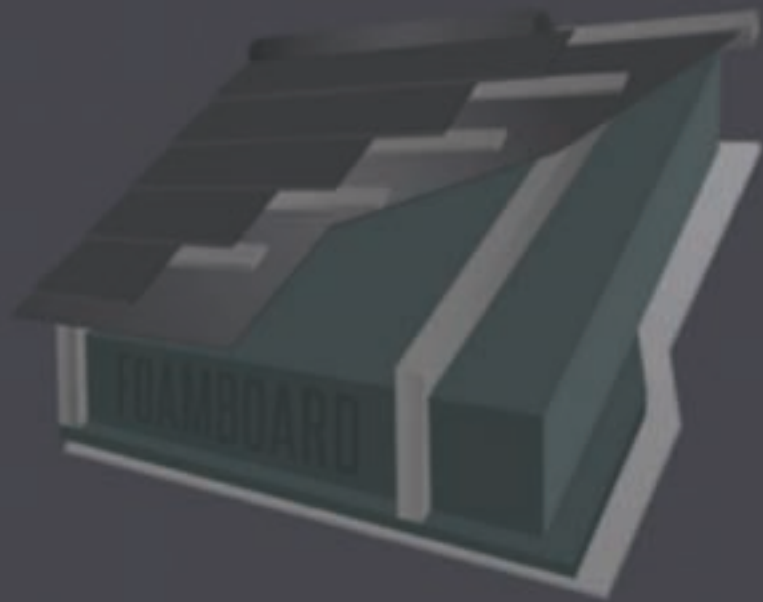


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# Turn down the volume

Adrian Pargeter of Kingspan Insulation describes how 'lower lambda' insulation can be the architect's friend, as more efficiency means less volume is needed to achieve regulations compliance.

Masonry cavity walls remain the UK's most popular house construction method, and can be used to achieve a wide range of design styles



**B**uilding Regulations have recently become more demanding when it comes to insulating properties to achieve better U-values. If a building design relies on a conventional cavity wall construction, tighter regulations could leave designers with a potential space problem.

The most recent changes to the regulations (Approved Documents L1A and L1B of Building Regulations 2013 in England and 2014 in Wales, and Section 6 2015 of the Building Standards in Scotland), significantly raised the levels of insulation required for a building to reach compliance. As a result, the overall thickness of the external walls, and consequently building footprint, could also increase considerably.

If you are not able to increase the footprint size, or simply don't want to, then the only other alternative is to reduce the size of the internal space. This can lead to unsatisfactory compromises on the dimensions and layout of rooms, making them feel cramped and unwelcoming.

Above and beyond these considerations, there is a practical problem. Namely that most contractors simply do not like traditional masonry cavity wall constructions to be much wider than 300 mm. Larger cavities have other knock-on effects, such as the need for longer wall ties and bigger foundations, all of which can add to the time and cost of construction.

## Slimming down

A typical cavity wall construction would be a 100 mm medium density concrete block inner leaf with a 100 mm brick outer leaf. That leaves just 100 mm void for the insulation and cavity. So how can designers meet the regulatory requirements and stay within those parameters? The first thing to look at is the thermal conductivity of the insulation to be used, i.e. its lambda value. The lower it is, the more efficient the insulation, so the thinner it needs to be to exceed the required U-value.

The thicknesses required for commonly used insulation materials to achieve the same level of thermal performance vary considerably. To achieve a tested R-value of 2.857, mineral fibre required 110 mm (for a lambda value of 0.038 W/m.K), whereas

PIR required 65 mm (0.022 W/m.K), phenolic required 60 mm (0.020 W/m.K), and advanced phenolic 55 mm (0.018 W/m.K).

Phenolic insulation cavity boards are widely used in UK construction. They have a fibre-free core, and are designed to be unaffected by air infiltration and to be easy to handle, and offer excellent levels of thermal efficiency. Recent product innovations in advanced phenolic cavity boards have meant that reduced insulation thicknesses can now be achieved that deliver a desired U-value for the entire cavity wall construction.

Boards can be combined with foil facings which are well-suited to partial fill applications. Reflecting radiated heat back into a property, they can significantly increase the thermal resistance of the cavity and reduce the thickness of insulation required.

However, facings still require a 50 mm clear cavity to be maintained, so a further development has been water-tight polypropylene fleece facings to protect against moisture ingress, allowing the air gap to be reduced to just 10 mm. The gap between the board and the outer facing can be simply maintained using a retaining clip which fastens to the wall ties, and a self-adhesive breather tape should be used to create a continuous water-tight facing.

Combining such facings with advanced insulation materials can significantly reduce whole wall construction thicknesses. Take the example of a traditional cavity walled construction with a 102.5 mm brick outer leaf and a 100 mm medium density block inner leaf (with a 6.6 per cent thermal bridging factor assumed for mortar joints).

In this example a 90 mm thickness of lower-lambda phenolic insulation, plus a 10 mm air gap, is all that is needed for a whole wall U-value of 0.18 W/m<sup>2</sup>.K. This construction could be applied to help meet Building Regulations and standards across the UK, including in Scotland where they are most stringent.

## Performance, not compromise

In balancing the different demands of design, preferred construction and building performance, compromises sometimes have to be made. Is space more of an issue than energy efficiency? Will performance suffer at the hands of convenience? Straightforward solutions are however available that resolve the dilemmas, and allow designers to continue to employ the popular cavity wall construction approach whilst keeping walls slim and well insulated.

*Adrian Pargeter is head of technical and product development Kingspan Insulation*

*'The most recent changes to the regulations significantly raised the insulation levels required; as a result the overall thickness of the external walls, and consequent footprint, can also increase considerably'*



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enq.221

## C-Bonded – New Technology from Duravit



C-Bonded is a new technical solution developed by **Duravit** for the bathroom wash basin and vanity unit. Manufactured with millimetre precision, the ceramic of the washbasin is fitted to the furniture, with both materials appearing to bond seamlessly as a single unit. This completely new look produces an exceptionally sleek washing area. The "c-bonded"

solution not only looks and feels impressive, DuraCeram®, the patented special ceramic that actually makes this precision and moulding possible, is also particularly wear-resistant. The smooth, seamless surfaces of the washbasins are quick and easy to clean and also incorporate generous storage space.

0845 500 7787 [www.duravit.co.uk](http://www.duravit.co.uk)

enq.222

## Kingspan launch more lower lambda products



The future path to energy efficient buildings will be revealed on 1st August when leading manufacturer, **Kingspan Insulation**, launches four advanced, low lambda insulation products for floors, walls and soffits. Kingspan Kooltherm K103 Floorboard, K110 and K110 PLUS Soffit Board, and K118 Insulated Plasterboard feature an advanced, fibre-free insulation core, enabling them to

achieve an outstanding thermal conductivity. As a result, the products can facilitate buildings to be built to the upper levels of fabric performance with minimal thickness. The launch follows the huge success of Kingspan Kooltherm K106 and K108 Cavity Board which were released earlier in the year.

01544 387 384 [www.kingspaninsulation.co.uk](http://www.kingspaninsulation.co.uk)

enq.224

## Find paradise with Kinedo Eden from Saniflo

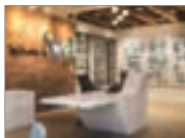


The range of self-contained Kinedo shower cubicles from **Saniflo** now features the stunning Eden with polished chrome profiles and external Cristal Plus coated glass panels plus internal panels in gorgeous opaque white glass. As with all Kinedo cubicles they are completely leak-free with no requirement for silicone or grout. Available as quadrant and corner versions, with either pivot or sliding doors and left and right handed versions. It comes in the full range

of popular sizes including 800mm x 800mm, 900 x 900, 1000 x 800, 1200 x 800 – ensuring it is suitable for every shape and style of bathroom. For more information visit the Saniflo website.

enq.223

## Antarctica Corian® transforms historic office



Bluesky Design Interiors have transformed a former canalside warehouse into an exciting and dynamic workspace for Well Pharmacy in Manchester. Combining the listed building's original features and character with contemporary styling, the team created a bespoke reception centrepiece in Antarctica Corian® from

CDUK. Fabricated by Production Fabricators, the 14m<sup>2</sup> desk was complemented by a matching waiting bench in the landlord's lobby. The design concept is based on the building's location. The shape of the desks reflects the ripples in the canal water, creating a simple desk that has an organic form. The sleek lines of the desk contrast with the textured timber and exposed walls of the building's interior.

0113 201 2240 [www.cduktd.co.uk](http://www.cduktd.co.uk)

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# Ahmarra Doors make their debut at the O2!

Specialist fire door manufacturer, Ahmarra, supplies and installs doorsets for the new InterContinental London – The O2. Ahmarra supplied and fitted over 300 severe duty timber fire doors in an FSC cherry veneer for the new 5-star hotel situated on Greenwich Peninsula.

Ahmarra's contract consisted of manufacturing and installing fire rated doorsets for the public areas including reception, restaurants, meeting rooms, ballroom, toilets and spa areas.

"Our experience of manufacturing doors for luxury hotels has enabled us to offer a premium product, which not only looked great, but was priced to fit the strict budget controls" said Sam Doran, Ahmarra's Sales Director.

Hasham Soliman, General Manager of the hotel, said: "We are thrilled to have opened the doors to our eagerly awaited luxury hotel in one of the capital's most vibrant new entertainment and



events districts. At InterContinental London – The O2, we have truly exceptional facilities for business and leisure travellers visiting the city and an incredible team ready to put this hotel firmly on London's centre stage."

Ahmarra's reputation for excellence has led to it supplying timber doors for some of the UK's finest interiors, from private homes to luxury

hotels and commercial buildings. Current 5-star London hotel projects include The Mondrian at Sea Containers House, The Metropolitan by Como and The Mandarin Oriental, which are both on Park Lane.

02392 389 076 [www.ahmarra.co.uk](http://www.ahmarra.co.uk)

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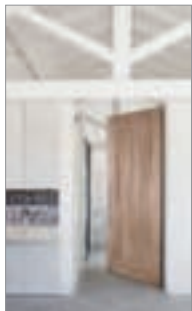
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## New Reeve doors range now available



Reeve Wood's doors are open and welcomes you to its new door range. Reeve Wood's nine standard designs are available and any other design and style can be supplied – truly bespoke.

Reeve Wood offer a variety of wood species including: Oak, Douglas Fir, Ash, Cherry and Walnut. Oak doors can be finished in any of the company's bespoke colour options. Any bespoke design, size or finish it will be made to specific requirements contact the company for more information.

01553 776 835 [www.reevewood.com](http://www.reevewood.com)

enq.231

## Panama Chrome indoor blind



A new fabric for interior blinds, which combines light and heat control properties and retains good indoor to outdoor visibility, has been unveiled by **Hunter Douglas**. Sunscreen Panama Chrome uses fibreglass and PVC to provide high levels of durability and also

achieves a solar reflectance value of more than 75 per cent. Available in five colours, the range has BREEAM-NL/EN145032-based Glare Control 3, which is the highest class for indoor blinds with indoor-to-outdoor visibility, achieved thanks to its special metal coating, which ensures an essential diffuse light transmission value of less than 2 per cent. The Sunscreen Panama Chrome range is also highly durable, which means less maintenance and lower operating costs.

01604 766251 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

enq.232

## Thomas Dudley becomes BIM compliant



**Thomas Dudley Ltd**, a market-leading bathroom and washroom products manufacturer based in the West Midlands has officially become BIM compliant. Dudley products have been trusted by the trade for over 40 years and are designed for simple installation and servicing. Spares are also readily available all to maximise the working life and minimise costs of every application on site. Simon Fleet, Thomas Dudley's Sales & Marketing Director said: "This is a great achievement and milestone within Thomas Dudley. We are extremely proud to be able to offer specifiers BIM data and model files, and will continue to drive further innovation and product development." Dudley offers a range of concealed solutions that are ideal for both domestic bathrooms and commercial washrooms such as the Vantage and Miniflo concealed cisterns. Both products are BIM compliant and offer 6/4, 5/3 or 4/2.6 litre dualflush to maximise water efficiency and are approved by the European Water Label Scheme. Other Dudley products to be BIM compliant include Illusion in-wall frames and Resan damage resistant sanitaryware. All products are manufactured to the same high standard to support Thomas Dudley's values of exceptional quality and longevity. For any other information please visit the company website.

0121 557 5411 [www.thomasdudley.co.uk](http://www.thomasdudley.co.uk)

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enq.234



## Irish grind school sees benefit of Gerflor



The Institute of Education occupies seven large Georgian buildings on its Dublin City Centre campus. With a refurbishment due, the overall level of academic excellence would spill over onto the institute's requirements for top quality throughout the project.

The flooring aspect would take the full brunt of the new requirements with international flooring and interiors specialist **Gerflor** rising to the top of the class to deliver the requisite quality. They would specify some 1200m<sup>2</sup> of Gerflor's Taralay Impression Comfort flooring, spread over three levels and colour themed in red, blue and yellow. Taralay Impression Comfort comprises of a Very High Density foam backing reinforced with glass fibre and a printed design.

01926 622600 [www.gerflor.co.uk](http://www.gerflor.co.uk)

enq.235

## Affinity255 flooring creates a bold design



Affinity255 PUR luxury vinyl tiles from **Polyflor** were recently used to create a simple yet stunning floor design for a refurbished common room area at Nottingham Girls' High School. Wood effect designs from the LVT collection were installed at the independent school for girls near Nottingham

city centre. A large square was created using the Jet Black Ash shade in the centre of the floor to contrast against the common room's white furniture. The Affinity255 collection features a cross linked and UV cured polyurethane reinforcement (PUR) which protects the floor and allows for a simple cleaning regime, making it ideal for break out areas where food and drink is consumed.

0161 767 1111 [www.polyflor.com](http://www.polyflor.com)

enq.236

## Safetytread - pioneers of anti-slip stairnosings

Safetytread products are a range of bespoke, premium, high quality anti-slip stair nosings manufactured in the UK.

Safetytread is environmentally friendly and provides a more economical solution than cheaper plastic materials. The treads will add excellent slip resistance to any staircase (internal or external); can be tailor-made to fit the exact dimensions of a stair tread and are available in a wide range of colours.

We will meet your stair nosing requirements with a tailor-made, bespoke solution, filled in your desired colour.

For more information please visit [www.safety-tread.co.uk](http://www.safety-tread.co.uk) or call us on 01202 625596.



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enq.238

# Building Automation – Creating Smarter Homes for Smart Consumers

By Asad Zaidi, channel marketing manager – Smart Space, Schneider Electric

An automated home brings together many control aspects including security, lighting, temperature, audio and video entertainment systems, blinds and curtains, sprinklers etc. You can enter your home and find the temperature perfectly set for your arrival, or have the lights go up as the sun goes down, or even unlock your front door with a smartphone; the possibilities are endless. There are different types of systems in the market capable of automating a stand-alone devices like cameras or heating etc., but a fully integrated system can incorporate all of these disparate systems and combine them into one single point of control or an application. All of these connected elements work together to make the home more energy efficient, more convenient and safer for the homeowner.

## Home is where the smart is

In a home, different systems like lighting, heating and cooling can be automated to improve conservation, convenience and safety. Households benefit further if these home automation systems provide users with information on their energy consumption trends. Home automation systems such as Schneider Electric's Clipsal C-Bus Home Automation System gives homeowners an insight on their energy use by centralising control of key home devices and services, collecting data on usage and consumption at the same time.

Furthermore, the Clipsal C-Bus from Schneider Electric brings this centralisation to an even higher level. Heating, lighting, entertainment and security features such as alarms and locks converge into one integrated solution. As a security solution, it can provide peace of mind and protection for your loved ones whether you are there with them or away. Whether you are throwing a dinner party for your friends or enjoying a quiet night in with your family, Clipsal C-Bus simplifies your life by integrating all your devices into one single controller, allowing you to relax and enjoy your home. Using a mobile device, a touch screen or a simple push of a button, you can secure the home and create an ambiance perfect for the moment.



We are looking to drive the change in what homes can do for their owners. Together with architects, engineers, electricians and other partners, we are bringing connectivity to homes through solutions like Clipsal C-Bus, KNX and different other platforms. These technologies connect a wide variety of devices, allowing home owners to control everything from lighting and temperature to audio and video systems.

## Increased comfort, lower bills

By integrating energy management with other home control functions, the C-Bus and KNX home control systems go beyond automation. They turn homes into smarter living spaces. They let us monitor and manage our homes to maximise energy efficiency and lower energy bills, either wirelessly in the home or remotely from work, during leisure and even further afield. This combination of mobile devices and remotely operated technology has given us this freedom and it's transforming how we live.

C-Bus Wiser lets you program, monitor and operate your home's heating and air conditioning, lighting, appliances, electronics and security

systems while home or away and adjust them according to what you want to pay each month. Without sacrificing convenience or comfort, you can make smart decisions and choices that can achieve savings of up to 30 per cent on your home's annual energy costs.

There's both a growing need and desire for people to be more energy efficient than ever before. Stories regarding global warming and rising energy costs are always in the headlines, and homeowners are increasingly worried about keeping their utility bills in check. However, people looking at installing a smart home system also want an element of style and flexibility, so a connected system that can be updated and added to over time is very much in line with people's habits and needs. Energy efficiency is all about controlling your habits more readily and looking for ways to lower your carbon footprint, but there doesn't have to be a compromise with style and aesthetics. There's a very clear drive towards this when so much of our lives are already integrated with technology – and people are looking for this to be extended into their homes.

enq.239

0870 608 8608 [www.schneider-electric.com](http://www.schneider-electric.com)



## OPTIM-R installed on sustainable housing



The superior thermal performance of the Kingspan OPTIM-R Flooring System has helped a new residential development in the fashionable area of Battersea Village to meet its strict sustainability goals. The two five and six storey apartment blocks and two townhouses have been designed to

combine modern architecture with high sustainability standards, including the use of the innovative natural building material, Cross-Laminated Timber (CLT). 111m<sup>2</sup> of the Kingspan OPTIM-R Flooring System was specified for the townhouses due to its high level of thermal performance, which is five times that of other, more commonly available insulation materials.

01544 387 384 [www.kingspaninsulation.co.uk/optim-r](http://www.kingspaninsulation.co.uk/optim-r)

enq.240

## Tough new Rapid Floor Paint from Bradite



Bradite, one of the UK's longest established quality paint manufacturers, has launched a new high performance, single-pack, moisture-cure polyurethane floor coating designed for professional application. Aimed at professional painters and decorators, contractors and specifiers, new Rapid Floor Paint PW74 is recommended for use on interior concrete,

wood or steel floors, and for use over existing epoxy and polyurethane coatings. It delivers a gloss coating that is surface dry in two hours, a minimum overcoating time of eight hours and a maximum overcoating time of 16 hours. The surface is ready for light traffic after a minimum of 24 hours following the final coat.

01248 600315 [www.bradite.com](http://www.bradite.com)

enq.241

## Polyflor flooring makes the grade at Academy



High performance flooring from Polyflor, has recently been installed in classrooms at The City of London Academy secondary school and sixth form in Southwark. Around 2000m<sup>2</sup> Classic Mystique PUR sheet vinyl flooring was installed into classrooms on the first floor of the

school building. A popular flooring choice for projects in the education sector, the hardwearing, homogeneous Classic Mystique PUR floorcovering is ideally suited to the demands of high traffic school environments, demonstrating outstanding durability and abrasion resistance. Classic Mystique is also enhanced with PUR, Polyflor's exclusive and robust polyurethane reinforcement which is cross linked and UV cured to provide superior cleaning benefits.

0161 767 1111 [www.polyflor.com](http://www.polyflor.com)

enq.242

## New builds remain attractive



Almost 70 per cent of people would like new build properties to be better equipped for modern living, with people citing a desire for more storage, renewable energy, and pre-wired TV and broadband. Buying a new build remains attractive – more than half would opt for a new build because it allows them to have input on the style and design of the interior. Figures come from a nationwide survey, commissioned by Sky to explore consumer expectations of new build property

against a backdrop of changing media consumption and rapidly advancing technology. Broadband and TV services ranked in the top five essential services, just behind more traditional utilities.

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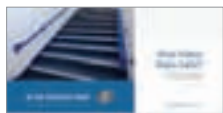
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## Quantum Flooring works to make stairs safer



Many accidents occur on stairs - there are ways to reduce the risk. In partnership with the UK Slip Resistance Group (UKSRG), **Quantum Flooring Solutions** has been involved with the compilation of a document which is intended as 'a one stop shop'

for information on features which can help make a stairway a safer place. The objective is for the document to be of value to anyone involved in the design, specification, construction, installation, fitting or maintenance of a stairway – giving impartial and independent advice on the elements of a stairway that need attention for safety purposes, and where relevant it indicates the areas where regulatory guidelines need to be met. For more information visit the website.

0161 627 4222 [www.quantumflooring.co.uk](http://www.quantumflooring.co.uk)

enq.244

## The great outdoors with AkzoNobel



**AkzoNobel** have now garnered their substantial expertise into producing through their Sikkens brand, a new all-embracing wood coatings brochure aimed directly at delivering top quality products for the exteriors market. The new AkzoNobel exterior wood coatings brochure is a collection of high quality products that covers; impregnating primers,

primers, sealants and fillers, together with providing a one-stop solution for mid-coats, top-coats, maintenance products, oils and care products...all in one easy-to-use reference guide. It's a fully encompassing selection of high quality wood coatings for a myriad of exterior wood applications.

01254 687950 [www.sikkens-wood-coatings.co.uk](http://www.sikkens-wood-coatings.co.uk)

enq.245

## Fire safety seminar exposes industry knowledge gap



A survey following a series of in-depth presentations at the recent Housebuilders' Fire Protection Seminar – hosted by European specialist supplier to the construction, building and industrial markets, **SIG plc** – has revealed that there may be a knowledge gap amongst housebuilders regarding the correct specification and installation of fire-stopping measures. Taking place at the impressive Saddlers' Hall in London, the event saw SIG joined by the Children's Burns Trust, the Chief Fire Officers Association and the Association for Specialist Fire Protection (ASFP), to speak about the threat of fire in residential buildings, and what this means for housebuilders. The topics covered included fire protection best practice, looking at the consequences of non-compliance and the need to have workers correctly assessed for competency in the installation of passive fire protection elements. Taking the stage to open the event, Paul Gordon, Managing Director of SIG Distribution asked the audience whether they believed their projects had appropriate fire-stopping, repeating the question once the event concluded. From the beginning to the end of the seminar, the number of attendees that agreed shifted from 72 per cent to just 40 per cent, showing the current knowledge gap in the industry.

0114 285 6300 [www.sigplc.com](http://www.sigplc.com)

enq.246

enq.247

enq.248



## Gatic CastSlot specified for Waitrose car park



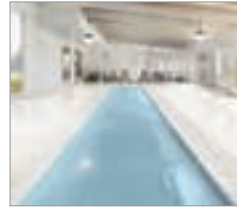
Gatic Civil Drainage, part of **Alumasc**, was recently specified for Waitrose's new store in Oxford for its CastSlot system from its market-leading Slotdrain range. The installation was part of a £10m project to build a new store for the premium food retailer. Gatic's CastSlot is designed to create a continuous interception of

surface water, as well as provide a discreet and durable surface opening. Manufactured in three metre lengths of galvanised steel, it benefits from fewer joints and improved flow performance. A high flow inlet and channel capacity meant CastSlot provided a tidy, unobtrusive and functional solution.

01304 203545 [www.gatic.com](http://www.gatic.com)

enq.249

## Rising tide for fibreglass pools



Fibreglass pools are now firmly established within the swimming pool industry and it's not difficult to see why. Installation can be carried out by your builder and can be completed within a fraction of the time and cost of a concrete or liner pool. Our fibreglass pools are a one-piece reinforced construction with options for internal corner steps, roman ends and automatic cover

chambers. Insulation is now available conforming to Part L of Building Regulations. **Bakewell Pools** is a family business that has been supplying fibreglass pools for 20+ years. Please check our website for more information and visit our showroom.

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## Aluminium grilles become a decking favourite



**neaco's** patented aluminium open grilles have attracted widespread demand as a more practical alternative to traditional timber decking. The company's Techdek system has become a popular choice for garden decking, sun terraces, external walkways. Architects have been quick to appreciate Techdek's advantages: the product is non-toxic, non-combustible, corrosive-free, extremely durable and easy to install without requiring hot works such as welding. A patented swage-locked construction between bars enables high structural efficiency and load-bearing capacity.

**neaco's** National Sales Manager, Peter Melia, comments: "We have been attracting a lot of specifications from projects which require low-maintenance decking and terraces – Techdek is virtually maintenance-free, which gives it a clear advantage over wood, which can be vulnerable to the elements and requires regular surface treatment is required to protect the grain. Our grilles are available with a ribbed surface for anti-slip performance." Techdek is similarly suited to balcony flooring with grille profiles that provide a generous 74 per cent contact area yet drain water efficiently. The system can be specified as part of **neaco's** all-in-one modular balconies.

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## Time to hit the deck!

**James Latham's** latest range of premium composite decking offers the natural look and feel of tropical wood with outstanding performance properties and ultra-low maintenance.

Manufactured in Germany, ProFi Deck is offered in two stunning design styles. UPM ProFi Classic Deck offers the beauty of a hardwood deck without the high maintenance providing superior resistance to UV, frost, stains and impacts when compared to traditional composite or wood decks.

The UPM ProFi Design Deck range gives outdoor living a fresh and modern feel. Renowned designers from around the world have been inspired to work with the wide colour range and clean looks of the Design Deck range which offers high impact and scratch resistance, a reversible profile, a closed surface and Lignin-free colour durability. Plus, it is also manufactured using more than 50 per cent recyclable materials.

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**254**





# Different strokes for different folks

Swimming pool designs can successfully combine safety with creativity, but also need to be closely aligned to the particular requirements of users. Specialist pool industry association SPATA provides some design advice.



**T**he design of a swimming pool, whether indoors or outdoors, will materially depend on the requirements of the potential pool owner and the particular use to which the pool is going to be put.

If the plan is to use the pool for exercise, then the length is all-important – although a counter current unit can often be installed to reduce the size of the pool. If the pool is to be constructed in a building, the width is the key factor, as the width of the pool will determine the width of the building (including the pool surround for walking on). The construction cost resulting from the width of the building tends to be much more expensive than its length, due to the span required over the void below.

The design process can be made easier by working with a member of the Swimming Pool and Allied Trades Association (SPATA). Whether or not architects have worked on a pool project before, the expert advice and assistance that members can provide can help in various ways. Not only in streamlining the project but also to ensure that the timescales and budgets are met with an overall assurance of quality.

Some SPATA members are designers in their own right and some can undertake the whole project, but ensure that whoever you work with has Professional Indemnity (PI) insurance. Consideration of relevant pool standards is a must, both for commercial and domestic pools and best practice means adhering to industry-specific standards, while also taking other related standards into account.

## Creative freedom

For many years, it has been the norm that the rectangular 2:1 length to width proportional ratio for swimming pools provides an appropriate visual balance and appearance, and is ideal for exercise. Depending on space availability however, the length can be extended and the width reduced. As this shape is relatively simple to construct and therefore relatively cheaper compared with curved structures, it is also very popular!

Once the decision is made to go away from a rectangular or square shape, the variations in shapes possible are endless. For example, some clients (and architects) may want something unique and personal, such as a 'figure of eight'; L or Y-shaped, or kidney shaped pools. More unusual shape requirements have included guitars or grand pianos, and pools may be required to incorporate spas, fountains or waterfalls.

Access required to the pool is usage-dependant. For example, a Roman end step feature in the width of the pool may preclude the swimmer from easily turning and, therefore, a ladder (or ladders) may be more appropriate. Alternatively, if space permits, a side step bay may be the answer.

Regarding safety and usage, there may be equipment that needs to be factored in from the offset. Planning and building these features in will help retain the aesthetics of the pool that could be lost by ad hoc additions at a later date. Again, the shape and positioning of the pool is a factor that could affect these added features.

*'The construction cost resulting from the width of the building tends to be much more expensive than its length, due to the span required'*

The only way to illuminate pool water is underwater floodlighting. Lights around and outside the pool will not illuminate under the water. Equally fibre-optics and small, spa type lights are excellent for illuminating steps under water or providing a light feature, but not full illumination.

### SPATA – representing installation quality

The Swimming Pool and Allied Trades Association (SPATA) represents approximately 175 swimming pool companies in the UK, Ireland and overseas, including designers, contractors, service engineers, trade suppliers and retailers of pool equipment and ancillaries. For specifiers the benefits of using a SPATA member are clear, as the association has an internationally-respected reputation for quality, works with other industry bodies to set standards and requires members work to an industry Code of Ethics. The organisation also runs the Spatex Pool, Spa & Wellness Show which next year is taking place at the Ricoh Arena, Coventry from 31 January-2 February.

While a well-installed pool provides years of healthy pleasure – and a healthy increase in the value of a property, creating a swimming pool demands a wide range of specialist skills. To have a trouble-free installation, it is essential to select a reputable supplier. SPATA members have to meet minimum criteria before they are accepted into membership, and the organisation sets standards governing construction and operation of pools,



spas, saunas and steam rooms – our members have to follow these. Members' work is inspected before they can join, and periodically re-inspected afterwards. The organisation also provides technical advice for both members and customers, as well as water treatment training courses.

With so many pool design options available, it makes great business sense for construction and architectural professionals to partner up with companies who promote industry standards, and offer a wealth of experience.

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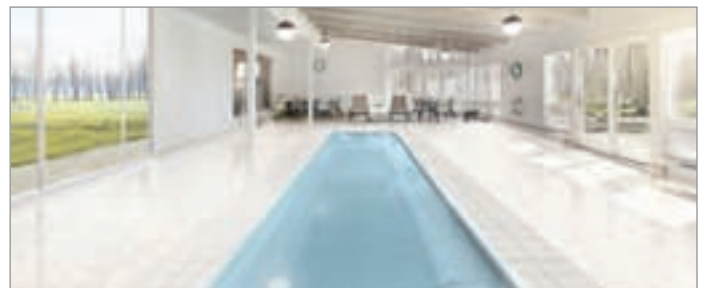
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## Brett and Marshall K combine talents



Brett Landscaping has recently performed in partnership with Marshall K Paving Contractors Ltd to supply and install paving at the National Centre for Circus Arts in London. With its riven surface sparkle in classic Silver Fleck, the Centre chose Aura block paving to rejuvenate the Courtyard event area. 700m<sup>2</sup> of Brett Aura block paving in Silver Fleck was selected to create an extremely effective Courtyard visual. Director Jon Dix said: "Our objective was to revive the area with re-laid setts that were sympathetic and appropriate to the aesthetic of the building. With Brett Landscaping, and Marshall K Paving, we have achieved exactly that."

0845 608 0570 [www.brettpaving.co.uk](http://www.brettpaving.co.uk)

enq.258

## Marmox Multiboard Peterborough Pool



Swimming pools present a notoriously aggressive environment for building materials including reinforced concrete, so it is a measure of Marmox Multiboard's inherent durability and other attributes that it has been specified for an unusually challenging refurbishment contract at a leisure centre in

Peterborough. Half-size sheets of Marmox Multiboard, measuring 1250x600mm, were able to be fixed directly over the top of the existing asbestos based substrate, the Multiboards also offer a greatly improved thermal performance which will help prevent problems of condensation forming. They offer positive physical characteristics in addition to being waterproof.

01634 835 290 [www.marmox.co.uk](http://www.marmox.co.uk)

enq.259

## JDP and Peter Savage drainage offers solution for major highway improvements



Leading water management specialists JDP has supplied over 47 tonnes of covers and gratings from specialist manufacturer Peter Savage to provide effective drainage water management for a £33m highway improvement contract on the A30 near Bodmin, Cornwall. Kier Construction was awarded the contract to dual a 4.5km section of the A30 between Temple and Higher Carblake, to provide urgent relief and ease congestion on the last section of single carriageway in this busy part of the region. JDP's water management team supplied a variety of covers and gratings including the Savage V-Max and Savage Ultra products from its depot in Launceston. The V-Max product is specifically designed for highway slip form drainage, and provides durable and easy un-obstructed access with a captive but removable grating. JDP's range of products provide effective drainage for highways and civil engineering works including specialist solutions for road building, retaining walls and embankments, ground stabilisation, SuDs and surface water drainage. Through technical knowledge, and a strong relationship with the product manufacturer, JDP provided expert advice and support for Kier Construction, ensuring the most effective drainage solution for the major highway works. The project is anticipated to run for 22 months with completion in Spring 2017.

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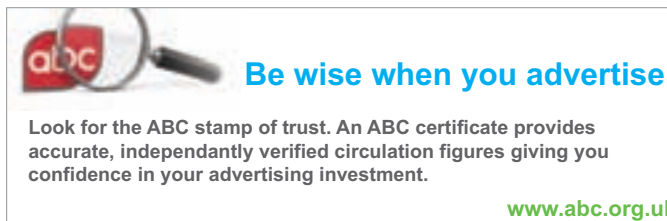
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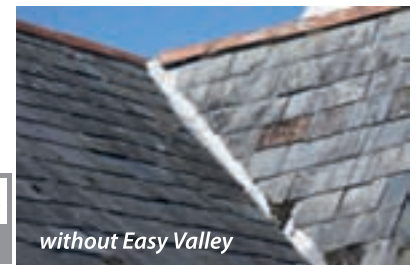
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