

# adf

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07.17

*Cover*

## 262 Fifth Avenue, New York City

Supertall tower is Russian architect  
Meganom's first commission in the US  
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## CYGNET HOSPITAL, COVENTRY

Tangram Architects brings its expertise to a  
mental health challenge on a gateway site

## DAVID ROSS SPORTS VILLAGE

Breaking down the scale at Nottingham centre



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# FROM THE EDITOR



This will long be remembered as the year when regeneration became devastation.

Beyond the appalling human tragedy which the Grenfell Tower fire represents for the individuals killed and injured and families traumatised for life, is a wider shadow cast across the construction industry.

While the investigation is going to be necessarily long and complex, this only reflects the horrendous web of complexity and, possibly, laxity when it comes to the regulations which are intended to protect building users. At the time of writing, all 120 samples of cladding which have been sent to the BRE for testing by 32 local authorities have been found to be below the threshold needed to qualify as “limited combustibility” which would make them suitable for use under the Building Regulations.

For whatever reason however, Building Regulations appear vague and/or confusing on of all things, fire performance, and are open to interpretation to the extent that according to some commentators it’s unclear even whether the cladding material itself is required to be fire retardant. This means that Grenfell may have ‘complied with regs’ but the cladding could still have fatally compromised the fire performance of the exterior. According to David Metcalfe of research body the Centre for Window and Cladding Technology, the current testing being done by the BRE is looking more comprehensively at combustibility throughout the external system – when previously cladding materials could be passed on the basis of their surface spread of flame being Class 0. This begs the question, have materials potentially been given an easy ride?

Approved Document B of the Regulations may be flawed in not explicitly stating that cladding should be of limited combustibility, but as Metcalfe told the BBC, “most have interpreted it to mean that it doesn’t have to be.” As he stressed though, focusing on the cladding may not be giving the full picture, when the whole external build-up could be equally relevant. What is not in doubt is that this tragedy is forcing unprecedented and welcome scrutiny onto how we specify our buildings.

There may also be much more to this than the building’s exterior, and the questions are as numerous as the theories. Why did the fire spread so quickly internally? Was the fire stopping between floors replaced effectively following the installation of the new heating system last year? At the time of writing, it is unclear that it was. The refurbishment of Grenfell Tower took place in 2016, following that a fire risk assessment was signed off by Kensington and Chelsea. This was in a context where if sufficient test data do not exist on products’ fire performance, and because Building Regulations have not been adequately updated, ‘desktop studies’ can be submitted to the Building Control approval. Reportedly, the NHBC has been accepting sub-A grade materials, based on previous desktop studies. Nothing here suggests a belt and braces, robust system, to say the least.

Theresa May has said that she wants a “major national investigation” into not just Grenfell but the use of cladding. While just investigating one material type will be a huge task, it’s a much broader issue than that – about how buildings are specified, and what has happened to our regulation system.

None of this conjecture is of any consolation to the victims’ families and friends. The least that they could expect is that the investigation is pursued as deeply, transparently but also as rapidly as possible to give a real signal that the industry wants to take the initiative in avoiding further disasters.

**James Parker**  
Editor



**ON THE COVER...**  
262 Fifth Avenue is a 1000-foot supertall glass and aluminium tower in Manhattan, by Russian architects Meganom  
Image © DBOX  
For more information, go to page 08.



## HOK HEIGHTS

# AECOM and HOK tackle tallest tower yet

AECOM has been appointed to deliver 67-storey residential tower Spire London for developer Greenland Group.

The firm's high-rise construction arm AECOM Tishman will lead the delivery of the HOK-designed building, which is set to become the tallest tower of its kind in Western Europe once completed. The developer has also awarded the cladding contract to Permasteelisa Group.

Dan McQuade, group president of AECOM Construction Services, said: "We



are very excited to work with Greenland on this iconic project in the heart of London's Docklands. It will be our fifth project working together across the globe, and we look forward to further strengthening our relationship and helping Greenland to bring their vision to life."

The £800m Spire London, which will comprise 861 apartments and penthouses, is already under construction on the 2 Hertsmere Road site near Canary Wharf. The tower is expected to complete in 2020.

## GRENFELL TOWER

## Architects feared dead

Two young London-based architects are feared to have died in the Grenfell Tower fire last month.

Italians Gloria Trevisan and fiancé Marco Gottardi, both 27, moved to London in March 2016 to pursue careers in architecture.

The couple both graduated from the IUAV University of Venice, finishing their courses in the same year. Before arriving in the UK, Trevisan completed an internship at Negri & Fauro Architects in Padua, and was involved in the restoration of a Venetian palazzo.

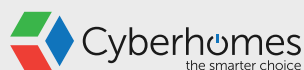
In London she worked as an architectural assistant for conservation specialists Peregrine Bryant in the practice's Fulham office, while Gottardi, who was a surveyor before switching to architecture, was employed by English-Italian practice Creative Ideas & Architecture Office (CIAO) near St Paul's Cathedral.

Peregrine Bryant commented: "Gloria had recently joined the practice and was an extremely promising and talented graduate. There is no doubt that she could have had a very successful career and her loss is a great loss to the profession. But above all, our thoughts are with the family and friends of Gloria and Marco."

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# EVENTS

## SEMINARS

**Green house: How to design a truly resilient home beyond solar panels**

13 July, London

[www.architecture.com/whats-on](http://www.architecture.com/whats-on)

**Fees: How to best calculate, negotiate and monitor**

05 September, London

[www.architecture.com/whats-on](http://www.architecture.com/whats-on)

**CDM 2015: Is your project in line with the current regulations?**

19 September, London

[www.architecture.com/whats-on](http://www.architecture.com/whats-on)

## FESTIVALS

**Open House London**

16-17 September, London

[www.openhouselondon.org.uk](http://www.openhouselondon.org.uk)

## TRADE SHOWS

**Decorex**

17-20 September, London

[www.decorex.com](http://www.decorex.com)

**100% Design**

20-23 September, London

[www.100percentdesign.co.uk](http://www.100percentdesign.co.uk)

**Restaurant Design Show**

26-27 September, London

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

**Healthcare Estates**

10-11 October, Manchester

[www.healthcare-estates.com](http://www.healthcare-estates.com)

**Surface Materials Show**

10-12 October, Birmingham

[www.ukconstructionweek.com/](http://www.ukconstructionweek.com/)

**Smart Buildings Show**

10-12 October, Birmingham

[www.ukconstructionweek.com/](http://www.ukconstructionweek.com/)

**Timber Expo**

10-12 October, Birmingham

[www.ukconstructionweek.com/](http://www.ukconstructionweek.com/)

**Sleep**

21-22 November, London

[www.thesleepevent.com](http://www.thesleepevent.com)

## MAGGIE'S CENTRE

# Hardwood CLT for Maggie's Oldham

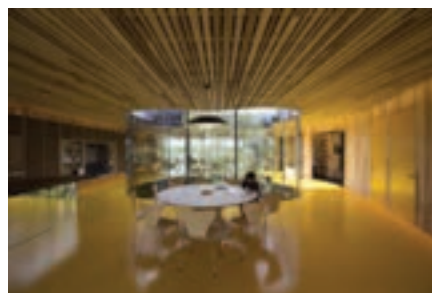
What is thought to be the world's first permanent building constructed entirely of hardwood cross-laminated timber (CLT) has opened in Oldham.

Designed by dRMM Architects for cancer charity Maggie's, Maggie's Oldham is made from American tulipwood, which is believed to be 70 per cent stronger in terms of bending than typical CLT-grade softwood.

Described as a "pioneering piece of permanent architecture," the facility is built from more than 20 panels of cross-laminated tulipwood ranging from 0.5 metres to 12 metres in size.

dRMM co-founder Professor Alex de Rijke said: "From the Oldham project inception we knew it was the right material for Maggie's, not only structurally and visually, but conceptually. An elevated, open plan, all-timber and glass building – with trees growing through it, and every detail considered from the perspective of use, health, and delight – was always going to be special."

According to the American Hardwood Export Council, tulipwood CLT is one of the most sustainable timber species because of how fast it replenishes. The material used for the Oldham centre (about 116 m<sup>3</sup>



of logs) would be replaced in approximately two minutes because of its vast availability and underutilisation.

Other architects who have designed Maggie's centres include Zaha Hadid, Richard Rogers and Norman Foster.

## SERPENTINE PAVILION

# Kéré's timber canopy in Kensington

Award-winning Burkina Faso architect Diébédo Francis Kéré designed this year's Serpentine Pavilion, with a bold timber structure that brought his "characteristic sense of light and life" to the lawns of Kensington Gardens, London.

The architect, who leads Berlin-based practice Kéré Architecture, is the 17th architect to accept the Serpentine Galleries' invitation to design a temporary Pavilion in its grounds as their first structure in London.

Inspired by a tree in his home town of Gando, Kéré's Pavilion "seeks to connect its visitors to nature – and each other." The roof, supported by a central steel framework, mimics a tree's canopy,

allowing air to circulate freely while offering shelter against rain and heat.

Kéré attended the first RIBA International Week held on 3-7 July.



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## FOSTERS

## Bloomberg HQ to open in autumn

The Foster + Partners-designed European headquarters of media giant Bloomberg is nearing completion, the architects have reported.

Located in the City of London between the Bank of England and St Paul's Cathedral, the stone and bronze-clad building will provide 500,000 ft<sup>2</sup> of sustainable office space along with two new public plazas, a restaurant arcade and a cultural hub that will reinstate the ancient Roman Temple of Mithras to its original site.

Foster + Partners founder Norman Foster said: "The design is a highly specific response to Bloomberg's needs, it is an embodiment of the organisation and its core values, embracing the latest principles of sustainable design, and will be a magnet for global talent to the City of London."

Expansive, open floorplates are connected by a spiral ramp that spans seven floors of the nine-storey building. Wide enough for three people to walk alongside each other, it is designed to connect employees and encourage passing interactions as they travel between floors.

Desks, to be arranged in circular pods around a central table, will be designed to allow two people to sit and collaborate in front of the screen. On the sixth floor, a double-height, column-free 'pantry' illuminated by natural light from the atrium ceiling will be the central hub of the building and offer views of St Paul's Cathedral.



## MEGANOM SUPERTALL

## Aeronautics inspired tower to rise in New York

Images of a 1,000-foot glass and aluminium skyscraper to be built on New York's Fifth Avenue in Manhattan have been released.

The building, 262 Fifth Avenue, is designed by Russian architects Meganom who took inspiration from aeronautics to create the floors as "shelves in the air, from which the city is seen."

Developed by Israeli-Russian entrepreneur Boris Kuzinez, 262 Fifth Avenue will rise next to an adjacent 12-storey limestone building also owned by Kuzinez. Demolition work has started to make way for it.



The designs feature wide 'porthole' windows on the eastern elevation and three 15-foot wide floor-to-ceiling window walls on the north and south, while a metal observation deck tops the skyscraper. Expansive, column-free residences have been achieved via a structural system that separates the functioning core from the living spaces.

262 Fifth Avenue is Meganom's first commission in the US, but the practice has worked on a number of major schemes in Russia including the Pushkin State Museum of Fine Arts extension and the renovation of the Kremlin Museum.

## Google search ends for UK HQ

Plans for Google's giant wedge-shaped UK headquarters near King's Cross railway station have been submitted for planning.

Proposals for the 11-storey building designed by Heatherwick Studio and Bjarke Ingels Group (BIG) show a sloped structure with an extensively glazed sawtooth facade and a vast roof garden.

Internally, the facility features a column-free 'ground plane' including retail, and a workspace core with naturally-lit double and triple height areas for 4,500 staff. There is a landscaped roof with outdoor amenities, and a diagonal staircase connecting all levels.

Bjarke Ingels said: "Our design is rooted in the local character of the area, taking advantage of the contextually defined building envelope while creating continuously cascading work environments that will connect Googlers across multiple floors. By opening up the ground floor and activating the roofscape, the light and airy workspaces are sandwiched between the terraced gardens on the roof – and market halls, auditoria and shops on the ground."



Thomas Heatherwick added that the architects had treated the new scheme "like a piece of infrastructure, made from a family of interchangeable elements which ensure that the building and its workspace will stay flexible for years to come".

BIG and Heatherwick Studio, who are also working on Google's new California campus, were brought in to collaborate on the scheme after initial designs by Allford Hall Monaghan Morris were rejected by Google. Construction is scheduled to begin in 2018.



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# NEW ARRIVALS

Rounding up the latest movers and in-house appointments across the industry



## MONIKA LAUDENCKA-SOBIK BENOY

Benoy is pleased to welcome Monika Laudenska-Sobik as director in London. This role will utilise Monika's breadth of experience working across mixed use, transportation and commercial projects, with a focus on design management and project co-ordination of major national and international developments. Monika has over 20 years' experience in leading and directing complex projects with large multidisciplinary teams, most recently holding the position of commercial practice group director and office director at CallisonRTKL. Working across a range of sectors, she delivers innovative and creative solutions to large-scale developments in Europe and the Middle East.



## BRAM D'HOEDT URBAN AGENCY

Bram D'Hoedt has been appointed as new associate at Urban Agency. Since joining in 2013 he has brought his talent and experience to several projects ranging from small-scale housing schemes to large-scale residential and urban masterplans. He has led key projects such as the residential schemes Greenacres and Spencer Docks in Dublin, Laayoune education centre in Morocco and the 7 million ft<sup>2</sup> mixed use development and transport hub Qianhai Exchange Plaza in Shenzhen. Bram has been successful as an academic researcher and was published in association with Columbia University and New York Institute of Technology he has also exhibited at the International Arts Campus, Antwerp.

## FRAZER MACKAY WSP

WSP has appointed Frazer Mackay as the new UK managing director to its 750-strong energy and industry business. With 28 years' experience in both business operations and project delivery roles, Frazer joins from Costain where, as sector director for oil and gas he led a team of 500 energy experts and managed a \$150m turnover. A Chartered Engineer, he has successfully worked with blue chip clients such as Shell, BP, INEOS, ExxonMobil, Statoil, SABIC, Total, Valero, PRL and GSK. Based in Glasgow, Frazer will sit on the UK Executive Committee and Leadership Team - reporting to Mark Naysmith, the firm's UK chief executive officer.



## TOM SYKES WATSON BATTY

The Leeds office of Watson Batty Architects has promoted Tom Sykes to associate. Tom is a specialist in what the firm terms the 'Living' sector and was instrumental in the delivery of some notable projects including: Kirklees Excellent Homes for Life PFI for Wates Living Space, Chain Street for Incommunities, Kearns Village for Skipton Properties and Saddleworth Close for Riverside Housing Group and Starfish. As well as additional responsibility to ensure integration of quality assurance systems within the practice, Tom will continue to head up work for Starfish Group for which Watson Batty is their key design partner.



## PHILIP DRING NICHOLAS HARE ARCHITECTS

To recognise the talent and commitment of some of its most senior staff, NHA have decided to make a series of new appointments, including Phil Dring as partner. Phil has worked with the practice since 2005 leading key projects and helped to shape the culture of the practice. Philip has extensive experience at all stages of design, from pre-planning to completion and is currently leading a team on the new masterplan for the Warwick Independent Schools Foundation that includes several new buildings. The firm says "He is a talented designer with great leadership skills that are also appreciated by both clients and colleagues."



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## APPLE ORCHARD ROAD, SINGAPORE FOSTER + PARTNERS

Apple Orchard Road is the first Apple Flagship store in Singapore. The project is another example of the close collaboration between Foster + Partners and the design team at Apple led by chief design officer, Sir Jonathan Ive and Angela Ahrendts, senior vice president of Retail and Online Stores. Its 120 foot (36.5 metre) wide glazed storefront “dematerialises the building’s facade,” say the architects. A thin white canopy cantilevers 25 feet (7.6 metre), drawing the eye towards the interior, while providing shelter from Singapore’s tropical climate. The large stone walls to either side of the interior feature two spectacular curved staircases, hand-carved by Italian artisans from Castagna stone. The staircases “flow” up to the mezzanine floor with integrated handrails which have a tactile and smooth finish.

Ref: 82923



## TEHRAN INTERNATIONAL AIRPORT T-2, IRAN GMW MIMARLIK

One of GMW MIMARLIK’s recent commissions was for the design of the Tehran International Airport T-2. The proposed 175,000 m<sup>2</sup> terminal is designed to serve a total of 26.5 million international and domestic passengers, and the existing terminal will be given over exclusively to “pilgrim traffic”. The simple and yet dynamic form of the proposed terminal presents a strong visual identity that expresses the three main functions of an international terminal; the main processing space for the passengers, commercial areas and the airside lounges. The linear arrangement of spaces within the pier provide flexible use of a total of 28 gates in the terminal.

Ref: 86306



## KHYANG SCHOOL, CAMBODIA WW+P

A new school in rural Cambodia, designed and built pro bono by Weston Williamson + Partners has officially opened. WW+P has designed a building which is flexible and adaptable to meet current and future needs. What’s said to be an innovative, cost-effective and low maintenance design maximises the use of external and internal spaces, incorporating traditional verandas to enable teaching and play in small groups. Locally available materials have been used throughout. The detailing and arrangement of the brick walls has been carefully considered to maximise cross ventilation while also providing variety and interest to the building.

Ref: 50354



### NAPOLI AFRAGOLA STATION, ITALY, ZAHA HADID ARCHITECTS

The first phase of Napoli Afragola Station has been inaugurated. The new rail station at Napoli Afragola is one of southern Italy's key interchange stations serving four high speed inter-city lines, three inter-regional lines and a local commuter line. Designed as an "urbanised public bridge" connecting the communities on either side of the railway, the station is defined by the circulation routes of passengers, minimising distances for those embarking and alighting at Napoli Afragola as well as passengers connecting to different train services. The design enlarges the public walkway over the eight railway tracks to such a degree that it becomes the station's main passenger concourse – a bridge housing all the services and facilities for departing, arriving and connecting passengers, with direct access to all platforms below. The station has been constructed as a reinforced concrete base that supports an elevated concourse of steel ribs clad in Corian, with a glazed roof.

**Ref: 60595**



### UNIVERSITY OF PENNSYLVANIA, USA FOSTER + PARTNERS

The University of Pennsylvania has announced the construction of a new hospital on Penn Medicine's West Philadelphia campus designed by Foster + Partners. It will house 500 private patient rooms and 47 operating rooms in a 1.5 million ft², 16-storey facility on the former site of Penn Tower. Long term flexibility was incorporated into the design so that patient rooms can be adapted and changed over time with minimal impact on the building fabric.

**Ref: 65186**



### MARBLE HOUSE, BANGKOK OPENBOX ARCHITECTS

Openbox Architects' recent residential design intertwines architecture, interior and landscape in the form of marble effect sculpture. The marble finish is in fact a large scale lightweight wall tile with a marble pattern print. As an external finish applied over a layer of internal brick wall, it also acts as weather cladding, shielding the house from direct sunlight, and the heat of Bangkok summers, thus helping to cool down the interior during the day.

**Ref: 27513**





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# PILKINGTON





# VIEW POINT

In his second article on the subject for ADF, Rory Bergin looks deeper at the facets within 'the ethics of development' that architects should consider

Since ethics are primarily about how we deal with each other, architects might be forgiven for wondering what it has to do with buildings built with what are, hopefully, inert materials. But since the purpose of building is to serve the needs of people, clients, users, occupants and society, there are ethical implications to every act related to design and construction, some of which are covered in part by legislation, and many which aren't.

## A check through the two codes of conduct that architects should follow reveals an inadequate response to today's environmental crisis

The central question, as I see it, is: 'Are we being fair to everyone involved in the process?' Another we need to ask ourselves is: "Does our professional ability and knowledge mean that we should take an extra level of care for everyone and everything affected by our work, even when legislation and guidance is absent?"

A check through the two codes of conduct that architects should follow is revealing insofar as it reveals an inadequate response to today's environmental crisis. The RIBA Professional Code of Conduct states: "Members shall respect the relevant rights and interests of others." The ARB Architects Code states: "You should treat everyone fairly. You must act in compliance with your legal obligations. You must not discriminate."

On the other hand, when it comes to the environment, The RIBA Professional Code of Conduct has this to say: "Members should be aware of the environmental impact of their work." (Aware! But not asked to do anything.) The ARB Architects Code states: "Where appropriate, you should advise your client how best to conserve and enhance the quality of the environment and its natural resources." The 'where appropriate' has me baffled. Where would it not be appropriate, given that every project an architect could be involved in must have an impact?

### Impacts over time

In my previous article I set out the four areas within which to consider the ethical implications of any project. The first area looks at the impacts of a building over its design, construction, operation and

demolition phases. What are its impacts on people over time, and how does it change?

For example, a question we might ask in regeneration projects, or in any design project where an existing use is being terminated or moved to facilitate the new project, is 'are people being treated fairly to enable the design and construction process to happen?'

This is particularly relevant to regeneration projects where the lives of people who live within the regeneration zone are going to be disrupted to enable the project to happen. Care must be taken to ensure that they are treated fairly and end up being beneficiaries of the project. If they are to suffer the disruption of moving and being rehoused, possibly more than once, then surely they should enjoy a share of the benefits of the project that they are enabling to happen.



Historically, many slum clearances happened without the agreement of residents, work was done 'to' them, and not 'with' them, and happily we no longer behave this way. But whenever I hear the word 'decanting' I feel that while we may have moved on in terms of how we work, but not all of us have moved on in terms of the way we think. Decanting is something you do to wine. Perhaps we should use the word 'disrupting' instead?

Another point to consider is whether people on a housing waiting list are being treated fairly? Across England there were 1,183,779 households on social housing waiting lists in 2016. If we take an average household size of 2.3 from the last census, that gives us a figure of 2,722,691 people.

The needs of such people, often housed in substandard and often overcrowded accommodation, at high costs to the country, should be given sufficient weight when deciding what to do in any situation. There may be a temptation to give more weight to people who are already living locally in any planning decision, but surely the need of those not present have equal weight, and if their need is dire, greater weight?

## Context

The second area of my investigation was the context for the physical building – the immediate location, the wider context and the global context, and to look at the question of whether we aim for the greatest good or the least damage for the planet.

In recent years we have seen a huge rise in the amount of legislation, guidance and advice related to 'greening' the construction sector. Building Regulations, green building standards and policy all pushed the sector to make massive improvements in the performance of buildings. But two issues remain; the policy has become patchy as first the Coalition and then the Conservative Government pulled back on the scope and level of intent of such policies, and the analysis of completed buildings demonstrates that many are not achieving the environmental targets that were originally set.

Should the architectural profession have a set of standards that give guidance and support even when clients or local policies don't support or actively work towards environmental targets or where national policy vacillates due to political expediency? If we are to have a Coalition where the DUP claim that climate change isn't real, we need protection against potential further

backsliding at a point where we are leaving the EU and will no longer have its substantial support for environmental protection.

Should the profession refuse to work on projects where there is an unwillingness on the part of clients to meet their environmental obligations? Would this strengthen our position as expert and impartial advisors, or weaken it?

## Purpose and effect on users

Third in the key facets within 'ethics' I looked at is the question of who is affected by the purpose and use of the building – the client, the funders, owners, operators, those nearby, the neighbouring region and the rest of the planet. Do we aim for the greatest benefit for the greatest number of people? If so, how do we account for this and what do we mean by benefit? Is it financial gain, safety, better services? How do we compare these against each other in terms of the benefits they bring as well as the difficulties they cause?

**Whenever I hear the word 'decanting' used, I feel that while we may have moved on in terms of how we work, not all of us have moved on in terms of the way we think**

Some of these effects are covered by law, Building Regulations or a duty of care, but much of it isn't. As we build at higher densities, issues occur which are new in the UK and poorly considered by our regulations. Other countries with more tall buildings are further advanced than us in some respects.

When more people move into an area, the balance of the community is changed. While some argue that an influx of new people into an area is beneficial as it brings more economic activity, those living in the area previously often feel threatened by new neighbours, rightly or wrongly. Increased levels of traffic is often a bone of contention, but is probably used as a stalking horse for the real objection, which is to new development, regardless of its impact on traffic.

It is important that we are clear about the benefits that new development brings to an area as well as acknowledging the impacts that causes.

**If we are to have a Coalition where the DUP claim that climate change isn't real, we need protection against further backsliding as we leave the EU and will no longer have its support for environmental protection**

## User requirements

Last but definitely not least, we need to consider the range of needs of the users, from the most basic ones of shelter to the most sophisticated level of personal development. Maslov's Hierarchy of Needs provides us with a ready-made structure to use here, so we may only need to assess how this structure relates to our work as designers and whether we are giving due attention to the different needs of building users. A fundamental issue is whether we know how well or badly we are currently doing, before we even start to think about improving matters.

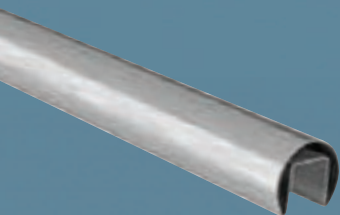
Maslov proposes that our human needs are hierarchical and dependant on each other. Only by fulfilling basic needs of shelter and nourishment can we begin to achieve well-being, good mental health and fulfilment. An ethical view of this would support a designer's ambition to create buildings that help their occupants to flourish in that hierarchy as far as possible. From shelter on the one hand, to enabling self-actualisation on the other. This makes the basic point that buildings are for people, not for architects, and it is only by fulfilling the needs of the people living in our buildings are we fulfilling our own needs as professionals.

Do we know how well we are doing? Mostly not. Post-occupancy study happens in only a tiny fraction of the built environment, even within the part of it that is designed by architects. Without a better evidence base we risk becoming irrelevant as others who lack our design drive are enabled by technology to 'sample' the needs and desires of people and to provide it to them through technology that bypasses us. A connection to our audience is essential for the profession to thrive, and our audience is the user of our buildings, not each other. ■



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## FUTURE WATCH

# Designing for flood resilience

Although we are in the midst of summer the risks of winter flooding remain critical – Norman Hayden looks at the strategies and solutions currently being implemented

**O**n a wild night in late January 2014, families on the flood-inundated Somerset Levels began to be evacuated from their homes. The widespread media coverage of the resulting devastation and hardship helped to make this a pivotal moment in Britain that winter. Storms over a four month period brought torrential rain that wreaked havoc with property throughout the country.

The effect of the 2013-14 floods was significant: around 2,000 properties were hit and clean-up costs alone were £1bn – including repair costs ranging from £30,000 to £100,000 per dwelling – with insurers paying out over £1.5bn. The overall cost to the UK was an estimated £3bn.

The problem is predicted to be a recurring one with climate change likely to cause further major floods in the future. Since 2007, the Government has made considerable investment in defences, which have been very reliant on heavy engineering, tidal barriers and river-side and coastal protection, but even those were to be breached.

The building industry, planners and politicians realise urgent action is needed to deal with the threat long term by protecting and adapting older properties while designing new homes for long-life durability.

### Addressing the flood factors

According to the Building Research Establishment (BRE), some 5.2 million homes – nearly one in six properties – are still at risk from surface, river and coastal flooding. Some estimates see the cost of flood damage in the UK rising fivefold by 2050, to £23bn a year.

What factors fuel the problem? Firstly, there's the design and age of our housing stock. Many homes date back to the Victorian era or are far older, and are not flood-resistant, having been built with permeable materials like timber, lime mortars and plasters and soft bricks.

Secondly, homes have increasingly been built on floodplains – particularly since the 1960s and 70s. Quite naturally, where concrete and asphalt has replaced grass and vegetation, water gets directed into surface drainage systems, often overloading them and causing floods.

Official warnings about the consequences have not been heeded and there are growing calls for a blanket ban on building in flood-prone areas. Despite this, and the fact that councils have to consult the Environment Agency on significant planning applications in districts at risk, around 200,000 homes have been built close to rivers between 2001 and 2011 and this continues today as part of efforts to meet Britain's housing crisis.

Another reason why floods continue to be a significant problem in the UK is the low uptake of alternative drainage solutions. In



### RESILIENCE ON THE THAMES

Amphibious House, Marlow, designed by Baca Homes  
©Fremantlemedia

## The twin challenges of resistance and resilience are being tackled

2015, surface water drainage strategies were introduced. Sustainable drainage systems (SuDS) are required to be considered for new buildings or projects that increase a site's built footprint. This covers any development of over 10 units in Flood Zones 2 and 3, or within an area identified as having a surface water flooding problem.

The idea is to do away with pipes by trying to reproduce natural systems with dirty and surface water drained off through collection, storage and cleaning and then released slowly into watercourses. SuDS strategies comply with national and local planning policies in England, Wales, Scotland and Northern Ireland as well as with the relevant Environmental Agency guidance. However, they are not being fully enforced.

Uncertainty over long-term performance and costs associated

with SuDS' design, implementation and adoption has been an issue in England and Wales. Water companies have thus been reluctant to take up schemes that suggest a large risk. By contrast, Scotland has seen many schemes implemented since 1993.

## One idea is for new houses in flood risk areas to be jacked up on elevated concrete slab-and-pile foundations

Faced with the great challenges posed, Sir Michael Pitt's official report on the 2007 floods urged better preparation and a more innovative approach to housing design. This has resulted in a refocusing on best practice in design and development and use of new materials to the industry standard BS85500 set in 2015.

### Emerging solutions

The twin challenges of resistance and resilience are being tackled. On resistance, the aim is exclusion and dry-proofing – that is, preventing water getting in. For resilience, wet-proofing is the key – if water gets in, how quickly and effectively can houses recover to normality?

One idea is for new houses in flood risk areas to be jacked up on elevated concrete slab-and-pile foundations, allowing underground water to drain quickly. Another idea is for a second basement, which would temporarily hold the water. In this way, standard houses could literally rise and fall in emergency conditions while appearing at all other times exactly like a static house.

Construction ideas include solid walls with external render along with cavity wall membranes. Products involving doors, windows, special kitchens, water-resistant wall and floor membranes that channel water towards drains and sumps that disperse water quickly are all being explored. For older houses this would obviously mean retrofitting.

Research is also taking place into resilient surfaces such as robust boards, and the positioning of toilet and sink non-return valves, plus the placing of electrics and home appliances above expected water levels, are other items of key interest.

Architect and Construction Products Association deputy chief executive Peter Caplehorn points to the progress being made: "We have a range of materials available in the construction industry which can be used in just about every part of the home to make it resistant to flooding," he says. "We have floor finishes that can cope with complete immersion in water, wall finishes and plasters that don't absorb water and doors and windows, which will take a fair amount of flooding."

### 'Aquatecture'

Such materials and products have been incorporated in projects such as the recently-launched Building Research Establishment (BRE) Resilient House.

The project, in conjunction with industry partners, is taking place in a building within the BRE's experimental Victorian Terrace at Watford. This refurbishment – employing simple solutions to stop water getting in, and being more resilient if it does – has the mass housebuilding sector in mind.

Elsewhere, a 'buoyant homes' project on an island on the Thames at Marlow, Buckinghamshire has seen the emergence of Britain's first amphibious house designed by London-based Baca Architects using technology pioneered in the Netherlands.

The site of the three-bedroom family home is in a designated

Flood Zone 3b within a conservation area and contains a 'can-float' basement, which rises in its dock-like foundations to avoid flood water. Following the completion of construction, the property was successfully test-floated at the beginning of this year.

Baca director Richard Coutts says: "Marlow's Amphibious House is a case of technology and design coming together. It is proof that flood-conscious architecture is feasible, we call this Aquatecture. The Marlow House opens a new way of building with water, instead of against it."

A similar project sees Berfield, a joint venture company owned by the Larkfleet Group and Floodline Developments, looking to build 24 'floating' homes, among a wider development, on the edge of Theale Lake, south of the village of Burghfield, Berkshire. The houses will have three core components – a concrete basin, buoyant basement structure and guide piles – and are designed to float if the lake overflows.

Inevitably, there are questions about resilience. Will older houses function normally with upgrading? Will resilient homes allow a return to normal? Would their features affect the design of a house? Will they prove too expensive and esoteric for volume house building?

### Revising regulations

The case for resilience is also hampered by the fact that Building Regulations are currently more concerned with flood avoidance. Planning may require restrictions to be placed to ensure resistance or resilience measures, but these are not always followed through into the construction.

This has resulted in a very uncertain market for flood-resilient property even with new-build guarantees such as the BRE's Home Quality Mark.

The CPA's Peter Caplehorn looks at it this way: "When you get on to things like insulation which people want for comfort and efficiency, it gets complicated because a home that is completely resilient to water begins to look like a prison."

He feels mandatory regulations would help bring about a more robust approach. "We need to look at Building Regulations covering flood resilience because, between developers and local authorities, nobody wants to take on the investment, bite the bullet and get on with it."

Far greater investment is clearly needed. RIBA puts the UK's under-spend on flooding at £580m and urges the Government to adopt a joined-up approach to development in high-risk areas by looking beyond just 'building now and protecting later.'

The cost to homeowners needs to be considered. Even if greater protection of homes added to property values, would homeowners in risk areas end up paying overall through expensive repair/insurance premiums? Traditionally, 'no betterment' clauses have prevented insurers from assisting in the finance of flood protection.

Occasionally, insurers stipulate that homeowners must adopt measures and, in some cases, will not insure if the repairs to a property are not resilient.

From 2015 the Government-backed Flood Re scheme, run and funded by insurers, covers those in high-risk homes who might otherwise struggle to get affordable insurance. The worry is that the pressure for new housing might lead to further flood-prone homes which would outstrip the ability of even Flood Re to insure them.

Uncertainties abound. But what seems clear, is that unless bold ideas on flood resistance and resilience are taken up there will be many more distressing scenes like those seen on the Somerset Levels a few winters ago. ■



# ASK THE ARCHITECT

Glenn Swann, associate at sports & leisure specialists LK2, tells ADF about the firm's aspirations and how technology is helping to shape the profession today

## WHY DID YOU BECOME AN ARCHITECT?

I've always been creative, so the idea of using that creativity and imagination to go beyond just the visual and influence the built environment seemed like an ideal career choice. It's always satisfying to see ideas and designs brought to life.

## WHAT DO YOU LIKE ABOUT IT MOST?

One of the most rewarding aspects of this industry is creating spaces that have a real and lasting influence on people's lives.

It's also an industry in which you never stop learning, as every new project brings with it new challenges.

## WHAT IS THE HARDEST PART OF YOUR JOB?

The biggest challenge has always been balancing the architectural aspirations of a project while keeping a keen eye on financial proceedings.

It's difficult, but very pleasing when the final outcome is favourable.

## WHAT IS YOUR PROUDEST ACHIEVEMENT AND WHY?

I've been working in architecture for 30 years, and have never ceased to be proud of numerous aspects of individual projects.

The best moments are when you feel personally that a scheme could not have been bettered and receives gratitude and praise from your client.

For example, the Buttermarket Shopping Centre in Ipswich was a huge success for us. The project involved the regeneration of a failing shopping centre – the team had to come up with an innovative solution and in the end we delivered a mixed use retail and leisure centre, creating a vibrant, revitalised destination.

## WHAT IS YOUR BIGGEST CHALLENGE CURRENTLY?

The biggest challenge is always to win the next job and to ensure a steady flow of

interesting work into the office. It's a fine balance between delivering satisfying results which lead to repeat business whilst also attracting further opportunities.

## WHAT SINGLE CHANGE/INNOVATION WOULD MAKE AN ARCHITECTS JOB EASIER?

Architecture isn't easy and we should not strive to simplify the process. In fact, the more complex the project, the more potentially satisfying the outcome.

## WHAT'S YOUR CURRENT FAVOURITE MATERIAL FOR DESIGNING BUILDINGS?

For designing, I prefer just a black fibre tip pen and tracing paper. When it comes to constructing buildings, I'm still a great lover of traditional materials but used in a contemporary manner.

However, I am always open to innovative ideas in technology, which is ever-changing. For example, there's a newly launched design and presentation tool based around combining the use of virtual and mixed reality, allowing experience of 3D design by creating hologram versions of models. It's fantastic as clients can now potentially view scheme proposals in real-world environments.

## WHAT CAN WE LEARN FROM OVERSEAS ARCHITECTS?

All architects, overseas or otherwise, should learn from each other. At LK2,



Buttermarket Shopping Centre, Ipswich

we see no reason why architects cannot pool their resources and work together. We are working in collaboration with others in such a manner, including overseas.

### WHAT WILL THE NEXT 'BIG THING' BE IN THE INDUSTRY?

If I knew that, I'd be doing it! Joking aside, as a progressive practice we are always searching for that unique quality that puts us a little bit above the rest in order to attract exciting and innovative projects.

We're currently evolving our 'STREET-LAB' concept, which is a new model which will increase values and extend the life and vitality of existing retail parks. Using this concept will enable us to create cohesive retail, leisure, entertainment and community destinations.

### HOW CAN YOU SEE AN ARCHITECT'S ROLE CHANGING IN THE NEAR FUTURE?

Architects should attempt to put their egos behind them and collaborate more in order to share ideas and skills. We can all design buildings, but we all have differing

methodology and techniques that could be shared to our advantage.

### IS IT A MISTAKE TO PUT TOO GREAT A FOCUS ON TECHNOLOGY WHEN DESIGNING?

Not at all, technology is there to aid the architecture process not inhibit it. There are no limits to the role that technology can play at the design stage of a project.

### DO YOU THINK THAT CLIENTS HAVE AN ACCURATE IDEA OF WHAT YOU DO?

Some do, some don't – it really depends on the client. Commercial clients have a better understanding of our roles and services, whereas individual private clients do not have the sufficient knowledge of the profession and the service on offer. I think it's nothing that good education by the architect can't resolve.

### WHAT ARE YOUR HOPES FOR 2017 AND BEYOND IN TERMS OF YOURSELF AND YOUR PRACTICE?

The plan is to just keep pushing forward to the next level. Staff numbers have doubled over the last few years and we are



**Architecture isn't easy and we shouldn't simplify it – the more complex the project, the more satisfying the outcome**

Glenn Swann, associate at LK2

continuing to progress in a positive manner. We also have a number of concepts based around the integration of retail with sport and leisure that we are working on with a team of leading specialists in their individual fields. Overall it's currently a really exciting time for me and the LK2 team, and we're looking forward to further success in 2017 and beyond. ■



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## GEZE UK demonstrates commitment



GEZE UK has strengthened its specification team with the appointment of Matthew Gregory who takes up the role of specification manager, covering the North region as part of the GEZE UK specification team expansion.

Matthew will be responsible for providing product specification and technical support for architects and specifiers across tender documentation, CAD and BIM projects, while supporting the GEZE UK sales team. Prior to joining GEZE UK, he worked for BIG Group as an industrial door installation and service engineer and as a senior automatic door engineer.

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## The VEKA UK Group names Renolit



Renolit has scooped the top in The VEKA UK Group's second annual Supplier of the Year awards. The VEKA UK Group are proud to celebrate suppliers that go above and beyond in providing the materials needed for VEKA and Halo's industry-leading PVC-U profile systems. Renolit won

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## Vent-Axia helps council beat records



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## WINDOWS SELECTION: A SPECIFIER'S GUIDE'



*'Windows Selection: A Specifier's Guide'*, from **Metal Technology**, has been added to the list of RIBA-approved CPD seminars. The revised and updated CPD presentation allows architects to assess aluminium window systems in terms of material, function and the latest performance values and standards required for modern buildings. Specification guidelines include the correct window and door Security Standards and an overview of glass selection to complement security, thermal performance, solar control and acoustics. For further information, contact Metal Technology.  
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The **Metal Cladding & Roofing Manufacturers Association** has announced the addition of two new online CPD modules. *Mineral wool insulation installation* sets out an overview of the factors that need to be taken into account in the storage, handling and installation of mineral wool insulation in built-up metal roof and wall cladding systems. *Serviceability states and deflections criteria* explains the importance of setting the deflection criteria at the design stage and implementing them at the construction stage to ensure that all elements of the construction perform as expected.  
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## CHIMNEY DESIGN AND RESTORATION OF FLUES AND DUCTS



**Flue Liner Solutions** are offering a RIBA approved CPD presentation entitled *Chimney design and restoration of flues and ducts*. This seminar will give an overview of chimneys, factors to take into account when designing buildings and an awareness of common problems. It will help architects to understand the following topics: chimney design and sizing; flue lining systems and suitability for different appliances and fuel types; remedial works to existing chimneys; maintenance requirements for chimneys as well as understanding chimney terminals and chimney fans.  
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## LONDON SHOWROOM NOW HOSTING RIBA APPROVED CPDS



**James Latham**, one of the UK's biggest independent panel and timber products distributors, is now offering two RIBA approved CPD seminars at its impressive new showroom in the heart of London's architectural and design community. The seminars cover *Acrylic Based Solid Surface* and *Performance Door Blanks*. Both have been developed in conjunction with the RIBA, and offer a unique opportunity for all architectural and design professionals to gain up-to-date knowledge and enhance personal proficiency as well as earn CPD points. Steven Dennard, Specification Manager for Structural Products as well as the Group Door Manager, explained: "These seminars provide educational learning to architects, designers and other specifiers and have been assessed by the RIBA to ensure they are as current and relevant as possible." Showcasing an enormous range of Latham's exclusive and semi-exclusive materials, the showroom – which is located at the Business Design Centre in Islington – has been created to inspire architects and designers, provide expert advice and enable them to keep abreast of the latest trends and developments in surface solutions. For more information and to book a free CPD seminar please call James Latham or visit the company website.  
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# Victorian beginnings

This story of British independent business success demonstrates resilience to market forces and a determination to succeed, combined with a work ethic passed down through successive generations.

Joseph Stannah founded his lift company in London in 1867. He first made his name making hoists and cranes for London's dockyards. This was the days of the industrial revolution and Victorian engineering changed the face of Britain – and the world. These were exciting times for engineers and architects alike with much to be inspired by:

- In 1860 the first passenger lift in London was installed in the Grosvenor Hotel for the benefit of the privileged classes.
- In 1863 The world's first underground rail service, London's Metropolitan Railway, was opened.
- In 1867 the foundation stone of the iconic Royal Albert Hall was laid by Queen Victoria. The building was designed by architect Francis Fowke.
- In 1867 the famous Paris Expo displayed 'the world's first working hydraulic lift'.

Albert Stannah developed the company's product range and marketing and design. An early advertisement appeared in the Builder magazine in the 1880s.

Lt. Commander Leslie Stannah returned from WW2 service to find the Stannah factory was destroyed, along with so many businesses in London at that time. With no workforce, drawings or components available to him Leslie rebuilt the business from scratch using his reputable family name. The factory was rebuilt in 1945, and with the government

of the day's help, Leslie manufactured passenger lifts, even exporting some to Palestine and Ceylon.

Brothers, Brian and Alan Stannah, current joint chairmen, extended the Stannah product range. Turbulent political times in the 1970s with the 3-day week and miners strikes led Brian and Alan to look for product diversification to supplement the downtime of the lift factory. The Stannah Stairlift was born.

When asked, what reaching this milestone means to the Stannah family, Jon Stannah, Group Managing Director and descendant of Joseph Stannah said: "It means a great deal. Family is all about generations, the legacy left behind and the future generations that will continue to grow the business. We are very lucky to know the history of our company - this celebration is not just about the Stannah family, but also about the wider family that is the Stannah corporation."

To date Stannah has installed over 45,000 lifts, 600,000 stairlifts and look after over 91,000 lift products from all manufacturers right across the UK. The Stannah Group has an ever-growing commercial portfolio of products and services in the UK including escalators, moving walkways passenger lifts, platform lifts, service lifts, goods lifts, homelifts, stairlifts, bespoke lifts built



to client specification, loading systems – equipment for loading bays and local lift serving, nationwide from eleven service branches across the UK. Stannah major projects include Leeds Station, Edinburgh Waverley and Edinburgh Haymarket Stations, Reading Station, Nottingham Hub, Birmingham New Street, the Poplar Link Enhancement Project that links Docklands Light Railway with CrossRail network, Luton Airport regeneration project and the installation of a lift in Winchester Cathedral.

The heartbeat of the company and the main contributor to its success is the hard work and loyalty of its staff, that currently numbers more than 2000.

To read the company's fascinating timeline go to the website.

01264 339090 [www.stannahlifts.co.uk/150](http://www.stannahlifts.co.uk/150)



An early ornate Stannah passenger lift



Stannah escalators and lifts at Leeds Station



## Dominik Hinzen appointed



C. R. Laurence of Europe GmbH, with its headquarters based in Ilsfeld, Germany, has appointed Dominik Hinzen to the role of Managing Director. In his new position Dominik Hinzen is responsible of the operative and strategic management of the company for the business development in all markets of mainland Europe. The long-standing Branch Manager Harald Brinkmann will furthermore be responsible for the seamless management of the Ilsfeld-based site of about 4,000sqm of logistics areas.

crl@crlaurence.co.uk

## Saracen oversee move for Samsung



Workplace consultant, **Saracen Interiors** has started work at the new UK address for Samsung Bioepis at Profile West in Brentford. A key move for Samsung Bioepis as it is the first time that the company will have a European presence, the biopharmaceutical expert will share the 8000sqft space with Samsung C&T. Samsung C&T is preparing to move to the premises at the prestigious Profile West when all fit out work has been completed. Work is expected to last for up to six weeks and Saracen's office move division, Saracen Move Management will also oversee the logistics of the move process.

enquiries@saraceninteriors.com

## Next hardware trends revealed in major survey



A new survey has revealed what predictions the UK's architects are making for their sector and what they feel are the next big trends in hardware going forward. **SDS London** commissioned Insight Data to carry out the survey, which asked UK architects a series of questions about their business, the industry and the products they use. As part of the survey, they were asked how much value they think architectural hardware/ironmongery adds to a project. An overwhelming 97 per cent of respondents said it adds a lot or some value to a project, compared to just three per cent who said, 'not much'. Simon Ayers, Sales and Marketing Director at SDS London, comments: "The survey gives an insight into architect's expectations for the sector and reveals a positive outlook for the coming months. "Architects are looking to the opportunities in the flourishing private housing sector. A growing, younger population is driving demand for housing and they are choosing to rent over the steep costs associated with house buying. The survey also highlights key trends in hardware that we have seen reflected in our own business, such as high demand for contemporary hardware."

020 7228 1185 [www.sdslondon.co.uk](http://www.sdslondon.co.uk)

## UK manufacturing predicted to rise with the 'Northern Powerhouse'



A series of proposed infrastructure projects surrounding the Northern Powerhouse initiative could open fresh opportunities for manufacturers of building products in the UK. The Northern Powerhouse hopes to redress the North-South economic imbalance and attract investment into northern cities and towns. Proposed infrastructure projects include HS2, a £50 billion high-speed railway connecting London, Birmingham, the East Midlands, Leeds and Manchester. Supporters of HS2 say the project will create better connections between the big cities of the North and Midlands and make sure our economy shares growth between the North and South. Leon Friend, Director at Hueck UK, says the company has seen an increase in demand for its aluminium systems for projects in cities such as Manchester and Birmingham. He comments: "We have seen increased demand for our solutions for multi-storey residential projects in the cities; as well as commercial projects. As more young people flock to the cities, the need for single occupancy homes is growing bigger. New-build houses to buy are out and build-to-rent apartments are in".

01217 671344 [www.hueck.com](http://www.hueck.com)

## Luxury brands boost sales at hardware specialist



Hardware specialist **SDS London** is celebrating a successful quarter one following the roll-out of several new premium product lines. In its latest financial figures, the company has seen an eight per cent increase in turnover in quarter one, compared to the same period last year. The growth comes off the back of SDS teaming up with three luxury brands this year – Oliver Knights, Rocky Mountain and Groël – to supply their hardware to the retail and trade sectors, including architects, designers and specifiers. The latest additions bring a mix of traditional and contemporary hardware aimed at high-end projects in the residential and commercial markets. SDS offers a wide range of hardware, which now encompasses a clutch of market leading brands and more than 10,000 products lines. With the majority of its products manufactured in the UK, SDS have become the go-to supplier for architects keen to champion the 'best of British' in their work. SDS London recently supplied hardware for a development of a historic office building, which was once used by the Suffragettes as a base for its movement for political and social change.

020 7228 1185 [www.sdslondon.co.uk](http://www.sdslondon.co.uk)

# Trade body awards celebrate top flight acoustic performance

The skills and ingenuity of UK-based acoustic professionals working on national and international projects across a variety of environments were celebrated at a trade body awards.

ANC, the Association of Noise Consultants, unveiled the winners of its acclaimed Acoustic Awards programme at the Hyatt Regency Birmingham.

Hoare Lea secured the winning project in the award for 'Architectural Acoustics: Commercial Buildings,' sponsored by H & H Acoustic Technologies, with Sandy Brown Associates highly commended and SRL Technical Services commended in this category.

'Architectural Acoustics: Education Buildings,' sponsored by Ecophon, was secured by Sandy Brown Associates, with Adrian James Acoustics receiving the highly commended accolade and a commended award for Pace Consult.

'Environmental Noise,' sponsored by ANV

Measurement Systems, was won by Apex Acoustics, with Southdowns Environmental Consultants taking highly commended and a commended title for AECOM in this category.

It was another successful outcome for Apex Acoustics, the winners in the 'Smaller Projects' award sponsored by Bruel & Kjaer, with AECOM taking the highly commended award and Red Twin the commended title.

The final award, 'Vibration,' sponsored by Pliteq, was won by Cole Jarman. WSP were highly commended and RBA Acoustics commended in this category.

The awards were presented by James Woudhuysen, forecasting and innovation specialist and visiting professor at London South Bank University, with a distinguished panel of judges.

020 8253 4518

[www.association-of-noise-consultants.co.uk/2017-award-winners-revealed/](http://www.association-of-noise-consultants.co.uk/2017-award-winners-revealed/)



Picture 1: Architectural Acoustics – Education Buildings Awards guest speaker James Woudhuysen with Stephen Stringer of Sandy Brown Associates and Shane Cryer of Ecophon

Picture 2: Environmental Noise Award James Woudhuysen with Rich Hinton of Apex Acoustics and Mike Breslin of ANV Measurement Systems

Picture 3: Smaller Projects Weigang Wei of Apex Acoustics with Mark Dowie of Bruel & Kjaer

Picture 4: Vibration award Philip Hankin of Cole Jarman with Paul Downey of Pliteq

Picture 5: Architectural Acoustics – Commercial Buildings Max Foster of Hoare Lea with Ian Kirby from H&H Acoustic Technologies



## Healthier door closing

Powermatic concealed door closers from Samuel Heath are becoming increasingly popular with specifiers, estates managers and clinicians throughout the healthcare sector thanks to the many health, safety and hygiene benefits that they deliver. Powermatic door closers are totally concealed when the door is closed and offer few surfaces on which dust and potentially harmful detritus can accumulate. Their low mounting height also simplifies inspection and cleaning procedures. British designed and manufactured, Powermatic door closers are ideal for anti-ligature and anti-barricade applications in mental health facilities. Their concealment also helps to create the less institutionalised, more therapeutic environment valued by clinicians. Finally, the door closers are less likely to be vandalised, significantly enhancing reliability of the closer and fire door, and reducing repair and maintenance costs.

0121 766 4200 [www.concealeddoorclosers.com](http://www.concealeddoorclosers.com)

## The new name in frameless hardware



OnLevel is the new name in frameless Glass Balustrade hardware in the UK, launched by industry veteran Gary Dean in February, it has already made quite an impact with the strong brand image and a busy stand at the FIT show. However Gary says there is more to them than what we have seen so far. OnLevel has already

expanded its range of products to include Juliet Balconies which can use 10mm to 21.52mm glass with spans up to 3m with only side fixings. More new products are promised soon including a revolutionary new version of the traditional glass clamp.

[sales@onlevel-uk.com](mailto:sales@onlevel-uk.com)

## 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)

## Enhanced security for mental health



Crittall Fendor is strengthening its position as the manufacturer of the largest range of specialist mental health fenestration in Europe with its CleanVent Window which has been enhanced by the addition of a Slipper Clutch mechanism. With security considerations uppermost in mental health installations the CleanVent allows the glazing to be cleaned quickly and easily behind the security mesh. An additional feature is the Slipper Clutch, an anti-ligature dial-shaped handle specially designed to withstand misuse in addition to normal wear and tear.

0191 417 0170 [www.fendor.co.uk](http://www.fendor.co.uk)

## Gerflor 'barking' up right tree



BRAVEHOUND is the canine wing of the charity GLEN ART who support former servicemen and women and their families. When the charity was seeking to re-modernise their training facility in Erskine Hospital with new safety flooring, they appeared on the radar of international flooring and interiors specialist Gerflor who happily agreed to donate some flooring. The project at Erskine Hospital would need 200m<sup>2</sup> of Gerflor's Tarasafe Standard vinyl safety flooring in Royal Blue. The Tarasafe™ vinyl safety flooring range is available in over 80 finishes and is reinforced with a glass fibre grid, suitable for use in all areas of heavy traffic.

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

## XENERGY™ SL and MK™ is specified for Midland Metropolitan Hospital



Dow Building Solutions' XPS products are being used in the construction of the new Midland Metropolitan Hospital in Sandwell. The new facility is expected to have 670 beds and 15 operating theatres. Half a million people will benefit from the new A&E, maternity, children's and inpatient adult services that will be available from the state of the art hospital. 9,000 sqm of 160mm and 180mm XENERGY™ SL and XENERGY™ MK is being supplied to the main roofing contractor Praters. Dow has been assisting with the design process through the provision of u-value calculations and other technical assistance, drawing on the expertise of its experienced staff. Richard Powell, Sales Manager, Dow Building and Construction, said: "We are proud to be working on this key new piece of healthcare infrastructure in the West Midlands. Midland Metropolitan Hospital is set to provide world class healthcare from a beautifully designed building, where architects have stretched scaled new heights. XENERGY™ is still capable of providing exceptional thermal performance at lesser thicknesses, allowing architects greater creative flexibility."

020 3139 4000 [www.building.dow.com](http://www.building.dow.com)

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As seen in the successful completion of the Cygnet Healthcare facility in Coventry, the 300 door project that has now been opened. Read on to the next page to find out more about the project.

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**BUILDING  
PROJECTS**

## **CYGNET HOSPITAL COVENTRY**

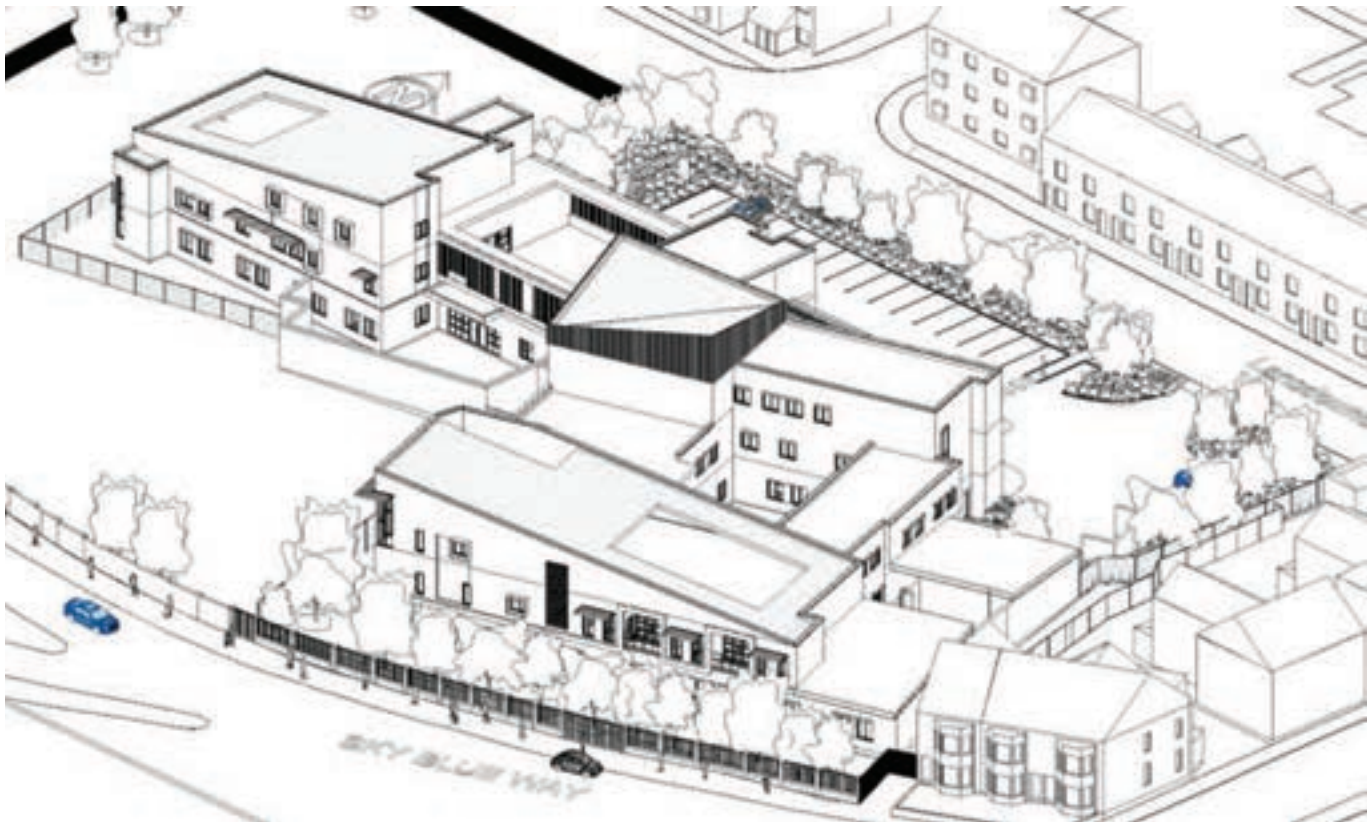
# Taking care in the community

For Tangram Architects, a new mental health unit for women on a constrained but high-profile urban site in Coventry required careful handling and expertise to get the balance right. James Parker reports

**C**ygnet Hospital Coventry is a new 56-bed facility located on a tight urban site 1 km east of Coventry city centre, offering a range of specialist mental health services for women. The hospital is run by independent provider Cygnet Healthcare, which works “in partnership with the NHS, Clinical Commissioning Groups and local authorities,” and for whom specialist healthcare architect Tangram has designed several mental health schemes.

The building includes a 16-bed Psychiatric Intensive Care Unit (PICU) plus a 33-bed rehabilitation service which has the aim of preparing service users for independent living in the community once they leave the PICU. This includes a seven-bed ‘Transitional Living Unit’ where users have their own facilities for washing and cooking.

The ‘care pathway’ typically begins with service users admitted to the low secure unit-designated PICU located in the



#### VARIETY OF FORM

There are two key buildings on the site – one (centre right of drawing) housing the PICU (Psychiatric Intensive Care Unit) and the locked rehabilitation unit and the Transitional Living Unit plus further locked rehab in a linked building (top left). Between them sits the butterfly-roofed gym

L-shaped Dunsmore Ward on the ground floor, which provides 24-hour cover assessment, treatment and support for women in crisis, together with its own adjacent locked rehabilitation area. The aim is that following a risk assessment they will move as soon as possible to the 16 bed locked rehabilitation unit above the PICU on the first floor, or the locked (but lower-security) rehabilitation unit (Middlemarch Ward), offering 17 beds on the ground and first floor of a linked, adjacent building.

The locked rehabilitation service offers what Cygnet Healthcare calls an “extremely wide range of therapies” and tailor-made rehabilitation programmes in collaboration with carers and local teams. There is also a Personality Disorder Unit on the first floor offering a range of therapeutic interventions such as Dialectical Behavioural Therapy and Schema Focused Therapy.

The ‘pathway’ concludes with the Transitional Living Unit found on the second and third floors of the linked building also housing the ground / first floor locked rehab, with seven individual, self-contained flats. With staff support tailored to each service user’s need, the facilities in this area have been designed to increase their chances of successfully reintegrating

into the community upon discharge. Despite the aim of providing a greater degree of independence, the normal security provisions you would expect are present, as David Whitehead explains: “There is still anti-ligature ironmongery and anti-barricade doors to minimise risks wherever possible.”

#### A narrow gateway

Director at Tangram Architects David Whitehead describes the site as “quite complicated,” and it certainly had its challenges, its 1.3 acres hemmed in by terraced Victorian housing to the north and east, and major arterial road Sky Blue Way to the south. Beyond squeezing 56 beds plus the normal support spaces and a gym onto this brownfield site, there was the separate challenge of installing a sensitive psychiatric unit in a prominent, urban location without compromising residents or service users.

Project architect Alex Smith says: “The site is very complex, some of the mental health schemes we work on are on green-field sites, and they have their own constraints, but it’s not like a building in the middle of an urban context.” Despite the challenges, the relatively prominent nature of the site for such a development was





embraced by Coventry council's design officer, which in turn gave Tangram more scope to design a distinctive building that was fit for its varied purposes. David Whitehead: "As the proposal was located on the main arterial road and was therefore a gateway site for Coventry, the design officer to make something special here – a landmark building."

### Broken form

Tangram sought to break down what might have been a monolithic building on this constrained site, by creating a series of sloping forms linked with green roofs and terraces. Combined with this, the architects also embraced the notion of the building being a 'landmark', graduating the rooflines up from two stories to three towards the highly visible corner of the site on Sky Blue Way. This change in gradient takes the rhythm of the terraced housing behind the hospital up to a scale which will compete with more substantial buildings on this main road and "create some grandeur" as David Whitehead puts it. "There are a number of large-scale buildings adjacent to Sky Blue Way, such as the university halls of residence," adding: "In order to compete with the scale of these buildings the build-

ing had to punch above its weight."

The gymnasium sits at the centre of the site between the square shaped building housing PICU, locked rehabilitation and administration at first floor, and the more rectangular locked rehabilitation and transitional living unit. This provides a major element of its visual impact in this prominent location, with a butterfly roof clad in translucent Rodeca polycarbonate cladding which gives the gym a night-time glow when activities are taking place inside. As Whitehead says, "It sort of acts as a lantern, it's a focal point of the site. Smith adds: "It used to be a tired and overgrown piece of hard-standing and now it has something beautiful on it, and the 'lantern' acts as a beacon for the building."

The brise soleil and window surrounds also help the building tie in visually with the bay-windowed red-brick housing. The cladding mix is partially brick and partially a complementary Trespa rainscreen panel which further ties in with the local vernacular, along with rendered blockwork.

Windows, provided by Crittall Fendor, all have "embedded security measures," now typical of mental health schemes and are a mix of sliding windows and fixed, in various size and heights, and taller at the

**It's an interesting mixture without overdoing it – we have created some characterful elevations**

Alex Smith, Tangram Architects





#### TRANSITIONAL LIVING

In order to help service users reintegrate into the community the Transitional Living Unit includes seven self-contained flats with washing and cooking facilities

ground floor to maximise daylighting. Smith says: “It’s an interesting mixture without overdoing it – we have created some characterful elevations, and importantly the service users have control over opening their own windows.”

Next to the gym is a “therapeutic and service-user led space” consisting of a hairdressers and beauty parlour. As Smith says, “You need some joy in the building too, avoiding an institutional feel without adding risk.”

#### Ward design & security

The ward layout reflects best practice design accumulated over many years in mental health care and which Tangram hones and optimises for clients, from linear, and T-shaped to space-efficient L-shaped wards – as have been adopted here. Whitehead says although the client Cygnet “likes the L-shaped ward, as it gives them a central nurse station with good observation across the day space and bedroom areas,” during the design process they “still come back with comments and we enhance the layout from there.”

He adds: “the L-shape allows you to enter the ward from the corridor and this

spine of circulation also accesses the ancillary and support accommodation. It suited the site and allowed us to join the dots.”

Each ward has a seclusion suite – including the seclusion room itself plus an en suite, a sitting room and an adjoining external space – on the ground floor walled courtyards but on the first floor a terrace.

Within a unit of this type, despite its generally low-secure nature, security and means of escape in a fire remain key design drivers alongside creating therapeutic spaces. Therefore as well as getting the clinical adjacencies correct within wards, means of escape need to always be carefully thought through. An established concept of creating a ‘secure line’ was used, meaning areas within this secured perimeter allowed free movement of staff and service users avoiding the need of having to go through the secure line ‘airlock.’

Whitehead explains further: “The client wanted one of the locked rehabilitation wards adjacent to the PICU within the ‘secure line’, which also includes the tribunal services therapy and interview rooms and the gym.” By contrast, the locked rehabilitation area over two stories (ground and first) is slightly lower risk, so



this and the transitional living unit sit outside of the secure line.

### External therapeutic space

Although there is a park opposite the site, across what is a busy main road, due to the constrained size of site the architects “didn’t have a great deal of options for soft landscaping” beyond a small garden at the back. Staff can allow service users to access this as part of ‘grounds leave’ whereby they are able to use landscaped areas.

It was a key design goal to provide direct access to outside space for all wards to benefit patients, however while it was relatively simple to create walled courtyards on the ground floor, how could this be achieved for the locked rehabilitation unit on the first floor? The answer was to create a substantial 120 m<sup>2</sup> terrace, which also contributes to the aim of breaking up the building’s facade, providing visual separation between the two buildings.

The terrace was created to be a warm roof for the day space beneath, with the attendant thermal benefits this offered. According to Smith it “is reminiscent of a Mediterranean courtyard setting.”

The design of the terrace also had to

navigate the balance between providing a feeling of openness while also ensuring the area was not overlooked. David Whitehead: “We tried really hard to avoid people overlooking into the terrace but also provide some kind of a view out. So we have a timber slat and polycarbonate sheet detail to the walls of the terrace, which are designed to be anti-climb and anti-ligature but hint at transparency.”

Smith explains further how the issues of potential overlooking from neighbours have been considered generally across the site: “Where possible, service user rooms have been located sympathetically to avoid direct overlooking.”

### Ceilings, clashes & BIM

Tolerances in the design became challenging in instances where the structure, M&E services and the architecture were fighting for space, and BIM was employed to help alleviate this. HBN guidance for secure environments requires 3 metre ceiling heights in service user areas, but in a steel framed building this can be difficult to achieve in all areas.

Tangram’s David Whitehead explains: “With a steel framed building, you tend to

### ACHIEVING THE BALANCE

Internal spaces have been designed to avoid an institutional feel without adding risk

### SUPPLIERS

#### Internal doors & ironmongery:

Kingsway Hunter Doors

#### Windows & curtain walling:

Crittall Fendor

#### Carpets:

Danfloor

#### Sanitaryware & taps inside of

service user areas: Dart Valley

External paving: Marshalls





**The terrace was created to be a warm roof for the day space beneath, with the attendant thermal benefits this offered**

#### PROJECT FACTFILE

**Client:** Cygnet Healthcare  
**Architects:** Tangram Architects  
**Structural engineers:**  
 BSP Consulting Structural Engineers  
**Client side M&E:**  
 Harniss Engineering  
**Project management:**  
 Fed3 Projects

**Start on site:** September 2015  
**Completed:** February 2017  
**Number of beds:** 56

get clashes with services, but we worked them out ‘the best we could’ using clash detection software and BIM techniques.” Where these clashes were unresolvable, he says it’s about “working out carefully where you can have dropped bulkheads below the 3 m height, whilst remaining compliant.” Smith adds: “We have coffered the ceilings in service user day space areas to provide routes for services, and it helped create a sense of space and interest to the ceiling scape in these areas, providing both an attractive as well as compliant solution.”

Whitehead adds that one aspect of the building’s interior, that of the bespoke fitted furnishings (by Taurus) was beneficial because it made it possible to work around some of the “inevitable small intrusions” of the steel frame. He says this was particularly helpful in the bedrooms.

The bedrooms have been designed in pairs, with a central services riser. Whitehead says that in the 12 years the practice has been working with Cygnet, the client has moved from highly serviced buildings with full comfort cooling, to an approach much more orientated towards natural ventilation.

He says the “middle ground” ventilation approach at Coventry had implications in terms of accommodating it within the frame: “There was a significant amount of plant to get through the steel frame. It was a challenge, however using BIM helped

enormously. Structural engineer BSP modelled the frame in Revit, we modelled the building in Revit, and we could align the two.”

The building was designed to be BREEAM ‘Good’, however this meant that “eco-bling” as Smith puts it, such as solar PV, was not required. He says: “‘Good’ still demands a certain thermal performance, and we used A+ materials. We looked keenly at construction methods for rainscreen, roofs, floors and insulation.” An attenuation tank was also provided under the car park for surface water run off from the roofs, and efficient boilers were employed. Experienced in working with BREEAM accreditation, Tangram are currently targeted to deliver BREEAM ‘Very Good’ on another project with Cygnet Healthcare in Maidstone in Kent.

This fairly complex and sensitively designed building is also a striking example of how such psychiatric facilities can be carefully integrated into more prominent urban sites than previously seen in many cases. The expertise of Tangram, especially when novated in a Design & Build contract as they were in this case (to Clegg Construction) was critical to the building’s success. As its architect Alex Smith asserts, the practice’s role was to bring rigour not only in the initial design but also once novated: “We are there to help and where possible, working the client-side project managers, maintain design integrity.” ■

# Pinderfields Hospital keep lifecycles on track with Yeoman Shield

As part of their lifecycle programme, Engie in conjunction with Consort Healthcare and Mid Yorkshire NHS Trust engaged with Yeoman Shield to provide a solution to the continual damage being caused to door frames throughout the Pinderfields Hospital. The continual repair of which was proving to be a drain on the maintenance budgets.

Door frames are inevitably vulnerable to wear and tear caused by the everyday activity on a busy site, being especially prone to damage from wheelchairs, trolleys and mobile equipment.

When damaged the door frames not only look unattractive, detracting from the clean and pristine environment that The Pinderfields facilities management team work hard to maintain, but splinters, dents and crevices caused as a result of the damage, make the frame work hard to clean leading to a potential build-up of dirt and bacteria.

Michael Kenward, Engie Capital Works



Co-ordinator at Pinderfields Hospital commented "We have in the region of 3000 door frames on site and a long term alternative to the perpetual and costly refurbishment of the timber frames was required. Having worked with Yeoman Shield on previous wall & door protection projects, we contacted them for a solution."

After a survey carried out by a Yeoman

Shield Area Sales Manager Steve Hawke, a bespoke product was decided upon.

Post formed Yeoman Shield angles, to the required dimensions, were fabricated from 2.0mm thick FalmouthEx material, for fitting to the existing timber door jambs.

Where necessary a timber infill piece was manufactured to fill any gaps between the frame and angle so providing extra support to the internal angle.

Supplied in Dusty Grey to complement the existing décor, the formed angle protectors were installed at 1250mm high by Yeoman Shield's directly employed fixing operatives.

"Now in place the frame protectors will reduce our repair and maintenance outgoings whilst having a positive effect on the lifecycle of the building." Concluded Mr Kenward.

For more information on Yeoman Shield's cost saving wall & door protection products go to the website or call Yeoman Shield.

0113 279 5854 [www.yeomanshield.com](http://www.yeomanshield.com)



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## REHAU is clear choice for iconic London hospital

**W**hipps Cross Hospital in Leytonstone, East London, is one of the most iconic hospitals in the UK with its Renaissance-inspired main entrance, majestic towers and tiered covered walkways. Managed by Barts Health NHS Trust, the hospital is committed to providing a modern environment for its patients and recently completed a major refurbishment of three of its wards, its Ultrasound and Breast Screening Units. As part of the project, the windows needed replacing in each ward.

The contractor for the job, SEH Commercial, recommended REHAU's Heritage range, which would offer all the benefits of new PVC-U windows, but wouldn't look out of place in the Grade II listed building. The HERITAGE range was developed in consultation with conservation bodies and housing associations to offer the most authentic design and styling on the market, while also delivering on energy efficiency, security and reduced

maintenance costs.

HERITAGE sash windows have all the sight-lines of a traditional timber box sash window with a deep heritage bottom rail. The exteriors of the windows have putty-line aesthetics to further enhance the authentic design, and the windows are available in a range of finishes, including classic white and woodgrains.

As well as looking the part, HERITAGE windows offer superior thermal insulation properties thanks to triple chambered profiles, which achieve an 'A' Window Energy Rating (WER), and triple brush seals for excellent draught proofing. These features help to create a comfortable environment for patients and reduce heating costs for the Trust. HERITAGE windows also provide excellent sound insulation, which can positively contribute to quieter, more restful spaces for patients.

To minimise the impact to patients and their care, SEH Commercial were often



required to work at night and at weekends. The HERITAGE window system is easy to install, ensuring the windows could be fitted within the limited access times available.

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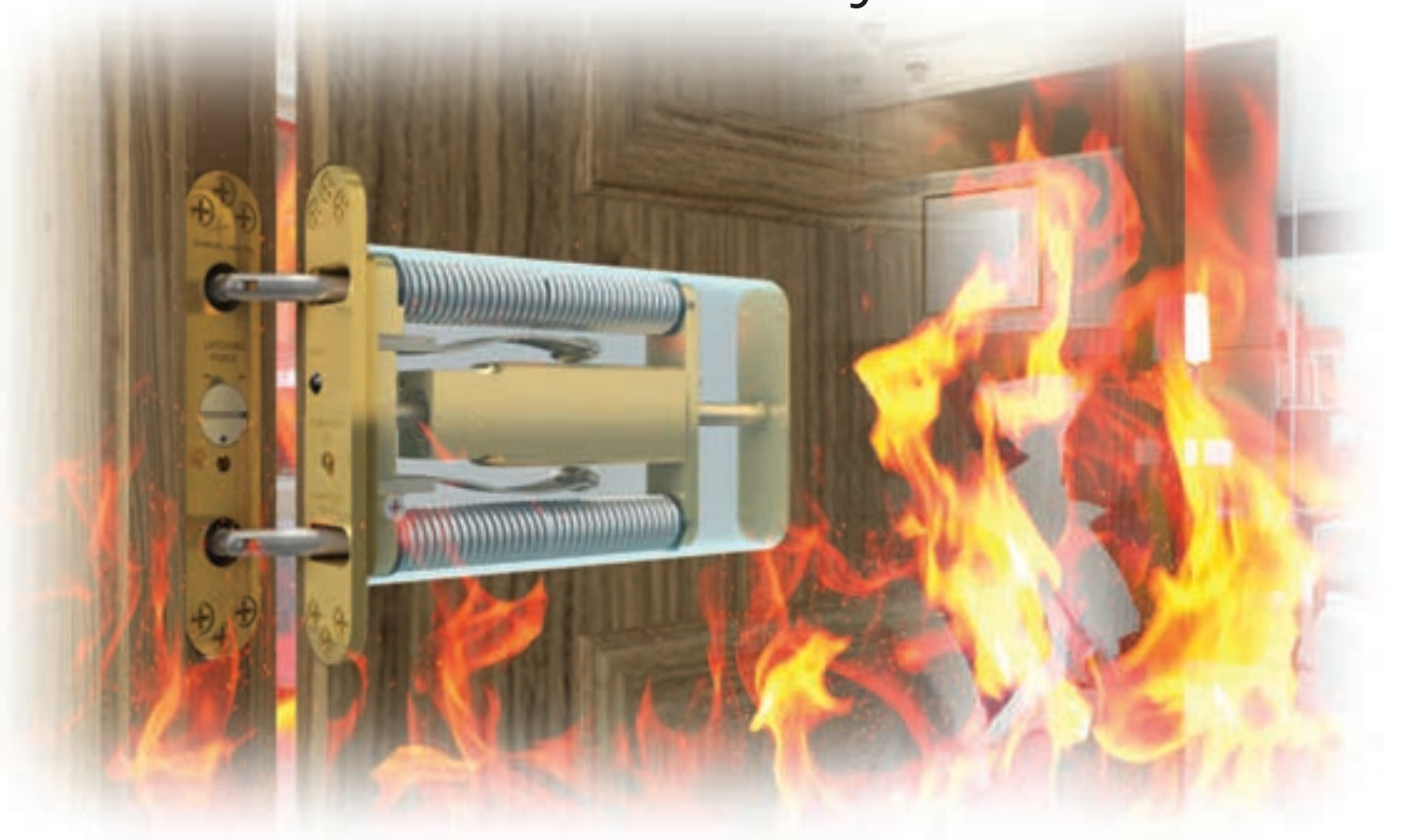
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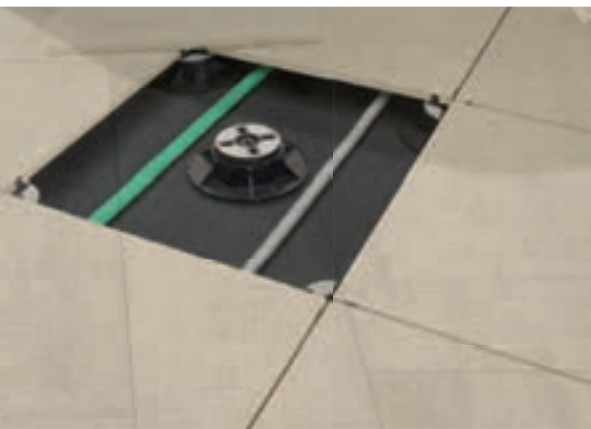
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# Tackling a sporting challenge

Jess Unwin learns how David Morley Architects successfully dealt with the design challenges of scale, flexibility and adaptability to create a new sports complex for the University of Nottingham

At its official opening in May it was clear that the University of Nottingham's new £40m sports complex is a big hit – in every sense.

Student and public membership numbers at the David Ross Sports Village (DRSV) are growing rapidly, helped by state-of-the-art facilities that include the UK's largest university sports hall.

Yet that impressive scale – the multipurpose main hall alone can accommodate 20 badminton courts – was also one of the key design challenges which faced David Morley Architects.

## Human scale

Chris Roberts, associate director at David Morley, was at the recent launch of the sports complex, which will be three times the size of the 1970s building it replaces. Roberts explains: "We had a comment at the formal opening from someone at the university who said that even though the building is huge, it still feels like a series of intimate spaces."

He adds: "And that was really part of the design ethos. From the outside and inside, although the sports hall component is obviously large (3,450 m<sup>2</sup>), our aim was to try and avoid too much of a bulky, hangar-style mass, and bring the project down to a human scale."

A not exhaustive (but certainly exhausting!) breakdown of what's available at the DRSV underlines the wide-ranging sporting credentials of this new facility. At its heart, the sports hall can be divided into four bays if required and reconfigured to provide handball and netball courts, trampoline rigs, cricket nets and indoor five-a-side football pitches.







#### UNITED

The new building and the existing swimming pool now share a common reception point

The adjoining areas of the overall building contain a 12 metre climbing wall, a 60 metre sprint track, a 200-station fitness suite, seven squash courts, a martial arts dojo and two dance studios.

There's also space for table tennis, archery and fencing, while other sections are home to a hydrotherapy pool, private consulting rooms and specialist physiotherapy and sports massage services.

#### Distinct volumes

A single structure playing host to so much activity could have become a soulless, cavernous monster. But Roberts reveals: "A key idea we had was to break up the building into distinct volumes, inside and out. That was very important."

One of those distinct volumes is the Pavilion, a three-storey glass-fronted area that wraps itself around one corner of the main sports hall. Here is where you'll find the DRSV's entrance – a full-building-

height atrium space that also hosts the climbing wall.

However, even within the Pavilion there are further sub-divisions housing a cafe, the sprint track, specialist strength and conditioning facilities and, high up on the top floor, the fitness suite, covering 1,200 m<sup>2</sup>.

Another volume, roughly on the footprint of the centre's now-demolished predecessor, is filled by the dance studios and dojo. The squash courts and a flexible-use zone for archery, table tennis and fencing are two further distinct sections within the overall structure.

Externally, to reduce the mass of the building, its component sections have different, stepped roof levels, while a range of facade materials also helps. The Pavilion is largely glazed, the area occupying the footprint of the former sports centre features a simple black aluminium panel cladding and the main sports hall has a light-grey aluminium cladding.

Brick was used for the lower part of some of the building's exterior walls, providing a robust plinth.

Roberts adds: "The setting is a Green Flag Award-winning landscaped campus and there is a Grade II-listed building near the main entrance to the complex. In addition, one side of the project is close to homes. We wanted to be sensitive to the parkland and residential properties and not have a new sports complex that would be too imposing."

### Maximising available space

The university did, of course, want to achieve the maximum amount of space possible for sporting activity. "That really came first all the way through the project," admits Roberts. "After all, our top priority was helping the university to achieve its targets for sporting success and increasing participation in sport."

The answer was ensuring the main sports hall and other areas could be reconfigured for different sports.

Roberts continues: "Something we always try and achieve with our buildings is to 'do more with less'. So we've managed to fit a lot in through the spaces being flexible and adaptable. This might mean, for example, that a space meant mainly for one activity is a certain height so that it can also be used for badminton or table tennis."

"Working with the university's sports department was crucial to creating those flexible spaces," he adds. "The precise detail of the design brief evolved through lengthy consultation. For example, the squash courts were initially configured in a line, but after conversation with the university's squash coach we rearranged them so he could observe multiple courts from one position."

He continues: "We encourage clients to consider as many options as possible in the early design development stages. It's at that stage that things can be changed without any cost impact. A constantly updated 3D model was critical because it helped us very quickly show the impact of changes."

### Unifying the site

Another part of the DRSV design solution was to unify the new structure with the existing nearby swimming pool building and outdoor pitches. The pool is now connected to the rest of the complex via a covered and glazed link building, and both facilities share a joint reception point.

The boundaries of the new DRSV have been built to all but touch the pitches. An







### CONSULTING

The architects consulted with sporting governing bodies so that spaces were designed to be compliant with recommended standards

outdoor viewing terrace and the transparency of the Pavilion's glazing brings the outdoor and the indoor together.

### Transparency

Roberts explains that transparency throughout the building was a further design box to tick. "As a practice we're always talking about design from outside in and inside out. It seems obvious, but by allowing people to see what's going on in the building glass animates it, and brings it to life."

He adds: "Internally, glass partitions allow you to see the activities taking place in adjacent areas. It makes you aware of the facilities on offer, perhaps encouraging people to use them."

"And, in this parkland setting, we wanted to make the most of the views looking out. So, for example, students exercising on the third-floor fitness suite look out over the treetops."

Transparency into the building from outside is just as important. The glazing around the main approach allows people arriving at the complex to see people running up and down the sprint track, exercising in the fitness suite and scaling the climbing wall.

### Equipment suppliers' design role

As with other sports projects elsewhere, which include Lord's Cricket Ground and London 2012 water polo venue, David Morley consulted with sporting governing bodies so that spaces were designed to be compliant with recommended standards. Accessibility is ensured with internal spaces and circulation routes designed using Sport England Accessible Sports Facilities guidelines.

However, engaging with suppliers like Continental Sports, which provided equipment for the main sports hall, was also important. Roberts says: "They had a design role [and] helped us with things like the coordination of fixture and fittings – everything from line markings and sockets for posts to roof fittings like drop-down basketball hoops and court division nets."

### Multi-purpose venue

While the DRSV's scale sets it apart, standard construction methods – steel framework, block work walls, precast concrete slabs for the three-storey Pavilion and standing seam aluminium roofing – were employed to erect it.

But it will be more than just a sports





venue – the main hall being used for fresher fairs, exams and graduation ceremonies. For the latter, special acoustic treatments were applied to ensure the intelligibility of sound from a PA system in a building of such volume.

### Environment-conscious design

Roof-mounted photovoltaic panels, mixed-mode ventilation and high insulation standards helped the DRSV achieve BREEAM Very Good. The glazing – with carefully selected solar gain protection specification – is also shaded by louvre and brise soleil features while allowing in plenty of natural light. Electric lighting, air-source heat pumps and combined heat and power boilers have been chosen for their high efficiency to minimise the building's carbon footprint.

As part of meeting the sustainability aims early design plans were redrawn to avoid felling ancient oak trees on the site, and the main contractor was able to divert 97 per cent of the construction waste from landfill.

### 'Real passion for sport'

Although David Morley first became involved in the project design back in 2013,

**I was a sportsman before I became an architect so it's great to design a facility of this standard**

Chris Roberts, associate director at David Morley

construction began in March 2015, and the building was only completed last autumn. During this period, the university used a £2m temporary sports building.

However, despite the relatively lengthy delivery, Roberts says he is delighted to have been involved with the project: "I was a sportsman before I became an architect so it's great to get the opportunity to give back by helping to design a sports facility of this standard – and it's very rewarding to see it being used."

David Morley Architects' associate director concluded: "It's an evolution of the high-performance sports facilities that the practice has designed over the past 30 years. And it's underpinned by a real passion for sport and an understanding of the particular requirements of high-performance sports environments." ■

### VIBRANT

Extensive glazing was a key design feature to animate the building

All images © Martine Hamilton Knight, Architectural Photography, Built Vision

### PROJECT FACTFILE

**Main contractor:** Kier Group

**Project manager/quantity surveyor:**

Gardiner & Theobald

**Structural engineers:** Price & Myers

**Service engineers:** Max Fordham

**Architects:** David Morley

**M&E:** NG Bailey

**Landscape architects:**

Land Use Consultants

**Fire engineers:**

Exova Warringtonfire

**Acoustic engineers:**

Max Fordham LLP

**BREEAM:** Anderson Green

**CDMC:** WSP Safety

# Cardiff community sports hub helped by Gerflor

Sport in the UK contributes significantly to community life. It is a valued activity bringing benefits to all the community as an enjoyable leisure pursuit, and as a contributor to enhancing quality of life. Community sport centres are important to local people and bring fun, challenge and competition as well as opportunities for social interaction as part of leisure time activities. Access to sports facilities and opportunities that meet local needs positively influence the communities' perception of their local area, particularly for children and young people.

The all-new STAR Hub in Cardiff opened its doors in September 2016 and now proudly sits at the heart of the Splott, Tremorfa, Adamsdown and Roath communities. This state of the art facility includes a new swimming pool with access for all users. Their spacious Health & Fitness Suite houses all-new TechnoGym equipment, including a Functional Fitness frame to allow for fun and challenging adaptation of traditional workouts. In short, it's a haven for fitness that's inspiring the local community to become fitter and more active.

In constructing the new STAR Hub facility, the specification of the flooring choice would be at the very top of the agenda to enable only the very best products to be used. The ultimate decision would fall to the installer CS Flooring Solutions who would specify some 320m<sup>2</sup> of Taraflex® vinyl sports flooring from international flooring and interiors specialist Gerflor.

Ensuring that a floor is laid correctly and to the manufacturers specifications is always a consideration and any high-quality installer knows that preparation and proper planning is the key.

Anthony Mynett, director of Carpet Services (Cardiff) Ltd commented: "On this project the set-out design required careful planning. In this instance, the installation process required the flooring product to be very user-friendly and flexible to meet the client demands. The result with Gerflor's Taraflex sport flooring has proved its capabilities and has now left a lasting impression".

Taraflex® vinyl sports flooring from Gerflor has been used in many international and local sporting events and is available in 17 colours and three wood-effect designs.

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different levels of the EN 14904 Standard delivering the full scope of indoor sports surfaces from P1 to P3 shock absorption solutions. Taraflex® is recognised for providing durability, safety and comfort without impairing performance. A unique value proposition, the Comfort range offers greater than 45 per cent force reduction, making it unrivalled in the marketplace in terms of offering comfort for users lowering the risk of long term injuries. Taraflex® meets the EN Standard of 22196 for anti-bacterial activity (E. coli - S. aureus - MRSA) (3) returning >99% levels of growth inhibition. The product is also treated with Protectsol®, which renders polish redundant and is triple action meaning no polish is ever required, it's easy to maintain and is anti-friction burn and slide/grip. Taraflex® has a double density

foam backing and with another bonus, it's environmentally friendly.

Anthony Mynett finally ends by saying: "We were delighted with the total project from a flooring perspective, with Gerflor products playing a major role. We promoted this project on our website and LinkedIn account and received some very positive feedback. Working and specifying Gerflor products has enhanced our capability to the main contractor Wilmott Dixon. It demonstrates our commitment to quality."

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# Monodraught putting wind in the sails at Eton Boathouse



**M**onodraught were specified as a natural ventilation solution as part of the recent refurbishment of Eton College Boathouse function room.

4 N° SOLA-BOOST X-Air Systems were installed in the conference area and ensure that the area is kept cool even when the room is fully occupied. Low CO<sub>2</sub> levels and good air quality are maintained to keep attendees feeling fresh and focused throughout the day. Natural ventilation is sustainable energy in action by harnessing wind power and the thermal rise of warm air in a controlled way.

Natural ventilation brings a steady supply of fresh air into the conference area, topping up the oxygen level, while at the same time expelling stale air to the atmosphere using the natural buoyancy of thermal forces. Fan noise, often associated with mechanical systems or air conditioning, is eliminated, to the benefit of conference attendees.

SOLA-BOOST X-Air is the latest generation of natural ventilation featuring the

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The iNVent 2 Control system utilises seasonally adjusted proportional control based on internal temperature and CO<sub>2</sub>.

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Find out more about Monodraught's natural ventilation solutions, or contact the company for a call from its design team.

01494 897700 [www.monodraught.com](http://www.monodraught.com)

## PROJECT DETAILS

- Eton College Boathouse, Dorney Lake, Sola-boost natural ventilation systems
- Sector: Leisure
- M&E Consultant: TMI Mechanical Ltd
- Contractors: WFC
- Location: Dorney Lake, Windsor
- Products installed (Autumn 2016):
  - 4 N° SOLA-BOOST® X-Air 170 natural ventilation systems
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## Expona flooring flows through new gym



High performance commercial sheet vinyl flooring from Polyflor's Expona Flow PUR collection was recently installed at Shrewsbury Sports Village in Shropshire. Escape Fitness designed the sports centre's new gym and also installed the 220m<sup>2</sup> of Expona Flow PUR flooring

throughout the space. Two designs from the Expona Flow range were selected to be installed alongside each other. English Oak is a traditional timber design featuring a subtle rustic effect while Meadow is an intense yellow-green shade with subtle pearlescent highlights.

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## Knauf AMF offer gold standard service



100m men's breaststroke Olympic Gold medallist, Adam Peaty, opened the £9m Holly Hill Leisure Centre. Knauf AMF provided acoustic solutions to help create a facility fit for future Olympic athletes.

Swimming pools are often very noisy places. The sound reverberates off the hard surfaces back into the humid air. High humidity amplifies sound making the noise level seem even higher. Philip Lyons at Space & Place architects specified Heradesign wall absorbers for the swimming pool hall to reduce and manage the noise level, creating a comfortable sound environment.

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## Financially healthy lighting for The Cleeve Sports and Arts Centre



Luceco has recently supplied LuxBay LED luminaires to sports hall facilities at The Cleeve Sports and Arts Centre in Cheltenham. Lighting in the main sports hall had reached the end of its economic life. Key factors for Sean O'Reilly, Associate Building Services Consultant from Integrated Architecture based in Gloucester, was to specify replacement lighting with low maintenance energy efficient credentials that could utilise the fixed positions of the old fittings, and would also provide significant cost savings throughout the lifetime of the luminaires. Installed by Mike Evans, EIS Midlands of Gloucestershire, LuxBay offered a cost-effective alternative to the existing traditionally lamped luminaires. Suitable for mounting up to 10 metres, the LuxBay boasts 105 Luminaire Lumens per watt, is environmentally friendly and requires no maintenance over its lifetime. The Cleeve Sports and Arts Centre offers a wide range of opportunities for the local community to participate in sport, health and leisure activities, their aim is to provide "Leisure for Life". Luceco's aim is to provide the end user with energy saving, cost-effective LED lighting.

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## Centre gets Hunter Douglas treatment



The pool area of a flagship £22 million leisure centre in Hampshire features a striking Hunter Douglas ceiling. Edenbrook Leisure Centre, in Fleet was designed by GT3 Architects to seamlessly integrate into the landscape. It complemented the green theme

with an energy-efficient roof and sustainable timber detailing. Hunter Douglas echoed the timber inside, manufacturing and supplying a 1752m<sup>2</sup> linear open ceiling in African Ayous, comprising 111mm module, with 92mm wide panels and a 19mm gap. The panels were coated with a lacquer that is suitable for high humidity environments.

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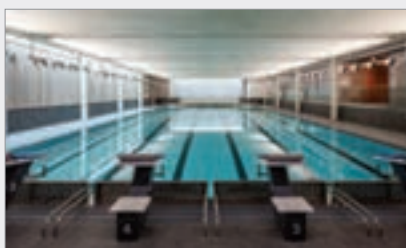


# Mapei waterproofing and ceramic systems used for American School swimming pool

Mapei systems have been installed for the construction of a swimming pool at the American School in London, St John's Wood.

The American School in London was founded in 1951 and currently educates 1,350 pupils. The new swimming pool is part of a £10m development comprising underground sports centre with fitness studio, multipurpose room, and changing facilities along with a 25m swimming pool where Mapei's involvement in the project was focused. As the 1,430m<sup>2</sup> sports centre is below ground level, curved changing rooms with brightly tiled walls reflect the available light, while voids allow natural light to flood the space.

Rosie Bard from Orms Architects commented "Mapei was the obvious choice for a high end swimming pool environment such as this. The quality of the design, finishes and fit out meant that a product was required that met both the technical and aesthetic



requirements". EP Ceramics installed Mapei's Planitop Fast 330, a quick-setting, fibre reinforced cementitious mortar to smooth out surface irregularities for the pool area. The waterproofing system was then installed, comprising of Mapei's Mapelastic to protect the concrete structure against cracking and to provide a waterproof barrier. The alkali-resistant fibre glass mesh Mapenet 150 was specified to reinforce the waterproof membrane. Mapelastic was again installed on top of the Topcem screed and Mapetex anti-fracture membrane before installing tiles.

Eporip solvent-free epoxy adhesive was used to seal any cracks in the screed before laying ceramic tiles, fixed with Mapei Keraflex and grouted with Ultracolor Plus grout in Medium Grey (shade 112) in the pool tank.

Matt Dudley from EP Ceramics commented: "The installation was made easier by the early involvement of the Mapei team working alongside ourselves and the architect to produce an M40 with the correct products for each stage of the works. Fixers working on the job commented on how high the standard of products being used were, not only for ease of use, but for workability and drying times allowing each stage of the process to progress smoothly. Going forward on future projects we will be pushing the architects and designers to use Mapei products and technical expertise."

Call Mapei's Technical Department for assistance with your sports project.

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## Sadolin sets the bar high at golf club



Sadolin PV67 Heavy Duty Varnish has provided a stunning, long-lasting finish to wooden surfaces at Kedleston Park Golf Club. At its heart is a welcoming clubhouse offering the finest Derbyshire hospitality, where Sadolin PV67 Heavy Duty Varnish has

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# Rubik's cube roof solved by Contour Roofing and Sika Sarnafil

Following last year's NFRC Roofing Awards win, Sika Sarnafil Registered Contractor Contour Roofing, has once again been recognised for its outstanding work, making the shortlist in the Single Ply category.

With the success of its previous award-winning project, Ewart Grove, a London residential new build, Contour was called on again by client Paul Simon Homes to offer a premium waterproofing solution for Cheltenham House. Another new build project in London, the entire roof and vertical works are shaped like a Rubik's Cube – a puzzle that was no match for Contour Roofing's problem solving skills.

Originally specified with metal cladding, the client wished to replicate this look for less cost. Jonathan Woods, Managing Director at Contour, once more proved that Sarnafil's single ply membranes can accommodate the most complex builds.

Contour worked closely with Sika Sarnafil



to generate a bespoke specification with Sika Sarnafil's recently launched Self Adhered membrane in lead grey, and décor profiles to emulate metal seams. Custom-made Sarnafil details were cut and fabricated to accommodate the various angle changes on the roof.

Sarnafil's new spray-applied adhesive Primer 610 was quickly and carefully applied to all the vertical areas, to accommodate the application of the Self Adhered Membrane. The weight of each drop proved extremely challenging, and had to be secured with

a peelstop, and fixed at every point with stainless steel SFS fixings. The décor profiles were installed with upmost precision and careful measurement, creating symmetry and uniformity.

Jonathan Woods explained: "Every single detail on this project has been carefully planned before application of the products. Coupled with the wealth of experience invested by our contract manager and award-winning fitters, the project was finished to perfection."

"Sarnafil advised us to use the new Primer 610 and Self Adhered membrane and helped us to understand the product with demonstrations at its training academy and our offices. Change is always tough, certainly with experienced fitters, but we insisted that the Self Adhered membrane was paramount for the success of the roofing works at Cheltenham House."

01707 394444 [gbr.sarnafil.sika.com](mailto:gbr.sarnafil.sika.com)

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## JJI-Joists – the versatile answer



When it comes to I-Joists first choice amongst builders and architects is the James Jones' JJI-Joist. However, JJI-Joists are used for much more than floor systems. JJI-Joists are now commonly used as wall studs where the range of

depths and 9mm web make them ideal when thermal efficiency and depth of insulation are paramount. And JJI-Joists are also increasingly used in roof structures as well, either as rafters or where cassette panels, formed using JJI-Joists and OSB sheets, are used to create a fully insulated 'room in a roof'.

[jjj-joists@jamesjones.co.uk](mailto:jjj-joists@jamesjones.co.uk)

## VAEPLAN protects stunning development



A full Alumasc warm roof system, with VAEPLAN'S proven durability qualities and resistance to the Swansea Bay sea air, provides a long-lasting roofing solution at the Oyster Wharf waterfront development in Mumbles.

Registered Alumasc contractor Span Roofing Contractors installed the vapour barriers and PIR Insulation, then rolled the VAEPLAN single ply membrane over the insulation boards and mechanically fixed it within the heat welded overlaps – providing added strength to the weld and increasing resistance against the higher wind loads this coastal building will experience.

0333 5771 500 [www.alumascroofing.co.uk](http://www.alumascroofing.co.uk)

# Growing acceptance of timber

Timber is seeing a strong resurgence across many construction sectors due to sustainability drivers, but obstacles remain. ADF canvasses industry views

Each year the UK produces 11 million tonnes of steel, 12 million tonnes of concrete and 11 million tonnes of timber. Most of this is destined for building sites across the UK, having been selected by architects and specifiers.

All three materials are widely used for the structural framework of buildings and all have their strengths. However, when making the choice between different material options, what has not always in the past been considered as part of the decision-making process is the relative environmental credentials of each. As the focus on sustainable building practices becomes increasingly intense, those comparisons are becoming ever more important to the specifiers in the industry.

“Sustainability and environmental consideration have been hot topics in the construction industry for a number of years now,” says Tim Belden, university liaison manager at The Timber Research and Development Association (TRADA). “As an architect, if you’re serious about lowering your impact on the environment and global warming, you should be using timber wherever appropriate; it’s the obvious choice.”

Although this view has been widely adopted in continental Europe, it has failed to catch on in the UK despite the unambiguous findings regarding the carbon footprint of each material. “One tonne of concrete produces 927 kg of CO<sub>2</sub> per tonne of end product – that’s almost a 1:1 ratio,” says Belden. “If we look at steel, dependent on variety, approximately 1.8 tonnes of carbon dioxide is produced for every tonne of end product. These are huge numbers that have a significant impact on our environment.”

## The positives of negative footprint

Timber, on the other hand, has a very different environmental impact. Due to its ability to absorb and store carbon in its fabric, timber consumes more CO<sub>2</sub> than is emitted back into the atmosphere during its processing. Belden continues: “Let’s take cross laminated timber (CLT) for example.

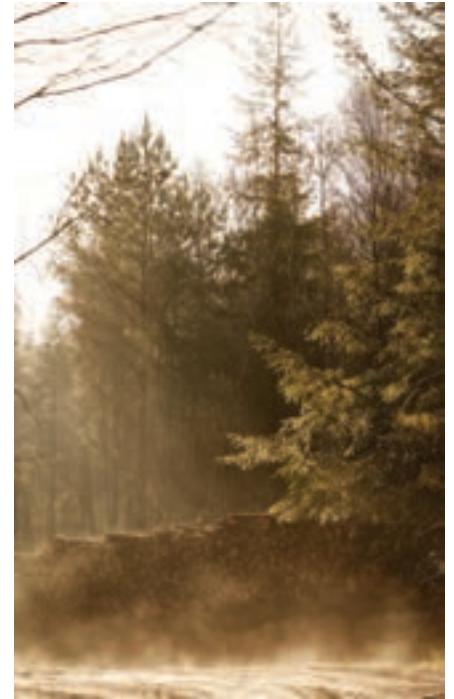
For each tonne of product grown, processed, prepared and shipped to site, 300 kg of CO<sub>2</sub> is removed from the air. Timber production therefore has a negative carbon footprint, meaning we’re not only protecting the environment, we’re helping to improve it.”

This data comes as no surprise to Stuart Devoil, head of marketing and brand at timber panel manufacturer MEDITE SMARTPLY, who explains his company’s approach to sourcing timber: “Made from fast-growing softwoods in our own sustainably managed FSC-certified forests in Ireland, our products actually consist of the by-products from timber production.” He continues: “Our timber panels use material that would otherwise be used as fuel or simply disregarded: wood residues, sawmill co-products and pulpwood. Whatever we don’t deem suitable for product manufacture, we use in the generators to power the processing machinery.”

## Cost

It’s not just environmental benefits that timber construction materials add to the material choice mix – the projected cost outlook is also becoming increasingly appealing to specifiers. Belden says, “While the cost of raw materials in steel and concrete can fluctuate, especially in the case of steel, timber costs remain fairly predictable. With the increased interest in building with timber frame we’re forecasting that the price will continue to decrease in the next few years.”

The demand for timber as a construction material has been firmly established with architects and specifiers for many years. However, increased focus on sustainability in the built environment is beginning to turn even more heads. Duncan Baker Brown, director at East Sussex architects BBM Sustainable Design, clarifies: “When we’re working on projects, we want to assess the whole supply chain to understand exactly where our raw materials have come from. The most accessible and eco-friendly product that we can do this with is timber. It’s a material trend that is



## IN DEMAND

Demand for timber is growing due to the material's sustainable attributes, negative carbon footprint and durability

**It's not just environmental benefits that timber construction materials add to the material choice mix**





**Timber consumes more CO<sub>2</sub> than is emitted back in the atmosphere during its processing**

growing, but we've been using timber in our projects for many years due to its environmental credibility and qualities."

#### **Large-scale uptake**

So, if the environmental argument for building with timber stacks up and the cost is on a

par with steel and concrete, why aren't we seeing more people building with it?

"I don't know. That's the short answer," claims Belden. "I think people still have in their head that timber is trees swaying in the wind." He adds: "I always ask – what building do you think of when you think timber frame? A lot of the answers make reference to Tudor style buildings. Tudor buildings are a great example of timber frame construction: they've been up for 400-500 years. If that's not durable and sustainable I don't know what is!" Belden concludes, "There's not many concrete structures over 50 years old that are still in an inhabitable shape, and I'm sure they don't have the same charm."

Demand for timber in construction is growing, and some of the factors for that are the material's sustainable attributes, negative carbon footprint, and durability. With constant innovation bringing about new products such as flame retardant and airtight variants of timber panel and boards, it seems the uses and demand for this product will only continue to grow.



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## Salford apartments achieve airtightness



An impressive new contemporary apartment development in Salford is set to benefit from the superior airtightness performance qualities of Wraptite from the **A. Proctor Group**. Project architect Andrew Tate of Bowman Riley Architects required a

high-quality air tightness membrane and chose Wraptite as an external air barrier. Unlike internal air barriers, which can be complex and costly to install due to the need to accommodate building services, Wraptite was applied externally, quickly and easily to the Siniat Weather Defence Board in continuous pieces.

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

## StoCretec makes its mark in the UK



StoCretec is a market leader for concrete restoration and protection systems in many European countries. StoCretec's full range of systems is available for anything from small concrete patch repairs, through to large-scale, sprayed mortar projects and high-performance industrial floor-coating

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



## All bases covered

Leading construction connector manufacturer **Simpson Strong-Tie** has expanded its range of post bases to include additional solutions for new and retrofit applications. The range includes concealed post bases; bases with site-adjustable heights from 100 – 150mm; bases which can be adjusted even after the columns have been installed; and options to cast into concrete or to fix down using studs. A brochure is available for download, which includes installation advice, performance characteristics and safe working loads. Sales Director Jon Head explains: "With the off-site construction footprint increasing all the time, we've seen a growing demand for post base and column support solutions, prompting us to not only make more options available 'off the shelf' but not expand our 'made to order' service to cope with ever more interesting and unique house design." Request or download a copy of *Connectors for Timber and Masonry Construction* from Simpson Strong-Tie's website.

01827 255600 [www.strongtie.co.uk](http://www.strongtie.co.uk)

## New Tension System Cross Coupler

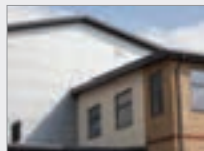


When forming a cross brace using tie bars, the new **Ancon Cross Coupler** offers a streamlined alternative to an anchor disc. Cross couplers and anchor discs allow tension bars to lie in the same plane and remove the need to offset bars, with the coupler or disc providing an attractive design feature for the panel. The cross coupler

is the latest addition to the Ancon 500 tension bar system, which provides a high load capacity while meeting the aesthetic requirements of today's architectural applications. Ancon Cross Couplers are available to suit tie bar diameters from 10mm to 24mm.

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

## School on fast-track to success



The **Kingspan TEK Building System** of Structural Insulated Panels (SIPs) have been used to create the building envelope of a contemporary, energy efficient sports hall and classroom block at Swavesey Village College, South Cambridgeshire.

The panels arrived onsite pre-cut to the project's exact specifications. This bespoke approach almost eradicated onsite alterations and, combined with the panelised system construction, allowed the installation team to establish a fast and predictable installation programme.

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

## Monarfloor Tranquilt – a sound choice



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## Drybase Flex provides barrier to damp



Drybase Flex Membrane from **Safeguard** is the latest product in the company's Drybase Damp-Proof Coatings range and is designed for direct application to floors and walls that have been affected by dampness and salt contamination and when it is not possible to stop the damp at its source. A watertight,

low-profile sheet membrane solution to the problem of persistent damp, Drybase Flex Membrane is a highly durable and flexible means of protection against moisture ingress which can be quickly and easily applied to walls using specially-formulated Drybase Flex Adhesive.

01403 210204 [www.safeguardeurope.com](http://www.safeguardeurope.com)



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# Safe and stylish balcony tiling with BAL External Tiling Solutions

Designing a seamless inside-outside tiled balcony – but unsure about the right assembly?

Now help is at hand with BAL's new External Tiling Solutions for balconies, roof terraces and patios, which cater for the growing trend of having the same tile flowing from the inside out onto a balcony or patio to create an extension of the house – an area to cook, eat, relax and entertain.

However to have these tiled areas available all year round requires an all-weather assembly – capable of dealing with the inclement weather that is thrown our way, be it rain, frost, snow – or even occasionally heat!

Without the correct tiling system, tiled areas can be susceptible to cracking, efflorescence or staining – all derived from water damage or fluctuations in temperature.

Water penetrating the lower levels of an external assembly can pose a serious risk to the structural integrity of any balcony. Permeation of water through tile joints will eventually cause damage if no provision is made for water to drain away efficiently.

BAL's new system – launched in conjunction with sister company Gutjahr – helps to protect the tiled assembly by providing rapid, immediate and high volume drainage of the surface down through the screed and expelled away from the assembly through drainage mats, grates, drip/drain edge profiles and guttering systems.

Simple to install, these products help protect the long-term integrity of the balcony assembly from these problems and others such as weed growth, warping and impact damage.

This new innovative technology also helps prevent damage to building connections that can occur if water is allowed to fall back to the threshold. If the right waterproofing solutions are not in place, water can travel up and over the waterproofing, or worse still, get behind the waterproofing and track back. Damage to these critical areas can cause big problems for even the smallest balcony.

BAL's new range of AquaDrain drain grates and drainage mats helps maximise protection from water ingress by passing high water volumes, providing a strong construction, remaining durable and catching debris.

These new products represent a completely new range of solutions for the BAL portfolio



and work as a system with current BAL preparation, waterproofing, adhesive, grout and sealant products for tiling.

This means for the first time architects, designers and contractors are provided with a true 'one-stop-shop' for balcony, terrace and patio systems with break-proof porcelain, ceramic and natural stone tiles or slabs.

To ensure that moisture staining, frost damage and efflorescence do not become problems in the future, it is crucial to specify the right products. It is vitally important to remember that water sensitive tiles and slabs should not be used externally.

The correct combination of products and materials include:

- Appropriate drainage assemblies – structures with effective falls, drainage and often with reduced thickness.
- Suitable backgrounds – non-absorbent, rigid, fully cured and dry, unaffected by temperature fluctuations and preferably cementitious
- Correct selection of adhesive and grout – rapid setting/low water demand i.e. white for light natural stone such as BAL Rapidset Flexible Fibre or BAL Stone & Tile PTB.
- Tile/slab selection – with low porosity, break-proof, suitable for external use i.e. frost resistant.

BAL offers three systems, each designed to meet the height and weight requirements of varying constructions and a number of



different edge finishes, depending on screed thickness, tile size and thickness and the desired look. Among the systems on offer from BAL include:

- Thin Drainage Assembly for direct point adhesion break-proof coverings (complete construction height from 29mm)
- Standard Drainage Screed Assembly for the solid bed fixing of ceramic, porcelain and natural stone and concrete paving (from 68mm build-up)
- Thin, Lighter Weight Drainage Screed with an epoxy drainage screed for a strong but comparatively lightweight build-up compared to conventional systems (from only 43mm height build-up).

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[www.bal-adhesives.com/gutjahr-zones/](http://www.bal-adhesives.com/gutjahr-zones/)

# Breaking the thermal mould

Heat lost through conventionally-wrapped parapets is a common complaint among architects, so an efficient space-saving alternative is welcome, says Schöck's Chris Willett

In a similar way to the thermal insulation issues manifested with balconies, in the case of parapet connections energy is seamlessly transferred through the thermal barrier. In addition, a link between the wall and ceiling can have a shape-dependent impact on the exterior corner, potentially affecting the exterior to interior surface ratio. Anchoring parapets onto a wall or ceiling also presents a material-related thermal bridge comparable to a balcony connection.

**Loss of energy is still several times higher than when a structural thermal break is incorporated**

The conventional method of insulating parapets is to wrap the perimeter of the wall with an insulation barrier to make the parapet part of the heated building mass. As a result, the heat outflow is reduced; however, the loss of energy is still several times higher than when a structural thermal break is incorporated.

However when the parapet is thermally separated at ceiling level by a thermal break, it sits outside of the heated building mass. The two diagrams on the following page demonstrate heat loss from a parapet with insulation wrapped along its length and a parapet construction using a thermal break. They show that more heat is being lost through the wrapped insulation along the circumference, while in the case of the thermal break, barely any energy escapes through the load-bearing thermal insulation element.

## Low U-values

Beyond being an effective insulant, thermal breaks offer more design flexibility as they can connect structurally at specific points. In fact, the levels of insulation achieved when a thermal break is employed are so significant that the solution is a viable choice on Passivhaus schemes.







Fig 1a



Fig 1b

**UNWRAPPED**

**Fig 1a:** Heat loss through a parapet connection wrapped along its entire length

**Fig 1b:** Parapet with structural thermal break  
Images © Schöck

Indeed, the thermal break is assessed as a 'Certified Passivhaus Component', provides BBA Certification, LABC Registration and NHBC approval and meets full compliance with UK Building Regulations. The temperature factor used to indicate condensation risk for occupants in residential or commercial buildings – the (fRsi) value that must be equal to, or greater than 0.75 or 0.50 respectively – is comfortably met by incorporating the solution.

In addition, the solution is compliant with the Government Standard Assessment Procedure, SAP 2012 concerning carbon emissions from buildings and respectively heat losses through non-repeating thermal bridges.

Parapets incorporating thermal breaks are also designed for low maintenance, as opposed to wrapped components that are prone to damage and, inevitably, repair and maintenance outlay. This is particularly the case in areas where railings or covers pierce the insulating layer. With thermally-separated parapets however, railings and covers can be attached directly into concrete.

Another significant benefit is that extra useable terrace area is released because there is no thermal insulation applied on the internal surface. Thermally-separated parapets are also durable and water impermeable, minimising maintenance costs and the potential for expensive restorations due to waterproofing problems.

**Cost savings**

Recently, an independent cost analysis undertaken by Andrews Eades Chartered Surveyors involving two 12.5 metre-long parapet constructions: a conventional parapet construction detail and a second detail incorporating the structural thermal break with a spacing of 1.25 metres. Comparisons of construction costs show initial cost savings through the use of thermally-separated parapets of up to 10 per cent depending on the structure. The reason for this is simplification of the formwork process, as well as the detailing of the rear of the parapet.

*Chris Willett is managing director of Schöck*

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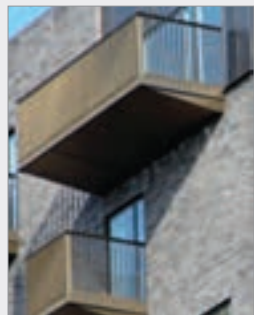
## Hollo-Bolt, the original expansion bolt for structural steel, specified for balcony



The ongoing Hackney regeneration scheme is one of London's largest programmes for building and refurbishing homes. As part of the project, 72 enclosed balconies were installed onto the front of the Kings Crescent apartment blocks to increase the living space and modernise the appearance of the estate. The contractor required a safe method for connecting the pre-drilled steel hollow sections together to create the structural framework for the balconies. The engineers evaluated several products for speed, strength and durability before deciding that the Hollo-Bolt by Lindapter was the best solution due to the range of independent product approvals, including the CE mark. Hollo-Bolts were used to create the splice connections for the steel hollow sections running up the vertical face of the buildings. The contractors also used Hollo-Bolts to attach the framework to the vertical trusses which formed the load bearing base for the balconies. The Hollo-Bolts allowed a quick installation of the balcony extensions without drilling or welding, helping the contractors to finish the project on time and on budget.

01274 521 444 [www.lindapter.com](http://www.lindapter.com)

## Superb metal finishing benefitting from supply chain partnerships



Powdertech Corby's work can be seen at the exciting Rathbone Market regeneration scheme in Canning Town, East London. Powdertech's work completed the element which gave the final building in the development its name – 'Lumire'. The balustrade across all four sides of the building glows golden, a physical representation of the 'light of regeneration' in the heart of Canning Town. Rathbone Market is a £160 million regeneration mixed-use development with over 650 dwellings, retail and community facilities and two open spaces. The stylish apartments have 1900 linear metres of galvanized steel balustrade, coated by Powdertech in a high performance AkzoNobel power coating Y2217F, matt gold/green. The fabricator, galvanizer and Powdertech worked as a team from the project outset, with close involvement from the architect. The firms met to discuss design elements that would optimise the balustrade fabrication, galvanizing and powder coating finish. All stages were reviewed by the team throughout the project duration by visiting each other's premises, and the initial completed assemblies were inspected by the architect. The success of the project as a whole is recognised as being largely due to the shared vision and collaboration of all parties involved.

01536 400890 [www.powdertechcorby.co.uk](http://www.powdertechcorby.co.uk)

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## Increased demand for colourful Trespa®



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## New offices get full ARP treatment



An aluminium rainwater system, plus fascias and soffits for a newly built office building in Llanishen. ARP was asked to supply further fascia and soffits plus bespoke fabricated aluminium flashings for the roller doors. Another visit to site was required to obtain relevant measurements before consulting with ARP's in-house CAD

Team and production to enable the company to supply the additional items. Scott Barry, owner of K S Barry said: "By working together we have succeeded in meeting the client's requirements."

0116 298 3666 [www.arp-ltd.com](http://www.arp-ltd.com)

## Levolux gives a lift to Lee High Road



The recently completed Goldcrest House residential development in Lee High Road, Lewisham, incorporates a number of eye-catching features, including an external solar shading and screening solution, courtesy of Levolux. The substantial four and part five-storey building is located within a confined site, sandwiched between Lee High Road to the north-east and the River Quaggy to the south-west. The 'L' shaped building is considerably larger than the original single-storey terrace it replaces, with a frontage that extends 53 metres in length, following the gentle curve of Lee High Road. To soften the visual impact of the building from the street, Levolux was invited to develop an external solar shading and screening solution, comprising vertical Aerofoil Fins and horizontal and vertical glazed panels. The solution applies across the length of the building and extends vertically, from first floor to roof level. External walkways, with mesh balustrading, are concealed behind a series of multi-coloured, extruded aluminium Aerofoil Fins. Each Fin, which is fixed vertically at 90 degrees, measures 200mm wide by 45mm thick, with lengths of up to 2.7 metres.

[info@levolux.com](mailto:info@levolux.com)

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Specifiers seeking to certify a fit-out for sustainability best practice increasingly use the SKA Rating system operated by the Royal Institution of Chartered Surveyors and Earthborn's Ecopro Matt Emulsion, Lo Sheen Emulsion and Eggshell are all now compliant.

Available in all 98 shades of BS4800, plus black and white, they are all made in the UK and also comply with the strict EU Ecolabel standards. The extensive palette offers a huge choice and enables colour matching with other decorating features.

The Ecopro range is uniquely formulated for high performance and all three products are totally oil and acrylic free, with minimal VOCs.

Eggshell is the newest addition to the range. Suitable for use on interior walls, ceilings and woodwork, it's a complete all-rounder. It dries to an attractive sheen that is durable, washable and scuff resistant.

Ecopro Emulsions are water-based, low odour, environmentally sound alternatives to conventional wall and ceiling emulsions. The Matt option is particularly suitable for use on new plaster, while Lo Sheen is formulated for enhanced durability and washability, making it suitable for higher traffic areas.

Tel 01928 734 171 Fax 01928 731 732  
Email [sales@earthbornpaints.co.uk](mailto:sales@earthbornpaints.co.uk) [www.earthbornpaints.co.uk](http://www.earthbornpaints.co.uk)



# The future is now for sectional garage doors says Hörmann

When it comes to garage doors, priorities are changing for homeowners. With rising crime rates and energy bills increasing, consumers are looking for ways to ensure their garages are secure, as well as energy efficient. David O'Mara, Marketing Manager at the UK's leading door manufacturer Hörmann, looks at the evolution of the market, how it has shifted to accommodate the ever-changing needs of homeowners and the growing popularity of sectional garage doors.

The garage door market has, up until now, been largely geared towards and dominated by the traditional up and over. Driven by both manufacturers and consumers, this style is often seen as the door of choice for national housebuilder. However, sectional garage doors are becoming increasingly popular due to their high levels of security and thermal efficiency.

Both of these considerations have become progressively more important for consumers in recent years and this is partially as a result of the varying ways in which we now use our garages. Gone are the days of it merely being a storage room, garages are now utilised as gyms, offices and all manner of vital extensions to the family home. Many homeowners are subsequently placing the same importance on the security and efficiency of their garage as they do on their home.

As a result in advances in both of these fields, there has been an increase in the number of people buying sectional garage doors. The versatility of this style also means that they can be used in virtually any scenario, regardless of size or shape, to suit the needs of the customer. Due to the vertical opening, there is more space inside and in front of the garage meaning that homeowners intending on using their garage for something other than the traditional use, have the means to do so.

Sectional garage doors are fitted behind the opening and add a stylish finish to any façade. As they come with seals around all four sides, they offer optimal levels of thermal efficiency and weather resistance.

Hörmann's latest sectional garage door, the LPU 67 Thermo, has been designed using 67mm thick filled polyurethane panels and double-lip seals on all four sides. These features help the range achieve U-values as



low as 0.91 W/(m<sup>2</sup>.K), 50% better thermal insulation when compared to the LPU 42. For a thermal break between frame and brickwork for up to 15% better energy efficiency, the LPU 67 Thermo sectional garage door is available with Hörmann's specifically designed ThermoFrame technology. As well as its thermal benefits, this range comes with Hörmann's proven finger trap protection to help eliminate potential trap zones both internally and externally.

For that extra peace of mind, Hörmann's range of 42mm insulated and timber sectional garage doors are available with the police approved Secured by Design accreditation. This accreditation means that products have been put through their paces by experts, in

order to prove that they can withstand common methods of forced entry. When the door is closed, the anti-lift kit automatically engages in the operator boom's stop then locks immediately to ensure that it is secured against forced opening. As this function is purely mechanical, it continues to secure even when the power fails.

Increased importance on security and energy conservation is driving the market towards secure, insulated garage doors with innovative technology enabling Hörmann to create doors that are safer than ever before and offer the highest levels of insulation.

01530 51688 [www.hormann.co.uk](http://www.hormann.co.uk)



## Tower Wharf, Birkenhead



Comar Architectural Aluminium Systems, with their approved fabricator LDG completed the installation of aluminium curtain walling, windows and commercial doors to a new waterfront £8.6million flagship office block and call centre.

To maximise natural daylight and facilitate the large glazed areas Comar 6EFT was specified 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)

## Potential of Smart Buildings



GEZE UK is encouraging architects and specifiers to 'switch-on' to the benefits of developing smart buildings with the launch of a new brochure. *Smart Solutions* highlights safety systems and drive technology which can be used to create innovative networked and modular solutions which allows GEZE windows and doors to be controlled from a single source. Linked into GEZE's new interface modules – The IO 420 and the IQ box KNX – products can be integrated via widely used communication standards for homes and commercial buildings.

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

## Schueco gains Q Mark Certification



One of the leading sustainable building envelope specialists, Schueco UK, has announced that as a system supplier two more of its popular sliding door systems – the Schueco ASS 70.HI lift/slide door and the Schueco ASS 70 FD folding/sliding door – have been awarded Q Mark Product Certification by Exova BM Trada. Q Mark

Product Certification covers a wide range of characteristics including weather performance, mechanical strength, operating forces, corrosion resistance of fittings and PAS 24 security. The tests certify the doors' opening and closing performance over 50,000 operating cycles.

01908 282111 [www.schueco.co.uk](http://www.schueco.co.uk)

## Brochure showcases Aztec's Collection



Halo fabricator Aztec Windows is boosting awareness of its 'timber alternative' Prestige Collection® of windows and composite doors with an impressive new brochure, designed entirely in-house. Neil Evans, Sales Director for The VEKA UK Group commented, "The Prestige Collection® has

helped Aztec Windows create a niche with homeowners who crave that timeless timber-inspired style. This beautiful brochure is testament to their hard work, the quality of their offering, and using Halo products to the fullest. It certainly gets our seal of approval!"

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**Tel: 07718 570564**



## Wicono Windows frame historic skyline



The creation of a new corporate headquarters and customer interface facility for a York based insurance company has seen high performance systems from the WICONA range employed to help achieve the client's ambitions of building a stylish and sustainable property, including attaining a BREEAM rating of Very Good. Amongst the many impressive aspects to the property is a third floor terrace, fronting meeting rooms, where WICTEC 50SG sliding doors give access to the outside space and the stunning views of the historic walled city.

01924 232323 [www.wicono.com/en/uk](http://www.wicono.com/en/uk)

## Slimmest Part L compliant steel windows



Designed for energy efficiency, W30 steel windows from Steel Window Association members are the slimmest steel options currently on the market which comply to current Part L building regulations.

For domestic applications, the W30 system is B-rated by the BFRC. Each B-rated window incorporates an 18mm double glazed unit, comprising 4mm soft coat low e glass and 4mm clear low iron glass sandwiching a 10mm krypton gas-filled cavity with a warm edge spacer bar. The W30 is double weather-stripped to improve weather tightness and thermal efficiency.

[info@steel-window-association.co.uk](mailto:info@steel-window-association.co.uk)

## Is there a window system on the market that can reduce noise as much as this one?



Hot on the heels of its recent launch of three new products, Hueck UK has added an innovative new system to its aluminium range. Lambda SA (silent air) is a modular soundproofing system based on Hueck's Lambda 090 window system. Thanks to an ingenious design, Lambda SA can reduce noise pollution by up to 39dB, even when the window sash is open in the tilted position. Lambda SA is ideal for use in new-build and refurbishment projects where the requirements for soundproofing are high, such as densely populated areas and homes near airports and railway lines. Different combinations of soundproofing system components mean different demands for soundproofing, economic viability and the possible width of the tilted position opening can be achieved. For example, a fanlight for rush airing can be combined with a special bottom light window for sound-proof continuous ventilation. And Lambda SA can also be used with windows that do not have a bottom light window. Hueck is one of Europe's largest manufacturers and suppliers of aluminium window, door and facade solutions, specialising in both standard systems as well as bespoke applications.

01217 671344 [www.hueck.com](http://www.hueck.com)

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



# Fully funded flat roof solutions for Airedale Academy

Airedale Academy in Castleford recently underwent significant refurbishment to repair its failing flat roofs, which had surpassed their natural life expectancy and were experiencing water ingress. Prior to the work commencing on site, flat roof manufacturer Bauder helped the academy successfully secure £1.5 million of funding for the required works by assisting them with all stages of the application process.

All of the original waterproofing on the school's campus was then removed before being replaced with over 7,200m<sup>2</sup> of Bauder's premium reinforced bitumen system, Bauder Total Roof System, by approved contractor FRS Roofing Services. The system build-up included Bauder's PIR Insulation for superior thermal performance and tapered insulation to effectively create drainage falls without having to incorporate them into the structure. As part of the necessary works, 20 new Bauder rooflights were also expertly



fitted to give essential daylight to the building's interior.

A challenging element of this installation was the number of intricate detailing requirements, with the roof possessing over 20 separate roof areas, calling for exceptional levels of workmanship from FRS. There were also some health and safety implications, with asbestos having been found within the building structure. Consequently, specialists were called in to ensure safe removal and some roof areas were overlaid to minimise the

possibility of any asbestos debris being dislodged and therefore contaminating the rooms and corridors below.

The academy remained open and fully operational throughout the works, which caused logistical challenges, however all deliveries were timed as not to conflict with vehicles moving in and out of the facility and the team worked closely with the client to agree working hours to reduce disruption to the students and staff.

Mike Leake, Vice Principal at Airedale Academy: "The expert support we received from Bauder was crucial in helping us secure the necessary funding and the final outcome of the roof refurbishment is outstanding. We are already starting to notice the benefits, including cost savings as a result of the insulation upgrades, and our long guarantee gives us total confidence about the future performance of our roofs."

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

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# Velux® adds three more sizes to curved glass rooflight range

**R**oof window manufacturer VELUX® has added three more sizes to its world's first curved glass rooflight range.

The VELUX curved glass rooflight, designed for flat roofs, is now available in eight different sizes and features CurveTech, an innovative curve-shaped glass top that lets rainwater easily drain off the surface – even on completely flat roofs. That means daylight is able to shine through without raindrops getting in the way.

The new curved glass rooflight offers a number of other unique benefits for homeowners looking to bring in more daylight through the roof:

- A fully programmable control pad offers remote control operation of out-of-reach rooflights. Practical pre-fitted rain sensor closes the rooflight automatically in the event of rain.
- A combination of insulating PVC frame and double-glazed, low-energy inner pane



ensures heat does not escape through the window and helps to maintain the home's ideal indoor climate.

- The curved glass shape provides natural drainage of rainwater, negating the need for regular cleaning. Toughened glass makes it virtually impervious to damage from the elements. Maintenance free PVC material used on the interior frame is

also easy to clean.

The eight different sizes of rooflights provide homeowners with flexibility when looking for roof windows to match their room size.

Recent research into the flat roof window market by VELUX revealed that over half of single-storey extensions in the UK have flat roofs, and over two thirds of flat roof extensions have no glazing in the roof.

Grant Sneddon, product manager at VELUX said: "It's a great feeling to launch another three sizes to our new curved glass rooflight launch – the first of its kind in the world – giving homeowners more choice when it comes to improving their home."

The curved glass flat roof windows are installed in the same way as other VELUX flat roof windows and use the same base units as the existing range, meaning installers don't need to learn new methods of installation.

01592 778225 [www.velux.co.uk](http://www.velux.co.uk)

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[www.rensonuk.net](http://www.rensonuk.net)

## Assessment and surveillance scheme



Kiwa has launched new approval schemes for injected systems and their installers and has recently awarded BDA Agrément® to Warmfill Moulded Foams, Energystore and Thermabead. These documents are easily accessible via the website, and readers can see that all relevant performance factors have

been assessed. The approvals cover the use of the system in the UK and the Irish Republic, where applicable, all subject to consideration of the location of the installation and degree of exposure.

[www.kiwa.co.uk/bda](http://www.kiwa.co.uk/bda)

## Vortice wins new contract



Ventilation systems supplier Vortice has been awarded the contract to supply intermittent ventilation fans to Midlands-based house-builder William Davis. The first site to be completed is Mill Fields, set in the Leicestershire village of Broughton Astley.

This select development offers stunning views of open countryside and the houses are all well specified. Vortice Specification Manager, for the North, Ken Johnson, said "It was clear that the quality of the products specified was of the utmost importance. The fans chosen are stylish and discreet, making them the ideal choice."

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

## Royal opening of Oastler building



Saint-Gobain Building Glass looked on proudly last month as a £27.5m university building it helped to design and create was opened by the University of Huddersfield to provide a new home for its Law School and the School of Music, Humanities and Media.

Saint-Gobain Building Glass looked on proudly last month as a £27.5m university building it helped to design and create was opened by the University of Huddersfield to provide a new home for its Law School and the School of Music, Humanities and Media.

01476 23000 [www.saint-gobain.com](http://www.saint-gobain.com)

## JET Cox Rooflights in a different League



A leading Premiership football club has chosen JET Cox Rooflights for their brand new training facility in North London. Supported by Sport England, the new facility was the result of massive investment. The club's architect specified Glass Monopitch Rooflights with specialized solar glazing from JET Cox for the new two storey extension to the indoor training pitch.

The slim profile, thermally broken Monopitch Rooflights provide maximum design flexibility and are available in a variety of standard and bespoke configurations.

0121 530 4230 [www.jet-cox.co.uk](http://www.jet-cox.co.uk)

## An excellent shop window for Crittall



Prestigious furniture and home décor specialist Neptune has chosen Crittall Windows to help display to advantage the products in its latest showroom in Wimbledon, south London. Neptune's in house design team specified Crittall's Corporate W20 external screen windows and doors in a conversion of an early 20<sup>th</sup>

century, three storey building. The Crittall products were installed across the entire shop frontage in the words of the company "bringing our timeless aesthetic to the indoors and out."

01376 530800 [www.crittall-windows.co.uk](http://www.crittall-windows.co.uk)

## AET supplies system to Hexgreave Hall



AET recently announced an exclusive distribution deal with Italian based DAE Energia; introducing heat metering solutions for residential and commercial applications. They have since secured their first order, supplying to the historical Hexgreave Hall

in Nottinghamshire. Units supplied by AET are floor standing 300L storage units, designed to provide communal developments with independent fast recovery hot water and high efficiency heating. The HIU draws energy from the main heating primary circuit delivered from a centralised plantroom.

01342 310400 [www.flexiblespace/hiu](http://www.flexiblespace/hiu)

## The benefit of experience



BBH Chartered Architects specified fourteen Bespoke Conservation Rooflights® for the refurbishment and transformation of a series of unusable barns into a stunning family home. BBH specified the Conservation Rooflight® due to its minimal appearance to complement the internal and

external styling of the barns. Planning Officers were provided with images of previous installations of the Conservation Rooflight® into similar schemes; these images enabled the Planners to visualise the architect's vision and planning permission was granted.

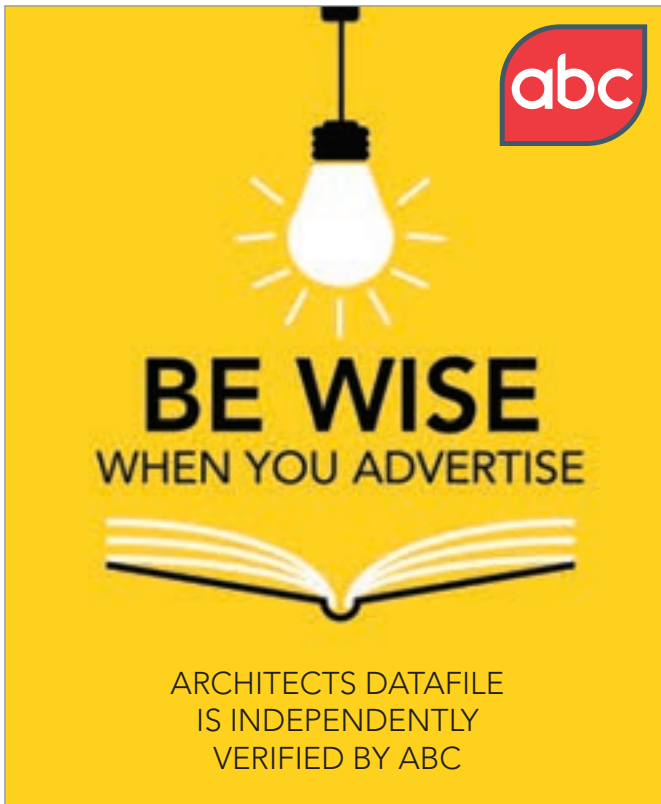
[info@therooflightcompany.co.uk](mailto:info@therooflightcompany.co.uk)

## Paragon Gas Stoves



Paragon branded efficient, realistic high quality gas flame technology is now available in a freestanding stove design both for conventional and balanced flue systems. The new Paragon gas stove models are manufactured with heavy-duty, seam-welded steel bodies and doors in keeping with high quality solid fuel originals. Conventional flue models can be fitted into Class one, Class two and Pre-cast flues and come complete with an innovative closure plate system. BF models have a rear mounted "through the wall" flue system. For more information or to arrange a display please contact Charlton & Jenrick.

[sales@charltonandjenrick.co.uk](mailto:sales@charltonandjenrick.co.uk)



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for additional finishing processes. Using the various sealing bands, adhesives and pre-cut corner parts available from the Schlüter®-KERDI range, the seams between individual boards are quickly and robustly sealed, creating a complete CE marked bonded waterproofing assembly upon which tiling can commence without delay.

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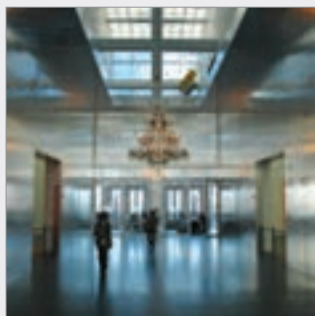
advantages of Schlüter®-KERDI-BOARD extend beyond design versatility and through into the process of construction. For contractors, a move to Schlüter®-KERDI-BOARD represents a quicker and easier installation process, with time savings being made due to its light weight and ease of cutting.

Schlüter®-KERDI-BOARD makes for a considerably greener alternative to other options, such as plasterboard and cement-faced products: the foam core is thermally insulating, helping to conserve energy use and improve comfort, and the absence of a cementitious layer means that it costs less to transport and produces no dust when cut, making for healthier working conditions.

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01530 813396 [www.perfectwetroom.co.uk](http://www.perfectwetroom.co.uk)

## Celotex GA4075 used to create contemporary art



Celotex insulation has been designed to help keep buildings warm and make them more energy efficient – and the panels do their primary job very well. However, one artist has found a different way to use the building material, creating unique sculptural works of art with shining metallic finishes. The story of these artworks goes back to 2007 when Italian-born artist Rudolf Stingel held a year-long solo exhibition at the Museum of Contemporary Art in Chicago. The show included several examples of Stingel's work spanning the previous 20 years, and also included a purpose-built entry gallery. This room was entirely clad in Celotex TUFF-R Zero (GA4075) with the silver foil layer creating an almost mirror-like finish on the gallery walls. The room was illuminated with a glimmering chandelier, and the result was a shining space, with fascinating light effects and reflections. Celotex is lightweight, meaning it would have been easy to transport, and it would have added very little load when attached to the gallery's existing walls. Cutting it is also simple – it can be done with a knife or saw – and this would have helped to speed up the installation process.

01473 822093 [www.celotex.co.uk](http://www.celotex.co.uk)

## Airedale goes home



After suffering fire damage in 2013, Airedale International Air Conditioning's Headquarters needed to be rebuilt on a tight schedule. Kingspan Kooltherm FM Pipe Insulation was installed on the successful rebuild in Rawdon, Leeds, due to its wide operating temperature envelope

which suited the capabilities of their R&D centre. All pipe insulation used on the project was required to have FM Approval. Kingspan Kooltherm FM Pipe Insulation is FM Approved per Approval Standard Class 4924.

01544 388 601 [www.kingspaninsulation.co.uk](http://www.kingspaninsulation.co.uk)

## Thermal Bridging for Grade II building



Spacetherm Wallboard has been supplied by the A. Proctor Group to mitigate thermal bridging for the historic Electricity House building in Bristol. Used in this instance as a Window Reveal Board, Spacetherm Wallboard was developed to prevent thermal bridging through a component or element of a structure.

Spacetherm Wallboard is a high performance laminate, which consists of Spacetherm Aerogel insulation blanket bonded to plasterboard, and is ideal for use in applications where low U-values are required, and space is at a premium.

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

# Rock-solid insulation credentials

With clients demanding versatility as well as robust credentials from insulation, Paul Barrett of Rockwool puts stone wool under the microscope

**I**t may sound improbable, but the raw ingredient of stone wool insulation is a hard, dark volcanic rock – basalt – that is formed when lava reaches the planet's surface. Around the Pacific Rim and Hawaii, in particular, volcanic activity produces violent eruptions of dust 'pumice' as well as strands of material, which is formed as lava falls through cold air draughts. These strands are nature's original stone wool.

As far back as the beginning of the 20<sup>th</sup> century, scientists began to examine the material to determine its potential insulation properties. Miniature artificial volcanoes were then created in factory conditions to produce stone wool in commercial quantities.

The production process is a technological replica of the inside of a volcano, spinning and cooling lava in a controlled environment. The process begins with the base rock being graded and crushed along with other carefully-selected ingredients, such as recycled stone wool, to form the raw material. This charge is then melted in a cupola furnace at a temperature in excess of 1500°C. The liquid rock pours from the furnace and is directed into a chamber where it is spun and transformed into rock strands and stone wool.

Finally, the spun strands are then mixed with a binder. Trillions of these strands are collected to form a matt, which is then cured. Cut to various lengths and thicknesses, it is then prepared and packaged to form an extensive range of products for a wide variety of applications.

## Extra benefits

Not only is stone wool a naturally renewable and sustainable material, it also combines key benefits for construction projects – sound absorption, fire resistance and thermal insulation. Its excellent acoustic properties are due to the material's dense, non-directional fibre structure, which 'traps' sound waves and dampens vibration.

Fully tested to meet the rigorous

demands of today's legislation, stone wool insulation is proven to reduce ambient, impact and reverberation noise.

Light and mid-density products can dramatically improve acoustic performance by 'soaking up' airborne sound; sound energy causes mechanical movement of the fibres and fluid friction as trapped air molecules move back and forth inside the small pores – these processes harmlessly dissipate sound energy as tiny amounts of heat.

Heavier structural products can be used in floating floor constructions to absorb impact noise by damping vibrations, while the heaviest products can add mass to a building element, minimising sound transmission.

## Fire resistance

Being created using a similar process to that which occurs at the heart of a volcano, stone wool is designed to tolerate temperatures up to 1000°C without burning, thus giving it the ability to stop the spread of flames during a blaze. Furthermore, stone wool products can protect the building's load-bearing structure, buying crucial time for building occupants to evacuate.

Stone wool fire protection products can be used as an effective barrier in a range of building applications, such as a fire shield for structural steel members, in between rooms and roof spaces, cavity barriers for concealed spaces, and a fireproof cover for pipes and ducts.

Extra attention to design must be taken to avoid the possibility of flames spreading through cavities or along service pipes or cables. Due to the different combination of plastic and metal elements in each service, fire stopping systems must be designed, manufactured and installed to cope with the individual needs of a project.

Ideally, specifiers should look for stone wool insulation products that have been awarded the highest possible European classification – namely those designated 'A1 non-combustible'.



**Stone wool insulation is designed to shield the building fabric and to improve fire safety as well as thermal comfort**



### Reliable thermal performance

Stone wool insulation is also proven to deliver on thermal performance. Its excellent insulating properties derive from tiny pockets of air trapped within the physical structure of the stone wool.

As well as reducing the energy needed to keep buildings warm in winter, stone wool insulation can also maintain a cool interior temperature during the summer. This type of insulation can be used on both new build schemes as well as upgrading existing buildings – by adding an insulated external render system, for example. This approach to refurbishment causes minimal disruption to occupants and will cut fuel bills in the long run.

Stone wool insulation shields the building fabric, improves fire safety, minimises noise and ensures thermal comfort. The material's physical characteristics, coupled with all the benefits it brings, combine to make a strong case for specifiers who are looking for an all-round material for building insulation.

*Paul Barrett is product manager at Rockwool*

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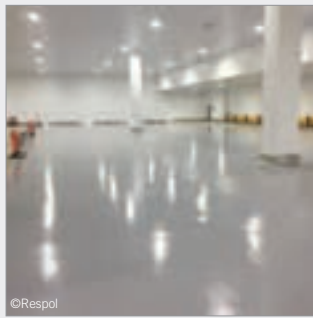
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## Mapei industrial flooring system installed at Morrisons Gadbrook



Mapei's Mapefloor i302 resin flooring has been installed in an area covering over 1,200m<sup>2</sup> at the Morrisons Supermarket food processing plant in Northwich, Cheshire, to renovate the existing flooring and provide a safe and durable solution. The area covered in this project was in preparation for the installation of a new food processing production line. The floor covering was installed within one week, with the machinery being installed on time and to specification. Mapei's technical specialists were heavily involved throughout the project, visiting the site with the contractors. Stuart Turley from Installers Respol commented: "The systems itself was easy to install and has proven to give a good finish." As the flooring was installed in a food processing plant, the products used for the new floor had to be 'taint-free', hence the specification of the Mapefloor i302 resin flooring which is safe and compliant for use in areas of food preparation and storage. The versatility of the Mapefloor i302 SL product allowed it to be used as two systems; first as a high-build coating for foot traffic areas and secondly, as a self-levelling system for areas where fork-lift trucks would be operating.

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

## Miena: fine-edged washbasin bowls



Kaldewei has produced yet another iconic bathroom design with the new Miena washbasin bowls. The washbasin bowls, designed by Anke Salomon, are made of superior single layer of steel enamel combining the highest standards of minimalist design with a unique fine-edged quality. The Miena

washbasin bowls are round or rectangular and come in two different sizes. What is completely new is the diversity of colour: customers can choose from the exclusive Coordinated Colours Collection, such as Oyster Grey and Lava Black allowing for greater individuality.

01480 498053 [www.kaldewei.co.uk](http://www.kaldewei.co.uk)

## Why sun control is so important



Striking the right balance of sunlight and daylight in a building is crucial to people's wellbeing, according to a new white paper by **Hunter Douglas**. It's why it is important to include blinds at the earliest stage of a building design process. While sunlight and daylight are important sources of light and warmth, they can also cause specific problems for workers, such as glare on a computer screen. The challenge for building designers, therefore, is to ensure there is plenty of natural sunlight that does not cause discomfort. Blinds offer the ideal solution because they ensure visual comfort.

01604 648229 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

## Community hub helped by Gerflor



The all-new community STAR Hub in Cardiff opened its doors in September 2016. This state of the art facility has a spacious Health & Fitness Suite which houses all-new TechnoGym equipment. In constructing the new STAR Hub facility, the specification of the flooring

choice would be at the very top of the agenda to enable only the very best products to be used. The ultimate decision would fall onto specifying some 320m<sup>2</sup> of Taraflex® vinyl sports flooring from international flooring and interiors specialist **Gerflor**.

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

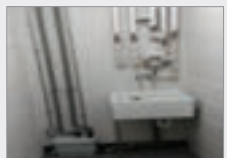
## Polyflor vinyl tiles help add retro edge



A variety of vinyl tile products from **Polyflor** were recently chosen to create a retro inspired interior design scheme for Nelson's Diner in Newbury, Berkshire. Expona Commercial PUR luxury vinyl tiles in Light Grey Concrete were fitted around the booth seating area, with the Black Matrix design used for a highlight arc shade near the bar area. Expona Bevel Line PUR tiles in the pale Portland Stone design were also installed around the bar seating area. Polyflex Plus PU homogeneous tiles in the Anglian Red and Mourne Grey were used to create a chequerboard pattern in the middle of the diner.

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

## Saniflo supplies University



**Saniflo** – inventor of the macerator and sixty years later still one of the UK's number one suppliers – is working with The City of London University Northampton Square site to provide additional science laboratories, accommodation and washroom facilities. Saniflo is

providing 12 Sanicubic 2 Pro macerating pumps for high performance and several Sanispeed pumps and Sanibest macerators for areas where continuity of service is critical. The Sanicubics quietly discharge waste through 50mm discharge pipes that join up to meet the mains drains.

020 8842 0033 [www.saniflo.co.uk](http://www.saniflo.co.uk)

## 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)

## Bristol Airport showcases Hunter Douglas



Hunter Douglas, worked as part of a multi-disciplinary team to complete the new, 9000m<sup>2</sup> West Terminal at Bristol Airport. The company, has undertaken numerous bespoke projects at international airports, designed and manufactured the ceiling for the airport's main security search and baggage reclaim areas. Hunter Douglas supplied 1000m<sup>2</sup> Ayous solid wood grill. It also supplied 400m<sup>2</sup> 30BXD Luxalon plain white multi-panel panels, which were installed on the ground floor in the domestic arrivals and domestic baggage reclaim areas.

01604 648229 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

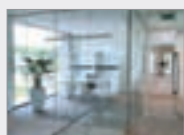
## Seating collection provides warm welcome



A new soft seating collection from Lyndon by Boss Design exemplifies how hospitality designs continue to influence the office environment, helping to create a softer, more relaxed workplace. Ideal for foyers and welcome areas, Manta subtly harmonises handcrafted luxury with a contemporary edge. Featuring a two-seater sofa with matching armchair, this new collection is designed to offer a compact and informal seating solution. Manta is available in a wide array of fabrics and leathers, and with a choice of leg finishes in polished or painted aluminium, and European Oak.

01242 584897 [www.lyndon.co.uk](http://www.lyndon.co.uk)

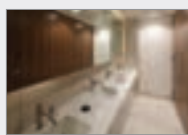
## All-glass frameless fire-resistant doors



Glasstec Systems have recently introduced their Lunax range of elegant all-glass frameless fire-resistant doors. Not only do they provide contemporary aesthetics with a real sense of light and transparency, they fully meet the requirements of E, EW and EI in fire resistant glass set out by UK Building Regulations Approved Document B. Offering a fire-proof resistance on both sides of the glass of either 30/30 or 60/60, the Lunax range truly combines elegance with comprehensive fire safety. Offering minimal and seamless detailing throughout the doors feature flush head and floor closers.

[info@glasstecsyste.ms.com](mailto:info@glasstecsyste.ms.com)

## Washroom adds touch of class



A leading washroom designer and manufacturer, Washroom Washroom has played its part in the refurbishment of a landmark office in Slough to a 'Grade A' standard. The iconic seven-storey building at Heathrow Approach, has now been extensively remodelled. As part of the multi-million pound project, Washroom installed new male and female washrooms on four levels of the building, as well as creating a new staff shower and changing area in the basement. Washroom's full height, flush front Alto toilet cubicles were specified with a dark walnut straight grain real wood veneer finish.

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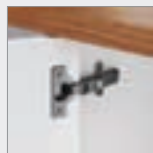
## CaberWood MDF is top of the class



As part of a pioneering playground development scheme, Robert Kett Primary School in Norfolk had an innovative idea to turn an unused double-decker bus into an outside library. After sourcing the right vehicle, they were faced with adventurous plans to create shelving for the books, a story-teller's chair and seating areas for the children. Fortunately, no task is too big (or too small!) for Norbord's CaberWood MDF and Jewson Cringleford was able to supply sixteen sheets of the strong, high quality material to enable the project to become a reality.

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

## Salice prove perfect for LochAnna



Salice UK are pleased to have teamed up with Faith Furniture Company to supply their Silentia and Titanium hinges for installation in all units within their LochAnna kitchen range. Faith Furniture are specialists in the supply of kitchens and appliances. Their LochAnna kitchen range offers a stunning collection of 11 kitchen styles,

offering every design option from the contemporary to the classic, all available with a wide choice of finish. Salice's Silentia integrated soft close hinge features a shallow cup depth of only 12mm, which permits the use of this hinge in doors with even the deepest edge profiles.

[info.salice@saliceuk.co.uk](mailto:info.salice@saliceuk.co.uk)

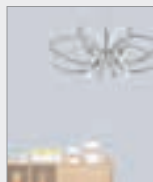
## Start with the needs of most...



An architect is urging her colleagues to start with what suits most and work backwards, when it comes to accessible toilet specification. Inclusive specialist architect, blogger and mother of a child with special needs, Vaila Morrison maintains that current Building Regulations fail to address what meets the needs of everyone. A more 'universal' approach to a Document M-compliant wheelchair-accessible WC would enable tens of thousands more people to access a venue. She says, "Under current Building Regulations, at the very least a unisex wheelchair-accessible WC should be provided, if there are no other toilet facilities. However, Document M assumes the wheelchair-user can access the facility and transfer without help. In reality, thousands of people need help to transfer because of their disability. Similarly, thousands of people with 'invisible' disabilities and/or learning disabilities need the extra space. Clos-o-Mat has developed a concept, with campaigners. Space to Change requires only 7.5m<sup>2</sup>. Then, if you need extra capacity and have the space and budget, you can add the 'extras' – the separate ladies, gents, baby-change and even a BS8300: 2009 standard Changing Places toilet!"

0161 969 1199 [www.clos-o-mat.com](http://www.clos-o-mat.com)

## tp24 delivers LED light as an art form

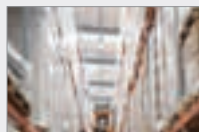


tp24, have recently launched their unique G30 Abstract range of linear LED light fittings, which is a system based lighting solution offering advanced simplicity and design flexibility unlike any other. Abstracts' revolutionary design has resulted in the arms being illuminated with LED ribbons which act as independent light bulbs run on 240v mains voltage, with differing wattages

per arm. Abstract has a wide selection of base frames, including Flush frames which are ideal for low ceiling and a choice of suspension heads for multiple arm connections which are all fully adjustable.

[sales@tp24.com](mailto:sales@tp24.com)

## A Bright future for C S Ellis



Luceco has supplied energy efficient LED lighting to C S Ellis Logistic Centres. Electrical Contractors, EBM Electrical Services Ltd, installed High Bay LED luminaires at C S Ellis's head office and distribution centre in South Luffenham. The

Titan High Bay provides an ideal replacement to HID 250W – 400W luminaires, offering high efficacy and over 50,000 hours of maintenance free operation. Other installations included LuxPack LED battens, a surface mounted luminaire available in 4ft, 5ft and 6ft lengths.

01952 238 100 [www.luceco.com/uk](http://www.luceco.com/uk)



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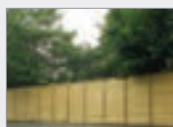
## New directory from Charcon



Charcon, the commercial hard landscaping division of Aggregate Industries, has published its 2017 trade directory in a new, pocket-sized format for complete ease of use. The pocket guide is filled with all the technical information that customers would need to know about the Charcon range and serves as a valuable reference tool for architects, specifiers, contractors, sub-contractors and merchants alike. It covers the complete breadth of Charcon's commercial landscaping range and includes sections on natural stone, flag paving, block paving, kerbs and water surface solutions.

01335 372 222 [www.charcon.com](http://www.charcon.com)

## Guide to managing noise pollution



Jacksons Fencing has issued its latest guide, *Managing Noise Pollution*, for landscape architects, urban planners, exterior designers and others involved in the specification of external physical perimeters. Noise pollution has a huge effect on populations causing people stress, fatigue and poor sleep quality. Jacksons Fencing has developed a range of acoustic fencing barriers with the modern urban landscape in mind. Some products achieving noise reductions of 28dB and 32dB in certified laboratory tests. The acoustic range is covered by a 25 year guarantee, as it is Jakcure® pressure treated.

01233 750393 [www.jacksons-fencing.co.uk](http://www.jacksons-fencing.co.uk)

## Remmers sets sail at Red Wharf Bay



Red Wharf Bay Sailing & Watersports Club is set in an area of outstanding beauty at Traeth Bychan on the Isle of Anglesey, North Wales. The member's clubhouse has been sited here for over 50 years due to its suitable sailing waters.

The members of the committee decided that the exterior of the building was looking a little tired and a refresh was needed before the new season started at Easter. Remmers Compact Opaque PU topcoat was selected for the job due to its performance characteristics and suitability to coastal locations.

01293 594 010 [www.remmers.co.uk](http://www.remmers.co.uk)

## Charcon supports award winning garden



Charcon, the commercial hard landscaping division of Aggregate Industries, has supported the Institute of Quarrying by donating quality commercial flag paving and kerbs to the largest show garden that featured at the inaugural RHS Chatsworth Flower Show. The Institute of Quarrying entered the 'Quarry Garden' which celebrates the essential role of quarrying and mineral extraction in modern life. The garden garnered a hat trick of successes, winning 'Best in Show', a coveted Gold Medal and 'Best Construction'. 600mm x 600mm EcoPave® Textured flag paving in Grey Fleck was used throughout the garden.

01335 372222 [www.charcon.com](http://www.charcon.com)

## Canopies with concealed gutters



Whichever canopy system you have used on past projects, surface mounted canopy gutters rarely improve the look of the structure. They also tend to discolour, warp and leak over time. This is one of the reasons why architects are turning to the WeatherSpan® canopy from Waverley. The aluminium gutter is an integral part of the canopy frame and is concealed behind a front fascia. Plastic down pipes run inside the front posts and exit the post just above the finished surface or can be connected to existing sub-terrain drainage. The end result is an exceptionally smart looking canopy that compliments any building design.

[sales@waverley.co.uk](mailto:sales@waverley.co.uk)

## Resiblock is top of the list



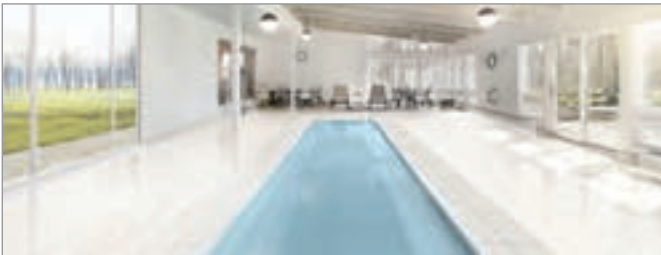
A new 250m<sup>2</sup> Car Park for the employees of one of Europe's leading Heavy Haulage specialists has been installed, and now sealed using Resiblock '22'. Resiblock '22' was selected following consultations between Resiblock, Keyline and Contractors Wright Civil Engineers. The previous success of Resiblock '22' at Port of Salalah, Oman, played a significant role in the selection of Resiblock '22' for this transporter base. The long-lasting sealing, stabilising and paver protection provided by Resiblock '22' has led to the Resiblock '22' product being used at multiple sites each year.

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# Timber covers all the bases

Stephen Toone of canopy manufacturer Fordingbridge describes how timber's versatility of application and lasting appeal is increasingly seeing it specified

There is no doubt that timber's strong sustainability credentials are the material's key advantage when compared to mainstream building materials such as steel and concrete. It's no secret that wood supplies, if carefully managed, can be maintained indefinitely and provide a 'green' alternative which produces much less carbon during its processing. However it has several other benefits when it comes to specifying canopies.

## Certification

To have an assurance that the timber has been sourced from well-managed forests, specifiers need to check if the material is FSC or PEFC-certified. FSC stands for Forest Stewardship Council – an organisation established in the 1990s with the objective to promote responsible forest management environmentally as well as socially. A global network of environmental, social, and economic members, including the likes of Greenpeace and WWF, has developed a set of FSC standards to protect forests' biodiversity and ecological processes.

Another organisation, the Programme for the Endorsement of Forest Certification (PEFC) – a global not-for-profit body – uses independent third-party certification to promote sustainable forest management. PEFC remains the certification system of choice for small and non-industrial private forests.

## Appeal

While sustainability may be a key reason for choosing timber, it's the material's appearance, which can lock in a rich colour range and surface textures, that tends to be a deciding factor for specifiers wishing to add a sense of warmth to a structure. This is also helped by timber's perceived tactile qualities, which are in contrast with the 'coldness' of steel, for example.

In the world of large-span canopies and buildings, it has been established that using glulam (glued laminated) timber holds many benefits, including strength, flexibil-



ity or fire resistance, which offers high design freedom to architects. Glulam timber has been specified on a range of landmark projects, such as the entrance canopy on the D1 Tower in Dubai. In the UK, a 42 metre-high arched glulam timber structural frame is the standout feature in Veolia's waste to energy and recycling facility in Leeds. The structure, which is 125 metres long and 35 metres wide, is one of the largest facilities of this type in Europe.

## Performance

These two schemes alone are a testament to glulam timber's widespread application and the material's many benefits. Beyond the aesthetics, glulam timber is extremely reliable and very adaptable in design; however, specifiers need to be aware that the material's durability depends on specification, particularly with regards to the species of timber, type of glue and preservative used, as well as the application itself.

Timber also has a superior strength to weight ratio compared to steel and concrete. Comparing equivalent beam sizes for the same load bearing capacity in glulam and steel, glulam has up to twice

## CATHOLIC TASTES

St Philomena's Catholic High School for Girls in Carshalton, Surrey

**Glulam timber structures can attract lower fire insurance premiums than steelwork**



#### BLOOMING LOVELY

Hilliers garden centre, Bosham

the strength to weight ratio of steel. This would mean smaller foundations would be needed for a reduced structure weight, resulting in shorter installation periods, reduced foundation loads, and ease of erection.

As a well-established and versatile material, the longevity of glulam timber has long been recognised – according to the Glued Laminated Timber Association, there are documented examples of its use around 200 years ago, while a number of structures that were erected more than 150 years ago are still standing.

There are further performance advantages, established through carefully prescribed design procedures backed by practical tests, to ensure structural fire resistance. Large section timber elements perform very well in fires due to the fact that timber chars at a known rate and does not deform.

Fire performance of glulam has been the subject of extensive research and structural glulam members can be designed to last a certain period of time based on the rate at which it chars. Additional fire protective finishes can be used to further increase the fire performance.

For this reason, glulam timber beams

### Glulam timber has been specified on landmark buildings such as the D1 Tower in Dubai

can attract lower fire insurance premiums than steelwork.

Glulam timber's proven resistance to corrosion and its ability to withstand harsh climates and exposed environments means the material can be trusted to stand the test of time. As timber doesn't rust or spall, it can be safely specified for schemes across coastal regions. The material can add an unrivalled ambiance to garden centres when used for canopies, while specifying timber for school canopies can contribute to a 'soft' appearance of the outdoor spaces.

Glulam timber would also allow architects meet tight project deadlines, as the products are manufactured with pre-engineered precision through offsite methods of fabrication, saving onsite time by increased building speed.

*Stephen Toone is managing director at Fordingbridge*

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A photograph of a modern glass extension on a brick building. A large tree with green leaves is in the foreground, partially obscuring the glass. A swing hangs from a branch of the tree. Inside the glass extension, a staircase and a dining table with chairs are visible. The text "escape.the.ordinary" is overlaid in white lowercase letters.

# escape.the.ordinary

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