

PIP

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Jan/Feb 2016

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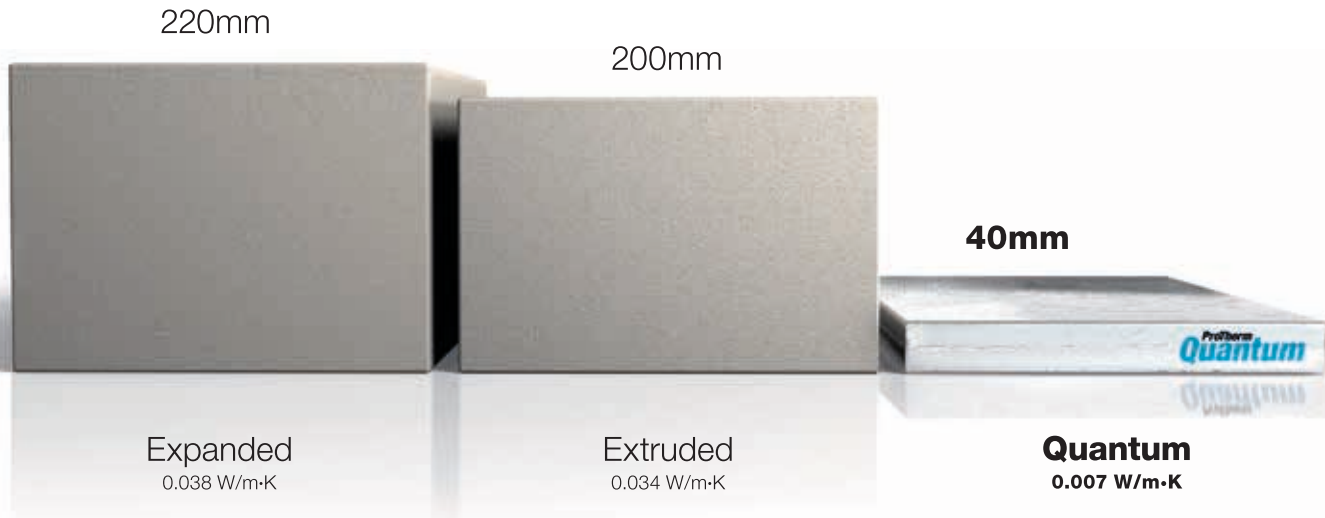
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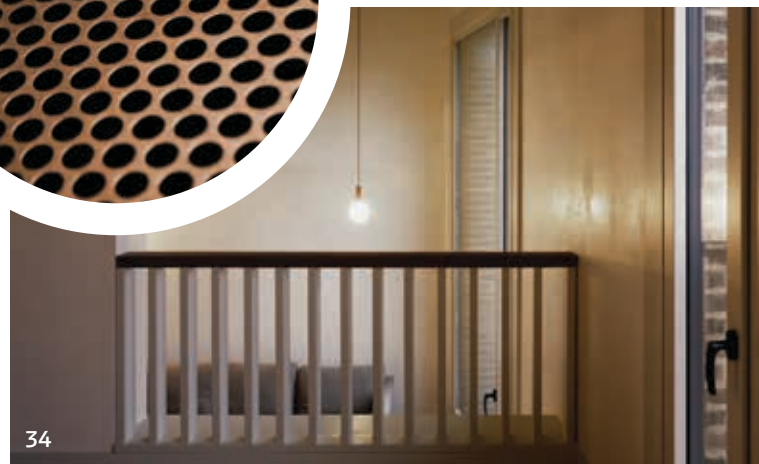


... was biblical. No sooner were northern England and Scotland deluged than flames engulfed a Dubai high-rise, billowing acrid smoke across the city and putting a real dampener on its New Year fireworks. Thankfully there was no loss of life; but in both, questions were raised about whether it needed a tragedy to force those in power to act to prevent any repeat.

rainfall patterns, but also the need to shield buildings in hot climates from ever-increasing local temperatures – hence the high-performance thermoplastic core to the tower's aluminium cladding that together ignited so dramatically. Interesting to note that a year before the fire, though legal liability concerns were raised in the Gulf press about retrofitting towers that fell short of the Emirates' new regs, nothing was done about it.

So despite a government review into UK flood resistance, the gripe of those left sluicing raw sewage out of their homes that things will only change when it's London that floods, might hold water. Last year the Thames barrier was raised 10 times more than it was designed for in 1982 (see p.4); so perhaps it's only once ministers are ankle deep in the Thames that we'll get a robust, committed policy. ●

Jan-Carlos Kucharek, Editor



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Cover image: Shepherdess Walk housing, London, by Jaccaud Zein Architects. Photograph: H  l  ne Binet

Compendium



GI(as)s seen on screen

Buckinghamshire's Domesday village of Cuddington, once famed for its medicinal spring, is better known now as the domicile of the Dimbleby dynasty or as the backdrop for Midsomer Murders' DCI John Barnaby. It also has a babbling brook, whose charms are fully availed of at Cuddington Mill, where it's bridged by a new extension to the millhouse. IQ Glass helped create a bold double glazed, double height space connecting old and new. Troubled waters? Only on TV, dear.

Water Wei

If you want to evoke memories of Ai WeiWei post his Royal Academy retrospective in London, look no further than the bathroom and Aquabocci's aluminium Ribbon drain. Part of its new, fully integrated shower system, it bears an uncanny resemblance to the facade of his Beijing Bird's Nest stadium, has a similar, alluring edge curve and looks robust enough to take a wet WeiWei's weight.



Cupric Prix

At the end of last year the European Copper in Architecture Awards bestowed the overall prize on Trollbeads House in Copenhagen. BBP Arkitekter's refurbishment of a 1960s office building with a stunning perforated golden copper alloy curtain, motorised to rise and fall to reveal or hide the facade behind, lends the penthouse-topped structure a fortified elegance reminiscent of a Venetian Merchant's House. Commended was Stockholm's new Ferry Terminal building (right) by Marge Arkitekter, clad in burnished brass. Its mirror-like windows reflect the grandeur of the Royal Palace opposite, its uncompromising sharp orthogonal form contrasting with Nicodemus Tessin's 1696 Renaissance palace.

JOHAN FOWELIN



Re-Po Deco

Got a few tens of thousands to spare? You could do worse than pop along to London's Willer Gallery where Milan architect Vincenzo de Cotiis is exhibiting his range of bespoke, handmade furniture pieces. His Progetto Domestico collection brings together high-end, found and recycled materials that already bear the patina of age. The result is something both elegant and exquisite, with pieces that seem to blend Art Deco with industrial modernism; luxurious but imbued with a sense of sustainability. PIP's personal favourite is his fabulous leather armchair, it's hefty club foot counterpointed by a tubular steel back, looking like a functional Prouvé chair that's been dipped in a white chocolate fondue.

Good long soak

Bath brand Kaldewei wasn't caught napping at the last Sleep event, featuring well in the European Hotel Design Awards. Winner of the Restoration gong was the Peninsula Hotel Paris, whose mannerist touches placed the firm's indulgent baths at the long end of its elliptical bathrooms. Can't recall whether it was Borromini or Bernini who was famed for entering on the long axis of ellipse church plans; but whoever it was, here it offers a good run up for anyone's Eureka moment.





UPCOMING

EcoShowcase Old Trafford Manchester 9 February

Surface Design Show Business Design Centre London 9-11 February

UK Concrete Show NEC Birmingham 17-18 February



Nôtre dam

The story of the diminutive Dutch boy who stuck his finger in the dyke is a salutary lesson that prevention is better than cure – especially when it comes to waterproofing. And Firestone Building Products has also proved that it's no longer small fry, having gone from PondGard linings for residential landscaping up to civil engineering scale with its new GeoGard EPDM product. Running up to 15.25m wide and 61m in length and as used at the reassuringly geometric 27,000m² Les Groies irrigation reservoir in France (above), it's perfect for when you want to pander to your inner Le Nôtre.



Water, water everywhere...

They say you should never meet your heroes – a thought at the back of my mind at Alumasc's recent water debate, held while chugging up the Thames towards the Thames Barrier – which represents for me the best of British engineering, joined-up thinking by the London boroughs and good old Dunkirk spirit in the face of disaster. There was plenty of liquid onboard as Alumasc Water Management Solutions MD Steve Durdant-Hollamby told the audience the barrier was completed in 1982 to deal with five-times a year predicted surges. Last year, he informed us, it was raised 50 times. Future-proof? Maybe not – but what a magnificently flawed beast it is close up!

Panel beaters

It would take the ego of an anarcho-socialist writer to come up with a line as sprawlingly all-encompassing as 'Coloured glass destroys hatred', but that of an architect to create the glass pavilion that encased Paul Scheerbarth's pithy aphorisms. Jacobs Architects seems to have taken the line to heart at Mandeville School in Aylesbury, with a translucent rainscreen

cladding on its new £3.2 million sports and music building. The firm specified more than 200m² of double height 4mm Kristall polycarbonate panels as outer and inner faces in blues and greens on the two storey steel-framed structure. Spreading an optimistic light from the outside and 200 times tougher than a sheet of glass, they're also strong enough to take a good school yard kicking.



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Ecobuild

Given my middle class pangs of global warming guilt when I enter the tantalising yet over-chilled, pre-packaged opulence of any higher-end food retailer, I hope M&S is putting its mouth where its money is with its sponsorship, once again, of Ecobuild's Big Innovation Pitch.

It works like this: M&S gives creative companies the platform, over the three days of the event, to pitch a sustainable building innovation, in the hope of becoming a supplier to the international retailer. Last year's winner, heating water additive Endotherm, increased heating system efficiency by changing the water's surface tension, optimising contact with the radiator and thus reducing gas bills. But with material efficiencies getting ever more marginal, I'm hoping to see processes rather than products come into play – can rethinking how we browse and shop, for instance, result in step change sustainability savings? We'll see...

In other news, students will be getting to grips with the social heart of the show – the central bar. Stand sponsor Medite-SmartPly has

Can rethinking how we browse and shop, for instance, result in step change sustainability savings? We'll see...

commissioned undergraduates from London's Bartlett School to create the DISCOVER bar with an innovative design in a sustainable material that will also showcase their design flair. It should end up being quite a structure, as it will also display the shortlisted Architect of the Year Award entries from event media partner BD.

Now in its 12th year, Ecobuild has been building up partnerships with the industry for a while and this year the UK Green Building Council is its exclusive lead partner, spearheading the content for its 'Leaders' Debates'. UK-GBC

chief executive Julie Hirigoyen will pose future challenges to a panel of industry leaders to see how they might be delivered. Among those in the hot seat will be architect, broadcaster and Design Panel chair Jonathan Meades, HS2 design chair Sadie Morgan and Berkeley Homes chairman Tony Pidgley. The final day will see predictions from future-facing architectural design firms such as [Y/N] Studio, Exterior Architecture and Space Synapse.

But it's not all crystal ball-gazing. Ecobuild has announced that intelligent building technologies will be the centre of its 'Energy' section. SMART will consist of live room sets demonstrating the latest in smart controls in metering, intelligent lighting and building management. So as well as a huge conference venue, you'll be able to wander a state of the art retail space, office, living room and even a bathroom. From the concept of the biggest to the smallest all at the same time – even Rem might think that's cool. ●

Ecobuild is at London's Excel, 8-10 March

PIP takes a look at a selection of products exhibiting at this year's show



BAUDER BioSOLAR

You spend your life being told you can't have your cake and eat it and then Bauder comes along and turn all those preconceptions on their head. There you were, thinking you could either have a green roof or a photovoltaic one and then it goes and produces BioSOLAR, which effectively gives you both. By lifting the PV panels 300mm above roof level and offering an extensive substrate beneath for shade tolerant species, the firm has apparently dealt with all those shrinking violets.

Stand E4090
bauder.co.uk



ANCON BUILDING PRODUCTS

MDC Nexus Bracket Angle Support

If your party piece is the magic levitating brick trick, you'll love Ancon's latest steel brick-faced lintels, which allow you to create the effect of brick simply floating above the window. The sleight of hand is that it's prefabricated off-site, with Ibstock Kevington providing the cut brick face that hides the steel angle. Not being concrete, it saves both time and weight, as it's simply held in place with the turn of a T-head bolt into a fixing channel. What would Kahn or Lewerentz make of it?

Stand E3080
ancon.co.uk

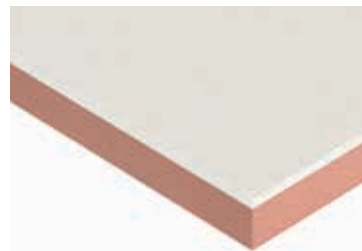


CANAL ARCHITECTURAL

Bespoke stairs

Whilst Nottingham might justifiably be famed for its lacemaking traditions, it's obviously not the only material that has fiddly details to get right. Local firm Canal Engineering has been honing its skills fabricating high end mild steel bespoke stairs, balustrades and handrails featuring the latest antique metal finishes. Take its sample above: a simple, crisply-welded number whose 'bold as brass' randomised balustrade nonetheless precludes passage of the proverbial baby's head.

Stand E6135, E6140
canalengineering.co.uk



KINGSPAN

Kooltherm K10 PLUS Soffit Board

Blink and you'd miss it. While you might think that image looks like an in utero Bridget Riley canvas, in fact Kingspan has brought back its soffit board. The product features a high performance, phenolic insulation core (0.020W/m²K) and has a non-combustible external facing, presenting a high quality external surface to the room and 'eliminating the need for a separate ceiling finish facade system'. For you and me, that means – unlike Ms Riley – there's no need to paint.

Stand E2060
kingspaninsulation.co.uk

Design to build



Design to fabrication is an industry-wide challenge. Developing smarter workflows allows us to claw back significant ground from design and construct contractors, and gives more time to finesse ideas through later construction stages.

Recently I spoke at the MelBim conference on a workflow we developed for the design, analysis and documentation of native Revit geometry for a cold bent glazed facade. In cold bending, a glass panel is deformed through one corner to achieve a double curved surface. It is done on site: a threaded rod is slowly tightened to a precise predetermined distance based on the panel's shortest length. As a facade system it is a little more expensive than flat panels and a lot cheaper than hot formed curved glass.

Our workflow for this project was partly shaped by recent developments on the parametric documentation front – the new release of Revit's node-based scripting plugin Dynamo. This software speeds up modelling and documentation by providing a flexible node based coding pipeline like Grasshopper. The code we

create can help a user to work faster/smarter, or completely automate the input of geometry. This method of working keeps project tasks open to a wide cross section of the office.

Dynamo 0.8 has a completely new interface that closely resembles the familiar Grasshopper and Revit buttons. The user buttons reside left of screen and are grouped into categories such as analyse, geometry and operators. The main workspace allows you to toggle between a node editor and a geometry preview window, allowing the user to check the code before executing it. Autodesk seems to have worked through some of the Dynamo bugs that caused spontaneous crashing and failure to refresh live data streams. The program is not perfect but the Dynamo release is now stable and reliable, suitable for mainstream architectural workflows.

The cold bent facade was designed in Rhino and Grasshopper; we extracted unique characteristics from each glass panel as lines of data linked to a csv file. The data in this csv file was used to populate parameter fields in a smart

adaptive family inside Revit. For this workflow, Dynamo was used to read the csv file data, re-organise the information into packets of family parameters and populate the Revit model using the csv data to drive key family type dimensions (ie width, height, curvature, position in space). The newly placed geometry automatically updated as the design was tweaked in Rhino. There were no re-documentation or translation errors and components were scheduled, tagged, and represented accurately in plan and section. We then produced cutting schedules from the Revit panels that formed the basis for fabrication shop drawings.

We are moving away from geometry-heavy models in Rhino and Grasshopper as complexity is built into Revit native families and adaptive components. Architects must work alongside fabricators to keep pushing the boundaries of architecture – how better than supplying the shop drawings and machine code they need? ●

Alan McLean is an architect at Bates Smart Architects in Melbourne

Books

Buy at ribabookshops.com



At Home with Autism: Designing housing for the spectrum

Kim Steele and Sherry Ahrentzen. Policy Press £85 HB

Given the highly litigious environments in which architects – indeed all professionals – are expected to work in the US, it's no surprise that this in depth study of design of autism should have stateside origins. That said, the general move towards creating inclusive environments, driven by building regulation, should make this a key text for any architect working in public housing – even education and health. Both authors have spent years working in and researching the field. The book swiftly moves on to practical design pointers for autistic design; ones that are simply and copiously illustrated. Colour photos might have given the reader more of an idea of how this concern might apply to those in the spectrum and given the book a less academic feel. But in all, a practical text on the subject.



Infrafracture: Infrastructure by design

Marc Verheijen. nai010 publishers £21.35 PB

Given that the author is infrafracture professor at the University of Rotterdam and worked at OMA in the discipline, one has to assume he knows what he's talking about. The book starts with an introduction into the architectural component that suggests infrastructure is a fundamental aspect of urban wayfinding and then presents the reader with a number of case studies taken from around the world to illustrate the point. The book is text-lite and image heavy and very much driven by the author's own sensory experience of the spaces. This means a book that is big on the emotional component of infrafracture. Some might take this as a criticism, as it diverts from the purely technical, but it is a text that suggests the use of technical devices as a means to an end.



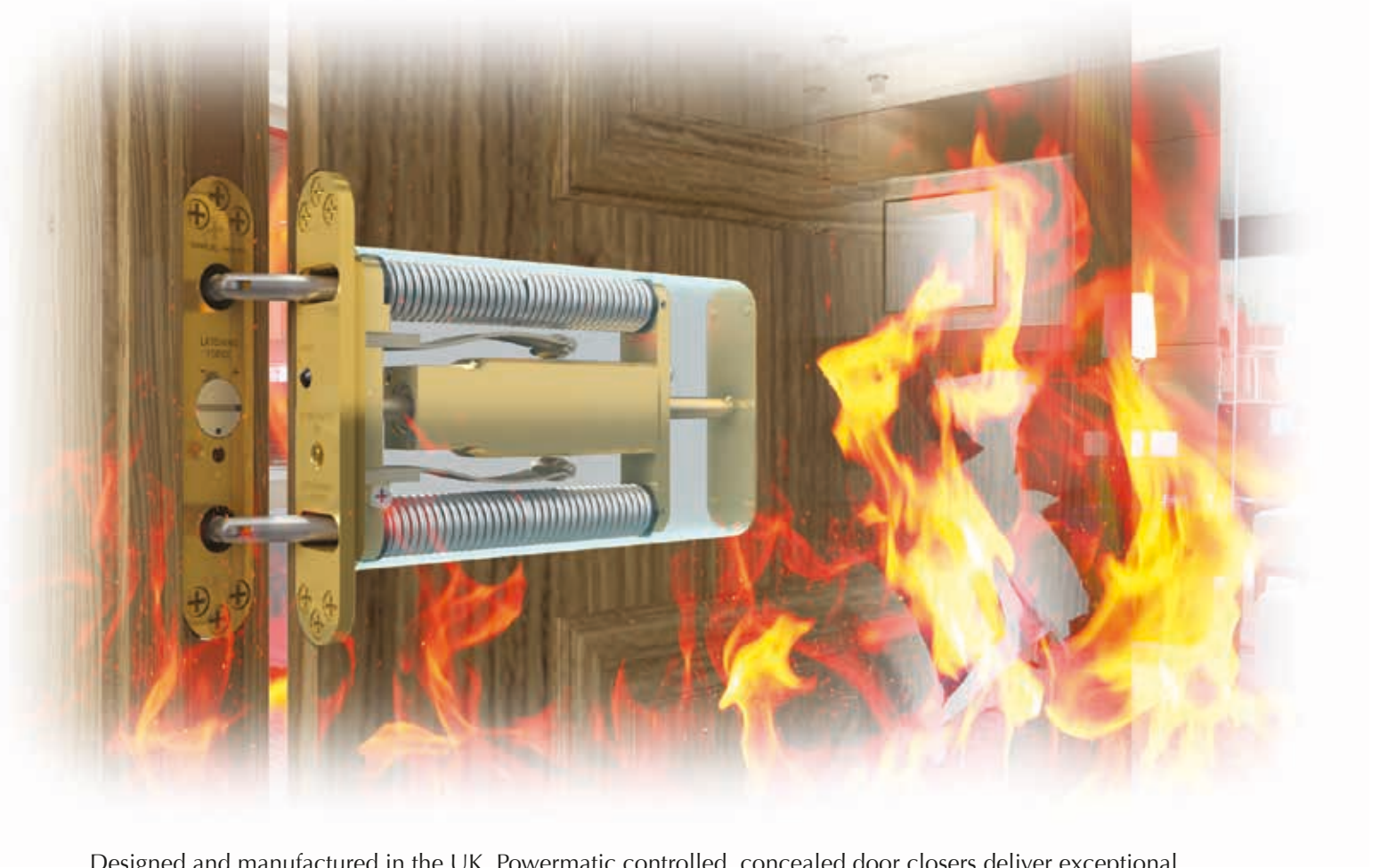
Consumer Product Innovation and Sustainable Design

Robin Roy. Routledge £29.99 PB

This is not an architectural text per se but the design issues it highlights are as pertinent to construction as to the broader design realm. It follows the evolution of consumer products from their origins to present day iterations. Learning from their successes and failures, it offers guidelines for designers on how to be better at product development and at designing for environmental sustainability generally. The first chapter is followed by engaging break downs on the design histories of domestic products like hoovers and washing machines. The final section draws conclusions from the case studies, bullet pointing the life cycle of product development to offer key guidance on best practice for innovation to avoid the pitfalls that can eke failure from success. A peripheral yet riveting read.

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3D printing



What: 3D printed concrete

Where: Skanska UK/Buchan Concrete

Developments in 3D printed building construction still leave a little to be desired aesthetically, so the race is on to establish attractive and permanent solutions. One area of focus is on the ability to 3D print concrete – an achievement which would do away with costly labour, form-work and waste, both on and off site, and implement a step change in the construction process.

While research teams in France and China are busy seeking solutions, Skanska in the UK is competing to develop techniques capable of printing building and infrastructure components, from junction pieces for drainage, copings and bridges to facade panels. The 36-month long research project is in the properties testing phase and will end up with a marketable product/process. Reports are promising.

'Much of the technology already exists,' explains Robert Francis, director of innovation and business improvement at Skanska UK. 'Our work focuses on the manufacturing process, specifically the delivery of the concrete in the robot – the system of delivery, the concrete mix and the computer programming needed to convert 3D digital drawings into robotic language. We are interested in the rate of flow, how

it integrates and how it behaves over 20 years.'

Partnered with Loughborough University, Foster+Partners, Lafarge Tarmac, ABB Robotics and Buchan Concrete, the research is taking place at Buchan Concrete near Burton-on-Trent, as well as at Loughborough and the BRE Innovation Park in Watford. Using real-life applicable designs provided by Fosters, a computer controlled robotic arm deposits a continuous bead of specially formulated grout to produce any desired shape.

Results indicate to a high compressive strength of up to 100N/mm² and inherent tensile strength of 10N/mm². Tensile strength can be supplemented by the addition of steel reinforcement through ducts, and alternative reinforcement techniques are being investigated. Meanwhile, one of the process's most transformative aspects is the speed at which items can be produced. The testing robot being used by Skanska is printing at a rate of 600mm per second – which, for example, can fully construct the panel in the above image in a matter of only three-four hours in total.

Skanska's ultimate aim is to produce pre-fabricated 3D printed components and deploy 3D printing robots for on-site construction. The next six to 12 months will be spent researching how to get the robots to site. ●

HISTORY OF 3D PRINTING

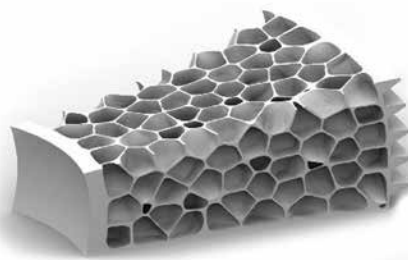
3D printing has a contentious history characterised by different descriptions and names. While the process really kicked off in the 1980s, others have cited much earlier, and obscure, beginnings with the photosculpture method of François Willème in 1860 and Blather's layering method proposal for producing topographical maps in 1892. The former could capture an object in three dimensions using cameras surrounding the subject. By the 1980s these technologies were called rapid prototyping (RP) or additive manufacturing (AM), and conceived as a fast and cost-effective method for creating prototypes within industry. The first patent application for RP technology was filed by Hideo Kodama of Nagoya Municipal Industrial Research Institute in Japan in 1980. Kodama invented two fabricating methods of a three-dimensional plastic model with photo-hardening polymer, where the UV exposure area was controlled by a mask pattern or the scanning fibre transmitter. In real terms, however, the origins of 3D printing can be traced back to 1986, when the first patent was issued to Charles Hull for inventing stereolithography apparatus in 1984. The technology used a laser to etch a 3D model into a special liquid (photopolymer). Hull went on to co-found 3D Systems Corporation – one of the most prolific organisations operating in the 3D printing sector today.



Left Exhibition of 3D printed concrete samples.

Above Testing is in progress to determine the concrete's properties.

Below Drawing of the honeycomb printed structure.



Skanska 3D printing technical specification

Compressive strength of up to 100N/mm²

Tensile strength of 10N/mm²

Printing rate of 600mm per second

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Left Replacement conservation windows and doors.

Right Conservation windows for Georgian-style new-build



What: Mumford & Wood

Where: Tiptree, Essex

So many great companies start with a sudden moment of revelation/epiphany, or can attribute a turning point to one. Mumford & Wood was already established as a high-quality joinery and building refurbishment company when one of its co-founding directors Derek Mumford went to Bath and realised it should specialise in the replacement of conservation grade, factory finished timber sash windows – a market which was only fledgling. At the time, timber windows were supplied with just the primer and then had to be finished by a glazier and painter on site in less than ideal conditions. By 1997 Mumford & Wood had produced the first fully factory finished, glazed sash windows in the industry, as well as pioneered and developed the system for creating Georgian replica windows using applied glazing bars.

Since then the firm has completed factory-made bespoke timber windows and doors for countless projects, including private homes, Cheltenham Ladies' College, FAT and Grayson Perry's House for Essex and currently the Trump Turnberry Resort in Ayrshire, Scotland. Over its 62-year history it has sealed buildings across Europe and in the Caribbean.

While its products are fully British made, Mumford & Wood aspires to German levels of accuracy and technology in its manufacturing. Its machines, some nearly the length of the factory itself, are made in Germany, Switzerland and Italy; once they would have been British too. A £1 million investment earlier this year in the Homag Profiline combines cutting and finishing into one three minute process, replacing 4-5 formerly separate operations. But the firm's key difference with other factory-made windows of its type in the UK is the level of traditional woodworking skills maintained to

ensure absolute quality.

Mumford & Wood moved to its site on the outskirts of Tiptree, Essex, in 1998. After several extensions both administration and manufacturing now take place side-by-side at its 25,000 ft² facility. All products are made to order and the company can deliver 500 to 700 units per month. A key component of its business is trying to change the perception of timber windows – they have come on a long way since onsite finishing and they don't rot, warp or stick.

Mumford & Wood was a founding member of the Wood Window Alliance, set up in 2006 in collaboration with other UK manufacturers. The Alliance is there to promote the use and standards of timber windows – their inherent environmental benefits, exceptional acoustic and thermal qualities, the type of care they need and their 56 to 65-year expectancy.

At a general level, the company is still



fighting to educate both homeowners and professionals in the disadvantages of timber alternatives such as PVC; that they degrade quickly in colour and shine from UV light, and that they become brittle. The innovations Mumford & Wood has developed in recent years mean re-painting of timber is no longer the chore it once was – no stripping required, just a clean and light sand. Yet the company offers an after-care service and 30-year timber warranty anyway.

Today Mumford & Wood is promoting its newly RIBA-accredited CPD designed to inform architects of the different timbers available for windows and doors, research into replacements for mahogany, as well as a tour of the factory floor. As one of the most technically advanced manufacturing sites PIP has yet visited and with all the skills and knowledge present, it is definitely worth it. ●

This editorial is supported by Mumford & Wood: www.mumfordwood.com



1. TIMBER PREPARATION

Manufacturing starts in the timber store. Siberian larch or red grandis, together with mahogany and modified timber, are mainly used, all 100% FSC certified. Lengths are fed into a saw machine for scanning and marking to identify and remove defects. Information from the cutting list is programmed directly into the system. Lengths are then processed through the Weinig Powermat 1200 which planes the timber, preparing two sides for the next operation and the other two for final finishing.



3. CASSETTE AND ASSEMBLY

Components move to cramping where they are assembled on clamps into a sash or frame. The assembled sash is then moved to either the 4 or 5 axis CNC router so that the external profile – plus any ancillary machining such as for ironmongery or trickle vents – can be done. At the same time, certain ranges including the internally glazed Conservation windows and doors require 'cassette' bars to be manufactured. With the scribing and notching machine, parts can be cut from the pre-moulded bead which allows the cassette assembly to be completed to a high degree of repeatability.



5. GLAZING

Glazing panels are bought by Mumford & Wood from an external manufacturer as single, double and triple glazed units. Each panel is closely checked for defects using a light box and rejected when necessary. Usually the supplier responds quickly enough so quality control does not delay the promised delivery schedule to the customer. The company uses toughened glass as standard which means that all double glazed units carry the BSI Kitemark. These are then inserted into the timber frames using a clip system, which aids with the fastening of cassettes and does away with pinning.



2. MANUFACTURING STREAMS

Prepared timber follows two streams. The first uses the Weinig Unicontrol 10 Windowline to produce tenon joints as well as what will become the internal profiles. The alternative process uses a new automated combined cutting and finishing Profileline machine (above). The £1 million machine has three machining heads, each with a store from which tools can be programmed. It reduces manual handling and replaces four/five former machines, running parts off every three minutes. Waste woodchip is recycled.



4. PAINTING

After using traditional methods to hand-finish every article and ensure quality, items are sent to the paint shop for hand spraying with three coats of high quality micro-porous paint or stain. A loop production line enables the process to be completed without the operator handling products even for localised finishing operations such as de-nibbing. This method improves both the speed of operation as well as removing any potential damage caused by handling. Each item is checked between coats for quality. Mumford & Wood also offers a dual-colour finish for opposite elevations.



6. INSPECTION AND DELIVERY

As products travel through the final stages of production they are quality checked and inspected by glaziers, finishers and wrappers. Effectively each department is the customer of the preceding process and could stop a job it considered questionable. Technology on the production floor allows team leaders to update production planning quickly and efficiently. Jobs are processed in the most convenient sequence for construction on site. New production offices adjacent to the production floor mean senior management can work more closely with production staff.



VIK Winery, Chilean Andes

Smiljan Radić's roof makes minimal impact on the landscape by emulating the fabric sun shades that protect grape pickers

Words: Pamela Buxton Photography: Cristobal Palma

Wineries have latterly become enthusiastic clients of the world's leading architects, with Foster's, Rogers Stirk Harbour, Santiago Calatrava and Jean Nouvel to name but a few turning their hands to this most niche of sectors.

The latest addition to this catalogue is the VIK Winery, designed at Millahue in the foothills of the Chilean Andes by Smiljan Radić, best known in the UK as the architect of the boulder-like Serpentine Pavilion in 2014.

Not for him the showy mirrored red panels of Nouvel's Château La Dominique or the energetically undulating aluminium roof of Calatrava's Bodegas Ysios in the Rioja region. Instead, Radić used a 10,600m² PTFE fibreglass

roof to create a lightweight and unassuming intervention in the landscape that does its best not to be noticed.

His inspiration for the 40m-span roof was the traditional use of fabrics stretched out in the vineyards to shade those harvesting the grapes. Radić embedded the building in the landscape for minimal impact and stretched a tensile roof between two reinforced concrete walls cast in situ. From afar, the white roof appears to float in the fields. This feeling of lightness was a primary objective, and can also be felt in the interior, according to the architect.

'With our projects we always try to do the least possible damage to the surroundings,' he

Left Radić's 40m span tensile roof does its level best to minimise its impact on the landscape.

Above Reinforced concrete retaining walls, nestled behind a berm, keep the building discreet.



The winery was buried throughout its length to avoid stealing the limelight from the landscape

DOUBLE-MEMBRANE ROOF

The PTFE roof was achieved through a collaboration with Birdair, the American specialist tensile membrane contractor which designed and executed the structural steel and membrane roofing system. The roof structure comprises 11 lenticular steel trusses interconnected with circular hollow sections and supported on reinforced concrete walls. These trusses were produced in China for Birdair before being transported to Chile and assembled on site, with the trusses fixed to steel bearings at the top of the concrete walls. The inner and outer PTFE skins span the space between the top and bottom members of the trusses.

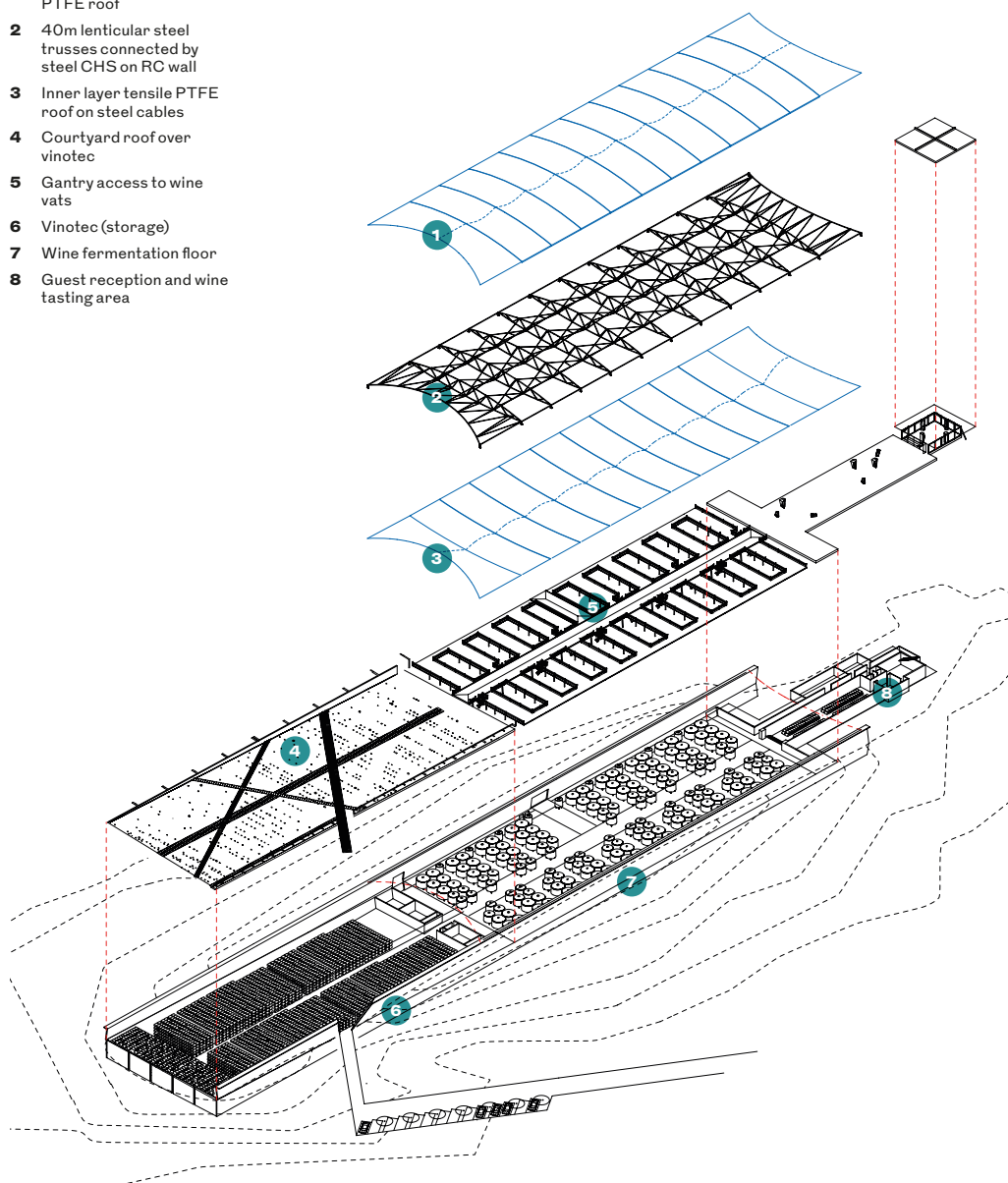
In the installation, rolls of the Sheerfill II outer membrane were tensioned over the top of the steel trusses. The corresponding inner PTFE lining was hoisted into place beneath using steel cables fixed at the eaves.

All joints between the sheets are PTFE, sealed using specialist, highly heated irons in combination with heat-sensitive tape. These form durable, permanent joints. Extruded aluminium clamping attached to the steel roof structure is then used to connect and clamp the membrane panels.

As well as providing the desired acoustic performance, the inner layer of the Fabrasorb I absorptive membrane conceals the trusses and their associated steelwork.

Axonometric

- 1 Outer layer tensile PTFE roof
- 2 40m lenticular steel trusses connected by steel CHS on RC wall
- 3 Inner layer tensile PTFE roof on steel cables
- 4 Courtyard roof over vinotec
- 5 Gantry access to wine vats
- 6 Vinotec (storage)
- 7 Wine fermentation floor
- 8 Guest reception and wine tasting area



says. 'The winery was buried throughout its length to avoid stealing the limelight from the landscape.'

As a result, the vineyard itself – not the winery – remains the landscape's main character according to VIK, which was established by Norwegian entrepreneur Alexander Vik.

By submerging the 16,000m² building, the firm also avoided the need to install air-conditioning in most of its spaces, instead using a natural free-cooling system.

Radić was keen that the design of the building should show the manufacturing process rather than conceal it. The roof spans a vast vat hall of stainless steel fermentation tanks and overhead walkways. A tensile design

formed by a double membrane of PTFE was the commonsense choice – both practically and conceptually – says Radić. He had previously considered using a pneumatically, pre-stressed roof structure with PVC but this proved too expensive, so instead specified a standard steel structure with two layers of PTFE membrane.

'The membranes are a simple high-tech material and very easy to use when you choose the right project, although – oddly – many people do not consider them as permanent structures, but simply as something ephemeral. This reading is very important for me because it allows the building to be seen as something more tender, less invasive,' says Radić.

Among other important factors were the

The upper layer's key function is waterproofing, while the lighter inner skin plays a significant acoustic role



Above The subtle tensile roof lends simple aesthetic grandeur to this factory floor, and reduces the need for artificial lighting.

membrane's lightness and the ability of the translucent PTFE fabric to allow in sufficient but not too much natural light throughout the day, thus reducing energy requirements. This half-light is apparently an optimal condition for winemaking. At the same time, the outer membrane's 73% heat and light reflectance (compared with 8% for clear glass) allows the winery to avoid excessive overheating.

Specification of the two layers is different in relation to warp and fill reinforcement, lower breakage strength and trapezoidal tear resistance. As well as its 12% solar transmission performance, the upper layer's key function is waterproofing, while the lighter inner skin plays a significant acoustic role.

'It was important to maintain the optimal acoustic levels in a room that holds many people at harvest time,' says Radić.

The roof is cantilevered over glass walls at both ends to form shading canopies – important since the building is oriented east/west. At the entrance, it looks onto a Japanese-inspired garden forecourt of boulders and water, the latter helping to cool the barrel room below. At the rear, the cantilever faces a small wine-tasting pavilion, also designed by Radić, where visitors, having perused the vats, can finally enjoy the contents.

The success of the membrane roof on the VIK winery has led Radić to use a tensile roof on another project – a theatre in the south of Chile.●

Client VIK winery, Chile

Architect Smiljan Radić with Loreto Lyon

Structural engineer Luis Soler P & Asociados

Roof design (structure and membrane) Birdair

Specified



1 Victorian tiles Eurocell

We're not sure whether the £3.8m redevelopment of Sneinton Market will make it 'Nottingham's own Covent Garden' as the planners want, or even whether that is a good thing. In fact, the new overhaul seems to be more Cantonese in design. Eurocell cleverly re-purposed one of its conservatory tiles to match the market's original Victorian roof design and colour (anthracite, in case you were wondering.) One question: if we southerners grant you your own Covent Garden (thanks Northern Powerhouse!), will you take our awful living statues as well?
eurocell.co.uk

2 Waterproofing membranes Tremco

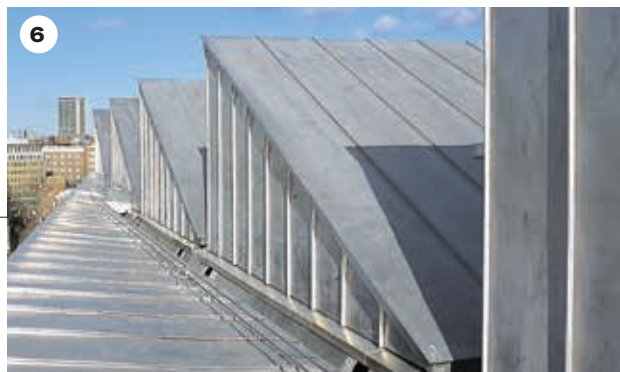
You get a whole lot of roof for your money with this building! And so any restraint shown in the ribbon windows is counteracted by the opulent tresses of roof flailing hither and yon in the brightening sky. In fact, the luxuriating dome apparently even needs to be tethered to prevent it billowing away. Now, waterproofing such an expanse might look daunting but it's actually that bit easier thanks to Tremco's new Rapid-Cure Roofing Formulation – the stuff cures in just 30 minutes and can be walked on after a mere hour. Just try not to tumble off it.
tremco-illbruck.co.uk

3 Applied waterproofing Sika

Hoist the mizzen, and splice the mainbrace, me lubbers! Set forth, nay, fifth for the Welsh National Sailing Academy and don't spare the windlass nor hoist the petard. The running tide is calling, but the flung spray and blown spume won't trouble Ellis Williams Architects' stepped, cylindrical structure – even standing, as it does, between dunes and marina. And that's thanks to the application of Sika's Liquid Plastic Products over the entire building envelope – and carried out in the winter, to boot. Full steam ahead and poop poop on the ocean waves!
gbr.liquidplastics.sika.com

4 Roofing system Kemper

It's terrific that a European roofing system was chosen for New York's 1,776 ft Freedom Tower, the tallest building in the Western hemisphere. Apparently, Kemper's white reflective coating reduces the 'urban heat island effect' (actually, in these chilly winter months a heat island sounds rather appealing...). It seems the cold liquid-applied membrane covered the 'exposed steel details and up to 400 penetrations'. Sadly, the 'tough, flexible waterproof surface that bonds permanently to the contours of the substrate' sounds my ideal outfit for lounging around on a heat island nowadays.
kemper-system.com



5
Canterbury roof tiles
Marley Eternit

The festive season is over, baubles wrapped and stored, and we're on the obligatory seasonal penance of dieting, exercise and financial retrenchment. So no holiday this year. But one look at Marley's warming handmade clay tiles will dent even the sternest partner's moral rectitude, summoning memories of long hot afternoons lazing in a Kentish cornfield, her flowing hair, his rippling chest, the red-roofed village inn beckoning with it's welcome pint and ploughman's. Aaah, lost youth... but let's put away the holiday brochures and concentrate on the loft extension. marleyeternit.co.uk

6
Waterproof expansion joints
T-Pren

This roofscape, more reminiscent of the Isle of Skye's famous Cuillin mountains than the graceful flow of a ballerina in full pas de deux, is the unexpectedly pointy summit of London's Royal Opera House. But for an establishment that has suffered two fires, two rebuildings and the comprehensive 1990s refurbishment, a reliable structure is essential. So the use of T-Pren's waterproof expansion joint on these complicated roofs reduces rainwater outlets and promises to keep the company within safe and dry – so they can enjoy more of the swan and less of the lake. t-pren.com

7
ECO range rooflights
Whitesales

Hassocks is one of those distinctly clerical sounding words. But does it refer to a) something one might wear when officiating in church, b) a game surreptitiously played with small bits of rolled up paper by choir boys during the sermon, or c) the curate's non-blasphemous oath when he sings his nose as he snuffs out the altar candle? Actually of course, it's none of these, but the Sussex home of the primary school that installed these ECO rooflights to brighten the premises without compromising thermal performance. As the head might have said: 'Let there be light', and, thanks to Whitesales, there was. whitesales.co.uk

8
Roofshield membrane
A Proctor Group

Construction is a serious business, but it's good to see a sense of fun in buildings too. These Code Level 5 energy efficient semis going up in Bicester clearly have playfulness in mind. A miniature version could start as a cross between Kerplunk and Meccano (check that green roof membrane, Roofshield, which controls interstitial condensation), and when the scaffolding's removed it offers pick-up-sticks for the dextrous kids in the family. Better still, with all that warm insulation, the grown-ups can have a few cocktails with the neighbours and play strip poker without a goosebump in sight! proctorgroup.com

Costed

David Holmes, associate at AECOM, provides an overview of roofing costs

Today increasing, contrasting requirements are being placed on roofs.

Increasing performance standards such as better U-value and acoustic requirements, more stringent requirements for air leakage, thermal bridging and more onerous fire resistance regulations compete with tighter budgets and architectural aspirations to provide good aesthetics to the building.

Cost drivers

The complexity of roof design and shape, including junctions with other building parts including dormers, parapets, projections or valleys, will add to the associated labours required for the roof finish. Climate change may affect the design if wind speed, increased rainfall and

greater exposure to UV light occur which may ‘age’ the roof prematurely and increase maintenance requirements.

Design

Many factors influence both the design and choice of roof coverings.

- Types of weather need to be accounted for: eg wind, rain and snow
- Level of exposure – more nailing and larger laps may be needed. Generally more western and northern locations face greater exposure so roof design needs to accommodate this
- The amount and type of insulation required – both thermal and acoustic
- Whether any bending of roofing is required
- Generally the shallower the pitch the more

lapping needed to maintain weather tightness, extending the material needed to cover the same area

- Flatter pitches take longer to dry, increasing possible maintenance, particularly for flat roofs
- Planning requirements may insist that certain styles or colours are used

Good design, particularly details around junctions and openings is very important, especially for flat roof constructions.

Modern industrial and commercial roofs tend to have a low pitch to minimise heating costs of large empty roof spaces, as well as for aesthetic reasons. This has seen the rise in secret fix systems with no exposed through fasteners and minimal end laps (preferably none), which allow roof pitches down to 1 degree. ●


Rates are a guide only, are Q42015 averages, excluding VAT. They do not include any contractor prelims

FLAT ROOF: MEMBRANE AND BUILT-UP SYSTEMS Includes insulation (U-value = 0.25W/m²K) and vapour barriers as necessary; excludes decking	
Single layer polymer roofing membrane; insulation	£75-90/m²
Bitumen three-layer polymer modified bitumen system	£80-110/m²
Bitumen two-layer modified bitumen system	£60-90/m²
Bitumen felt roofing system, laid flat, with solar reflective paint finish	£85-140/m²
Mastic asphalt; applied flat; to concrete substrate	£25-50/m²
Single layer sheet roof; composite system; warm roof covering; vapour control layer; insulation and water proof membrane	£75-110/m²
Polymeric waterproof membrane; 1.2mm thick fleece backed membrane; cold roof	£50-75/m²
Air cushion roof (ETFE type membrane) supported on lightweight metal structure (included)	£700-950/m²
Roof walkways; 600mm x 600mm x 50mm precast concrete slabs on support system	£44-55/m²
PITCHED ROOF: TILES OR SLATES Includes reinforced underlay and battens as necessary; excludes roof structure	
Natural Welsh slate tiles	£110-140/m²
Natural Spanish slate tiles	£70-110/m²
Synthetic slate tiles	£60-80/m²
Reconstituted stone slate tiles; random slates	£55-80/m²
Clay pantiles	£35-45/m²
Clay tiles; handmade; sand-faced plain tiles	£80-110/m²
Concrete tiles; interlocking; troughed / bold rolled	£30-50/m²
Concrete tiles; plain	£30-50/m²
Fibre cement slates	£45-65/m²
Red Cedar sawn shingles; preservative treated; uniform length	£55-85/m²
PITCHED ROOF: SHEET METAL Includes breather membrane, underlay or vapour barrier as necessary; excludes roof structure	
Copper sheet; mill finish; flat seam or wood rolled	£120-170/m²
Copper standing seam roof; mill finish	£140-200/m²
Extra for pre-patinated copper finish	£40-70/m²
Aluminium sheet; mill finish; wood roll; insulation (U-value = 0.25W/m²K)	£80-125/m²
Aluminium sheet; standing seam; mill finish; insulation (U-value = 0.25W/m²K)	£70-90/m²
Extra for PvF2 aluminium finish	£10-20/m²
Stainless steel; terne coated sheet	£110-140/m²
Lead roof covering; code 7; welded seam; milled lead; laid flat	£120-150/m²
Lead roof covering; code 7; welded seam; milled lead, pitched roof	£140-155/m²
Zinc; natural zinc sheeting; pitched	£85-120/m²
Extra for pre-weathered zinc	£20-30/m²
PITCHED ROOF: FIBRE CEMENT SHEET Excludes roof structure	
Profile 6 fibre cement; single skin; natural grey finish	£25-40/m²
Insulated system (U-value = 0.25W/m²K); Profile 6 fibre cement external skin; metal lining panel internally	£50-65/m²
Extra for coloured fibre cement	£1.75-2.25/m²
Double skin GRP translucent sheeting	£55-66/m²
Triple skin GRP translucent sheeting	£60-75/m²
LANDSCAPED ROOF Excludes decking	
Sedum roof; 100mm growing medium; laid flat; waterproof layer; separation layer; aquafRAIN; low maintenance	£150-225/m²




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Home lessons for student living

Velfac's low-energy glazing is helping architects and clients keep student rooms warm and bright, efficiently and within tight budgets

Photographs: The Kalyvides Partnership



Nationwide investment in higher education buildings – especially student accommodation – continues, with the sector setting the lead for quality, low-energy, sustainable projects, delivered within challenging budgets. In terms of windows, this means an increased emphasis on cost-effective design, but not at the expense of performance or function.

'We have seen rapid growth in university accommodation projects across the country,' says Velfac sales director Andy Cook. 'Our composite system is specified for its durability and low-energy performance (U-values as low as 0.8W/m²K for triple glazed units), making Velfac cost-effective for higher education. The

system also has a distinctive contemporary style. Exterior aluminium framing, featuring uniform sightlines, is being installed in exciting and innovative facades, while the inner pine frame actively enhances interior spaces.'

Student accommodation presents specific challenges for window system manufacturers, he says: 'Glazing must ensure excellent acoustic insulation, essential for high density housing often on inner city sites, and must require minimal maintenance, despite heavy use. Natural ventilation is also increasingly common, and requires a combination of fixed, manual and motorised lights within the same glazing system.'

These challenges can be met by products

Below left At Deaconess House, the Velfac system is used to create a highly distinctive street-facing facade.

Below Velfac units are installed within a perforated mesh panel system to create the 'shifted geometric' courtyard facades.

Right Sightlines remain uniform whether windows are opening or fixed.



with built-in high performance, explains Cook: 'Our composite frame is highly durable and easy to clean, and delivers uniform sightlines to ensure a clean exterior finish, sustained across multiple unit types including motorised windows.'

Because of these benefits – and more – Velfac glazing is highly cost-effective for university projects, especially compared to aluminium alternatives: 'Our clients don't want to sacrifice style or innovation to achieve sustainable solutions within fixed budgets,' says Cook. 'Velfac windows can help deliver efficient and effective accommodation, and often contribute to award-winning architectural quality.'

Deaconess House, Edinburgh

Architect: The Kalyvides Partnership, London

Deaconess House, a major student accommodation project for the University of Edinburgh, features Velfac windows in a series of impressive, innovative new-build accommodation linked to a refurbished Victorian hospital. The composite windows and doors are a distinctive element within the different facades of the multi-storey blocks, also delivering essential low-energy, low-maintenance performance. The glazing was specified by Tryfon Kalyvides of The Kalyvides Partnership: 'We wanted to achieve fine and sophisticated detailing with windows forming an important part of the overall composition,' he explains. 'The Velfac system is unique in that every window has a slender frame and uniform sightlines, so opening lights are indistinguishable from fixed. This increases the uniformity of the facade and adds to the quality of the design.'

Deaconess House is a complex development, architecturally and structurally. Facing the street, Velfac is used as punch-hole windows and to create an upper storey glazed facade, while the inner courtyard features a dramatic 'shifted geometric' design. External aluminium framing, finished in deep grey, complements the grey stone used in the build, while the clear lacquered inner pine frame adds warmth and colour to student rooms and shared spaces.

'We used Velfac glazing within a natural stone cladding system to deliver a sharp, mature exterior,' comments Tryfon, 'and at the upper levels, where a lighter aesthetic was demanded, we installed Velfac units within glazed spandrel panels to give the effect of curtain walling but at a scale appropriate to the neighbouring refurbished hospital building.' To achieve the 'more abstract' courtyard facades, Velfac windows and doors were installed within a perforated mesh panel system. 'Across the building the uniform Velfac sightlines are used to bring together the external and courtyard facades, providing a visual link which also helps unify the development. Achieving this unity depended on the successful installation of the Velfac system within these different interfaces, and both the Velfac technical team and the company's installers provided the excellent support we needed to achieve our goal.'

'The system is clearly value for money,' says Tryfon, 'It is continuously tested and improved to meet the performance requirements demanded of standards such as BREEAM and the Code for Sustainable Homes. I have specified Velfac for most of my independent career and I always encourage my clients to consider the system.' ●



'Clients don't want to sacrifice style or innovation to achieve sustainable solutions within fixed budgets'

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A picture of a finished floor being walked over would be nice, but our advice at this stage would be better.



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Can we sustain our green ambitions?

As regulation subsides developers are seeing the benefits of making homes sustainable, but do consumers have other priorities?

Words: Josephine Smit



Red tape, it would appear, abhors a vacuum. The government's winding down of the Code for Sustainable Homes may have marked the end of this nanny-state regulation but it has also created an opportunity. A new era of free market standards, benchmarks and labels now looks to be on the horizon, all promoting sustainability but this time round notably omitting the Code's now unfashionable S-word.

BRE's Home Quality Mark is imminent, and the National Energy Foundation and Housing Forum have concepts in the pipeline. Add to this initiatives in the non-domestic sector and buildings could soon be wearing a host of new more consumer-friendly labels. With healthy construction output and government pledging to deliver on ambitious housebuilding targets, there should be plenty of buildings to pin these

Architecture PLB's Barracks Square proposal for the Whitehill and Bordon Regeneration project in Hampshire: 100 homes built to Code 5 and Zero Carbon Homes standards, adopting a 'fabric first' approach.

badges on, but will developers and the public buy them without the coercion of legislation?

In truth, the Code for Sustainable Homes has not quite gone yet. Local authorities can continue to require Code level 4 energy performance – in excess of Building Regulations requirements – until amendments to the Planning and Energy Act make that performance regulation

in 2016. The pipeline of Code homes in development will also take several years to work through, while some sustainably-minded housing providers continue to apply the standard of their own volition during the transition.

The Home Quality Mark (HQM) has been developed by the Code and BREEAM's originator, BRE, and focuses on housebuilding from the consumer perspective, covering essentials from broadband speed to energy bills. Different developer groups are responding to the concept, says Dr Gavin Dunn, BRE director of BREEAM. 'In the social housing sector the Code's wind-down means there is a need for the tool. SME housebuilders are under a fair amount of pressure and some are looking for a means to differentiate,' he explains, adding: 'The bigger firms are mainly saying they have an open mind, and that anything that assists with quality and performance is good, although they are looking for something to resonate with their consumers, so that it factors into their decision making.'

Sustainability boost

Sustainability and energy efficiency come fairly low on buyers' and renters' priorities, although a survey of the general public by BRE found that 54% of respondents would prefer to buy or rent a home that had a green stamp of approval. 'People working in industry accept that a new home is more efficient than a second hand one, but homebuyers often don't understand that,' says Rory Bergin, partner of sustainable futures at HTA. The architect has worked with insurance company BLP and the Housing Forum to develop the Home Performance Label, which aims to give homebuyers and renters basic information about a property, from running costs to square footage. 'All we plan to do is provide clear information. We're hoping this will nudge the market in the right direction,' says Bergin. 'Our view is that we're in a period of government

with little interest in regulation, so you have to work at customer appeal and show the market the benefits of a sustainable future.'

Research carried out for the pilot – featured in New London Architecture's New Ideas for Housing exhibition last autumn – has already proved informative in quantifying wide variations in the space, storage and daylighting levels in homes. These variations are not yet reflected in market pricing, but they could be in the future, benefiting consumers and industry, says Bergin. 'The private rental sector sees huge benefits in giving tenants information, while developers see it helping them to differentiate their product from the second hand market.'

Performance gap awareness

Developers have another reason to take a closer interest in sustainability measurement systems: the gap between design and performance. The National Energy Foundation's (NEF) Assured Performance Process focuses on this by 'making sure oversight is embedded', says its senior energy specialist, Adam Tilford. The process came out of work by NEF for East Hampshire District Council to set a sustainability benchmark for the 3,350 homes planned for a 100 ha former Ministry of Defence site at Whitehill & Bordon. It is being developed by NEF and the Zero Carbon Hub and trialled on phase one of the green town expansion, the 100-home Quebec Park, which is being developed by Radian Group to a design by ArchitecturePLB.

'It helps developers to demonstrate the quality of their home and removes the risk of under-performing. Risk protection is a key driver,' says Tilford. That may be pertinent in a business environment where car brands – once held up as paragons of best practice for construction – are being vilified over diesel emissions measurement practices.

It has also caught the eye of local planning authorities, he says. 'They're interested in its potential as an early stage planning tool, identifying performance gap concerns at their stage of the process. For example, it would highlight the overheating potential for a scheme of single aspect apartments with south facing windows.'

Tilford sees the process as an opportunity for industry to demonstrate that it can, literally, put its own house in order: 'In the absence of tight government regulation, can we come up with a way of closing the performance gap without being told what to do?'

Educating the consumer

Both private and affordable developers are helping shape these concepts. 'We're very keen to be part of initiatives that support the quality of our homes, and promote quality in the industry,' says Piers Banfield, group product director



BRE is hoping that free market standards and benchmarks for sustainability will appeal to homebuyers.

with Cala Homes. Cala has trialled the Home Quality Mark on its Spring Meadow scheme, now under construction in Witney, Oxfordshire.

Banfield says: 'There is a need to educate the consumer, although the UK housing shortage limits the impact of this kind of information. But it is important to support the consumer's buying decision, and for us it is about the bigger picture. We want to be the housebuilder of choice and an employer of choice, which also makes us an investment of choice. It improves the perception of your business as a whole.'

Some question whether emerging labels do have the magic formula to change consumer and business perception. 'A lot of things are important to the consumer, like the number of defects post handover and how to make a home work,' says Lynne Sullivan, co-founding partner of architect Sustainable By Design and Good Homes Alliance board member. 'You have to ask whether the new labels go far enough.'

But this could be only the beginning of the story, says BRE's Dunn: 'The voluntary standards space is going to be about a range of tools used by different people for different aims.' ●

MEANWHILE, IN THE NON-DOMESTIC SECTOR

Experience from the non-domestic building sector indicates that sustainability labels can have an impact. Over its 25 years in the market BREEAM has helped to drive progress, says BRE's Dr Gavin Dunn. Top developers are backing research aimed at guaranteeing the in-use energy performance of new office buildings. Consultant Verco is working on research with heavyweight backing from the Better Buildings Partnership, funding from top property players, and support from DECC.

The research is looking at Australia's successful NABERS (National Australian Built Environment Rating System), which has at its heart an Energy Commitment Agreement. 'The overarching feature of NABERS is the mentality of designing for performance, the culture that things have to be done in the intended way through design, construction, commissioning and operation,' says Robert Cohen, technical director with Verco. 'If we can get new buildings working well, it could show pathways to how we might improve existing buildings.'

A GUIDE TO THE NEW NAMES

Assured Performance Process

Originated by National Energy Foundation (NEF)

What it does Addresses sustainability and the performance gap at planning, initial and detail design, and construction stages. Has nine aims within each stage

What's the badge Yet to be decided (along with the name), but there is likely to be a mark of recognition

Development stage NEF is working on a pilot with East Hampshire Council, and with Zero Carbon Hub on development

Home Performance Label

Originated by Housing Forum with HTA and BLP Insurance

What it does Gives information, specifically: floor area, storage area, volume, daylight, broadband speed, and annual operational and maintenance cost

What's the badge No overall rating, although a red/amber/green colour coding helps consumers recognise performance

Development stage Piloted in a home comparison website, and a consortium is being assembled to take it forward. Supporters include architects Levitt Bernstein, PRP and Pollard Thomas Edwards as well as developers L&Q, Wates and Pocket Living

Home Quality Mark (HQM)

Originated by BRE

What it does Measures factors including running costs, environmental footprint, resilience to flooding and overheating, impact on occupant health, digital connectivity and performance

What's the badge A rating, of one to five stars

Development stage HQM has been piloted, a technical consultation completed and the technical manual is about to go online. Organisations working with BRE include Lend Lease, Kier, Kingspan, Sustainable Homes, Gentoo, Construction Products Association, HTA, Zed Factory, and Hoare Lea

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Here East, Queen Elizabeth Olympic Park

Glazed cladding covered with millions of tiny dots has breathed new life into the vast shed of Here East, the former International Broadcast Centre

Words: by Stephen Cousins

Since the Queen Elizabeth Olympic Park switched into legacy mode three years ago, the challenge for architects, typologically speaking, had been straightforward – except perhaps for the International Broadcast Centre. A major concern was what to do with the gigantic bulk of the largest building of the Media Centre complex, at the Hackney Wick corner of the Olympic Park. At 280m long and 120m wide, the steel-framed structure was easily large enough to house the One Canada Square tower laid on its side, or six jumbo jets, yet was no more than a giant shed with no discernible identity or visual flair. Facades were windowless, a result of the building being crammed with TV recording studios in Games mode, and of basic steel composite cladding. In addition, an unsightly gantry frame, supporting several tonnes of aircon equipment, extended across its rear.

Architect Hawkins\Brown had the unenviable task of reinventing the structure as an attractive commercial office block and the central focus of the £100m redevelopment of the Media Centre site. Known as Here East, it includes the

former press centre and the former media conference room. Developer iCITY, a joint venture between real estate investor Delancey, and data centre operator Infinity SDC, wanted to fill the scheme with a mix of tech firms and small-scale artists and creatives, many from the local area, as part of the wider regeneration of the region.

Delancey project director Richard Palmer comments: 'Our brief was to take this big box and make it vibrant and attractive to the creative sector. Hackney Wick has the highest density of fine artists in Europe, and there is the huge east London tech scene to tap into. The original design just wasn't delivering what we wanted, we needed a creative injection, so we went out to design competition and Hawkins\Brown came up with a great proposal.'

The architect created the simple concept of a 'crust' and a 'core' to break down the building's bulk. A 16m-deep perimeter crust aims to maximise daylight, ventilation and views, with the existing cladding stripped off and replaced with a double glazed unitised curtain walling system. The crust surrounds a central

core, containing spaces for tenants needing no natural light, such as the Infinity data centre and UCL's Bartlett School and departments of engineering and robotics.

Around 3,000 unique panels of unitised glazed curtain walling, weighing a total 450 tonnes, cover the south, west and east elevations, and are key to adding visual excitement and breaking the facade down into readable sections. The glass is printed with a complex digital frit pattern, made up of over eight million ceramic dots, and dots-within-dots, which cascade diagonally across the facades at different angles, creating a comic-like effect reminiscent of works by the artist Roy Lichtenstein.

The design was in fact inspired by a British artist, Norman Wilkinson, inventor of the dazzle pattern camouflage used to protect battleships during World War I. Rather than conceal a ship from view, a dazzle pattern used bold shapes and violent contrasts of colour to confuse the enemy, making it difficult to discern the type of battleship – and so the level of threat.

The perspective of the sloping dotted lines draws the viewer's eye towards the locations of three themed main entrance atriums along the west facade, known as the steel mill, the timber yard and the fabric factory, a nod to the factories and warehouses that once occupied the site. Jennifer Dooner, architect at Hawkins\Brown comments: 'The concept was to unpeel the existing cladding and expose this homogenous sealed box to its true industrial and contextual heritage, opening it up to create both physical routes through it and views that connect it to the other buildings on the site.'

Each entrance is marked by a giant immovable 9m-wide steel louvred hangar door and large orange letter. The vibrant colour, another



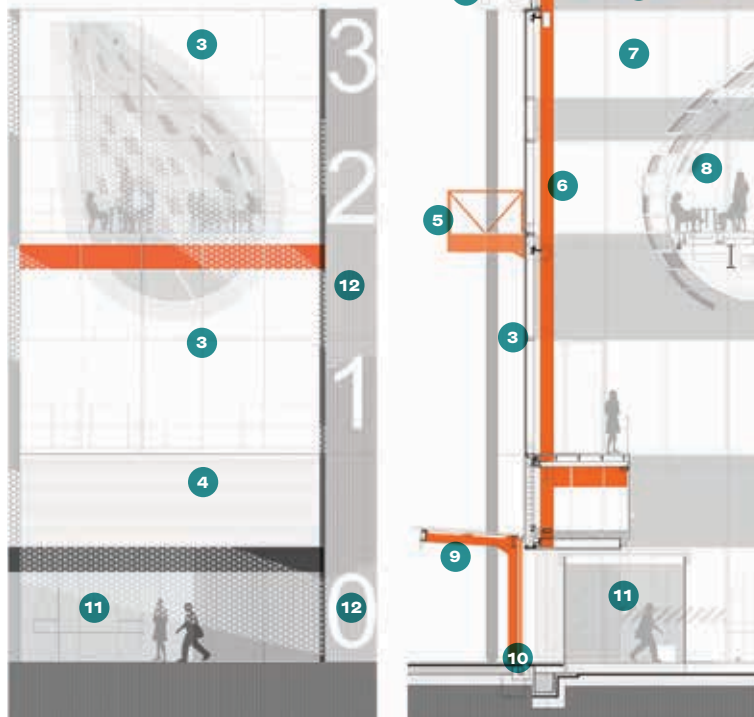
Below left Visualisation of the Olympic Park, looking south past Here East in the foreground.

Below East elevation of Here East during construction, showing the pixellated unitised cladding of the facade. Over time, this will be modified again by the WikiHouse timber system installed in front of it.



Facade elevation / section

- 1 Existing metal mesh cladding to syphonic drainage
- 2 Existing external cladding cut and supported as per contractors specification
- 3 Unitised structural silicone bonded curtain wall system
- 4 Anodised aluminium louvres as atria fresh air intake
- 5 Galvanised, painted metal balcony
- 6 Decorative paint finish to internal steelwork
- 7 Metal framed fire-rated internal glazed partitions
- 8 Suspended CNC timber pod
- 9 Steel framed polycarbonate clad protective canopy
- 10 Discreet slot drain
- 11 Glazed circular sliding entrance door
- 12 Perforated anodised aluminium cladding panels



military reference inspired by the interior lining of reversible flight jackets, is also applied to the exposed steel frame, clearly visible behind the glass. 'We loved the idea of the crust being like an ant farm, or a platform video game, where you can see lots of scurrying activity going on behind the glass,' Dooner adds.

This effect will be most apparent on the east elevation, where the gantry structure has been retained and, similar to a 'cabinet of curiosities', will be populated with creative studio spaces made of timber using the WikiHouse open source building system. The ant farm effect is already visible inside the offices of BT Sport – iCity's anchor tenant, which has occupied about a fifth of the building for the two years or so since the project began – where researchers can be seen walking between banks of TV screens and desks on a main floor and mezzanine level.

An advanced digital Diptech printer, a massive laser printer measuring 2,600mm by 3,700mm, was used by Polish glazing manufacturer Press Glass to print the ceramic frit pattern on the curtain wall glazing. The technique is much faster than traditional screen printing, which would have required thousands of individual printing templates, says Martin Saltern, project manager at cladding subcontractor Lakesmere: 'It's never been done on this scale,

using this size of machine to create a continuous pattern that flows across the whole building surface. Every panel has an individual reference in the corner so it can be reproduced from a digital archive in future.'

Hawkins\Brown and Lakesmere had to spend many hours preparing and checking 2D pattern drawings for each glazing panel in AutoCAD, even tweaking the designs to accommodate 20mm silicon joints between panels so that the dots appear to run uninterrupted across the facade. Each unitised cladding panel features two panes of heat strengthened laminate glazing, comprising a total eight laminate sheets. The ceramic frit is printed on the external sheet's inner face, and a layer of solar coating, to reduce solar gain and improve the performance of the glass, is applied to face four.

The density and location of the frit pattern responds to solar gain requirements, dependent on the interior use and orientation on the building and calculated using Grasshopper parametric modelling software. On the shadier north side the pattern is less dense, increasing on the west and south. Here East is designed to BREEAM 'Excellent': clear cladding panels have a U-value of 1.0 W/m²K, and spandrel panels, with black opaque glass, insulation and metal panel inner face, a U-value of 0.385 W/m²K.

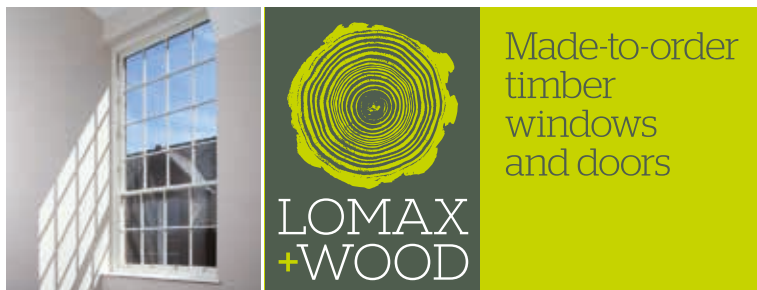


Above An army of apprentices from local boroughs will be drafted in to build the studios within the gantry structure, using the WikiHouse timber building system. Tenants will help with the design.

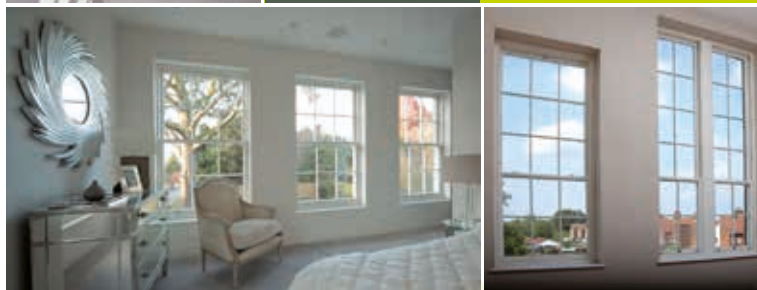
'We loved the idea of the crust being like an ant farm, or a platform video game, where you can see lots of scurrying activity going on behind the glass'

The design team considered printing the ceramic on the surface of the glass, which would have added texture, but the sheer density and volume of printing, and a lack of test data proving the expected lifespan, made this impossible for manufacturers to warranty, says Dooner. Concerns that office workers might go mad staring at dots all day led to the insertion of a 'vision band' at seating height to enable people sitting at desks in office spaces to see out through clear glass. The digital pattern was omitted entirely at ground floor for retailers' displays.

With over half of the curtain walling now installed, Here East is already a vast improvement on the generic white blob it replaces. In different lights and at different times of year the cladding creates different effects: the early morning sun creates a crisp contrast between white spots and a black background, and at dusk the effect is reversed as backlight from the building's interior casts the spots in shadow. Palmer describes the moment the protective temporary wall was peeled back from BT Sport's offices to allow in daylight: 'Imagine what it was like for them working in a sealed box for two and a half years, then suddenly having a vista out, it was like moles squinting at the sunlight. To celebrate the moment BT Sport's MD gave everyone sunglasses.' ●



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Specified



1
Slimline windows and doors
AluK

Day 9 and Duncan Wormishly, 44, was increasingly isolated by his mounting library fines. He had moved from Hornsey to a new Centra Living development in Bow to escape detection for the £3.85 infraction... but no! The demand from Haringey Council arrived within the week [now they know this is all lies – *Ed*] and all he can do is wait inside one of the 87 new Tredegar Place units until the trail goes cold, grateful for the ability of the AluK aluminium windows and doors to maintain his sanity by keeping out the traffic and railway noise, as well as keeping him warm.
aluk.com



2
Timber doors and windows
Mumford & Wood

Like Italy's infamous premier, Silvio Berlusconi, houses have their ups and downs. This fine vernacular new-build in Danbury, Essex, featuring traditional doors and windows from Mumford & Wood's Conservation range, has a bit of both – more than a bungalow but shy of the full two storeys. Whatever further comparisons his detractors might draw, 'Mr Bunga bunga', as he likes to be known, allegedly prefers the high version to the bunga-low, on the basis that the higher you are the more fun everything is. And, like this splendid example, age is just a matter of perception.
mumfordwood.com



3
Flat-roof opening lights
Fakro

To me, the lush greenery of this roof lacks only a tiny railway. Or perhaps a miniature town. There would come the diminutive old-time plastic bobby on his wire bike. Here would be a level crossing at which a Hornby MG Midget driven by a grinning man with a flat cap would stop to let cross a diminutive mother with a pram. We'd have to fill in these flat-roof windows as they'd look too much like an artificial reservoir, so we'd lose their high-functionality and perfect thermal insulation parameters... on the other hand, however, we would gain several peanut-sized sheep.
fakro.co.uk/flat-roof-windows



4
Andersen casements
Black Millwork

Why constrain yourself to going through the round window or the square window when you can go through both at once, just like you can at this American-style Surrey mansion, whose Andersen casements have a premium finish and U-value of 1.4 W/m²K? Geddit? Eh!? You don't know what I'm talking about? Play School! Brian Cant? Floella Benjamin? Big Ted? It was a BBC pre-school show that aired until 1988. What do you mean, you weren't born then? Look it up on YouTube. Actually don't. It was no Bagpuss. What? You don't know that either? The devil take you, then!
blackmillwork.co.uk



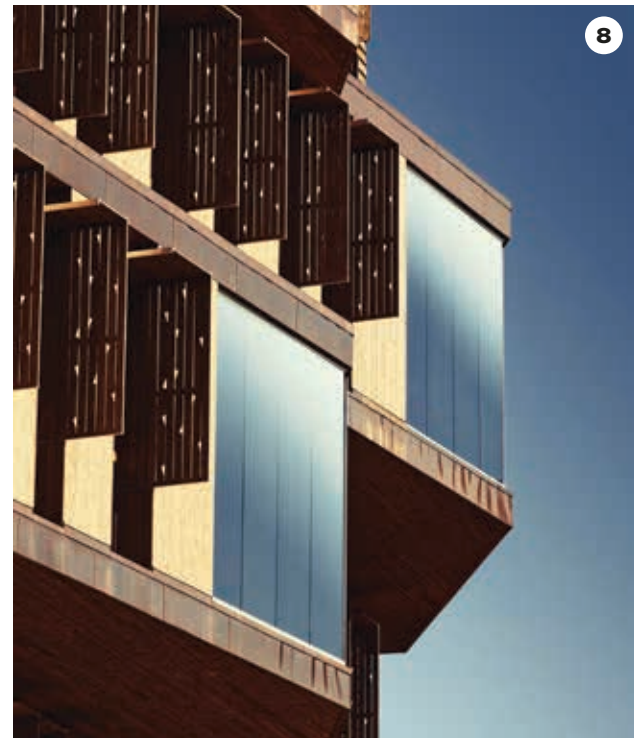
5



6



7



8

5
Curtain walling and windows
Kawneer

I like to see teachers really working hard, don't you? I bet they regularly knuckle down at Lambeth Academy, the 'super-school' in London, burning the midnight oil behind Kawneer's cladding and window systems, marking and lesson-planning as is only right. No doubt they do this to make up for all that time they get off during those generous holidays. I also like the way teachers are calm and relaxed about their workload and their lot despite the constant Ofsted demands. Likewise, this Kawneer system is going to be all about performance.

kawneer.co.uk

6
Composite windows
Velfac

What happened to the Scandi dream? We're coveting stripped pine surfaces, bentwood furniture, milky light and a beneficent welfare state when, suddenly, boom! grim tv detective shows. The light has got depressive, the interiors lonely and the furniture good for little more than sitting and drinking miserably. Looking at this charming RIBA award-winning barn conversion in Norfolk, I can't help imagining, within, a sprawled body sprouting a knife. Meanwhile glazed composite pine sliding doors from Velfac help boost interior daylight – and help me get out more often.

velfac.co.uk

7
Bifold doors
CCS

'They are talking about me again,' said the sofa as it gazed fretfully through the CCS bifold aluminium doors at the wooden patio chairs. 'Look at them gathered around the table. All bitching about my weight. I know I might have a few more pounds of stuffing, but that doesn't given them the right to stare. There's plenty of room down the rest of the garden...' But it couldn't turn its back, so the sofa averted its gaze and stared out from between its scatter cushions up through the complimentary roof-lantern, and dreamed its upholstered dreams.

ccsmidlands.com

8
SYP windows
Kebony

Up to a fifth of global CO₂ emissions come from tree loss. Some developing countries have committed to preserving woodlands, but many of our most diverse habitats, such as rain forests in Sumatra and Borneo, have practically disappeared. An alternative to tropical hardwood is Kebony, treated with an agricultural by-product to make sustainable softwood look like its harder cousin. And the German Institute for Window Technology has just given the material a thumbs up. So its use is well worth considering, as in this sleek nature research institute in Norway.

kebony.com

This page Light reflects well across the beeswax washed plaster walls, giving a monolithic feel to the space.

Opposite page

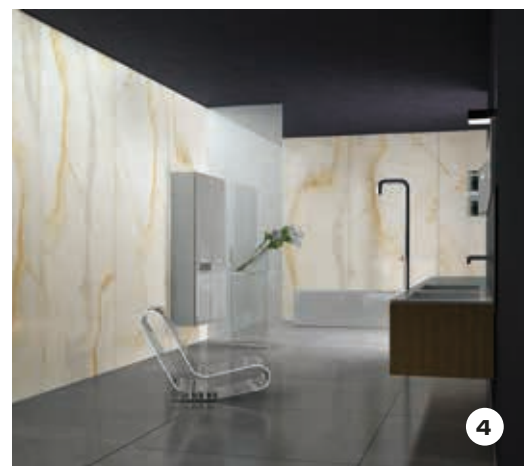
Left The corner townhouse becomes a robust, sculptural form that turns the corner to the apartments.

Middle The split level section creates complex spaces that are simultaneously intimate and grand.

Right Picture windows give clues of the split level nature to the street, and allow broad views out to the street and city.



Specified



1 SterlingOSB Norbord

Christian Montez and Kyra Powell built a two-storey house out of recycled materials for just £1,480. The 8ft by 16ft by 12ft structure was built in nine weeks out of Norbord's SterlingOSB in the middle of a field. While the bedroom somewhat resembles sleeping in a church bazaar tombola box (though it's co-ordinated – that counterpane appears to be made of SterlingOSB too), the couple is at least able to save for a deposit without draining their rental pot. Oh, and they got on the telly too – George Clarke's Amazing Spaces. Everyone's a winner! norbord.co.uk

2 Kaolin tiles Reed Harris

'Neutral' and 'natural' are often used interchangeably, and these glazed porcelain tiles from Reed Harris are no different. It's a Madonna 'Frozen' era – no makeup and unbleached oatmeal hemp nursing pillow – view of nature which is surely not what nature feels. These days, it must feel anything but virginal and untouched; instead, running a fever, ravaged and bipolar it must wonder when it's going to start feeling better. These Kaolin tiles ('Lime' pictured here) are low-maintenance, easy to clean and contemporary, bringing some 'there, there' to the 'here and now'. reedharris.co.uk

3 Veneer panels Knauf

The PIP Specified Pages have a bit of a reputation for being irreverent. I don't want to be rude about this South London college (LeSoCo) atrium, given the importance of spaces for our young people to cherish in our difficult economic environment. So, if using veneer instead of real wood allowed for the bright yellow fenestration flashing, jolly spiral stairs, fun, red LEDs on the internal curtain and tree-like sloped roof supports, hats off to Richard Hopkinson Architects, Platform 5 Architects and Deloitte – and Knauf. knauf.co.uk

4 Ceramic slabs RAK UK

What would a shrew see if it wandered through your bathroom? Your marble tiles, over-sized and rococo as these huge ceramic porcelain slabs? As if it were traversing huge photographic negatives of a slab of beef, the tiny but intrepid rodent could get lost in the whirls and striations of the hypnotic oblongs. Flowers would look vast, a bent paper clip seem a chair and taps appear at huge as the Niagara Falls. Whether the beast would feel at home in such modernist surroundings is beyond me – and no surprise. I'm not Doctor Doolittle. rakceramics.co.uk

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Read how fibre cement can provide a range of benefits to designers and specifiers.



RIBA
J



Usual advantages – plus style

Aluprof

the MB-86 Frameless Leaf commercial door from Aluprof takes the inherent strength and sustainability from a frame of aluminium but also caters for bonded glazed units. The completed door has beautiful, flush, clean lines and is perfect for any commercial entrance application. Available with or without threshold, the MB-86 Frameless Leaf commercial door can be configured to open in or out. www.aluprof.eu/en/



SMARTform boosts door leaf

ASSA ABLOY

ASSA ABLOY Security Doors has re-engineered its standard door leaf design to enhance aesthetics, add strength to the product and reduce environmental impact. SMARTform technology enables the leaf to be formed with the same square or rebated edges found on traditional Powershield doors, while structurally benefitting from a full interlocking seam on all edges of the leaf. assaabloy.co.uk/Security-Doors



Make double sure cold is kept out

Boon Edam

While revolving doors can significantly cut heat loss from reception areas, installing a Boon Edam heater will prevent cool air trapped in the door during windy weather from being released into the building. The main body of the heater unit is strategically mounted above the door and, using curved air outlets, creates a warm barrier around the inner opening, counteracting cold infiltrations. www.boonedam.co.uk



Modern complements traditional

Lomax & Wood

Lomax + Wood has supplied made-to-order, double glazed Alu-Clad timber flush casement windows and doors from its Contemporary collection for a modern, new-build, private development just minutes from the cosmopolitan city centre of Oxford. The dwellings have been designed to complement the form, style and materials of the more established surrounding suburban properties. www.lomaxwood.co.uk



Stylish doors match industrial look

GEZE

Appleton House in Warrington has been transformed inside with a funky industrial gym theme fit for the European HQ of global sportswear brand New Balance. Bi-parting automatic doors from GEZE UK were installed at the entrance to the canteen. Powered by ECdrives, the aluminium framed glass doors finished in grey satin reflect the theme while providing a stylish entrance. www.geze.co.uk



Co-ordinated casements in Clifton

Mumford & Wood

High performance timber windows and doors from Mumford & Wood have been specified in an historical property refurbishment in Clifton, Bristol. Double glazed casement windows from the Conservation™ range have been specified for the sympathetically converted grade II listed school building, to work in harmony with the traditional stone surrounds typical of the region. www.mumfordwood.com



OPTIM-R takes the Harrogate fall

Kingspan

A new six-storey, 107-bed Premier Inn has been built to accommodate visitor to Harrogate's International Centre. To maintain drainage, a wide channel was incorporated into the hotel's flat roof. Kingspan OPTIM-R Roofing System was installed as, at 18m long and over 1m wide, it was essential to have the channel properly insulated while still providing the required fall. kingspaninsulation.co.uk/optim-r



Recticel Insulation's BIM century

Recticel

Recticel Insulation has marked a century by posting more than 100 objects with the award-winning NBS National BIM Library, the fastest-growing in the UK. Downloadable in Revit, Vectorworks, AECOSim and ArchiCAD software formats, as well as the open IFC standard, the Recticel portfolio contains solutions for flat and pitched roofs, walls (including rainscreen systems) and floors. www.recticelinsulation.co.uk



Keeping patients wrapped up

Weber

External Wall Insulation by Saint-Gobain Weber has been used on the new £22 million Queen Elizabeth II Hospital in Welwyn Garden City, Hertfordshire, for Assemble Community Partnership. The use of weber.therm XM external wall insulation meets the sustainability brief by wrapping the structure in thermal insulation to create an attractive, weather resistant outer skin. www.netweber.co.uk



Schueco expands its range

Schueco

Schueco UK has made its AvanTec SimplySmart range of concealed window fittings even more flexible and comprehensive, adding new parts to increase versatility. Among these is the SmartActive handle; a specially developed anti-microbial surface finish with micro-silver particles that kill germs on contact. Independent tests verify a 99.9% reduction in contamination within 24 hours. www.schueco.co.uk



The latest interior design trends

Bushboard

Splashback designs in Bushboard's Prima laminate worksurface range bring the latest interior trends to the kitchen with graphic prints, oxidised metals, luxury granites and matt woodgrains, as well as plain colours. Prima has 36 designs in midway and hob panels in 3000 x 600 x 8mm and 1500 x 1200 x 8mm sizes. With high performance and easy maintenance, they are fast and easy to install.

www.bushboard.co.uk



How to paint polished concrete

Watco

Watco Powerfloat Sealer eliminates the need for either shot blasting or acid etching when painting a polished concrete floor. The sealer can be applied direct to the floor by roller, to seal and enhance the attractive look of the natural, polished concrete. The innovative formulation includes special additives that bond with the smooth concrete surface in a way other sealers and paints simply cannot.

www.watco.co.uk



Carpet tiles Merge into Transitions

Desso

Merge is a new, structured carpet tile from Desso and the latest addition to the Transitions collection. Embracing movement and creative expression, the collection contains nine different carpet tiles, interpreting our transient times through changes in colour, structure and nature. With organic patterns, shimmering yarns and textured piles, it adds warmth and definition to any office space.

www.desso.co.uk



Safety by design

Gerflor

Gerflor has coupled its technical expertise with excellence in design to create its latest safety flooring innovation, Taralay Impression Control. Providing inspirational design, superior slip resistance and outstanding performance, the dual collection has an impressive Safety in wood and Safety in design offer of realistic woods and modern designs in contemporary colours.

www.gerflor.co.uk



New colours brighten 2016

LG Hausys

HI-MACS® has launched its LUCIA collection which includes five new colours: Ice Queen, Shadow Queen and Star Queen by Marcel Wanders, plus Lentil and Red Quinoa, to give designers the freedom to create increasingly voluptuous, sensuous projects. With LUCIA, the firm's 'solid surface' retains all its unparalleled qualities: versatile, thermoformable, durable, invisible joints, waterproof and hygienic.

www.himacs.eu



We specify it; we use it ourselves

Gaia

Electric underfloor heating from Gaia has been installed throughout the private residence of the directors of Lifestyle Design & Build, which specialises in high-end property conversions. Installed just below the surface of the floor, the DEVImat electric coils respond quickly, producing a warm surface promptly, but is equally suitable for use under carpeted floors in living and bedrooms.

www.gaia.co.uk



Oak floors grace marina scheme

Kährs

Admirals Quay, Southampton's tallest development situated on the city's waterfront, has 8,500 m² of Kährs' one-strip design, Oak Brighton, installed throughout apartments and duplex penthouses. Part of Kährs' Sand Collection, the rustic wood floor is made in Sweden from sustainable European timber. A white-toned matt lacquer prefinish gives the lively surface an on-trend pale toned hue.

kahrs.com



Latest products join BIM portfolio

Polyflor

Leading commercial and residential vinyl flooring manufacturer Polyflor has launched even more downloadable BIM Objects, with Phase 3 of its BIM offering. Polyflor has added its latest products to its portfolio – the new Affinity255 PUR range of 2mm gauge luxury vinyl tiles and the relaunched Polysafe Wood fx safety flooring collection with brand new shades. Download free from RIBA National BIM Library and Polyflor.

www.polyflor.com



Elegant and practical for everyone

Twyford

The stylish Twyford All™ washbasin and vanity unit include special features to make access easier, more comfortable and more convenient for everyone, regardless of their age or level of ability. The washbasins come in three sizes, 550mm, 600mm and 750mm, and combine elegance with practicality, benefiting from a shallow design and integrated finger grooves on each side.

www.twyfordbathrooms.com



Common theme for global offices

Interface

Common Theme, the latest collection from modular flooring manufacturer Interface, helps designers working for multi-national companies to create a consistent identity in offices around the world. Inspired by the latest global trends, a subtle but distinctive grey palette gives a foundation for interiors and can be used to zone areas in open plan offices using the varied textures and colour ways in the collection.

www.interface.com



School's sports hall is prepared Tilemaster

A Tilemaster floor system has been installed at Manchester Grammar School in a new sports hall, which will accommodate activities including cricket training, squash, indoor hockey and badminton. Tilemaster Prime + Grip and Fine Flow 3000 were chosen to provide an exceptionally smooth, sound surface and a fast, safe application, ready for fixing of the finished Gerflor sports flooring.

www.tilemasteradhesives.co.uk



The long light walk Structura

This dramatic link bridge at the Queen Elizabeth Hospital Birmingham, designed by BDP, is formed with Kalwall, pierced at intervals with clear glazed full height windows. The highly insulating cladding admits natural diffused daylight to create an attractive ambience without shadows or glare, while providing privacy. Kalwall is increasingly specified for refurbishment of aged cladding and rooflights.

www.structura-uk.com/kalwall



A+ BRE rating for SIKA flooring SIKA Floor

Sika ComfortFloor® systems, Sikafloor PS23 and PS24, have become the first resin flooring systems to achieve a manufacturer-specific BRE Green Guide Rating – attaining an A+, the highest available. With a simplified system based on life cycle assessment data, the BRE Green Guide to Specification lets users determine the environmental performance of typical UK construction specifications.

gbr.sika.com



Firm wins triple accreditation Bracknell Roofing

Bracknell Roofing has achieved independent certification for its integrated management system, which centralises elements of its business operations. In the assessment it met the criteria required for ISO 14001:2004 and OHSAS 18001:2007 for environmental and occupational health & safety and ISO 9001:2008 for quality management.

www.bracknellroofing.com



Expona range adds natural designs Polyflor

Polyflor, the vinyl flooring specialist, has added the SimpLay PUR range of loose lay luxury vinyl tiles to its Expona collection. The new range for heavy commercial interiors offers authentic reproductions of beautiful natural materials presented in an adhesive-free, ready to lay product designed to reduce installation time, with 38 designs of traditional and contemporary wood, stone and textile effects.

www.polyflor.com



Neat finish at Grand Designs home SIKA Trocal

At a new-build family home shortlisted for the Grand Designs RIBA House of the Year awards, the high quality application of 200m² of Sika Trocal Type S waterproofing membrane has helped to provide a watertight finish for a complex roof system featuring seven pyramids and a vaulted rooflight. With aesthetics an important consideration, Trocal Metal helped reduce membrane overlaps and provide a neat finish.

gbr.sika-trocal.sika.com



Decorative finishes, bubble-free David Clouting

Interior Film from David Clouting is a unique range of self-adhesive, decorative films manufactured by LG Hausys that can be adhered to most substrates including wood, metals, plasterboard, plastics and melamine. Air free technology gives a bubble-free finish. CE certified and available to view on the Bimstore website, Interior Film is available in a range of designs and finishes.

www.davidclouting.co.uk



Better browsing on new website Alutec

Marley Alutec has a new website that offers one of the most comprehensive collections of industry knowledge, and is easy to navigate across multiple devices. The intuitive approach means merchants, architects, specifiers, contractors and end-users can all find relevant information that is best suited to their requirements and profession easily and efficiently. It is also fully optimised for mobile and tablets.

www.marleyalutec.co.uk



West End's Design Trend event IDS and FINSA

Spanish surface materials specialist FINSA and UK distributor IDS have showcased the latest trends in materials for architectural, design and furniture at the Innovation Centre in London. The event coincided with the launch of FINSA's latest Trendbook, which acknowledges how social and cultural changes define technological innovations, and how we live and consume, and inspire future surfaces.

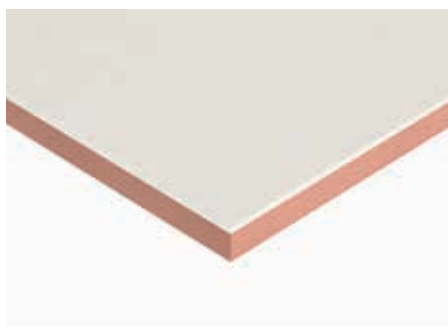
www.finsa.com



Flush-fit downpipes on BIM Alutec

Marley Alutec has added its new Flush-fit Downpipe sizes to its BIM offering. The new addition complements the firm's existing portfolio. Enabling specifiers to design a complete rainwater or eaves system with just a few clicks of a button, the objects can be downloaded from the Bimstore website. The new downpipes respond to customer demand for greater sizing variety.

www.marleyalutec.co.uk



Return of Kooltherm K10 PLUS Kingspan

Kooltherm K10 PLUS soffit board is back by popular demand, with a non-combustible external facing for outstanding fire and thermal performance. The lightweight 1.2m by 2.4m boards are suitable for ceiling applications beneath a conditioned floor, such as in underground car parks. Their fibre-free insulation core holds a Class 0 fire rating, with negligible smoke obscuration.

www.kingspaninsulation.co.uk



Sensuous but ready for business Compac

Dark Concrete is a stunning quartz worksurface from Compac – part of its New York Collection. Creating a fusion between architecture, design and functionality, Dark Concrete is silky, soft and sensuous to the touch and has a unique textured matt concrete finish to help create the ultimate urban style environment. Compac's New York Collection offers a range of colours and two finishes – Concrete and Glacé.

www.compac.es



Class act at performing arts centre Senior Architectural

A new performing arts centre in Newcastle-under-Lyme uses Senior's SMR800 curtain walling for its slim sightlines and aesthetic flexibility to create the modern entrance to the building. The system has been used throughout to maximise the flow of natural light into the dance studios and communal areas, alongside Senior's SPW600/E windows and SD automatic doors.

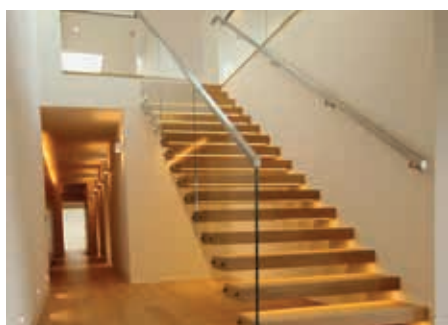
www.seniorarchitectural.co.uk



Back to washroom black Kemmlit

Kemmlit's special edition Classic Cell cubicle system features a stunning solid black crystal coat varnish finish, rebated doors and concealed edges. This ultra-modern designed cubicle creates the impression of floating above the ground. Aluminium 'handle bars' featuring LED vacant/occupied indicators, long life hinges and a robust 42 mm solid metal construction ensure it is fit for any washroom.

www.kemmlituk.com



Floating stairs at Ecobuild E6140 Canal Engineering

Over recent years one staircase design has become increasingly popular: the cantilever staircase. Neding no support underneath or between the treads, it has created a vision of open space that is very aesthetically pleasing. CANAL Architectural uses different fixing methods for this staircase design making it suitable for all properties, new or existing. Visit the Canal team at Ecobuild, ExCeL.

www.canal.eu.com



Totally green at Ecobuild Mapei

Adhesives and chemical products manufacturer Mapei will exhibit at Ecobuild 2016 on stand E6030, focusing again on its commitment to innovation and sustainable development. The stand from concept to build is designed with an eye on recycling, reusing and reducing waste materials. Mapei will also launch its new sustainability campaign 'GREEN BY NATURE' at the show.

www.mapei.co.uk



Cambridge kerbs separate cycles Aggregate Industries

Charcon, Aggregate Industries' specialist range of commercial hard landscaping and drainage products, has delivered a new concept in cycleway kerbing for Cambridgeshire County Council's new Huntingdon Road Cycleway. In total, 2,880 bespoke kerbs for the new 1.5km hybrid cycleway have been manufactured for the project, which will separate the carriageway and cycleway.

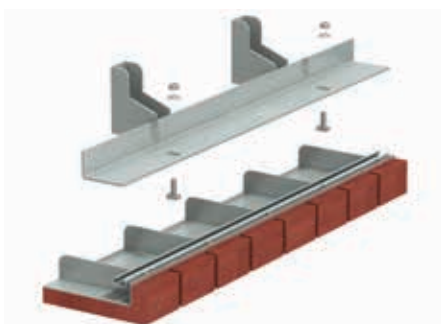
www.aggregate.com



Clever high performance hobs Blanco

Blanco's new hob collection includes the latest technology for high-speed, energy-efficient cooking. The high-end BH467831, a 78cm-wide ceramic induction hob, has six surface cooking zones, 14 heat levels, six sleek slider controls, residual heat indicators and automatic functionality. Highlights include a flexible induction zone for pans of varying sizes and a boost option which brings food to the boil in seconds.

www.blanco.co.uk



More high integrity fixings on show Ancon

Double winner of the Queen's Award for Enterprise, Ancon Building Products will exhibit new products at Ecobuild. On stand number E3080, Ancon will showcase its latest fixing innovations, including the lightweight Nexus® brick faced soffit system, insulated balcony connectors and an exciting new development in the Teplo range of low thermal conductivity wall ties.

www.ancon.co.uk



Cambridge school's fluent design Senior Architectural

Education First (EF) language school in Cambridge has a new building with a central glazed atrium linking classrooms spread over two levels. To ensure the use of natural light and ventilation, Senior's innovative Hybrid doors, windows and curtain walling was specified. Series 3 curtain walling is used on the double height atrium, with Hybrid Series 2 windows. Senior's SD automatic doors complete the package.

www.seniorarchitectural.co.uk

Sign Up

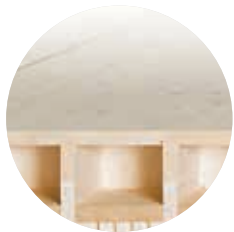
Andrew Mowat, associate at GRID Architects, gives us three of his specification favourites



CHARRED TIMBER CLADDING

UV bleaching and uneven weathering can leave timber cladding in need of restoration surprisingly quickly, however expertly detailed. However, on one small residential project in Kent, I've looked to traditional charred timber, which can resist the effects of weathering better than most, and has an attractive and delicate shimmer in some lights. The treatment has seen a resurgence in recent years; in particular the Japanese process of 'shou sugi ban' or 'yakisugi' which achieves a silvered black, textured, cedar board finish.

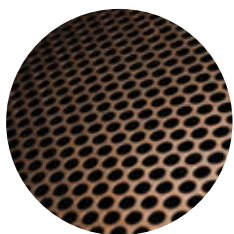
exteriorsolutionsltd.co.uk/



LAMINATED TIMBER CASSETTES

Cross laminated timber (CLT) panels offer huge flexibility with structural openings and roof forms. We have proposed a CLT panel structure for a music academy in south west London in which we have exposed the timber finish internally. In recording and performance spaces standard CLT panels can play havoc with the acoustics, so we specified laminated timber cassettes which contain an acoustic foam layer from the Eurban Lignatur range. The cassettes provide an attractive finish and the necessary acoustic and fire performance.

eurban.co.uk



DECORATIVE ALUMINIUM PANELS

On some of our larger residential projects we have used perforated and embossed aluminium cladding. The perforations, which vary in size, have added a lace-like quality that produces an interesting play of light internally when the panels are positioned in front of windows. We worked with Thornton Tomasetti facade consultants which used computer generated algorithms to fine tune the density of the patterns to meet solar gain and ventilation requirements. RMIG perforates and embosses the panels before they are anodised and installed.

rmig.com and thorntontomasetti.com

...Sign Off

Jan-Carlos Kucharek enjoys three of this issue's out-takes



PEAK ELECTRICITY

The new Star Wars movie returned to its roots with the destruction of yet another Death Star – and no recourse to the comedic distractions of the likes of Jabba the Hutt and Jar-Jar Binks. But that hasn't stopped architect i-am associates coining the former's name for its beach hut in Lincolnshire. The Force seems strong with it too: inspired by the dunes and built from DuPont Corian, Jabba's form strongly resembles energy firm E.on's springy 'Zingy' TV character. Though Zingy might have less bounce in 2016: over a million households ditched the Big Six energy firms last year for smaller providers. Could this be the start of the Amp-ire?



MAY CONTAIN NUT TRACES

Perhaps another stellar organisation feeling a bit discharged could be RSHP. In its move last year from Hammersmith to its City Cheesegrater – officially opened by Princes William and Harry – the space planning must have been a lot easier with 10 fewer bums on seats to squeeze in following redundancies last month. Meanwhile the City's Building of the Year recovered from its bolt-popping start to command its highest rents. With 1200m² of primo floor platti still up for grabs as a restaurant, one wonders if Ruth Rogers' protégé Jamie Oliver and his 'Italian' franchise might be interested? Then the cheeky-chappie would be coming home to roost...



WE BUY ANY CAVES?

While Porsche Design Studio might be trading handsomely off the name of its famous parent, it may have met its limit in its recent collaboration with champagne firm Veuve Clicquot, when one of its bespoke 'Vertical Limit' champagne refrigerators failed to meet the reserve at a Sotheby's auction. The fridge, a 1.8m tower of brushed stainless steel chambers unfolding to reveal 12 vintage magnums hand-picked by Veuve Clicquot's Chef des Caves, is one of only 15 and was estimated at £80-100K. Though sexy as a Kubrick monolith, it failed to whet the appetites of assembled punters. So what the hell do you give the man who has everything nowadays?

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Flat is back

Rob
Technical Services Officer

Sharp minds and friendly faces.

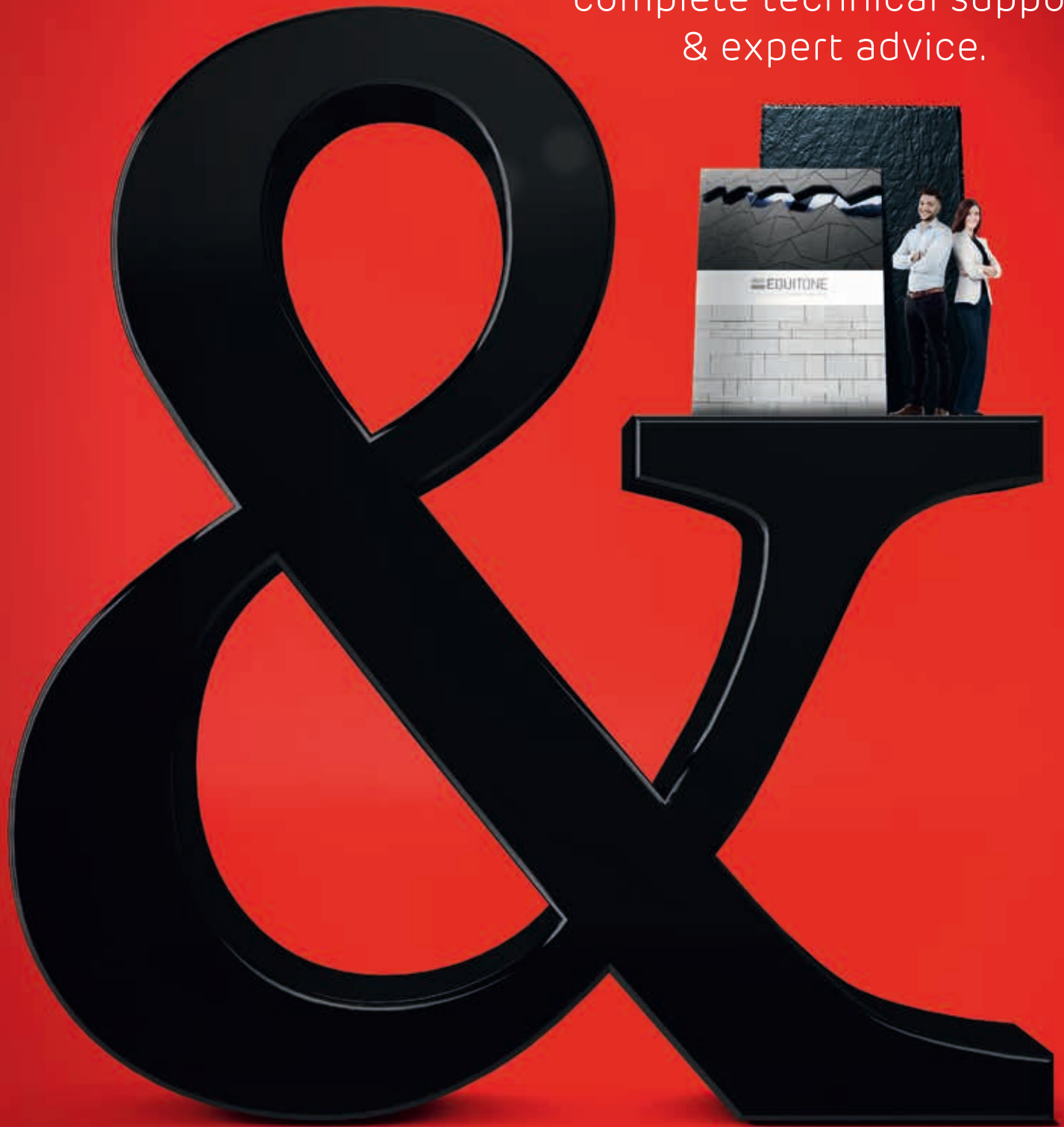
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