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FROM THE EDITOR



It is somewhat hard to know what to make of Phillip 'joker' Hammond's recent Budget, given that it contains a lot for housing, as rumoured, and perhaps more than some feared, while at the same time raising yet more questions on the Government's commitment to genuinely intervene to fix the supply problem.

There is no doubt that with the public finances still strapped, and this Remainer Chancellor notoriously Brexitwary, we should cheer the fact that the Treasury are prepared to find £44bn for housebuilding "funding, loans and guarantees," but what does this mean in practice? A fairly universal reaction to the cut in stamp duty for first-time buyers has been that it will in fact push house prices upwards, but will loans make a more positive difference? For example, SME housebuilders will get £1.5bn extra Home Builders Fund cash, but how quickly?

The Homes and Communities Agency is being beefed up in its new guise Homes England, including powers to compulsorily purchase land with planning permission to enforce the building of homes. However there was little other sign of planning issues being unravelled in the Budget, to see why the UK has so much land which is ready to build out, but which lacks the infrastructure or the will from major housebuilders to so do.

The problems in planning are well known, but what we have now is Tory heavyweight Oliver Letwin chairing a review of alleged land banking and other planning issues. The mere sound of the word 'review' sounds like reticence rather than action. The fact the Government needs to fact-find here is only too indicative of how little tie-in there is between the DCLG and our under-resourced local planning departments.

It is time that everyone in power acknowledged that the green belt is often not some sacred, 'Jerusalem'-evoking 'green and pleasant land', but is highly likely to be a nondescript ring of land around a town which might often be the best place to build on.

Another major omission in the Budget was the deferral of lifting the cap on council borrowing to build homes – its two year delay seeing criticism from architectural thought-leaders such as Ben Derbyshire. Surely it should simply be left up to councils to decide whether they can afford it? The reclassification of housing associations as private sector bodies should however offer the freedom for them to pursue the loans, as the largest providers of public rented housing currently, and build where and how they need to.

The announcement of new money was designed to raise a cheer in the gloomy context of economic growth prospects being revised down for the UK for the next five years, due to continuing productivity problems. Next time Hammond will have little room to work with next time if, as he secretly suspects, Brexit uncertainty causes an economic downturn short-term.

A note of optimism was heard on Brexit recently, from one very upbeat panellist at a National Federation of Builders event. The industry should benefit from opportunities offered by the Chancellor's £3bn put aside to 'prepare for Brexit,' he said. Building lorry parks along Kent motorways might be on offer. If that's not a tantalising glimpse of future prosperity,

I don't know what is.

James Parker Editor



ON THE COVER...

Wasl Tower, designed by UNStudio as a new kind of high-rise for the city of Dubai.

For more information, go to page 18. © Plompmozes



BRIDGING THE GAP

Apple Michigan Avenue reconnects Chicago to its river

Apple has completed its new Chicago store, designed in collaboration with Foster + Partners.

Located at the intersection of the Chicago River and North Michigan Avenue's 'Magnificent Mile', Apple Michigan Avenue "cascades down from Pioneer Court to the river's edge, creating new connections between the city and the river".

Inspired by Chicago's artistic energy, the project is said to reflect Apple's commitment to the cities and communities it inhabits, and is the result of a close collaboration between the design team at Apple led by chief design officer, Sir Jonathan Ive and Angela Ahrendts, senior vice president of Retail and Online Stores and Foster + Partners.

Stefan Behling, head of studio, Foster + Partners said: "We fundamentally believe in urban life, creating new gathering places, and connecting people in an analogue way within an increasingly digital world." Behling continued by saying that the design of Apple Michigan Avenue "embodies this in its structure and materiality with a glass wall that dissolves into the background" to reveal the only visible element of the building – its floating carbon fibre roof."

Apple Michigan Avenue sits above a wide new public stair, created to lead down from the plaza to the river. According to Foster + Partners, the descent of levels is intended to "create active spaces where people can connect, create, and experience the city and river together".

The stairway transitions between the outside and inside, passing through the building's glass walls and connects to the store, sheltered by a thin carbon fibre roof, supported on stainless-steel columns. As the interior steps down to the river, it provides a seating space around the Forum.

Jonathan Ives emphasised Apple Michigan Avenue's purpose to "remove boundaries between inside and outside" and "revive important urban connections within the city". He suggested that the new store "unites a historic city plaza that had been cut off from the water" giving Chicago "a dynamic new arena that flows effortlessly down to the river."

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WINNER

Stirling Prize awarded to dRMM's Hastings Pier

Hastings Pier, a major community-led regeneration project designed by dRMM Architects, has won this year's RIBA Stirling Prize.

Said to "reinvent traditional pier design", the pier provides an open space, able to support a variety of events and uses from circuses to music events, fishing to markets.

Professor Alex de Rijke, dRMM cofounder and architect directing the project said: "We were delighted to work with Hastings Pier Charity on this ambitious project which, literally a 'Phoenix from the ashes', was realised through dedicated community action and strong support from the Heritage Lottery Fund."

De Rijke said the Hastings Pier design exemplifies dRMM's collaborative, lateral approach to architecture, "creating places that inspire, that are innovative but popular and socially useful. Sometimes all you need in design is less."

He added: "Hastings Pier is an old struc-

ture carefully rebuilt as a new symbol for free access architecture and public realm."

After Hastings Pier was destroyed by fire in 2010, the local authority acquired the ruin and transferred ownership to Hastings Pier Charity with over 3,000 shareholders, following a successful crowdsourcing campaign.

Stirling Prize awards judges remarked: "It has taken a seven-year heroic collaboration to turn a smouldering pier in disrepair and decline into a vibrant public space with a palpable sense of ownership. This collaboration has been between the community, the council, the engineers and the architect, and it is the architect's vision which has been vital throughout to steer the process."

Maria Ludkin, chair of Hastings Pier Charity, said: "This award belongs to the people of Hastings and St Leonards who came together to save this historic landmark and made it a beacon of a town's regeneration."

AWARDS

Surface Design Awards 2018 finalists announced



The finalists of this year's Surface Design Awards have been announced, unveiling some of the best projects from across the globe featuring "exciting materials and surfaces".

The shortlist of projects range from internationally renowned museums to personal residential projects. There were 39 entries from the UK, 69 per cent of them being from London. The most popular categories entered were Commercial Interiors and Housing Interiors.

The judging panel was co-chaired by Tina Norden, of Conran and Partners, and Ab Rogers of Ab Rogers Design. The judges included Jenny Jones of Studio Jenny Jones, Sacha Leong of Studioilse, Constantina Tsoutsikou of HBA London, Jo Littlefair of Goddard Littlefair, Howard Sullivan of Your Studio and Nir Gilad of Nous Design, all of whom are experts in their fields.

A total of 30 projects have been named as finalists, with awards to be given out in February across 11 categories. Each project was judged on a range of criteria including the type of surface, the use of materials and the aesthetic design. 13 of the shortlisted projects are from the UK, eight of those from London. International finalists include five projects from China, four from Portugal, as well as entries from India, Belgium, Lithuania, Taiwan, Hungary, Canada and Italy.

EVENTS

SEMINARS

Architectural photography workshop 30 November, Liverpool www.architecture.com/whats-on

RIBA London CPD Roadshow 07 December, London www.architecture.com/whats-on

Steven Holl - Aia/Riba Keynote Lecture 2017 12 December, London www.architecture.com/whats-on

EXHIBITION

Ceramica 28 October - 10 February www.architecture.com/whats-on/ceramica

RIBA Presidents Medals

10 November - 24 February www.architecture.com/whats-on/presidentsmedals-exhibition-2017-at-riba-north

TALKS

Financial management: how to run a profitable business 05 December, Bath www.architecture.com/whats-on

TRADE SHOWS

Architect@work 24-25 January, London www.architect-at-work.co.uk

Surface Design Show 06-08 February, London www.surfacedesignshow.com

KBB 04-07 March, London www.kbb.co.uk

Ecobuild 06-08, London www.ecobuild.co.uk

UK Concrete Show 21-22 March, Birmingham www.concreteshow.co.uk

Materials for Architecture 25-26 April, London www.materialsforarchitecture.com

LIBRARY

Futuristic library for Tianjin, China

Tianjin Binhai Library has opened, designed by architects MVRDV in partnership with the Tianjin Urban Planning and Design Institute (TUPDI), as part of a larger plan to provide a cultural district for the city.

The building acts as a "connector from the park into the cultural district". An oval opening punctured through the building is "propped open" by a mirrored sphere including an auditorium. Terraced bookshelves which echo the form of the sphere create a "topographical landscape whose contours reach out and wrap around the facade". The stepped bookshelves within are represented on the outside, with each level doubling up as a louvre.

The library sits within a sheltered gallery, topped with cathedral-like vaulted arches, which winds its way throughout the scheme. MVRDV's building is surrounded by four other cultural buildings designed by an international team of architects including Bernard Tschumi Architects, Bing Thom Architects, HH Design and GMP.

Tianjin Library is part of German archi-

BOOK

Revisiting the work of Sir Frederick Gibberd

A new book reassesses the works of controversial architect, town planner, and landscape designer Sir Frederick Gibberd.

Gibberd's practice completed around 100 major projects ranging from housing and town centres to nuclear power stations and reservoirs, as well as schools, libraries and technical colleges. His key works include Liverpool Metropolitan Cathedral, London Central Mosque in Regent's Park, the Master Plan for Harlow New Town, Didcot Power Station and the original terminal buildings at London Airport (now Heathrow Airport).





tects GMP's 120,000 m² masterplan which aims to "accentuate the characteristics of the surrounding districts" Through its design, the complex will become a junction point for the CBD, old town, residential districts, commercial and government areas.

"There is no convenient label we can attach to him or his work," said the publishers. "He was condemned as conservative, formless and dull by some, frivolous by others". The author, architectural historian Christine Hui Lan Manley, "argues that Gibberd's body of work deserves greater recognition in the narrative of 20th century modernist architecture".

When Frederick Gibberd died 33 years ago, he left many diary notes, sketch books and travel journals, as well as a large 'Biography' which was a great source of material for Manley who spent three years researching in the archives at the Gibberd Garden.

The book is part of the Twentieth Century Architects series published by Historic England. This series, jointly commissioned by Historic England and the Twentieth Century Society, is designed to "introduce individuals to the work of architects who deserve more attention".

SITE LINES

Master Builders for the 21st century

Bruce Bell of Facit Homes says that the emergence of digital methods of creating buildings means that architects can recapture their former territory as Master Builders

Throughout the 20th century, architects have steadily become further removed from the process of making and producing buildings. This is especially true when you consider the scope of their forefathers' role, as the Master Builders of the pre-modern era.

On large scale, complex commercial schemes this disconnect between architects and the production process is perhaps easier to understand than on individual residential buildings. However, technology is presenting an opportunity for architects to reconnect with the build process in a meaningful way.

Controlling all the craftsmen on a project, the Master Builder had a intimate knowledge of the various trades, and was intrinsically involved in the crafting and making of a building. As the role of the 'modern architect' emerged, a great change ensued. Architects went off on something of a professional tangent, increasingly disassociated from many parts of the construction process, and becoming slightly abstract. Despite their vast skill and training, architects today are in many cases effectively reduced to shoppers, selecting and specifying products from catalogues for others to assemble, rather than actually designing and making in the traditional sense.

Control of the 'making' has gradually passed to the contractors, who will often do what they want, or at the very least, implement their own interpretation of what was designed or intended. I fear that the skill, vision and passion that an architect brings to the initial stages of a project can therefore be lost once it moves in to construction, as they relinquish that direct control and become subservient to those doing the actual building work.

A return to 'making'

Although it is not yet widely adopted in the UK residential sector, modern technology can put this control back in the hands of the designer and in fact, revive the role of the Master Builder for the 21st century. Digital design and manufacturing processes mean that architects are actually making the buildings once again, though of course now the digitally controlled machine acts as the hand, producing an exact replica of what has been designed with no potential for misinterpretation by a third party.

In the projects we undertake for clients, we design a timber structure within a BIM environment and extract information from the 3D model to create code for a CNC cutting pattern. In this way the architect is directly responsible for both the design and the making. This applies across many other components, from laser-cut, aluminium window pods to staircases. In the creation of such digitally manufactured buildings, architects are able to again be engaged across the whole project, from concept to detailed design through to production and construction management, using their array of skills throughout.



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Despite their vast skill and training, architects today are in many cases effectively reduced to shoppers

Bruce Bell, founder and managing director of Facit Homes

This method also encourages the architect to have more interaction with the site itself, both physically and remotely via photos or video link. A site agent acts as eyes and ears on the ground, but the project is entirely controlled by the architect from both a design and delivery perspective. They drive the programme and make the decisions, combining architectural design and contract management duties and truly taking overall responsibility for the outcome, as the Master Builder would have.

The shock of the new

The first time a contemporary architect takes this role on can be daunting, delving deeper into the build than they have been before, but they learn a huge amount about the reality of their design decisions. Rather than being tasked with doing one thing repeatedly, they move from package to package, detail to detail, and develop their knowledge and understanding of how the building is formed, in a more holistic way. It also exposes them to the dynamics of site-based issues, and allows problems to be resolved by good design rather than simply being patched over in isolation.

Re-engaging architects with the act of making, and closing the gap between design and construction can only be of benefit to both the profession and the built environment. I can see glimpses of a new generation of architects using technology to become closer to the craft element of the profession, engaging again with the responsibility, benefits and also joy of directly producing what they design. In so doing, they deliver the exact vision of a building that they have sold to their client, rather than a diluted version made by others.

Elements of this approach can be also applied beyond the creation of individual homes and on to larger-scale projects. In tackling the current housing shortage in the UK, the delivery of multiple dwelling developments driven by architects rather than the traditional housebuilders, could radically shift the emphasis away from simple profit to good design, whilst still offering great value. With technology allowing ease of volume production, and a trained designer taking control and responsibility for the outcome, the modern Master Builder would be a welcome addition to the UK's wider residential landscape.

Bruce Bell is founder and managing director of Facit Homes



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FUTURE WATCH

Setting the stage for regeneration

With cities' night time economy being seen as increasingly important for their future prosperity, Tim Foster, partner at Foster Wilson Architects reflects on how theatre design projects with placemaking at their core can catalyse regeneration

Following the debate around placemaking in recent years it is apparent that the term means many different things to different people. Local community activists believe it is about community participation and the making of places in which people have ownership, while property people believe it is about creating a congenial environment which will attract people to their developments, making them easier to sell or rent for a good return: the reality probably lies somewhere in between.

As quoted in a recent article in The Guardian, the US academic Richard Florida – considered to be the guru of placemaking – told the mayors of major American cities in 2002 that attracting 'hipsters' to their towns was crucial. "Don't waste money on stadiums and concert halls, or luring big companies with tax breaks. Instead, make your town a place where hipsters want to be, with a vibrant arts and music scene and a lively cafe culture. Embrace the 'three T's' of technology, talent and tolerance, and the 'creative class' will come flocking."

This is really the same cycle that Jane Jacobs described in her seminal work 'The Death and Life of Great American Cities', published in 1961, whereby districts fall into decay, the artists move in attracted by the cheap rents, the hipsters and coffee shops follow, the area regenerates, forcing the rents back up and the artists and original residents to move on. You only have to look at certain areas of London, like Shoreditch and Dalston, to see this gentrification process in action. There are obvious winners, mainly the early adopters, but there are also losers, particularly the low paid service workers who can no longer afford to live in the place where they have their roots.

So despite the casualties, placemaking as a catalyst for regeneration is here to stay, and most policymakers, now understand the benefits. There is also a growing consensus that cultural facilities, be they art galleries, music venues or theatres, have an important part to play in making places where people want to be. Generally, these facilities need to arise organically and are not imposed from outside. There are many examples of how small independent theatres, particularly in London, have contributed to the regeneration of their areas, such as The Tricycle in Kilburn, The Almeida in Islington and The Arcola in Dalston. They now occupy thriving high streets, which are almost unrecognisable from what they were 20 years ago.

Economic Impact

It is worth considering the economic impact that theatres can have on the night-time economy. Take for example the data published by The Society of London Theatres, who represent commercial theatre owners, which showed that in 2016, West End theatres had a gross revenue of £644m, VAT receipts of £107m, 14 million attendances and 76 per cent of seats filled. The London Theatre Report of 2014, which surveyed all theatres, both commercial and not-forprofit, found there were 241 theatres in London with 110,000 seats, 22 million attendances a year and nearly 20,000 people employed by theatres.

This is a lot of people generating a lot of footfall, who not only go to the theatre but also use transportation, restaurants and shops and visit other attractions. The West End of London is an extreme and unique example, but the same principles apply in any urban centre with a vibrant night-time economy, where cultural facilities are an important driver. In 2013 the Local Government Association published a report on how investment in arts and culture affects local economies, identifying five key impacts: attracting visitors, creating jobs, attracting businesses, revitalising places and developing talent.

With such evidence, the role of cultural facilities in driving wellbeing, regeneration and local economies is undeniable, but how are the different players in the development cycle responding?



IN THE ROUND Council-led regeneration – Taunton's Brewhouse Theatre and Arts Centre

Planning & local authorities

It is worth noting that The National Planning Policy Framework of 2012 requires local authorities to prepare local plans which support cultural wellbeing and deliver sufficient community and cultural facilities to meet local needs. This was not included in the original draft, and it was only because of a campaign led by the national advisory public body for theatres, the Theatres Trust, that any reference to culture was included at all. However it is there now and local authorities should be pressed to act on it. Some local authorities do understand the community and commercial benefits that a cultural plan can bring, but not all.

My practice, Foster Wilson Architects, is involved in two local authority-led projects for cultural buildings as part of larger regeneration projects. The Ovalhouse in Brixton is part of a large housing development led by Lambeth Council to provide a new home for an established theatre, create much needed cultural facilities in central Brixton, and help boost the night time economy. In Taunton we are looking at the enlargement of the existing Brewhouse Theatre and Arts Centre, a council-led regeneration project to create a cultural quarter in the centre of the town, which has been designated by the Government as a Garden Town. Both these projects show how local authorities are prioritising supporting their existing cultural organisations, while at the same time serving a wider regeneration agenda designed to add value and create places which people actually want to live in.

Developers

It is not just local authorities that are recognising the positive economic impact of theatres. There is a growing trend for developers to provide new cultural facilities or support existing ones as part of their plans. This is happening for a variety of reasons, which may include a requirement to replace an existing theatre, a demand for community benefit under a Section 106 agreement, or a straightforward commercial judgement about the contribution theatres make to the vibrancy of a neighbourhood.



NEW HOME The Ovalhouse in Brixton is part of a large London housing development For example, The St James Theatre, now renamed The Other Palace, replaced the old Westminster Theatre, which was previously on the site, providing a new theatre with residential development above. The new Bridge Theatre at One Tower Bridge forms part of a large development by Berkeley Homes and occupies an area originally designated as 'cultural space', although neither the local authority nor the developer knew quite what that meant when the original planning approval was granted. At the Regents Place development, British Land have lent their support to the existing New Diorama Theatre because they understand its importance in creating a cohesive community.

At a time when funding for theatres is increasingly hard to come by, the financial support of developers is to be welcomed, but needs to be handled with care to make sure they meet their obligations – and planning authorities have an important role to play in ensuring this happens.

Theatre as social space

Another growing trend, which theatres are increasingly embracing, is the creation of open, welcoming democratic foyer spaces, which are open to all in the daytime, and engage with the public realm. The traditional model of theatres that open their doors an hour before the performance and close them again after it finishes is rapidly disappearing.

While many theatres have been open all day for many years, the transformative development is the digital economy, where increasing numbers of people work online and do not need to be in conventional offices. Theatre foyers can be an ideal place to hang out, to work and to have meetings, provided there is the all-important wi-fi connection and good food and drink available. Obviously the location needs to be convenient and the design of the frontage as open and permeable as possible, but these are characteristics most theatres have anyway.

The most obvious example of this trend is the use of the foyers at The National Theatre and Southbank Centre in London, which are so full of people with laptops they are starting to be overwhelmed. This is a nice problem to have. It brings people into the building, who might otherwise not come in, and can generate a valuable income stream from the sale of food and drinks, as a well as creating a sense of place.

Most theatres do much more than putting on performances, and community engagement is an important part of what they do. This may include school visits, drama workshops, dance classes, yoga and pilates. An interesting recent project, The Storyhouse in Chester, combines a new theatre with a public library, which brings a whole extra level of community engagement to the building, ensuring it is full of life all day long.

I think it is worth highlighting that theatre people are remarkably good at creating theatre quickly and with very few resources. They are in the business of making performances, which are ephemeral – here today and gone tomorrow. This is the antithesis of conventional architecture, which is by definition permanent, so if you want a pop-up performance or an interesting 'meanwhile' use to help generate activity, then there is no one better to help you do it.

In conclusion, theatre buildings play a vital role in the economic and cultural wellbeing of communities and are key drivers of the local economy, the impact of which is often far greater than their modest means – if that isn't placemaking, I don't know what is.

Tim Foster is partner at Foster Wilson Architects







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VIEW POINT



Nigel Ostime, project delivery director at architects Hawkins\Brown, offers some thoughts on how to counter the ills of Design & Build using current procurement

There has been much in the media recently about the poor quality achieved through Design & Build (D&B) procurement, from examples in the housing sector to the Edinburgh schools debacle. Cut-throat tendering and low margins have led to corners being cut, and the worsening skills shortage has led to poor leadership and oversight. The fragmented supply chain compounds the problems. The problems are well rehearsed, but what might be the solution?

There is talk of a move towards more collaborative 'alliancing' procurement, but change in the construction industry is notoriously slow. So, assuming D&B is here to stay, at least for the medium term, what can we do within the current procurement framework?

On the basis that a good start is essential for a successful project, there needs to be more emphasis on RIBA Stage 0 – 'Strategic Definition'. Clients need to understand that Stage 0 is about getting the business plan right. It comes before the designers are brought on board and it is critical for the good health of the project. Clients need to have a clear understanding of the desired outcomes, both in terms of the building and their profit margin, and then stick to it.

Then in Stage 1 architects need to hold back from designing until the brief has been settled (and clients need to stop expecting their architects to start designing in Stage 1). Stage 1 is 'Preparation and Brief' – if there is any design to be done it should be limited to high-level considerations required to validate whether or not the desired outcomes are feasible for a particular site.

A major complaint by architects is contractors stripping out quality. Why is this happening? D&B dislocates the design process but how is there scope for contractors to make changes at all? If the client is accepting lower quality in the built product we have to conclude the designers over-specified the Employer's Requirements (ERs) or produced a specification with too much wriggle-room. Yes, clients accept the substitutions but if they were going to do that eventually, why did the designers over-specify during concept and developed design stages?

In Stages 2 and 3 designers need to understand value and deliver it. We need to stop relying on 'value engineering' which by its very nature means we didn't get the brief right or develop the right design in the first place. Value management should be iterative and start with the first pencil stroke, with a full understanding of what the client wants.

Designers must realise that the client defines value – it being what the client wants, at an appropriate cost and timeframe. The fact contractors are able to strip out quality signifies that the client would have been prepared to accept lower quality during the design process, suggesting the designers have not fully grasped the issue of value. (Or perhaps that the client had not fully determined the level of quality they would accept.)

On the other hand, delivering value requires a realistic cost plan and a considered programme at the outset. Too often, the designer is given a brief along with a cost plan that can't be delivered – or no cost plan at all. The design evolves, only to require redesigning later – this is inherently wasteful. However, the whole premise of this is predicated on the notion of providing a robust set of ERs and design teams will tell you they are often not given the resources, chiefly time, to prepare them. This leads to the next point.

The D&B process encourages clients to ignore risk on the basis that they can palm it off on the contractor. In reality the client pays a premium for this and, usually, has to accept a lower quality product. If time and cost are fixed, in the real world, quality must suffer. The RIBA's Client Liaison Group will publish a toolkit in 2018 to help clients and designers better understand risk, and acknowledge the consequences of passing it down the line. It is hoped that this will lead to more considered

In Stage 1 architects need to hold back from designing until the brief has been settled

ERs and, potentially, lower tenders, on the basis that contractors will be able to price risk – as a known commodity – more keenly. The toolkit comes with recommendations for improving collaboration between architects and their contractor clients with the aim of getting better project outcomes.

Often there is insufficient oversight by the client (or the client's agent) during the construction stage, and inadequate quality control by the contractor. D&B has effectively killed off site supervision, and the industry has lost the skills associated with it. Gone are the days of the site architect or Clerk of Works. Under D&B the contractor, by and large, self-certifies quality.

Compounding this, the ageing workforce means that such skills as did exist are dwindling. Architects are becoming less technically proficient as the supply chain takes the strain in Stage 4 and we have less opportunity to gain experience on site in Stage 5. If this is to be reversed, clients will need to recognise the benefits of thorough site monitoring and see it as a good investment in the asset development and asset management processes. Hopefully the recent, well-publicised D&B building failures will help persuade them.

Finally, during Stage 6, we need to do what manufacturers have always done – learn from mistakes and continuously improve. This is done through post-completion feedback, something that is rare in our industry. The Client Liaison Group will be focusing on this next year – last year's Client Survey showed that client satisfaction is increased just by asking for feedback.

INTERNATIONAL FOCUS

Showcasing the latest projects from around the world. Visit **www.architectsdatafile.co.uk** and enter the reference number for more information



WASL TOWER, UNITED ARAB EMIRATES UNSTUDIO

UNStudio, in collaboration with Werner Sobek, was invited by the Wasl Development Group to design a new kind of high-rise for the city of Dubai that would "act as a benchmark for both the region and for the Wasl Development Group itself". The project is located in a central position in Dubai's network – along Sheikh Zayed Road, the main thoroughfare that connects the Emirates north to south - and directly opposite the Burj Khalifa. When completed, it will be one of the world's tallest ceramic facades. What the architects describe as "clean materials, interactive light levels, and good acoustics" have been implemented in all spaces throughout the building. **Ref: 5911**



FACULTY OF FINE ART, MUSIC AND Design, Norway SNØHETTA

The new Faculty of Fine Art, Music and Design in the world heritage city of Bergen in Norway has opened. Designed by Norwegian architects. Snøhetta, the building houses the University of Bergen's departments of art and design, brought together for the first time on one landmark site. With a total floor area of 14,800 m², it will be the second largest cultural building in Bergen after the Grieg Concert Hall. Wasl Tower will be one of the world's tallest ceramic facades. In consultation with the client, clay was chosen as a basic material, as such the facade fins will be manufactured as low-tech glazed ceramic elements. The geometry of the tower achieved its holistic appearance by means of innovative parametric design and high-tech engineering. Ref: 7019



WINTER PALACE, EGYPT GM ARCHITECTS

Expected to be completed by the end of 2019, The Winter Palace Hotel is located in the city of Luxor. GM Architects has been chosen for the project because of its knowledge of the region and based on its previous work with Sofitel on projects in Tamuda Bay, Morocco and Beirut, Lebanon. The aim of the project is to completely re-design the exterior landscaping, to link the hotel gardens with the river Nile. The new and improved hotel layout will "encompass the vibrant colours of Nubia, Egypt and the French 19th century lifestyle," enhancing both the indoor and outdoor living spaces. **Ref: 3025**



KING ABDULLAH FINANCIAL DISTRICT (KAFD) METRO HUB, SAUDI ARABIA Zaha hadid architects

British based international building engineering firm Newtecnic has been appointed by main contractor, BACS Consortium, to oversee the construction stage of the advanced and highly complex facade envelope of the Zaha Hadid-designed King Abdullah Financial District (KAFD) Metro hub in Saudi Arabia. KAFD's intricate facade, representing patterns generated by desert winds, was design engineered by Newtecnic to reduce solar gain and produce air currents that help cool the building. Complexity is produced by the continuity of KAFD's self-supporting, 200-metre-long, high-performance concrete-composite walls and roof. To produce the structure new adjustable building components and fixing methods had to be invented, developed and tested by Newtecnic in partnership with the Engineering Department of Cambridge University. The project will be completed in 2018.

Ref: 4303



AVINOR OSLO AIRPORT, NORWAY OFFICE OF ARCHITECTURE

American World Architecture News has released the list of buildings competing for the award for the most sustainable building of the year. The extension to Oslo Airport is one of the finalists. The jury commented: "Design, innovation and sustainability have all been considered in the expansion of Oslo Airport". They also highlighted the ideas behind the project, where sustainability was not just considered in terms of materials and energy consumption, but also in terms of effective construction. The project is said to be attracting a lot of attention from across the world and is the first airport terminal to attain BREEAM Excellent environmental certification, the second-highest certification possible. **Ref: 2374**



ONE CIRCULAR QUAY, AUSTRALIA PTW ARCHITECTS

Global property developer the Wanda Group has officially unveiled its vision for One Circular Quay, a large-scale, mixed-use development located on Sydney Harbour. Developed by Wanda One Sydney, the project will encompass two adjacent towers. The first is a 59-storey residential tower, One Circular Quay, with a planned 190 luxury apartments. The second tower is a 28-storey highrise that will house a 5 star, 181-key Wanda Vista Hotel. At the base between the two towers will be a carefully detailed 518 m² area designed as a "cultural revitalisation of public space", including boutique high-end luxury retail and public art spaces. Sydney-based PTW Architects lead as executive architects for the project, while the 28storey Wanda Vista Hotel tower is being designed by Australia's Crone Architects, in collaboration with globally renowned architects Kengo Kuma & Associates, based in Tokyo, Japan. Ref: 3045



INFINITY HOUSE, KHANDALA GA DESIGN, INDIA, MUMBAI

Planned with a brief of maximising views of the sea and enabling a nexus with the environment, this villa for a family of four has been conceived on a plot of land that is deeply contoured with a steep slope towards the valley. With "stupendous" views, the villa has been planned with most of the rooms optimising the views. The natural site contours have been used effectively while exploiting the views of the mountains to create an infinity swimming pool, that manifests itself at the core of the villa.

Ref: 4085

NEW ARRIVALS

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

NEW DIRECTORS WOODS HARDWICK

Woods Hardwick, the multi-disciplinary architectural and engineering practice, has announced the launch of its structural engineering division and four new director-level appointments, bringing in professionals with significant reputations. The new Structures Division will be headed by director Simon Bennett. Architect Nicole Portieri is joining as director of the Commercial design team, and architect Peter Prescott is joining as associate director of the Residential design team. In addition, civil engineer Matt Ford has been promoted to director and now runs the Birmingham office.

Simon is tasked with establishing the Structures Division, offering existing clients structural engineering expertise as well as bringing new projects on board. As a chartered structural



engineer, he has 20 years' experience and has been involved in many award-winning projects.

New arrival Nicole Portieri joins Woods Hardwick to head up the Commercial Architecture Division and bringing with her over 20 years' experience to the practice, she was previously with Space4Architecture in New York. Peter Prescott heads up the Residential Design & Delivery Team. Joining from Pollard Thomas Edwards, he brings over 12 years' architectural experience.



LUCIA PETRELLI N STUDIO

N Studio the interior Design & Interior architecture practice has announced the launch of a new specialist architecture division, alongside a number of significant new appointments, including Lucia Petrelli as director. Lucia is former Associate at Foster + Partners and has led the delivery of numerous projects in Miami, Cleveland, Istanbul and Riyadh and brings with her a wealth of experience in residential and urban regeneration projects. A graduate from the University of Architecture of Venice, Lucia worked at Archea Associati, a leading Italian architectural firm. Lucia will front a 14-strong N Studio architecture team.



VIKTORIA ROY STEPHEN GEORGE & PARTNERS

Stephen George + Partners, has appointed Viktoria Roy as BIM manager at their Leicester office. In addition to an Honours Degree in Interior Design, Viktoria is a RICS Certified BIM project manager, Autodesk Certified Revit specialist, and a member of the Association for Project Management (APM). Previously at Pollard Thomas Edwards and Feilden Clegg Bradley Studios, Viktoria brings seven years' experience working with a variety of BIM applications and four years of strategically implementing standards and processes for better collaboration, ultimately improving project delivery. She spoke at London Build as part of the BIM & Construction Summit.



STEVEN CHARLTON PERKINS+WILL

Global architecture and design firm Perkins+Will has announced new leadership for its London office. Steven Charlton is appointed to managing director of the 135-person practice, after having spent the last six years as managing director of Perkins+Will's Dubai office in the United Arab Emirates. "It's exciting to be returning to my roots in London, where I can apply my experience in Dubai's rapidly changing and dynamic market to help grow our practice here locally," says Charlton. He helped grow sales in Dubai by nearly 60 percent year on year since 2011, and under his leadership the practice expanded from a staff of two to more than 100.

CPD FOCUS

THE TTA OFFERS A FULL RANGE OF RIBA-APPROVED CPD MATERIAL



The TTA now offers RIBAapproved CPD literature on virtually every subject related to tiling. The whole body of TTA technical publication has now been approved by RIBA and is available for download free-ofcharge from the TTA website. All the TTA's Technical Publications and Technical Advisory Notes are produced by members of the TTA's own Technical Working Groups, in partnership with relevant external bodies. They contain full bibliographies and references to British, European and International Standards. 0300 365 8453 www.tiles.org.uk

'STEP ON IT!' SPECIFICATION OF ENTRANCE MATTING



Ouantum Flooring Solutions – RIBA approved CPD seminar STEP ON IT! is a presentation and discussion dealing with the subject of specifying safe and effective entrance matting. The CPD presentation includes: What entrance matting is designed to achieve and how to select the right one: How recent BRE guidelines affect the choices for specifiers; Environmental and health and safety considerations applicable to the manufacture, installation and maintenance of entrance matting. 0161 627 4222 www.quantumprofilesystems.com EARN CPD HOURS WITH WATERLOO AIR PRODUCTS PLC



For designers, specifiers, contractors, consultants and building engineers looking to earn CPD hours, they can now book their place on Waterloo Air Products PLC's 'An Introduction to Air Distribution'.

On the course, attendees will hear from one of Waterloo's air distribution experts. They include Andrew Wardle, Northern Sales Manager, Alex Macfarlane, Southern Sales Manager, Alan Smith, Commercial and Export Markets Manager, and Roy Nutley, Technical Advisor. The course covers the basics of air distribution including typical air movement effects, cooling systems, the effect of heat gains, alternate systems and selection guidance.

"It's so important to share knowledge and information with industry peers," says Rick Edmondson, Chairman at Waterloo. "Working collaboratively doesn't start or end with each project. It's an ongoing process to ensure people who work in our industry have access to the best information possible.

"It's great that we can now support consultants, contractors, specifiers, architects and building engineers with their CPD and help them to earn hours towards it. We're looking forward to welcoming people to Waterloo, and for them to learn about the importance of air flow and the effect it can have on an internal environment."

Waterloo's course is approved by the CIBSE CPD Approval Panel. The presentations will be followed by a Q & A and the course is free to attend. To book your place, visit the website. 01622 711500 www.waterloo.co.uk

THE AIRFLOW RESIDENTIAL MECHANICAL VENTILATION WITH HEAT RECOVERY CPD

The latest CPD courses, seminars and documents for architects



The Airflow Residential Mechanical Ventilation with Heat Recovery CPD provides an understanding of the latest Building Regulations relating to residential ventilation. It discusses the different system options available to comply and specify appropriate ventilation systems while delivering improved indoor air quality, reducing energy and creating a lower carbon footprint. By taking part in the course participants will learn about compliance and practical issues to implement an effective, efficient mechanical ventilation system with heat recovery including,

- Building Regulations and how they apply to the correct specification of a ventilation system
- Understanding Compliance Guides and their place in the installation process
- A system is only as good as the ducting. The do's and don'ts of installing a duct system.
- Sign off by Building Control is mandatory. How to comply.
- The aspects of poor indoor air that can effect occupant health and degrade the fabric of a building.
- Explain the principle of operation of a Mechanical Ventilation with heat recovery system and where it will provide the most suitable ventilation solution.
- How to commission a fan system so that standards are met and Building Control will sign off the project.
- Be skilled in conveying accurate informed advice about ventilation to clients and installers.
 01494 525252
 www.airflow.com

UNITISED CURTAIN WALLING AND SUSTAINABILITY'S IMPACT ON SPECIFYING ALUMINIUM



One of the leading aluminium systems suppliers, **Reynaers** has long been developing CPD material for architects and specifiers, independently certified by RIBA and the CPD Certification Service. Two modules are currently available, *Introduction to Unitised Curtain Walling* or *Sustainability and its Implications on Specifying Aluminium Systems* – with more CPD material coming soon.

The module on unitised curtain walling is accredited by the CPD Certification Service. To earn credits, the material must be read and questions answered. Architects and specifiers can download the *CPD: Introduction to Unitised Curtain Walling*, completion of which will earn 60 credits.

The second module, a 45-minute seminar exclusive to UK architects and specifiers, is approved by RIBA. It covers the evolution of aluminium and its performance in the context of window design. The CPD also explores the qualities of aluminium as a material and an overview of key standards and legislation, such as Document L. It helps architects in specifying the right product with the optimum level of performance for their project.

To arrange a seminar, or to find out more about Reynaers' CPD material, please submit your details online, call or email. 0121 421 1999 www.reynaers.co.uk/CPD

TWO NEW RIBA ASSESSED CPD SEMINARS FROM COMAR



In two RIBA assessed seminars, Comar outlines: Stand & Deliver: a Study of curtain Walling - the design of curtain walling, it's properties and how it is used by specifiers. This seminar aims to offer an understanding of the points of Hll in the NBS specification system, and how best to make use of it. Designing functions & reliability into entrances - the issues that influence the function of main entrance design and technology. This seminar aims to offer an understanding of how user expectation influences door design and links this with hardware selection, entrance configuration and floor finishes. 020 685 9685 www.comar-alu.co.uk

RENOLIT LAUNCHES NEW RIBA APPROVED SURFACE DESIGN CPD



RENOLIT has launched a new CPD seminaron the flexibility and uses of thermoformable PVC as a decorative surface which illustrates the benefits of PVC films over other decorative surface materials. The seminar provides architects with an understanding about PVC and its common uses within interior construction projects. It informs how to recognize different types of surfaces films, their applications and raises awareness of some specialist applications. 01670 718222 www.renolit.com/design

CHIMNEY DESIGN AND RESTORATION OF FLUES AND DUCTS



Flue Liner Solutions are offering a RIBA approved CPD presentation entitled Chimney design and restoration of flues and ducts. This seminar will give an overview of chimneys, factors to take into account when designing buildings and an awareness of common problems. It will help architects to understand the following topics: chimney design and sizing; flue lining systems and suitability for different appliances and fuel types; remedial works to existing chimneys; maintenance requirements for chimneys as well as understanding chimney terminals and chimney fans. 0203 858 3888 www.fluelinersolutions.co.uk

CUT EDGE CORROSION CPD



Delvemade Limited offers a free two hour CPD 'Cut Edge Corrosion' seminar – inc. lunch. Dealing with how to recognise types of plastic coatings used in the manufacture of profiled metal roof cladding. The reasons for breakdown and corrosion are examined. Samples of current coating types are made available for inspection and delegates are encouraged to establish recognition of products. The effects of location and colour choice on the long-term performance of metal roofs are explained. An introduction to silicone technology is given, plus re-coating options for steel cladding. 01204 868604

www.delvemade.co.uk

McAvoy wins major industry award



The McAvoy Group was presented with the award for Best Virtual Reality BIM at the third annual RICS BIM4SME Awards. This is for the design and delivery of a two-storey primary school building for children with special educational needs at West Hill School for Surrey County Council. The RICS has identified BIM as the critical development affecting organisations

of every size across the construction industry. The BIM4SME awards showcase excellence, promote best practice, and the tremendous opportunities that BIM presents for the whole of construction.

info@mcavoygroup.com

Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. architectsdatafile.co.uk is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital

issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

www.architectsdatafile.co.uk

Wells MP visits Offsite Solutions



MP James Heappey recently paid a visit to the Offsite Solutions factory in Highbridge, Somerset, which makes bathroom pods for the construction industry. On his tour of the factory, the Wells MP viewed cutting edge offsite technology and the company's expanded

production facilities where complete bathrooms are manufactured for apartments, student accommodation, healthcare, hotel and care home schemes – faster and to consistently higher quality standards than is achievable on a building site.

info@offsitesolutions.com

Illbruck provides customer support



The illbruck Assured Application and Theory Training Programme offers customers a range of one-day courses at illbruck's purpose designed premises in Wigan. Designed to promote best practice and improve delegates' understanding of the selection and on-site application of window sealing membranes, adhesives, sealants and impregnated tapes, the illbruck Assured programme is suitable for key staff including

designers, technical managers and applicators. As a result of the training, delegates learn which solutions are best for that specific application. For more information contact **tremco illbruck**.

www.tremco-illbruck.com

Copper celebrates the Bronze Age

Set in the deserts of Sharjah, United Arab Emirates, a new multi-award winning visitor centre features Nordic Standard copper from Aurubis as part of a restrained palette of enduring materials.

The Mleiha Archaeological Centre is at the heart of an eco-tourism project to protect the rich archaeology, environment and wildlife in the region, creating a coherent setting suitable for potential World Heritage Site status. Focused on and wrapping around the circular Bronze Age Umm an-Nar tomb – considered the most impressive grave building of the many ancient funeral sites in the area – the new building was designed by Dabbagh Architects and conceived as a double curve mirroring the spectacular Fossil Rock mountains nearby.

The sinuous plan form terminates in a copper-roofed reception and exhibition area, fragmenting into copper-clad folded elements spanning the café, with glazing opening out to the landscape. Copper proved to be the ideal material for the complex geometry, with careful detailing and fabrication by cladding specialists Arabian Profile, working closely



The Centre wraps around the circular Bronze Age Umm an-Nar tomb

with the architects.

Given the historic importance and eco aspirations of the project, durability and sustainability were paramount in material selection. Principal architect Sumaya Dabbagh explained: "Alongside the regionally-sourced sandstone, we chose contrasting Nordic Standard copper which is recyclable and will weather organically over time, thus enhancing its natural beauty. Apart from its obvious contextual relevance to the Bronze Age site, copper is exceptionally durable with low maintenance – essential in this harsh desert environment".

Nordic Standard is produced by Aurubis, part of the world's leading integrated copper group and largest copper recycler. In addition to Nordic Standard, other Aurubis architectural surfaces include Nordic Brown pre-oxidised copper with either light or dark brown oxidisation that otherwise takes time to develop in the environment.

Various Nordic Green and Nordic Blue factory-applied patinas have also been developed with properties and colours based on the same brochantite mineralogy found in natural patinas all over the world. Aurubis copper alloys include Nordic Brass – now also available pre-weathered – Nordic Bronze and the innovative Nordic Royal with a long-lasting golden colour.

Aurubis is part of the world's leading integrated copper group and largest copper recycler. For more information visit the website.

01875 812 144 www.aurubis.com/finland/architectural

What impact are new Metro Mayors having on the construction sector?



In early May 2017 six city regions in the UK elected metro mayors, or 'combined authority mayors' to change the political structure in the UK, with some decision-making powers to be devolved to a regional level. Amongst the most high-profile people to be elected as a metro mayor was former Labour leader candidate Andy Burnham – for the Greater Manchester region. Leon Friend, who is Managing Director of prestigious aluminium window and door supplier **Hueck** believes that the rollout of American style mayors, is also very flexible and could even facilitate the devolution of a variety of issues from the national government to local authorities in the future. This means that even more opportunities are likely to arise for aluminium suppliers, manufacturers and the construction sector as local authorities are given more and more power to invest their grants where they see fit. Hueck has already supplied its systems to many projects based in central London and Manchester this year.

01217 671344 www.hueck.com

Experience a purple patch with Vicaima



When it comes to inspiration ideas for interior doors, few companies bring the wealth of fresh design and stand out performance as Vicaima manage to do so every year. Entering a purple phase for their much loved Interior Door Selector (IDS), the 2017/18 edition has surpassed even Vicaima's high standards, with the introduction of no less than six new ranges and a world of new colour and finish options. Encompassing 80 stimulating pages, this latest edition is their largest IDS yet and is certain to spark creative interest for their many markets; including housing development and hotels, together with numerous public and private sector applications. Among the many new and exciting ranges making their first appearance in the Vicaima 2017/18 Interior Door Selector are some exciting door ideas, including: M Range, a refined take on the Classic panel door in a wide section of lacquered colours; EX70 and EX20, two new collections that offer striking grain direction and a fusion of face finishes; The Rustic Collection, real quarter cut Ash veneer in a selection of four new stain finishes to give an open grain appearance.

01793 532333 www.vicaima.com

Green XL shortlisted for award



Aspen Pumps, one of the UK's market leaders in condensate removal pumps and accessories, is delighted to announce that it has reached the final in the National ACR & Heat Pump Awards

2018. The company's award-winning cleaning technology, Storm Chemicals - Green XL, has been shortlisted in the 'ACR Ancillary Product' category. Providing the market tomorrow's solution today, Green XL uses microscopic deep cleaning technology that provides a long lasting deep clean beyond the microscopic layer (biofilm).

01323 848842 www.stormchemicals.com

James boosts specification team expertise



GEZE UK has further strengthened its specification team with the appointment of James White who takes up the role of specification manager, covering the south of England, as part of the GEZE UK specification team expansion. He was previously an area sales manager for the window technology team at GEZE UK, selling a range of

window automation products and manual window control to window fabricators. His new role will see him developing specifications with architectural practices across all GEZE product ranges, providing technical support and boosting the wider sales team.

01543 443000 www.geze.co.uk

Vent-Axia wins award for air quality



Leading British ventilation manufacturer Vent-Axia is celebrating winning 'Commercial/Industrial Ventilation Product of the Year' category at the prestigious HVR Awards 2017 for the Vent-Axia Pure Air, an innovative air filtration system. The judges selected the company's advanced air filtration system the Vent-Axia Pure Air, which was

praised by the judges for addressing indoor air quality (IAQ) issues and demonstrating great foresight and commitment to public health.

0844 856 0590 www.vent-axia.com

Saracen completes landmark fit out



Workplace consultant, **Saracen Interiors** has completed the fit out and refurbishment of fertilizer development company, Sirius Minerals Plc's new company headquarters at Prospect House – the iconic, former Scarborough Building Society building. The 55,000 sq ft fit out covered three

floors and included the complete strip out of old mechanical, electrical and HVAC systems and the installation of new facilities throughout. Work also included the installation of suspended ceilings, flooring, furniture, a kitchen and breakout areas, working spaces, and new reception layout, including a bespoke reception desk and a living wall.

www.saraceninteriors.com

Barrier-SABCO passes 3kN test



Barrier Components popular SABCO frameless balustrade system has passed the rigorous 3kN test with flying colours, confirming it offers the quality and performance for any commercial or residential installation. Barrier-SABCO is

a balustrade hardware system boasting a hi-tech, sleek and minimal finish and offers the perfect cost effective solution for Frameless glass providing an installation that's designed to be simple to install and achieve BS EN 6180:2011. It only requires 400mm fixing centres to achieve the 1.5kN performance which is reduced to 200mm for 3Kn.

03300 373 334 www.barrier-components.co.uk

Signbox adds finishing touches



Located a stone's throw from the historic Brooklands motor and aviation museum, Dakota's name is itself a nod to the rich history of aviation in the area. **Signbox** was commissioned to cap the project off with stylish signage to reflect the building's

modern, contemporary feel. Signbox installed a backlit, painted glass reception directory with a polished aluminium frame. For the exterior of the building they constructed and fitted skyline signage for the top of the entrance portico and to each elevation. All of the exterior signage is powder coated stainless steel with LED illumination.

01784 438688 www.signbox.co.uk

Yeoman Shield looking good



The new Yeoman Shield website has been designed to be fully responsive and can be viewed at an optimum whatever your digital preference, laptop, tablet, desk top or mobile. Focusing on Yeoman Shield's comprehensive range of wall & door protection products, it contains

technical information and installation details along with a new colour carousel that showcases all 48 colours available. Whichever way you browse, take a look at the new Yeoman Shield website.

0113 279 5854 www.yeomanshield.com

On trend, on demand and bang on track



OnLevel was launched in the UK in February by experienced glass industry professional Gary Dean. Gary Dean Managing Director, OnLevel comments: 'The business is focused on innovation and providing solutions with genuine benefits to the installer and end user, we

listen to what our customers say to inform our product development. SKYForce is a prime example of this and bang on trend in the UK.' The SKYForce Juliet balcony system and the innovative range of adjustable frameless glass balustrade solutions.

www.onlevel.com



Mapei's Keraquick Ultrafast S1 adhesive

Mapei's Keraquick Ultrafast S1 adhesive is a cement-based ultra-rapid setting adhesive ideal for fast track repairs. The low VOC Keraquick Ultrafast S1 sets to foot traffic in 60 minutes and is ready for grouting in just 90 minutes. Suitable for interior and exterior use installing porcelain and ceramic tiles and mosaics the fast track product can be used for both renovation and new build installation projects in bathrooms, kitchens, terraces and balconies as well as areas subject to pedestrian traffic. Available in grey, Keraquick Ultrafast S1 is suitable for installation over wet and electrical underfloor heating systems, and can be used as part of Mapei waterproofing systems in conjunction with Mapegum WPS, Mapelastic AquaDefense or Mapeguard WP 200. After 90 minutes the tiles can be grouted using Mapei's Keracolor, Keracolor Flex, Ultracolor Plus or Kerapoxy grout ranges.

0121 508 6970 www.mapei.com



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🐠 🔲 www.rainhandler.co.uk +44 (0)1534 863339



Latest design developments make for brand-new possibilities

Schlüter-Systems unveiled a number of new announcements at CERSAIE 2017, continuing its drive to provide customers with inspirational, up-to-theminute accessories for tile and stone.

First up, the new profile Schlüter®-FINEC has been introduced to provide near-invisible edge protection for the corners of tile and stone installations, satisfying the demands of both tile protection and design aesthetics. The profiles are particularly ideal for use with glass mosaics and thin-format tiles as they are extremely slim-line, allowing for the creation of discreet flowing detail. Unlike comparable offerings from other suppliers, Schlüter®-FINEC is available in both anodised aluminium and V2A stainless steel, meaning that discreet edges are possible in both standard and heavy-duty applications. This new addition to Schlüter's renowned range of profiles is also easy to cut and mitre, making for quick finishing, less wastage and reduced frustration on the part of the installer.

In the second of its new announcements, Schlüter-Systems is excited to introduce three new drain grates, available across linear and point drain designs. With so many options available in the way of tiles, Schlüter recognises that drains are an increasingly important element in creating a cohesive whole for a wetroom. The new designs — Floral, Curve and Pure — have been developed with current bathroom trends in mind, yet are versatile and neutral enough to stand the test of time.

- Floral: A geometric design with just the right amount of softness, Floral's uniform pattern makes it equally suitable for wetrooms with a structured industrial or softly textured theme
- Curve: The simple, playful accents of the Curve design translate into grates that are the perfect complement to all manner of trends—from the organic feel of a natural retreat to the clean-cut lines of a reduced geometric wetroom
- Pure: Crisp and minimalist, Pure is a nofuss, no-frills design that is great to have at hand for its timeless looks

The new grate designs are available in Schlüter's ever-popular brushed stainless steel finish. In addition, all of the new grate designs come equipped with an



invisible frame, making for easy cleaning and a sharp, sleek aesthetic.

Finally, three of the most in-demand profile finishes available from the stylish Schlüter®-TRENDLINE range can now be applied to the internal wall corner profile, Schlüter®-DILEX-AHK, as well as all associated accessories. The new opportunity to finish these items in ivory, stone grey or dark anthracite will allow specifiers and tilers to achieve flowing expanses of matching profile protection from wall edges to corners, creating a smooth visual harmony or continuous bold accents as desired.

Schlüter is committed to continually expanding the range of options available to specifiers and tilers, allowing for increased creativity and the highest quality finishes. For more information please contact Schluter by calling or visit the website.

01530 813396 www.schluter.co.uk



Osmo UK, the ecofriendly wood and finishes expert, presents ESCO Chateau, a sleek and contemporary style of oak flooring. Prefinished with Osmo Polyx®-Oil, Chateau elegantly embraces the wood's artistic knots and grains, complementing a wide range of current decorative trends and interiors. Chateau is available in eight different colours, including black, tobacco, stone grey and natural. For more information contact Osmo.



The Passivhaus Institute has recently awarded the Designo wooden loft ladder certification for use in passive house projects. Available from Premier Loft Ladders, the Designo features the latest innovations in loft ladder design to perfectly balance aesthetics with performance. It offers excellent thermal efficiency (U value 0.60 W/m²K) and an airtight seal (class four) thanks to a highly insulated trapdoor with six-point locking mechanism.



The Biodigester 'T' range from Burnham **Environmental Services** caters for 6-42 people and larger Biodigesters are available for up to 2,000 people. All Biodigesters are suitable for variable loading. The 'T' range Biodigester has been tested to EN12566 Pt 3 and has a CE Mark. Owners are impressed by the limited maintenance required, infrequent emptying intervals and the 'Odour Free' totally aerobic process.



Rainhandler is used throughout the UK to provide practical and design solution alternatives to Gutters and Downpipes including an eaves drop system that requires no downpipes and no soakaways, this is particularly useful when unable to connect to an existing soakaway. Rainhandler requires no cleaning, it can be used to help with the dispersal of water running off balconies and is also easy to install with three colours available.





Following months of Research and Development, Frontier Pitts are very pleased to announce its Platinum Security Range which has successfully achieved LPS1175 Security Rating 2 & 3 from BRE's LPCB. With the firs Bi-folding Gate to achieve the LPS1175 accreditation alongside their popular Sliding Cantilevered Gate, Frontier Pitts Security Gate range now offers a complete access control solution to match a LPS1175 Security Rated fence line.



Specialist door manufacturer. Ahmarra has launched a new collection of doors designed specifically for the luxury hotel sector. All doors are made individually to order, allowing complete design freedom and ensuring that every project is truly unique. Ahmarra's high performance timber doorsets and glazed screens are particularly suited to areas of high footfall such as hotels, that often have specific fire, acoustic and safety requirements.



Johnson & Starley's established range of QuanTec condensing boilers has now been given a free eight year guarantee. This covers all parts and labour for every QuanTec model, adding a further three years of peace of mind for installers and users of this proven domestic boiler range. QuanTec condensing boilers were recognised in 2016 by a leading consumer magazine as the most reliable boilers on the UK market.



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



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BUILDING ENERGY ACADEMY EUROPE GRONINGEN, NETHERLANDS

Intellectual energy

A new building in the Netherlands which brings two universities together to help the country move towards a renewables-led future, appropriately embodies sustainable design. James Parker reports on how the architects focused on passive approaches for a carbon-neutral result

hile the Netherlands may appear to be a forward-thinking country in many ways, when it comes to reliance on fossil fuels it's some way behind other leading Western economies. In 2016 it was second to last among EU nations on progress towards renewable alternatives, but a new, appropriately low-energy, education building in north eastern Holland is part of the effort to change that.

Part of the reason for the Netherlands' continued allegiance to fossil fuels has been the Groningen natural gas field, discovered 3 km below the surface in 1959. This attracted global firms such as Royal Shell, and created what project architect Aldo Vos of Rotterdam firm Broekbakema describes as an economic 'gas bubble.' However, while it hasn't yet burst, those natural resources have been severely reduced, and this has



meant that transitioning to renewables is not only an ethical aim but an essential one to protect the country's infrastructure.

Taking natural gas from the soil for decades has caused geological changes underground, leading to ongoing small earthquakes which are endangering buildings and infrastructure. This is part of the reason for the creation of the Energy Academy Europe, built on the Zernike Campus of the University of Groningen (RUG) and dedicated to exploring solutions to the problem of making a profitable transition to renewables. No surprises then that amongst its many other attributes, the building is designed to be earthquake-proof.

A "huge amount of knowledge" has developed in the region around energy, says Vos. This particularly resides in the local universities - the RUG (specifically the university's Energy and Sustainability Research Institute), and also the nearby Hanze University of Applied Sciences (HUAS). Substantial knowledge also exists in the energy business community, and these interests all come together, and have bases in, in the new Energy Academy. The project had world-class sustainability aims, to achieve BREEAM Outstanding, and having gained an impressive 89.6 per cent rating, it picked up a BREEAM Award earlier this year.

As is common in many progressive educational establishments, the intention is that the different organisations will collaborate and share knowledge to produce practical solutions as well as business models for low carbon technologies. As Aldo Vos evocatively puts it, "there are a lot of different blood types in this building, businessmen, researchers, students". He adds: "They have to work together, so meeting one another is one of the main goals." To this end, the architects, once appointed by RUG (which is aiming to become carbon neutral), designed a highly transparent, connected set of spaces, which combine low-tech energy solutions with a focus on collaboration.

'Visibility' – one of the architects' guiding terms for this project for the architects, means a very visible use of renewables in the form of 1600 PV panels arranged in clusters on the sloping roof – itself oriented carefully to maximise efficiency. The architects have pulled off the seemingly impossible trick of putting enough panels on the roof to constitute '100 per cent coverage' while also designing half of the roof with skylights. This is because the steel roof structure includes triangular sections each supporting 12 panels, mounted on their size in a series of specific gradients to catch the sun over the course of the day.

This makes for architectural interest in itself, the resulting wave-like forms being a strong statement of how such installations can be exploited to enhance the overall form. As Aldo Vos says, "the solar panels become part of the architecture."

The site is on the north side of Groningen, "in the heart of the campus," and the building has been fitted between several academic buildings, including the earth-roofed Institute of Biology. Very close by was an old 1960s physics faculty, now demolished, with research staff having been moved across to the Energy Academy.

Building form & collaboration space

The architects designed a somewhat unusual elongated hexagonal geometry for the building, with two long sides and four short, to enable it to fit into the site with better quality public space. "We made a building with six sides, principally to create space around the building, and avoid any narrow alleys," says Vos. He adds that this particular shape was also chosen because it "works really well with the triangles in the roof."

The external form also allowed a simple, linear but also flexible internal arrangement of spaces, with the programme going from north to south. On the north side are RUG's laboratories and offices, and on the south side the education facilities including seminar rooms and lecture theatres, as well as an open plan office/workspace area for HUAS. Some of the innovative work undertaken by the laboratories includes calculating climate change levels using samples taken from building materials to assess their CO_2 levels.

Vos says that with there being three different types of user in this building, there are "three different typologies," namely the laboratories, educational areas, and offices. "The University of Groningen [labs and offices] side is more traditional," he says, "whereas the applied science university has new, more activity-related ways of working."

As part of fostering collaboration (and in a design response which Broekbakema has used successfully before), the building has a full-height atrium running east-west, with ramped walkways connecting across from the University of Groningen's labs and offices to the education areas to the south, as well as HUAS' workspaces. This 'street'





is one of the key areas where the two separate institutions can meet, as well as the businesses using the facility for seminars. Being a compact building, light had to be brought in from above to offset artificial lighting needs – "we needed lots of rooflights," says Vos – resulting in an attractive composition of triangular rooflights alternating with grey steel triangles.

The architects identified coffee breaks as a key device to make users come to the atrium space and interact. Aldo Vos: "Researchers and students want to drink coffee. We took all the utilities like the coffee area out of their work areas and put them on the common floors in the atrium space. There are print facilities and meeting spaces; you're pulling people out of their comfort zones so they can meet each other." Another innovative meeting area, and alternative workspace, is the winter garden on the building's south side, which can be accessed from the education and seminar

COLLABORATIVE

The building is organised with a winter garden to the south, next to applied sciences workspaces (over the fresh air labyrinth), central atrium, and University of Groningen offices and labs to the north

The architects designed a somewhat unusual elongated hexagonal geometry for the building



ABOVE

The architects designed coffee stations in the atrium to encourage users to collaborate and socialise

TOP

There is extensive glazing to laboratory spaces

rooms, and has even been used for seminars 'outside' in a naturally ventilated and landscaped environment.

He says that the practice's previous experiences of designing similar collaborative facilities have seen success, including merging two school faculties in one building – "media professors and economics students – it worked quite well," and an office building where the sales and research departments were combined in a design which included communal spaces similar to those in the Energy Academy.

As well as being able to physically interact in the communal space, the various users of the building can also see each other thanks to extensive glazing, particularly to the walls of laboratories. Vos comments on this further realisation of 'visibility': "We wanted to make the building transparent, so it's all glass facades in the atrium, so you can actually see the research that's being done, it's not behind closed doors." This is not the case for the offices above the research labs however, which have a more discreet and traditional design appropriate to the client's need for privacy.

He says interestingly that with the two colleges working side by side in the new building, the RUG professors are observing and learning from their less traditional counterparts in applied sciences. They have "a lot more interaction with students and with each other, with student and teacher spaces mixed to a much greater degree," says Vos.

Sustainability

The Energy Academy, thanks to a rigorous design approach embracing passive solutions where possible, has achieved a very low energy use figure of 51 kWh/m² per year. As with the roof, the architects have managed to make a virtue of energy-reducing design features on the facade.

The main external feature of interest on otherwise straightforward flat, glazed facades, are the wavy vertical brise soleil made from Siberian larch (from Dutch forests) – which the project architect says would otherwise have been used for biomass. They undulate between 5 cm and a maximum of 45 cm, the result of calculations on controlling solar gain to particular areas, and keep the building as cool as possible on hot days. Their form also provides an appealing softening to the facades. Internally, window frames and floors are also from Dutch forests, but are American oak.

To add further external variety, the ratio of glazing to wall is 50 per cent to the offices on the east and west-facing facades, but around 80 per cent to the south winter garden side, and the north, which doesn't have direct sunlight. The external facade has triple glazing, although windows can still be opened, whereas internally it is double-glazed.

There are other low-tech, and less visible passive solutions that enabled this building to attain its high BREEAM score, and which Broekbakema worked closely with Arup to achieve. In particular, they wanted to use the building itself to provide not just natural ventilation, but natural 'air conditioning' using geothermal design.

External air is gently pumped through a subterranean concrete 'labyrinth' running under the entirety of the education rooms to the south of the building, warming it to around 10 degrees. This means the Energy Academy is consistently warm in winter, and cool in summer (when cool air will be taken in via the winter garden overnight).



The labyrinth is intended to save around 20 per cent of the energy of a normal HVAC installation.

While this is a relatively simple, although space-hungry solution, working with it is the more exotic 'solar chimney', which creates a convection current drawing air from the labyrinth up through the building. With a glazed face plus a black layer underneath, when the sun shines onto the chimney the air temperature at the top is raised to nearly 100 degrees centigrade.

Concrete core activation, now a common method in the Netherlands, is also used to keep the building's concrete structural elements at a constant temperature and reduce the need for mechanical cooling and heating. Says Vos: "As well as creating our own HVAC system using concrete and a wintergarden, we make use of the earth to cool concrete floors using water pipes".

Two water reservoirs 100 metres below the surface provide heating and cooling, cold water is pumped from one into the building to absorb heat in the summer, then pumped back to the second reservoir as a heat store. In winter this is reversed, the water also heated by a heat pump and then flowing into underfloor heating to provide 60 per cent of the building's heating needs.

Lighting is LED and only comes on when occupants are detected, and users being able to use ramps rather than the lift saves a lot of energy. Lastly, water for flushing toilets and watering plants in the winter garden is collected in this reservoir, running down the sloping roof.

There is a back-up system of standard

HVAC heating and cooling installations throughout the building, including a small gas boiler, however Vos hopes that "it will never need to run". He says that this means the building is like a hybrid car, but in this case one that largely runs on renewables. "Almost eight months of the year the installations won't need to work," he says.

To reach the highest levels of BREEAM, Vos says that standard air conditioning methods are likely to be required to complement passive solutions, to ensure user comfort. "If you want a BREEAM Outstanding building the comfort levels required are quite high and have to be guaranteed all year round". While acknowledging the seemingly counter-intuitive nature of BREEAM requiring more mechanical HVAC solutions to achieve the high score this building gained, Vos approves of how the scoring system "makes you search for a good balance and for really smart solutions."

Conclusion

The building was opened in September, and the client and architect are collecting data on its energy performance, and, says Vos, "hopefully in a year or so we can say it's working as we hoped and designed it". Putting passive design to the fore but retaining traditional services as back-up, the architect says this hybrid building, like hybrid cars, represents a new stage in the learning process of how to create much more energy-efficient facilities. "A decade ago we had the Toyota Prius and now we have the Tesla, and we want this to be the Tesla of the building industry".

PROJECT DETAILS

Project: Energy Academy Europe Client: RUG (University of Groningen) Hanze University of Applied Sciences Architect: Broekbakema (Aldo Vos, Sander Veenstra, Steven Schulze), in collaboration with pvanb architecten BREEAM: Outstanding (BREEAM-NL) Emissions: Zero, after 40 years, including construction EPC: Zero or less Energy use: 51 kWh/m² per year Gross floor area: 12,676 m²

Concrete core activation is now a common method in the Netherlands

Delta ground gas barrier system

Brownfield land is a word specifically used to describe land which has previously been used for commercial or industrial purposes with suspected or known contamination (such as pollution or soil contamination) or land which has been in close proximity to pollution, hazardous waste or soil contamination.

The Government pledged in April 2017 to unlock Brownfield land to accommodate our housing shortage. Local authorities across the United Kingdom under new legislation now have to produce and maintain up-to-date, publicly available registers of Brownfield sites available for housing locally. These new registers will help house builders identify suitable Brownfield sites instantly, therefore unlocking land for thousands of new homes.

MemTech Gas Membranes

Delta Membrane Systems Limited is delighted to launched a new range of Gas Membranes, the MemTech Gas Protection range are BBA Approved and work in compliance with Building Standards (BS8485:2015, BRE 211.2015, CIRIA 665, CIRIA 735, CIRIA 748 and NHBC Standards) suitable for the protection against dangerous gases and chemicals when building on Brownfield and contaminated sites.

The MemTech Gas Membranes work in harmony with our waterproofing/ damp proofing membranes offering complete reassurance.

MemTech M1

MemTech M1 is a flexible, loose laid proprietary gas barrier for use on sites with Radon (RN), Carbon Dioxide (Co2) and Methane (CH4) ground gas. M1 will also protect against the ingress of Hydrocarbon Vapours where it is separated from the



ground e.g. above a block and beam floor. The barrier is manufactured by an extrusion/coating process which incorporates a two layer low density polyethylene membrane with a polypropylene reinforcement grid and an aluminium foil core. The membrane is extremely flexible for ease of installation and is robust enough to cope with site conditions.

MemTech M1 meets requirements of BS8485:2015 and BRE 211: 2015 Radon: Guidance on Protective Measures for New Buildings and Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings.

MemTech R1

MemTech R1 is a flexible, loose laid proprietary gas barrier for use on sites with Radon (RN) ground gas. The barrier is manufactured by an extrusion/coating process which incorporates a three layer, low density polyethylene membrane which is reinforced with a polypropylene reinforcement grid. The membrane is extremely flexible for ease of installation and is robust enough to cope with site conditions. R1 meets the requirements of BRE 211: 2015, Radon: Guidance on protective measures for new buildings.

R1 Gas Barrier will also protect against damp and therefore will act as a DPM in accordance with CP: 102:1973, section 2 and BS: 8000-4:1989, and National Building Regulation Approved document C.

MemTech LGB

MemTech LGB (Liquid Gas Barrier) is a ready for use specialist styrene butadiene latex based liquid applied gas membrane. It offers a simple, continuous passive gas prevention barrier against the ingress of Methane, Carbon Dioxide, Radon, Ground Gas, VOC, air & Moisture into buildings. LGB also acts as a waterproofing membrane complying with C2 and C4 schedule 1 of the Building Regulations 1991 for England and Wales. MemTech LGB meets the requirements of BS8485:2015.

MemTech Void Vent

MemTech Void Vent is a cuspated HDPE core with a geotextile filter/separator bonded to a single side, in either 25mm or 40mm depth. MemTech Void Vent provides a means of ventilation when used in conjunction with an



approved Gas Protection Barrier, in accordance with the recommendation(s) contained within NHBC Guidance and BS8485:2015.

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For help on the MemTech range of Ground Gas Protection, please contact Delta Membranes' Technical Team or visit the website.

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RECYFIX® MONOTEC drains outdoor surfaces at Ysgol Gynradd Lôn Las School

The Ysgol Gynradd Lôn Las Primary School, Swansea, has currently 535 pupils from Year 1 to 6 as well as Reception and Nursery Classes. The school site is split into four main areas. Having a large gymnasium and a separate school canteen there are plenty of outdoor playing areas including a hard surface yard, an enclosed area for Nursery and expansive areas of grassland.

Hauraton Limited introduced the RECYFIX® MONOTEC, surface drainage system in January 2016. The Lôn Las school, joins numerous installations successfully completed in the United Kingdom.

The RECYFIX[®] MONOTEC system was installed to provide surface drainage in the paved entrance/play areas and the car park's asphalt surface. Having a grating width of 100mm (Channel internal dimension) with an overall height of 280mm and a cross-section of 245.5cm², the 176 metres of channel supplied provide a



total water capacity of just over 4329 litres.

The MONOTEC one metre long channel component is of a sturdy monolithic design where the HEELSAFE grating and the tongue and groove linking system are integral to the channel moulding. The whole unit is made of tough, virtually unbreakable polypropylene (PP) formulated to be very resistant to daily temperature fluctuations from frost conditions to strong sunlight, including the Ultra Violet (UV) spectrum. PP is naturally resistant to de-icing salt. Complying with the requirements of EN 1433, the PP is given its UV resistance by adding just sufficient stabiliser so that the structural strength of the material is unaffected and a consistent appearance is maintained.

Shaun Davies the Site Agent for the Contractor also observed, "I was very impressed with the durability of the MONOTEC channels. Not a single unit was damaged by site traffic or whilst laying the asphalt. Any queries or information required was easily and quickly obtained from Hauraton's technical support team".

"All Hauraton surface water drainage systems' comply with European Standards (hENs) and carries the CE mark".

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Caledonian 'smart' choice for Academies

The UK's leading offsite building solution provider, Caledonian, will be exhibiting at The Academies Show Birmingham 2017, 22 November, NEC.

Visitors to stand B34 will be able to find out how a number of schools and academies around the UK have partnered with the company to deliver their estate requirements.

Featuring prominently will be the recently completed £2.5m sports complex for Ashville College, a leading independent day and boarding school in Harrogate.

Also be showcased will be the new £14m boarding house for ACS Cobham International School in Surrey. Designed by





Broadway Malyan, it again uses Caledonian's SMART construction technology.

Caledonian's SMART construction solution is being chosen by a growing number of architects and academies because it allows up to 85 per cent of the build to be completed off-site. Benefits include assured levels of build quality, shorter schedules – allowing whole projects to be completed out of term time – as well as ongoing building efficiency and low maintenance. Importantly also, very low impact upon both the functioning of the educational facility, and, the local community. In partnership with HLM Architects, Caledonian is an approved supplier on the \pounds 50m Education Funding Agency (EFA) Framework to design and build for schools, academies, and other educational facilities. The Framework, which falls under the second wave of PSBP (Priority School Building Programme), went live in August 2017 for a period of up to four years.

To find out more about the full range of education building programmes from Caledonian, call or visit the website.

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Soft-touch technology designed for little hands

s the new cohort of pupils enters the education system, how many school toilets are really suitable for the younger generation? From a facilities management perspective, water saving and low maintenance are key considerations, but what about the functionality and comfort for a 5-year old?

Water savings

Easily distracted, young children often forget to turn the tap off. During a school term, this can result in significant volumes of wasted water. The alternative to mechanical taps is a non-concussive, time flow tap with automatic shut-off after 7 seconds. Couple this with a flow rate limiter set at 3 litres/minute to attract BREEAM points, and water consumption is considerably reduced.

Feeling the pressure

Conventional push-button taps use hydraulic pressure to close the tap, however, this requires 6-7 kg of force to activate the water flow. This can be difficult for a 5-year old. DELABIE has developed Soft-touch technology to overcome this problem. The mechanism still relies on dynamic pressure to close the valve, but when the push-button is pressed, the mechanism is de-pressurised, reducing the amount of force required to activate the flow from 6kg to 3kg. Consequently, the user experiences much less resistance when pressing the push-button.

Scalding safety

Hot water at 60°C causes third degree burns within 5 seconds for adults, and even sooner





for 5-year olds. To prevent serious scalding, all DELABIE mixers have a pre-set maximum temperature limiter, which can be adjusted during installation. Taps should be supplied with pre-blended water from a TMV3 approved thermostatic mixing valve such as the PREMIX NANO. Serving 1-2 taps or 1 shower, the NANO's minimum operating flow rate is 3 litres/minute, ideal for under basin installation.

Low maintenance

Intensive use and a general lack of respect for the installation can result in high levels of maintenance. Tapware in educational facilities need to be robust, durable and able to withstand misuse and abuse. DELABIE's taps with soft-touch technology are made from solid brass with reinforced fixings to prevent rotation. The mechanism is designed to withstand over 500,000 operations. It is easy to access via a grub screw on the push-button, and the cartridge can be removed, cleaned or exchanged.

Soft-touch direct flush WCs

Soft-touch technology is also available for direct flush WCs and can be operated by very young pupils without supervision. During busy periods e.g. break time, the flush is instantly available for successive flushes and there is no delay while the cistern refills. Since there is no cistern, there is no stagnant water, scale build-up or impurity deposits – factors that encourage bacterial development. Furthermore, the direct flush valve is also water efficient. The TEMPOFLUX 2 dual flush valve has a 3/6L flush, which can be adjusted to 2/4L for either ECO or small WC pans.

DELABIE's soft-touch technology is ideal for toilets catering for the younger generation. Small hands can easily operate the taps, maintenance is minimal and there is no compromise on water efficiency or user safety. Soft-touch technology is available for taps, showers and WCs, so even the younger generation can use the facilities safely. Visit DELABIE on stand E10 at Education Estates and F15 at Education Build Scotland to find out more.

01491 824449 www.delabie.co.uk



soft-touch technology

Iconic Brutalist gem preserved with innovative Sika Sarnafil roof solution

The roof refurbishment of the Central Building at Cambridge University's Fitzwilliam College is one of the first major projects to use a new, pioneering approach combining Sika Sarnafil's single ply membrane with large areas of its Sikalastic 621 – a liquid applied product typically used for areas with complex detailing.

This pairing of systems was further enhanced by Sika Refurbishment's SikaFloor 420, providing a complete building envelope solution.

Working closely with architect Cullinan Studio, Roofing Contractors Cambridge (RCC) and the College, Sika Sarnafil created this innovative waterproofing solution to refurbish the roof, which has an extremely complex design."

"The original building was constructed in 1963 by famous brutalist architect, Denys Lasdun," comments Neil Smith, Area Refurbishment Manager at Sika Sarnafil. "From ground level you can see protruding



Fitzwilliam College in Cambridge has a newly refurbished roof thanks to an innovative Sika Sarnafil solution.

'scalloped' detailing on the roof. If you looked down on the roof from above, it is like a picture-frame, with the scallops forming the border around the edge of the flat roof. The challenge was to effectively waterproof both the flat roof – which itself had plenty of challenging details – and scalloped areas, while maintaining the look and integrity of the roof and the building as a whole."

Dave Stewart from RCC continues: "Due to the unusual shape of the scallops, it wasn't aesthetically practical to install sheet membrane on them, so many, many discussions took place to decide how best to tackle this!"

"The Sikalastic product ensured these unique details would be protected without altering their shape. It's not unusual for a project to incorporate small amounts of Sikalastic, but this is one of the first projects where the Sarnafil membrane and Sikalastic 621 have been used over large areas together."

It was thanks to the collaborative relationship between Sika Sarnafil's technical expert and RCC's highly experienced fitters, that the finished roof met strict requirements of the architect and client.

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Natural ventilation with enhanced thermal efficiency

Passivent, the natural ventilation specialist, has improved the performance of its Aircool® ventilators. As a result of recent product improvements, thermal performance has increased by 22 per cent, giving specifiers greater flexibility to meet the energy efficiency demands of a building. Achieving U-values as low as 0.86W/m²K, the ventilator offers excellent performance when closed.

The range of controllable insulated ventilators has been designed for use in external facades, including all forms of



wall construction, curtain walling and window profiles. The ventilator includes integral electrically actuated, modulating dampers which control the air intake and extract. Being low voltage, the dampers are energy efficient and they are also virtually silent in operation. The Aircool's thermally broken frame design minimises the risk of condensation. Weather protection and security are provided by the external weather louvre, even when the internal insulated louvre is open. The ventilators can also be supplied in modular form for maximum flexibility; acoustic and thermal options are also available.

"The thermal upgrade makes Aircool one of the best in its class. It's the ideal partner for BREEAM projects," said Passivent's Design Manager James Hammick. "With wall sleeves and external weather louvres provided as standard, it's also straightforward to contractors to install," he continued.



The ventilator can be used across a range of markets including education and commercial. As well as being suitable for daytime cooling, it can also be used for night cooling to reduce the risk of overheating. Being fully automatic, there is no risk of the Aircool overcooling.

Passivent offers a comprehensive technical design service including assistance with product selection, system design and early stage thermal modelling. For more information visit Passivent's website or contact them by calling.

01732 850 770 www.passivent.com/aircool



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01788 550556 info@autopa.co.uk www.autopa.co.uk



Gerflor flooring for Scottish school



A school in Scotland that supports and accommodates 190 pupils with additional needs has been built to deliver an education environment worthy of its staff and students. When Falkirk Council required flooring for this education project they would turn to international

flooring specialist Gerflor to supply 4000m² of flooring products that could deliver stunning looks, durability and performance. The vast cornucopia of products supplied would consist of Gerflor's award-winning Taralay Impression Control safety flooring.

01926 622 600 www.gerflor.co.uk

Redecoration to the next degree



Crown Trade products are providing the University of East London with a trusted route to transform student accommodation for the new academic year. Crown Trade Steracryl Mould Inhibiting Matt Paint, Crown Trade Clean Extreme Scrubbable Matt and Crown

Trade Fastflow Quick Dry Gloss are all being applied as part of the refurbishment of dormitories and associated kitchen areas. Ideal for spaces that receive a high level of traffic, Crown Trade Clean Extreme is 100 per cent more stain resistant than standard matt vinyl emulsion paint – and can be scrubbed up to 10,000 times.

0330 0240310 www.crowntrade.co.uk

Jeckells sets pupils in the shade



Jeckells' the Sailmakers has installed three tensioned canopies over outside learning areas at Icknield School in Letchworth. Working closely with architects, Wilby & Burnett, Jeckells fabricated the canopies, sourced the stainless steel posts with red post bumpers and

organised full installation to fit in with the school's demanding schedule. Ferrari Soltis 86 premium mesh material was used due it its strength and durability. In recent years Jeckells has built up a reputation for the design and manufacture of quality shade sails with an almost unlimited degree of versatility in design, colour and materials.

01603 782223 www.jeckells.co.uk

LVT and Safety Flooring join forces



Flooring products from two of **Polyflor's** most popular luxury vinyl tile and safety flooring ranges were chosen to help refurbish the school hall, classrooms and corridors at St Wilfrid's Church of England Academy in Blackburn. The grey wood effect Silvered

Driftwood shade from the Expona Design collection covered 600m² in the school's busy dining hall. Featuring 28 stunning wood, stone and abstract effects, the heavy commercial Expona Design PUR luxury vinyl tile collection will provide years of performance in education environments where there are high levels of foot traffic.

0161 767 1111 www.polyflor.com

Tough test for Redland Cambrian



Lochwinnoch Primary School has provided a showcase for Cambrian Slate, showing how an early 1900s traditional building can still retain its original appearance using a modern slate substitute. Renfrewshire Council and **Redland** developed the

answer to the challenge: Cambrian Slate, precision engineered and manufactured using 60 per cent recycled Welsh slate. Cambrian was the ideal choice for this project, offering the performance and ease of use of a modern tile, while providing a roof that was sympathetic to the naturally-tiled appearance of the original building.

01293 666700 www.redland.co.uk

Colourful, stimulating interiors with KI



With the help of KI's Postura+ chair, office refurbishment consultancy firm, Whitespace, transformed a new building at Cheetham CofE Community Academy, Greater Manchester, into a visually stimulating and exciting learning environment. The school

wanted a durable, cost effective, stackable seating solution and KI's Postura+ chair was a natural choice. Approximately 250 Postura+ chairs were used in a variety of colours as well as Postura+ high chairs, which were specified with 610mm sled bases for use at higher tables. Postura+ come with a 20 year warranty.

020 7405 7082 www.kieurope.com

GEZE UK gets top marks for education



When it comes to the supply of door and window systems for education, GEZE UK gets top marks, as a new Project Portfolio outlines. The brochure illustrates how various automatic and manual door control solutions and window technology systems have been applied in a range of schools, colleges and universities to meet specific purposes and the needs of staff and students. It highlights how GEZE's extensive product range is backed up by in-depth technical support to ensure the right solution is identified for various developments, their environments and projected uses. The Project Portfolio Education features a series of case studies including stylish entrances and practical solutions including the City of Glasgow College where showcase entrances were in-stalled at its City Campus. Functionality, efficiency and durability were the requirements for Swansea University's Bay Campus where GEZE's automatic swing door operators were fitted on external main entrances and manual overhead door closers were fitted extensively throughout the student accommoda-tion. A copy of the Education Project Portfolio is available from the download section of the company's website.

01543 443000 www.geze.co.uk

Metal Technology and the art of education



The £35m Northwood School in the London borough of Hillingdon specialises in the performing arts for its 1,080 pupils and the new building gives visual expression to this focus while embracing its general learning areas and sports complex. Rising to three storeys on a building footprint of 9,800 square metres, the school features **Metal Technology** System 17 HR capped curtain walling, in conjunction with System 5-20D doors, System 4-35 casement windows and System 23 louvres. The combination of these systems delivered a fluid design that linked each section of the school into an aesthetically coherent whole and contributed to the sustainability and security objectives of the design. All Metal Technology systems are designed to perform seamlessly together to achieve the desired look and performance standards. Used individually or together, they offer complete design flexibility for creative aesthetics with the assurance of superior performance, structurally, thermally, acoustically and in terms of safety and security. For more information, please contact Metal Technology by calling or visit their website.

028 9448 7777 www.metaltechnology.com

Webermineral TF render marked 10/10



High performance webermineral TF render from **Saint-Gobain Weber** has been specified for an extension to the Poyntzpass Primary School in Newry. Concerns that the weather would delay render application were overcome with the technical attributes of

webermineral TF, a through-coloured, textured decorative finish designed for use with multi-coat render systems including Weber's thermally efficient External Wall Insulation. This cementitious render can be applied at temperatures as low as 1°C. webermineral TF has rapid drying benefits that prevent wash-off in one hour.

08703 330 070 www.netweber.co.uk

New school benefits from airtightness



The construction of a new contemporary secondary school in Aberdeen will incorporate the superior airtightness performance qualities of the Frametite air barrier system from the **A. Proctor Group.** The school will feature a three-storey teaching block with rooftop art

studio, a sports block and a single storey wing available for a variety of uses. The Frametite System comprises Frametite, a low-resistance vapour permeable air barrier for walls plus Wraptite Tape. This approach saves on both the labour and material costs associated with achieving the demands of energy efficiency in buildings.

01250 872261 www.proctorgroup.com

Altro resins transform university



A package of **Altro** resins products have been used to transform a 30 year old building, which was previously part of the Hewlett Packard campus in Bristol, into the University of the West of England (UWE) Future Space. A combination of Altro resins products

was used to create solutions for areas such as the circulation hub, main access route from the entrance to the hub, laboratories, workshops and corridors. Products were selected for their UV stability and slip-resistance, flexibility and durability.

01462 480480 www.altro.co.uk

CMS provides student housing solution



High performance windows, doors and curtain walling by **CMS Window Systems** have played a key role in enabling Church Lukas architects to deliver an eye-catching new 330-unit student accommodation building in the heart of Glasgow. CMS Window Systems, were appointed on the

strength of their track record in delivering high quality solutions for student accommodation projects – both purpose-built and refurb projects. The 25-week, \pounds 1.4 million fenestration programme saw CMS fabricate and install a combination of aluminium curtain walling screens, doors, a rooflight and 160 windows.

01324 841398 www.cmswindows.com

Rehau top of the glass for school installations



REHAU PVC-U windows have been specified for three schools in the south east of England, as its efficient, secure and easy to fit profiles are top of the class for the education sector. The REHAU TOTAL70c top hung, outward opening casement windows in slate grey finish, were recommended for the installations at the Harris Primary Academy Shortlands, Harris Primary Academy Chafford Hundred and Harris Primary Academy East Dulwich schools by contractor SEH Commercial. The thermal insulation qualities of the REHAU TOTAL70 range was key to the success of this project with energy costs and increasing obligations to reduce the carbon footprint now an important consideration for the public sector. This system is capable of exceeding all current building regulations and has achieved values required for Passivhaus installations. The TOTAL70 range also achieved the lowest possible U values and the best window energy rating, demonstrating the ability to retain heat within the building, necessary to maintain a quiet working environment for pupils.

01676 526568 www.rehau.uk/windows

Use shutdown periods to treat heating systems, advises Sentinel Commercial



Water treatment specialist, **Sentinel Commercial**, is urging building maintenance engineers in the education sector to take advantage of planned shutdowns over the holidays to review water quality in boiler plants and implement any necessary chemical treatments, such as system cleaning and inhibitor dosing. These procedures, which can take several days or more to complete depending on the size and complexity of a system, are vital to the health of boilers and heating systems as a whole; those which do not receive adequate water treatment are likely to suffer from excess energy consumption, poor heat transfer, premature repairs and parts replacements, and breakdowns. Best practice water treatment, which comprises system cleaning, protection and maintenance, is able to deliver lifetime protection to boilers and heating system should be avoided. The benefits of best practice water treatment include optimal energy savings, heat transfer, and system longevity and performance, and meeting boiler warranty terms and conditions.

01928 704330 www.sentinelprotects.com

Hunter Douglas creates perfect harmony



The new £57m Royal Birmingham Conservatoire is a world-class teaching and performance building, providing music students with unequalled facilities in the UK and **Hunter Douglas** was proud to play its part in its creation. It was specified to design

and manufacture a 281m² engineered solid wood (ESW) grill ceiling for the spacious foyer. To provide a flat underside finish, even where there was a downstand in the soffit, Hunter Douglas advised using slats in both 100mm and 200mm depths. The slats were finished in American Ash veneer and were coated with a UV-cured clear lacquer.

01604 648229 www.hunterdouglas.co.uk

Dulux Trade paints the way



When Birkett House School in Wigston Leicestershire, relocated its primary facilities, it required a robust interior paint scheme that could withstand the heavy traffic of a busy school. With durability leading the specification process, it was the Diamond Matt and Satin Wood ranges

from **Dulux Trade** that were chosen by Design Consultants, Cantoo. The tough, water based emulsion paint utilises Diamond Technology, making it 10 times tougher than Vinyl Silk and Vinyl Matt ranges. Products can help to extend maintenance for up to five years.

0333 222 70 70 www.duluxtradepaintexpert.co.uk

Caledonian 'smart' choice for academies



With 85 per cent of the build off-site, factory controlled quality, and projects completed out of term time, **Caledonian's** SMART solutions are chosen by a growing number of architects and academies. In addition, low maintenance and building efficiency, and very low

impact upon both the functioning of the establishment, and, the local community. Caledonian is an approved supplier on the £50m Education Funding Agency (EFA) Framework to design and build for schools, academies, and other educational facilities.

www.caledonianmodular.com



New student accommodation

Manchester design studio Jasper Sanders + Partners has used variety of Forbo's products in a combination of bright colours to create an energetic and enriching environment at New Bridewell, Bristol's latest student accommodation development. Jasper Sanders, Design Director fitted out communal areas with Tessera Layout carpet tiles which he specified for their modularity, contemporary colour palette and robust durability. Anthracite grey provides a unifying backdrop, connecting different activity spaces highlighted with bright colour pops, yellow being the dominant colour in study areas and a various blue shades in more social areas. The 'pixellated' layout reflects the long history of the University's Department of Computer Science. Jasper also specified Sarlon Acoustic Vinyl to reduce impact sound in the studio flats and in turn, to improve the health and well-being of the tenants.

www.forbo-flooring.co.uk/education

Affinity255 luxury vinyl tiles



Heavy commercial Affinity255 PUR luxury vinyl tiles from **Polyflor** were recently chosen to complete the stylish interior design scheme at The LiquorLab, a new cocktail bar at the Southwater development in Telford. Affinity255 PUR luxury vinyl tiles

in the Huckleberry Oak shade were installed to create an inviting space for customers to socialise in. The luxury vinyl tiles were straight laid in the main seating area and laid in a herringbone pattern in the raised seating area. Huckleberry Oak features rich hues in a realistic wood effect design with intense grain detailing.

0161 767 1111 www.polyflor.com

Warner's popular Trieste range



Warner Contract Furniture have recently worked alongsise the designers at Studio Saint to deliver a stunning range of restaurant furniture to Bar Bao in Washington DC, USA. The restaurant provides a contemporary twist to traditionial Asian cuisine and is run by The Social Restaurant Group. Warner's popular Trieste range of commercial furniture was used to create a quirky, industrial interior which not only reflects the restaurant's branding but also allows the focus to remain on the restaurants food rather than detracting attention from it. The Trieste range includes Side Chairs, Table Bases, High and Low Stools, all of which feature hairpin legs and walnut stained woodwork. The team at Warner Contract Furniture were particularly excited about this project because it was the first delivery to be made outside of Europe and as of yet the furthest project from their head office in Manchester, UK. Warner's range of quality contract furniture supplier you can reply on please visit Warner Contract Furniture's website.

0161 408 2390 www.warnercontractfurniture.co.uk



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BUILDING DECONICIENTS FUCINA MARYLEBONE, LONDON

Made with organic ingredients

With its bulging brick ceiling and bubbling, blackened steel walls, a new Italian restaurant in London recently won a major design award. Stephen Cousins reports on how architectural invention was used to elevate diners' experience

I f you enjoy a slice of pizza now and again as well as interesting design, pay a visit to Fucina restaurant on Baker Street in Marylebone, where the architectural interiors evoke the visual and tactile qualities of the tasty Italian dish.

The sculptural brick ceiling dips sensuously like fresh dough in the hands of a master chef, its shape directly inspired by the undulating forms in the interior of a traditional pizza oven. On the lower ground floor, the open fire pit looks through to the chef's table, where shiny blackened steel panels on the walls resemble mozzarella bubbling in the oven. Elsewhere, features such as stained glass windows, light fittings with candles, and traditional materials like marble, brick and timber, subtly evoke the

BRICK BULGES

The restaurant's ceiling made up of over 32,000 bricks in seven different sizes, held together by wires



MATERIAL CONTRAST

The 600 m^2 space features dramatically contrasting as well as organic materials – brick, steel and timber

religious and classical traditions of Italy.

"The aim was to invent a spatial experience that mirrored the brief," says Andy Martin, architect for the project's interiors. "We wanted to use the space to invoke a visual memory of Italian taste, a contemporary reinterpretation of these memories. The space is sculpted to stimulate, the forms are organic, the materials raw and refined, a reflection of the food on offer."

Fucina is conceived as a high quality food-led restaurant that showcases the diversity of taste inherent to Italian cooking. The client, restaurateur Kurt Zdesar, is something of a guru in foodie circles, having previously launched the famous Ping Pong dim sum restaurant chain.

In September 2013, he opened Chotto Matte in Soho, known for its Nikkei cuisine and cocktails and a second international outlet is expected to open next year in Miami. Both Chotto Matte projects were also designed by Andy Martin Architecture (AMA).

"Where Chotto Matte is clubby and fun and aimed at a market of 25-35 year olds, Zdesar wanted to do something totally different with Fucina, something more serious and food-led with a focus on organic produce."

In the constant noise and bustle of London, the circa 600 m² restaurant is intended as a quiet haven, characterised by softened edges and wandering lines. A polished timber floor weaves through the restaurant between circular borders of hand-laid coloured marble chips set into traditional 'terrazzo cemento'. The mosaic floor gives the impression of moving water and was directly inspired by terrazzo floors in the famous Olivetti showroom in Venice, designed by architect Carlo Scarpa in 1957-58.

Hot topping

The gravity-defying ceiling was originally conceived as a series of inverted brick vaults, inspired by historic four-sided vault structures seen throughout Italy. However, the idea evolved into a more fluid shape more closely aligned with the brief to create something organic.

The ceiling includes over 32,000 bricks, each between 50-60 mm wide, 260 mm long and 15 mm thick. There are 27 different sizes in total. "When we went to tender, a major consideration was who would be able to make that ceiling. It is very heavy, we had to work closely with the structural engineer, Milk Structures, and the fit out contractor, Bridport Interiors, to design an effective support structure," says Martin.

The gravity-defying ceiling was originally conceived as a series of inverted brick vaults

The two bulges were formed using a steel frame, covered with four layers of 5 mm-thick plywood, which was bent into shape then covered with a layer of special tiling board designed to soak up adhesive. The bricks were laid onto this, every second brick with a small notch in the side where a piece of wire ties it back through to the structure to improve the ceiling's structural integrity.

The bricks are 'commons' – a more costeffective alternative to Italian hand-made bricks – treated with a lime wash to give them a greater a sense of "depth".

Fucina translates as Forge, which in Italy relates not just to the use of fire to heat metal, but the traditional kitchen fire used for cooking. The open fire pit kitchen on the lower ground floor is used for all the restaurant's meat grilling and is a major aspect of the food concept. Burnt steel is used throughout the scheme, including for the lighting and ironmongery. A series of blackened steel floor-to-ceiling screens in the dining space can be closed to obscure the street and reinforce the sense of intimacy.

Two different types of marble, imported from Italy and Portugal, were specified to create features including the large bar and the floor, ceiling, walls and hand basins in the toilets.

"When I think of Italy, I think of marble," says Martin. "Some marbles appear very organic but are also very rigid and architectural, I like the play between the texture and the function of the material."





SALA DA PRANZO

The Sala da Pranzo ('dining room') has striking candle lighting fixtures, reflecting Italy's Catholic heritage

Regal versus rustic

High end materials, such as the marble and blacken steel, contrast with more common 'rustic' materials including brick, exposed concrete and timber to create texture and warmth. Many surfaces have a neutral, plaster-effect finish with a roughened surface to add interest.

"The spatial experience, with the dipped ceiling, is quite dramatic, so the more common materials help make the environment feel less intimidating for diners," says Martin.

The restaurant incorporates 110 dining covers including low-backed bespoke banquettes (upholstered benches) installed along walls and arm chairs. The furniture takes inspiration from the branches and roots of trees, the large tables appear to "grow" from the floor, the chairs are fabricated from machined branches. All the furniture, lighting and ironmongery was custom-designed by AMA.

Italy is famous for its ecclesiastical architecture and many visitors will be

familiar with iconic buildings such as the Cattedrale di Santa Maria del Fiore, the main church of Florence with its incredible dome, the mighty St Peter's in the Vatican, and Pisa cathedral, one of the most impressive examples of Romanesque architecture, built between 1053 and 1272.

Fucina aims to convey the reverential atmosphere of a church. The chunky timber entrance doors are reminiscent of unwieldy church doors, the curved brick ceiling is crypt-like, the glazed external walls include panels of coloured glass, a contemporary nod to stained glass windows. Lighting fixtures in a rear space include real candles that reflect on polished stainless steel. "No one has ever walked inside and said it felt like a church, but we wanted to create a subtle religious reference," says Martin.

Pursuing perfection

Sometimes the architects' pursuit of quality materials and finishes was a challenge due to concerns over budget,



The spatial experience, with the dipped ceiling, is quite dramatic Andy Martin, AMA

and the practicalities of construction. An original plan to install a kiln-dried engineered timber floor would have pushed the project over budget, so a more cost-effective timber was specified and French polished in situ to achieve a similar finish.

A single piece of marble, due for installation on the ceiling over the bar, had to be split into two sections to manoeuvre it down the narrow staircase into the space.

The structure of the existing, recently constructed building raised issues due to the lack of adequate penetrations for restaurant services, or connections for water and power. As a result, the contractor had to build a large ventilated room in the car park, plant for extract ventilation had to be installed on the roof, and a number of air conditioning condensers had to be spread between the roof, car park, the restaurant and the bakery next door.

"It's hard to design buildings for every kind of circumstance, but here some basic rules were not followed, which made our job much harder," says Martin.

Despite these obstacles, AMA's doggedness paid off, and last month Fucina won two awards for Best UK Restaurant and Best London Restaurant, at the Restaurant and Bar Design Awards 2017.

"We hope this is a project people can return to many times and appreciate the attention to detail which may not be immediately obvious," says Martin. He concludes: "Today, restaurants are becoming less about the food and more about the experience, most of all, we want people to enjoy the space in Fucina, it's an ambition that I believe we managed to achieve here."

Relcross door closers keep brewery warm



When Hillside Brewery in Gloucestershire realised that the doors to their upstairs patio weren't closing properly, with consequent loss of heat and escape of noise into the local area, something had to be done. The doors are exposed to the elements and, on windy days, the door closers originally fitted just weren't good enough for the job. The doors open outwards and the prevailing wind is inclined to keep them open rather than blow them shut. As it turned out, the solution was simple. They contacted **Relcross** and subsequently fitted a couple of LCN 4040XP. This is LCN's most durable heavy duty closer designed for the most demanding, high use and abuse applications. The body is made from cast iron and is fitted with an Extra Duty forged steel 'Cush-N-Stop' arm to help prevent the doors and frames being damaged by the wind action blowing them too far open. The load capacity of the bearing has been increased by 44 per cent and the extra power and robustness of the LCN 4040XP means the wind affected doors now close properly and securely eliminating the previous problems. For further information on LCN door closers contact Relcross or visit the website.

01380 729600 www.relcross.co.uk

Merlin thinks Sadolin is magic



SADOLIN has been drafted in to help transform a pub into a stunning venue in the heart of the East Midlands with a range of superior woodcare solutions. To help with the restoration project, he turned to Sadolin PV67 Heavy Duty Varnish and Sadolin Superdec after hearing glowing reports

about the products. Merlin, said: "I've used it here on the bar top at The Maltsters and it's dried crystal clear and rock hard, which is excellent." Available in either a gloss or satin finish, Sadolin PV67 Heavy Duty Varnish comes as a two-pack system and is renowned for its ease of application, and its beautiful, long-lasting finish.

0330 024 0310 www.sadolin.co.uk



Please call 01746 781782 or visit www.webuildit-ltd.co.uk or www.bio-pure.com

JTPumps new sewage pumping station



JT Pumps has released a new sewage pumping station which can easily handle 80mm solids, with easy installation and a range of tank options allowing the pumping station to service buildings of varying sizes – from properties as small as one house up to as large as 10 to 20 houses, keeping developers costs down and simplifying drainage solutions. Using the same pumps but different sizes of tanks,

this pumping station can adapt itself to a range of tasks, including sump drainage, floodwater drainage and sewage removal, and is fitted with automatic activation for peace of mind. Enquire today!

www.jtpumps.co.uk

AkzoNobel's FF top of the class



Bromsgrove School is one of the country's bigger independent schools. Witley Jones design, manufacture high quality furniture, producing extensive ranges of classroom, library, common room and accommodation furniture. Witley Jones wanted to ensure that

their initial manufacturing methods would be free of formaldehyde in any of the lacquering processes to safeguard both their own workers and the end user. To meet these stringent demands Witley Jones would turn to Blackburn-based coatings manufacturer **AkzoNobel** to supply their high-performing Duracid FF range.

01254 687950 www.sikkens-wood-coatings.co.uk

illbruck achieve astonishing airtightness



Thanks to a variety of air- and vapour-tight barriers, sealants and gap-fillers from tremco illbruck, a new-build oak-framed office building has achieved an astonishing airtightness. illbruck ME003 Vapour Barrier is a three-ply co-extruded polyethylene (PE)

membrane. illbruck ME317 Internal Membrane Tape, a single-sided, reinforced kraft paper tape with solvent-free, modified acrylic adhesive for bonding the vapour barrier overlaps. illbruck OT301 Endurance Adhesive, for bonding and forming an air-tight seal between the ME003 vapour barrier and the structural elements.

www.tremco-illbruck.com



Back in the frame – green oak

Robin Lancashire of Exova BM TRADA discusses Britain's enduring appreciation of green oak framing and offers some points of good practice

The popularity of green oak goes back centuries, with oak structures being used as a robust form of construction in Britain since the Middle Ages. While the use of oak has declined due to cheaper alternatives and fewer people with the specialist skills required to build with it, this material remains in fashion as a premium product thanks to its longevity, versatility and unique charm.

Today, much of the joy of oak comes from the stunning hand craftsmanship that is visible in the exposed structural elements that characterise it. The fact that it is a renewable, home-grown and traditional material is also appealing. It is often used to add eco-friendly extensions that work in harmony with historic properties, but is also used for buildings such as theatres, galleries, restaurants, museums and visitor centres – as well as new homes.

One of the major differences between building with oak and most other timber construction methods is that it is used when green – i.e. recently felled and still carrying a relatively high moisture content. The large section sizes used means that it takes several years to dry. This happens when the frame is in service, and so this is when it develops the cracks and texture that are characteristic of the material and give it its aesthetic.

Green oak construction is a niche form of



construction and if engineers are employed on the project who aren't oak specialists, problems can easily arise. When thinking of building with this unique material, there are a few things which should be considered.

Shrinkage

Used undried or 'green' with an initial moisture content of 30 per cent or more, the timber shrinks considerably as it dries, which may result in splits or distortions. While careful selection can reduce this risk, it is not always possible to predict how the wood will behave when it is in its green state. Care must be taken in the design to ensure that any shrinkage or distortion will not cause damage to other components or reduce the weather resistance of the building. If it is simply aesthetic, it may just need to be accepted as part of the "charm" of using this material.

Many of our clients have heard about the need to design and construct allowances for timber movement, but do not know how to do this. Others are concerned that work may require guidance through on site consultancy. On some occasions, clients become aware of a problem with the building in use, but do not know what has caused it, if it is important, or who should be responsible for it.

Tannins and extractives

Oak has a high extractive content (commonly known as tannins), particularly when the wood is used green. Tannins appear as a dark brown exudation on exposed surfaces as a result of exposure to weather and may run down onto surfaces below – so protection is always advisable below exposed oak frames. These extrac-

A primary decision in the structural design of a green oak frame is to use traditional carpentry joints

tives are also very corrosive to mild steel, so fixings into oak used externally should always be of stainless steel or nonferrous metal.

Joints

A primary decision in the structural design of a green oak frame is to use traditional carpentry joints such as mortise and tenon, dovetails and scarfed joints with traditional pegs and wedges, or modern joints comprising steel plates and screws, connectors and tie rods.

Where steel connections are to be used, it is preferable to use the wood at a lower moisture content than for traditional carpentry joints and this is best done by limiting the size of the sections. Small sections can be dried more easily and the amount of shrinkage that will occur is therefore reduced.

Air tightness

Although traditionally an oak structural frame would be exposed on the inside and the outside, today it is not possible to do this while also achieving the air tightness and thermal insulation required under Building Regulations. To get around this, the easiest way is to conceal the frame on the outside with a suitable cladding system and expose the oak frame on the inside of the building only - but this changes the traditional appearance of the building, which is often the motivation for using the material in the first place. Alternatively, a thinner separate secondary oak frame or decorative timber sections can be incorporated into the wall outside the thermal insulation layer.

Several green oak building manufacturers have developed systems that use either prefabricated insulated panels, or insulated softwood stud framing to meet the current regulations. These systems generally increase the wall insulation well above the required level to compensate for any heat loss through the structural columns or at the junctions between infill wall and column.

Robin Lancashire is the senior timber frame consultant at Exova BM TRADA

Protect Membranes used in Europe's largest certified Passivhaus housing scheme

Protect BarriAir, the air barrier membrane with vapour control properties, has been used throughout a 68 home residential housing scheme at Saffron Acres in Leicester, achieving stringent levels of airtightness to meet the Passivhaus standard.

Used within a community-led initiative undertaken in collaboration with emh Group, Westleigh Partnerships Ltd and Saffron Lane Neighbourhood Council with consultation by Encraft, BarriAir was specified to ensure an airtight timber frame structure within a well-designed living space.

A former derelict site regenerated to address the shortage of affordable housing, Saffron Acres is the winner of the 2017 East Midlands Residential RICS Award and also the largest Passivhaus affordable housing development in Europe. Achieving certification in 2017, all 68 timber frame designed plots were awarded the standard, creating an environmentally friendly place to live.



Kyle McCabe, Assistant Site Manager at Westleigh Partnerships Ltd, commented, "The BarriAir product from Protect Membranes has delivered outstanding performance at our Saffron Acres development and testing was a key contributor to improved airtightness, resulting in the last home tested achieving 0.22 ach⁻¹ at the first time of asking. The product was very reliable and good to work with, helping the scheme to achieve Passivhaus standard."

Protect BarriAir is a high performance construction membrane for walls and

ceilings, offering a significant reduction in air leakage, helping to meet Building Regulations and airtightness standards. Also offering vapour control properties, Protect BarriAir is installed on the warm side of the structure, adjacent to the insulation, offering reduced heat loss and convection flows to improve thermal performance. BarriAir is available with integrated tape and offers an effective sealant to further provide added assurance of airtight performance and ease of installation. Other Protect products used on this development included Protect VP300 vapour permeable roofing underlay and Protect TF200 external timber frame breather membrane.

For details of how Protect products can be incorporated into residential and commercial builds, please visit the website, or call quoting 'Saffron Acres'.

0161 905 5700 www.protectmembranes.com

Icopal specified for Heathrow refurb



When the roof to Pier 7 at Heathrow's Terminal 3 required refurbishment, one of the essential design criteria was the robustness of the waterproofing layers, the consideration for foot traffic and the proximity of significant roof HVAC plant. Following similar

installations to other roof areas on Terminal 3, Itech Roofworks were nominated to install the **Icopal** system specification. For Pier 7, new insulation was installed and covered with the Pyrobar Underlay that was used as the carrier layer, before finishing with Icopal's Elastoflex Solvent Free liquid applied waterproofing membrane.

0161 865 4444 www.icopal.co.uk

Decra Tile meets complex design



Saint Columba United Reformed Church has a large, steep pitched roof, which falls to outlets that are within a metre of the ground, making it an easy target for vandals. As a result the roof required almost constant maintenance and it was decided a more robust solution

was needed. After glowing reviews from a nearby church that had previously used Decra, **Icopal** was specified. Decra tiles are formed from galvanised steel and are offered in a range of colours and finishes to create the effect of traditional roofing tiles.

0161 865 4444 www.icopal.co.uk

CT1 – The Snag List Eliminator. As seen on SpecfiedBy



CT1 now famously known as The Snag List Eliminator, from C-Tec, is one of the highest accredited and eco compliant products on the market. CT1 is a Unique adhesion on virtually any material in most applications without the need for additional fixings. CT1 is the ultimate solution for sealing. It is a hybrid polymer formulation and has earned its stripes as one of the No1 Sealant and Adhesives on the market. CT1 has been tested to 28 individual building substrates. CT1 is the only sealant which also has been food approved by ISEGA, safe to use in new kitchens and hospitals, specifiers who design new hotels, bars, restaurants and hospitals have demanded that CT1 is used on their project. The Norwegian Asthma and Allergy Association, which is the most stringent body and highly recognised as the authority on products which will help prevent Asthma and Allergy, even more crucial, product and catalysts' in the home. They have tested CT1 and have stamped their approval on CT1 as the sealant to use in the home to prevent at Asthma and Allergy. CT1 is the only sealant globally to be awarded this highly sought-after sealant. Visit https://youtu.be/xY2E-dPdxUo for more.

028 3083 4892 www.ct1ltd.com

Red Grandis[™] lands at Lathams

ne of the UK's biggest independent timber and panel products distributor, James Latham, is now offering Red Grandis™ directly from stock through all eight of its nationwide timber depots.

Ethically sourced and plantation grown in Uruguay by forestry and logging giant Urufor, Red Grandis is one hundred percent FSC[®] certified and fully complaint with EUTR legislation.

Offering exceptional durability and stability, this high-performing, versatile hardwood timber - which comes from the Eucalyptus family - is also easy to machine and stain, plus, because it is plantation grown, it offers continuity of supply.

James Latham's Technical Timber Sales Development Manager, Justin Hayward explained, "We are really excited to be able to offer this product and I am confident that it will quickly become a popular choice with our customers. Red Grandis is ethically sourced; environmentally friendly and readily available and this, coupled with outstanding levels of performance in stability and



durability, ensures that it ticks all of the boxes not only for us, but for our customers."

Typical uses for Red Grandis include all types of joinery such as windows, doors, conservatories, mouldings and cladding. It is particularly well suited to large projects such as door frames as it is supplied in long engineered lengths so it is less likely to bow and warp, this in turn reduces the need to overlap and finger joint frames.

Mr Hayward added, "James Latham has a long history and expertise in bringing new and innovative products to market and Red Grandis fits perfectly within our extensive timber portfolio which boasts one of the largest and most varied ranges of joinery quality hardwoods and softwoods available in the UK."

Red Grandis is available in the following thicknesses as sawn timber; 25mm, 32mm, 38mm and 50mm and in widths of 150mm and wider as well as long lengths (mainly 3.7m to 4.9m). It is also offered as WoodEx®, Latham's own premium quality, engineered hardwood and softwood timber product in all core sizes for joinery applications as clear faced and finger jointed for long lengths.

0116 257 3415 www.lathamtimber.co.uk



Why belt and braces is often best



Should basement waterproofing design use a barrier method or a cavity drainage system or both? A series of continuing professional development (CPD) seminars from **Safeguard Europe** helps answer that question whilst imparting all the regulatory and technical background a

designer or specifier would need. Delivered in a company's office to help professionals meet their CPD obligations, Safeguard can provide a one-hour seminar on either newbuild or refurbished basements or a two-hour seminar covering both.

01403 210 204 www.safeguardeurope.com

Imperial Bricks' new display



Imperial Bricks has created a new display at The Building Centre, in central London. The stand, on the ground level, features a selection of the 40+ styles of traditional handmade, waterstruck, wirecut and pressed bricks that Imperial supplies. With varying styles, colours

and textures on show, Imperial Bricks' range is ideal for matching existing brickwork in renovation and restoration projects, as well as adding character for new build developments. The Yellow Stock range in particular replicates traditional types of bricks used across London, available in weathered and reclamation finishes.

01952 750816 www.imperialbricks.co.uk

A complete roof resolved with Cembrit



High quality fibre cement slates from Cembrit have complemented the quality new build homes that David Wilson Homes has developed in South Wales. Providing a sleek and stylish finish, the dressed edge Moorland slates have made light work

of a complex roofing project. Main contractor Rooftop Tiling Ltd specified Cembrit Moorland dressed edge slates and sourced these products in 600mm x 300mm blue/black. Moorland fibre cement slates are manufactured using Portland cement together with a non-asbestos formulation of blended synthetic and cellulose fibres.

sales@cembrit.co.uk

Safeguard's Dryzone range is a winner



A suite of products from the Dryzone range of products developed by **Safeguard Europe** swiftly eradicated damp from a late 1950s house in the Allestree district of Derby. Dryzone Cream is a BBA-approved and patented silane/siloxane material that forms a DPC in brick, coursed stone, rubble infill

and cavity walls. Internally, the plaster was very badly damaged so it had to be removed to one metre above the DPC and was then replastered with Dryzone Damp Resistant Plaster.

01403 210204 www.safguardeurope.com

Future-proofing external doors

When looking to buy new external doors, getting value for money is arguably the most important consideration, but increasing financial restrictions on both property owners and landlords means there is extra pressure to minimise costs. Rob Hartill of Permadoor explains the choices

In most cases, choosing the cheapest doors rarely represents the best value in the long-term as they can incur further costs on maintenance and even replacements in the years to come.

Instead, specifiers on a tight budget should consider the cost of a product's whole-lifecycle before committing to spend.

A variety of options are available, but making some important considerations will ensure that the purchasing experience isn't overly challenging.

Future-proofing

Future-proofing is the key to guaranteeing value for money. At first glance, most external doors might perform well, but how will they stand the test of time?

Making sure products deliver optimum insulation, durability and visual appeal over many years is critical. Long-term performance will work out much cheaper than having to regularly replace budget doors.

Whether choosing for new builds, renovations or refurbishments, combining comfort, security and energy performance with a strong design are also primary considerations.

The benefits of composite

When it comes to long-term solutions, composite doors make an ideal choice. They are visually appealing, available in a variety of colours, and provide a real wood grain appearance, making them perfect for a range of applications, including as external or fire doors. They are also highly resistant to denting, warping, splitting, peeling and fading.

They are made from robust materials that are selected for their resilient properties which, when combined, counteract Future-proofing is key to guaranteeing value for money. At first glance, most external doors might perform well, but how will they stand the test of time?

common flaws found in similar products.

Composite doors combine superior aesthetics, high performance and thermal efficiency, and are low maintenance. What's more, they are easy to install and lock cylinders are easy to replace.

Which composite door to choose?

There are two primary options to consider: Foam-filled glass reinforced plastic (GRP) or solid timber core thermoplastic. Both offer outstanding performance, but are best suited to different applications.

Foam-filled GRP excels at thermal performance, providing superior insulation compared to timber.

While they are both equipped to pass the latest PAS24:2016 cut-through test, which is assessed on whether they can withstand a three-minute attack using two chisels (6 mm and 25 mm) and a Stanley knife in the central 800 mm zone, solid timber core thermoplastic are tougher and more secure, as they offer the same level of security across the whole door area.

Composite doors should be the first choice when it comes to future-proofing. Selecting a product that will perform to the highest standards is critical in today's market, but they must also create the right look and feel for a property.



ROBUST

Two options include foam-filled glass reinforced plastic (GRP) or solid timber core thermoplastic

Images courtesy of Permadoor



With composite doors there really is no compromise – they offer the full package of looks and performance

Composite doors combine traditional looks with the benefits of high performance and low maintenance. A wide choice of colours, styles and accessories, as well as bespoke sizing, means they are ideal for a range of projects. Many come with up to a 10-year guarantee.

Look for doors that offer the highest level of security, with PAS24/Secured by Design compliant specification available. They should also be Building Regulations compliant and CE marked.

With composite doors there really is no compromise. They offer the full package of looks and performance.

Rob Hartill is commercial director at Permadoor

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Tel: 01284 764045 email: sales@livingwoodwindows.co.uk www.livingwoodwindows.co.uk







A royal finish for Edinburgh Hotel

Work has recently finished on the new Leonardo Royal Hotel Edinburgh, renovated with 350 WarmCore aluminium windows fabricated in a bespoke colour. The window specification required an unusual pale silver metallic colour befitting of the hotel's new name easily achieved thanks to Synseal's WarmCore's composite PVC-U/aluminium structure which also delivers thermally efficient U-values as low as 1.3W/m²K double glazed and 1.0W/m²K triple glazed. The whole project was delivered by WarmCore fabricator Total Glass and installers Reliant Windows within seven weeks. Phill Cresswell, sales and marketing manager at Total Glass, said: "WarmCore enables us to turnaround dual colour and bespoke colour requests very quickly, ideal for this project given the complexity of the specification and time requirements which we couldn't have achieved with an alternative aluminium system. Specifiers love the low U-values and easy maintenance WarmCore offers - hands down it will be our product of choice for similar projects in the future."

01623 443200 www.synseal.com

Quality puts fasteners in pole position



Developer and client demands for building envelopes which offer outstanding build-quality in the long term, and enhance the overall green credentials of the finished building, are driving increased interest in high performance A4 (316 grade) stainless steel fasteners, according to

global fastener manufacturer **SFS**. The company, which pioneered A2 (304 grade) and A4 (316 grade) stainless steel fasteners for roofing and cladding in the UK more than 30 years ago, has completed orders for A4 stainless steel fasteners for a string of high profile building projects during 2017.

0113 2085 500 www.sfsintec.co.uk

Howarth partner with Yale



Howarth Timber Windows & Doors have been manufacturing to Secure by Design standards for many years and as such all products are Approved Document Q compliant. As part of a continuous improvement programme Howarth have

upgraded their door security and have now introduced Yale multi point lock systems throughout our door range. This latest innovation from Howarth further enhances its already well established reputation for products. Howarth have chosen to partner with Yale as they are a worldwide name synonymous with security.

www.howarth-timber.co.uk



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Eurocell raises the bar with lower threshold



As a part of its drive to continuously improve its systems, Eurocell, has introduced a new PVC-U low threshold for its Eurologik 70mm chamfered and ovolo doors that offers users an alternative to aluminium that will cut energy bills and improve comfort. This threshold is superior to aluminium equivalents

because it reduces cold bridging and is more thermally efficient. Using the PVC-U low threshold improves the U-value by roughly 0.1 W/m^2k depending on the style and specification of the door.

0800 988 3049 www.eurocell.co.uk

Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. architectsdatafile.co.uk is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital

issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

www.architectsdatafile.co.uk

Hi-Finity product by Livingwood



Among the most in-demand products offered by **Livingwood windows** are aluminium Hi-Finity Doors – no surprise, given their benefits. Hi-Finity's minimal visible sight lines provide a route to wall-to-wall glazing luxury. Installation guarantees stunning views of a

property's surroundings and extraordinary light levels within. Yet there's no compromise needed to achieve impactful aesthetics. Awarded the Swiss Minergie accreditation for thermal performance, the range delivers exceptional U-values. Bespoke needs are also supported: custom heights, weights, triple glazing and more.

www.livingwoodwindows.co.uk/products/hi-finity

Eurocell makes time-saving a matter



Providing both swift installation and a realistic slate-effect, next generation SlateSkin is the latest enhancement **Eurocell** has developed for Equinox, its innovative tiled conservatory roof system. Together, SlateSkin and Equinox create the most advanced system currently available.

Now with 'multi-course' tiles built in to each sheet, the SlateSkin GRP system reduces the time spent positioning and nailing tiles, with no compromise on build quality or aesthetics, while its lightweight construction allows the roof pitch to be set anywhere from just 5° to 35° .

0800 988 3049 www.eurocell.co.uk

Stunning aesthetics. Absolute safety: m.look facades from FunderMax...

hen it comes to 'fire protection', there can be no compromise – the lives of many people depends on the safety of their homes. Furthermore, we must protect people's possessions, their livelihoods and memories. The tragic events at London's Grenfell Tower have brought these issues to the forefront and acted as a stark reminder to us all.

At the same time housing projects offer aesthetic challenges too. To ensure residents feel 'at home' and comfortable, buildings should be visually appealing without compromising on safety. With m.look, the Austrian materials specialist FunderMax, has developed a fire-resistant facade material (fire class A2s1do), which offers unprecedented levels of design freedom.

A good example, which showcases the strength of m.look perfectly, is the renovation of a residential building in Erding, Bavaria. With it being a condominium, the planners had to prepare a number of facade design proposals for the owners. m.look mastered this challenge with ease because it can rely on an extensive range of trusted FunderMax decors, which open up a great variety of design options.

Once again, this project presented a number of structural challenges to the team: for example, around 7,000 m² of old facade panels had to be removed and disposed of separately. Another challenge (as well as an important design criteria) was the integration



of roller shutter boxes, door elements and balcony railings into the overall visual concept. With this in mind, the decision had to be m.look, since only this material met all technical specifications as well as the required product sustainability. These requirements included: suitability for high-quality architecture, surface quality, anti-graffiti properties, easy to clean, scratch and impact resistance, high integrity, low weight and good stability of corners and edges.

Both the product and service quality from FunderMax contributed to the success of the project. The attentiveness of FunderMax employees and partners, resulted in great praise and the apartment owners are now able to enjoy the new stylish and fireproof design.

To find out more about m.look please visit the website.

FunderMax GmbH 159A West Main Street, Whitburn Bathgate, West Lothian, EH47 0QQ

Contact: Paul Hughes Paul.Hughes@fundermax.biz





FUNDERMAX 🔊

PROJECT FACTS

Condominium complex Max + Moritz Wendelsteinstraße 16 + 18, Erding / Bavaria **Material:** m.look Exterior 7mm architectural panels 7,666 m² in decors 5000, 5004, 5051 **Project completion:** August 2017

ALUCOBOND® Prefab invisible

LUCOBOND® Prefab invisible is a new facade construction system for ALUCOBOND[®] panels without visible fixings, these fixings can spoil the aesthetic of the facade. Specially developed carrier sections are structurally bonded with the bonding system ALUCOBOND® by tesa® to the rear of ALUCOBOND® panels. The preparation of these elements is carried out in a workshop and can be optimised and automated. Immediately after bonding the adhesion values allow the elements to be transported. Given that this is a factory applied system, the installation is not reliant on weather conditions. The standardised system with prefabricated elements, consistent quality, and production control offers quick and easy mounting, as the elements are just hooked on the determined panel grid. The freely selectable panel grid is independent from the grid of the substructure.

There are unique extruded locator clips riveted or screwed to the carrier sections. These elements can be easily hooked on horizontal carrier rails which have been fixed into place beforehand on site.

Instead of widely used adhesive sealants which were predominantly developed for on-site use, the innovative bonding system ALUCOBOND® by tesa® uses the newly created double-sided adhesive tape tesa® ACXplus 70200 within a factory setting. The reliable tape creates a perfect bond between the substrates. When using adhesive sealants, there were complicated and time-consuming on-site processes to prepare the surfaces: First abrading, then cleaning before applying a primer. These procedures are now superfluous.





In addition, such processes are dependent on weather conditions and can only be carried out at a relative humidity no greater than 75 per cent and an ambient air temperature between 5 and 35°C.

Furthermore the safety in a workshop is higher than on the construction site. Especially while working with construction products which are chemical and depend on temperature or UV-light intensity.

Tests have been performed with ALUCOBOND® Prefab invisible and demonstrate that this system is comparable with a riveted system on vertical sections regarding the load performance. It is possible to achieve similar spans. By varying the width of the adhesive tape the wind load can be securely transmitted into the substructure.

In a test, the panel was subjected to a simulated wind load of up to 770kg/m² without cohesive failure. This is 4.5 times the wind load which would typically occur on a 20m high building.

Additional mounting adhesive is not required when using the invisible system.

Extensive mechanical testing, carried out at independent laboratories, has verified the high performance of the structural bonding. Depending on the width of the adhesive tape (19mm to 25mm) used, a 500mm-long strip can support between 1.8 and 2.4 times what a standard blind rivet can carry as wind load. The high performance of tesa[®] ACXplus 70200 is based on its viscoelasticity: this leads to elastic and viscous characteristics, providing inner strength as well as relaxation of mechanical stresses.

Paul Herbert, Specification Manager: 07584 680263 Richard Geater, Sales Manager: 07584 680262 Richard Clough, Business Development Manager: 07760 884369

www.alucobond.com

PROJECT DETAILS

Project: Raiffeisenbank, Lugano Switzerland Facade material: ALUCOBOND® PLUS Anodized Look C32 Construction system: ALUCOBOND® Prefab invisible Building Owner: Banca Raiffeisen del Cassarate, Italy Planning (Architect): Architetto Oscar Schneebeli, Cureglia, Switzerland Fabricator/Installer: Werkstätte LIECHTBLICK, Switzerland Year of construction: 2017

New house wrap with superior flame retardancy

Powerlon[®] FlameOut[™] is a new house wrap breather membrane that is flame retardant to Class B for all timber wall installations. FlameOut has been developed by Industrial Textiles & Plastics Ltd (ITP), industry leaders in flame retardant technology, and joins the Powerlon range of technologically advanced building and roofing membranes.

The new building membrane is strong but lightweight, with high water vapour permeability, and is the only product to be independently certified to EN ISO 11925-2 as Class B-s1,d0 for use in all timber frame constructions with no installation restrictions. A self-extinguishing FR material, FlameOut is available in two roll sizes, 1.5 by 50m and 3.0 by 50m, providing installation advantages for builders. It will be particularly valuable for use in safety critical buildings, both residential and commercial.

"Our 25-year expertise in developing flame retardant products for the construction



New Powerlon FlameOut house wrap is flame retardant to B1-s1,d0

industry went into the creation Powerlon FlameOut," said Marc van der Voort, Managing Director of ITP. "We're proud to offer this new product which will increase building safety for our customers in the UK and abroad."



RIBA-award-winning The Word protected by Powerlon UV Colour FR

Powerlon FR Membranes

Other Powerlon flame retardant building membranes from ITP include Powerlon UV Colour FR, which is flame retardant to Class 0 (BS 476 Parts 6 & 7). This innovative UV-resistant facade membrane has been specified for many prestige projects, including RIBA-award-winning The Word in South Shields, the Glasgow School of Art and the Canada Water Library, another RIBA-awardwinning public building. The UV Colour FR breather membrane comes in a range of attractive colours and is designed for use behind open or closed ventilated rainscreens and facades.

01347 825200 www.itpltd.com



New fire retardant membrane



The A. Proctor Group, renowned for providing high quality membrane solutions for controlling the heat, air, moisture movement in buildings, is leading the way with the development of Fireshield[®], a new vapour permeable membrane, which is designed specifically to improve the fire

protection behind cladding. Fireshield is the culmination of leading research to produce a vapour permeable membrane with a fire proof surface, which has a unique composition that actively reacts to prevent fire taking hold. The unique coating of Fireshield actively extinguishes fire rather than just resisting it.

01250 872261 www.proctorgroup.com

Stainless steel roofs for student village



A UGINOX® Patina stainless steel roofing system has been installed throughout the £73m Vita York student village. Built on the site of a former convent, fifteen 3 and 4-storey blocks have been added to the Grade 11-listed Victorian buildings. UGINOX Patina was specified as its coating weathers quickly to take on the

appearance of aged lead, the material being approved by English Heritage as an alternative to lead where there is an ongoing threat of metal theft. The stainless steel was fabricated in traditional standing seam, the project overall achieving BREEAM 'Very Good' status.

www.uginox.com

Aluprof's extensive range



Aluprof's extensive range of systems extend to unitised curtain walling, sliding folding doors, commercial doors systems, a wide range of window systems and a fully tested range of fire rated systems all of which are increasingly being specified on a variety of residential and

commercial projects across the UK and overseas. All systems are designed and installed by selected, specially trained companies to ensure each product meets Aluprof's exacting standards. Further information is available on the company website.

www.aluprof.co.uk

Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. architectsdatafile.co.uk is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital

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Smart combination stair and roof hatch



LAMILUX UK have launched 'Smart Combination,' the result of collaboration between LAMILUX Heinrich Strunz Group and attic ladder manufacturer Columbus Treppen GmbH. The LAMILUX CI Modular Rooflight System around which the Smart Combination is based, offers excellent performance characteristics such as energy efficiency through increased airtightness and

an absence of thermal bridges. The concertina ladder is compatible with all modular rooflights in the Lamilux Portfolio. The solutuion makes specification easy, achieving the perfect flat roof solution.

www.lamilux.co.uk

Stadium floodlights at Bristol Market



Luceco has supplied specialist LED floodlighting to Bristol Fruit Market. Based in St Phillips Marsh, buyers from local businesses have access to the finest fresh produce from around the globe. Stadium from Luceco is a high output floodlight designed for large outside areas such as MUGA applications (multi use games areas), sports grounds and logistic yards such as Bristol Fruit Market. Stadium 500W offers an

energy efficient alternative to a 1000W metal halide floodlight. Stadium 1000W is the equivalent to a 2000W metal halide flood, both providing 100 per cent instant light output with no warm up time.

01952 238100 www.luceco.com





Sto helps restore nursing accommodation



The benefits of an external wall insulation system provided by **Sto** have been highlighted yet again by a major refurbishment project in Cambridge. The StoTherm Vario K system has been installed on a large nursing accommodation unit at Addenbrookes

Hospital, where it has improved thermal performance standards and also helped the structure blend visually with the adjoining buildings. StoTherm Vario is a high performance EPS insulation system which provides excellent thermal insulation, and thanks to the mineralic reinforcing coat, also meets stringent fire safety requirements.

01418 928000 www.sto.co.uk

Filtering the options extends flexibility



Specifiers can tailor-make their internal environments using an innovative approach to ventilation devised by **Gilberts** (**Blackpool**). A leading independent air movement specialist has developed a range

of modular 'accessory' boxes to integrate with its innovative hybrid Mistrale Fusion System (MFS) stand-alone ventilation. The concept enables easy addition of various filtration options, to the MFS through-wall or through-window unit. Thus, just by adding the appropriate box behind the core Fusion unit, the ventilation can be simply and efficiently adapted to the requirements of each room.

01253 766911 www.gilbertsblackpool.com



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OPTIM-R provides slim solution



A derelict Grade B listed hotel in Kinross, Scotland, has been transformed into an impressive modern family home, with help from the ultra-slim **Kingspan** OPTIM-R Flooring System. Kingspan OPTIM-R vacuum insulation panels (VIPs) feature a microporous core

which is evacuated, encased and sealed in a thin, gas-tight envelope. This design allows them to achieve optimum levels of insulation performance with a declared value thermal conductivity of 0.007 W/m.K despite their minimal thickness.

01544 387 384 www.kingspaninsulation.co.uk/optim-r

Green light for underfloor air conditioning



AET Flexible Space, provider of underfloor air conditioning systems are presently commissioning the system and equipment supplied to German IT and software solutions company, iQuest for their new

build headquarters in Romania. Underfloor air conditioning systems use the plenum beneath a raised floor as the ventilation duct, eliminating the need for ceiling duct work, potentially reducing new build construction height by up to 10 per cent. The system supplied to the iQuest project is a CAM-V system – ideal for easy reconfiguration as there is no division of the plenum into supply and return channels.

01342 310400 www.flexiblespace.com

Small yet Powerful



Panasonic has redesigned its Mini VRF heating and cooling units to produce the most compact, yet efficient Mini ECOi series ever – available from November 2017. The new Mini ECOi VRF models, designed for residential and light commercial applications, deliver a powerful performance for properties with limited outdoor

space and boasts significant energy savings, easy installation and high efficiency. The new Mini ECOi Series, which includes 4HP, 5HP and 6HP models, is the ideal solution for delivering highly efficient VRF technology to buildings with restricted external space.

www.aircon.panasonic.eu

Add style with the BLANCO ENVOY tap



The BLANCO ENVOY tap boasts a sleek and modern design, which is suitable for all modern kitchens. Available in brushed steel, chrome, matt black and trendy rose gold, the ENVOY tap will stand out in any home. The elegant ENVOY tap boasts a sweeping swan neck and a tall spout, while the single

lever control and high pressure supply ensures a practical and powerful flow. The BLANCO ENVOY is designed with the environment in mind, with a six litre minimum regulated flow, to save water. For further information on BLANCO UK, please visit the website.

www.blanco.co.uk

Free swing door closers at new mental health hospital



Samuel Heath's Powermatic Free Swing controlled, concealed door closers have been used at a new £48 million state-of-the-art psychiatric care building at Royal Edinburgh Hospital.

The new facilities will provide accommodation for the adult acute mental health inpatient service, older people's mental health assessment, Intensive Psychiatric Care Service and the new Robert Fergusson national brain injury unit.

Powermatic Free Swing door closers have been used on the main entrance doors to all 185 residential care rooms throughout the new building. In addition to impressive fire and accessibility performance, the door closers are totally concealed when the door is closed, helping to create a more therapeutic, less institutionalised ambience to the interiors.

0121 766 4200 www.concealeddoorclosers.com

Salice products and service are perfect for Neville Johnson



Salice UK are delighted to be supplying a selection of their furniture fittings for installation within the Neville Johnson furniture range. For over three decades Neville Johnson has been creating innovative fitted furniture, offering bespoke solutions for any room or space. Using traditional techniques, fine materials and the incredible imagination of their talented team, they have progressed to become market leaders in their field. Salice supply their Silentia integrated soft close hinge which features a shallow cup depth of only 12mm, permitting the use of this hinge in doors with even the deepest edge profiles. Specifically designed to combine functionality and style, Silentia provides silent and smooth closing action for all types of furniture doors and is available for the full range of applications - angled, wide opening and blind corner specification. In addition, Salice's Futura concealed runner is specified for all drawer applications. Suitable for use with all versions of full-extension runners, Futura has options for self-closing units, and a push option for handle less furniture. For further information on the SALICE product range please visit the website.

www.saliceuk.co.uk



Stretch Metal Ceiling Innovation



The Microsoft Innovation Centre in Mons Belgium is a further example of how **Hunter Douglas Architectural Projects** work with Architects and designers to help realise their vision. The three dimensional installation was based on a large abstract drawing that composed coloured rectangular, square and conceptual shapes. To create a physical transparency between the floors, walls, and ceilings, the architects Reservoir A chose a

range of Luxalon Stretch metal panels from Hunter Douglas to blend the ceiling into the overall project design.

01604 648229 www.hunterdouglas.co.uk

Affinity255 flooring chosen Sports Centre



Heavy commercial high-design luxury vinyl tiles from Polyflor's Affinity255 PUR range were selected for the refurbished interior of a gym at Rhondda Sports Centre in Ystrad, Wales. Two complementary wood effect designs from the Affinity255 PUR LVT collection, Harvest Oak and Huckleberry Oak, were installed side by side throughout the reception, gym floor and circulation areas. Polyflor also offers Sport

67 indoor sports flooring, a 6.7mm gauge flooring available in blue, green and a maple wood effect that is widely specified for college, school and sports halls, gymnasia and leisure centres.

0161 767 1111 www.polyflor.com

Wetroom drain has sunk to new depths



CCL Wetrooms, a leading UK wetroom specialist, has launched its shallowest ever waterless trap – the NEW Lo-Seal Trap – at a cutting edge depth of only 55mm. Developed specifically for use in wetroom

construction projects with screed depths of below 60mm, the new trap allows wetroom drainage to be installed where standard depth drains cannot be accommodated. The NEW Lo-Seal Trap is the latest technological development to the market leading Linear Screed Drain from CCL Wetrooms, which has been providing shallow drainage solutions to architects, interior designers and house builders for many years.

0844 327 6002 www.ccl-wetrooms.co.uk

Low emission resin flooring



Remmers Epoxy OS Color New is a coloured Epoxy Self Smoothing resin system suitable for industrial and commercial applications. Its high mechanical strength coupled with excellent chemical resistance makes it ideal for industrial environments whilst its innovative

reduction in VOC's means it is perfect for commercial applications such as Schools, Hospitals or retail areas. Epoxy OS Color New is one of a select band of Remmers Solvent free epoxy resins that holds AgBB certification thanks to a huge reduction in the use of harmful ingredients when compared to standard resin flooring.

01293 594010 www.remmers.co.uk

Modern Terrazzo flooring revitalises historic Kelvin Hall



Flowcrete UK has worked with Glasgow's historic Kelvin Hall during a £35 million refurbishment project to help turn the much-loved building into one of the city's most exciting entertainment and leisure venues. In order to provide a high strength screed that could cope with the stresses of heavy foot traffic, Flowcrete UK supplied 1,750m² of heavy duty Isocrete K-Screed to ensure a robust floor buildup in the main reception that would be able to withstand Kelvin Hall's 25,000 weekly visitors. Proprietary additives were incorporated within the screed material, producing an earlier drying time and ensuring that the flooring installation was completed in a faster timescale than a traditional screed system would allow. To achieve a visually appealing floor finish, 1,600m² of the seamless resin terrazzo system Mondéco Mirrazzo was applied over three floors in a light silvery grey colour that matched the structure's interior design scheme. In selected areas, an asymmetrical two-tone effect was achieved by applying a darker shade of grey along one side of the corridor that blended seamlessly up the wall.

01270 753000 www.flowcrete.co.uk

Accessible toilets prove they open doors to more customers...



Do you want a way to increase customer numbers? Head to the toilets! That's the message from **Closomat**, resulting from feedback from brands such as Alton Towers, JD Wetherspoon. The brands are among a growing number to use Closomat's expertise to upgrade their accessible toilets to include more space and greater range of equipment – specifically a hoist, adult-sized changing bench and privacy screen, aka Changing Places, Space to Change. Alton Towers opened its Changing Places and Space to Change at the start of the 2017 season, and is seeing the facilities used on average 20 times/day, every day. Cornwall Services on the busy A30 trunk road opened its facility a year ago, and is seeing it used on average 10 times/day, with visitors reporting stopping there specifically because of the toilet. Closomat is one of Britain's leading provider of helpful toileting solutions, at home and away. Uniquely, the company can provide an in-house, 'one- stop-shop' complete package for 'away from home' assisted accessible toilet facilities, from design and commissioning, through to project management, supply and installation, and can also provide subsequent maintenance and repair.

0161 969 1199 www.clos-o-mat.com

Access all areas – how to create an accessible kitchen

With 18 per cent of the UK population aged 65 and over, a figure predicted to rise over the coming years, future-proofing homes is a necessity. James Dadd of AKW offers food for thought on addressing the challenge of ensuring independent and safe living when it comes to kitchen design

The first and overarching key feature of an accessible kitchen is that the kitchen should be inclusive to ensure comfort for multiple users with different abilities. It also needs to be convenient, responsive and flexible to changing needs over time and, above all, it needs to be safe. With this in mind, there are some key features and design principles that need to be incorporated into any inclusive kitchen installation.

The kitchen should be inclusive to ensure comfort for multiple users with different abilities

Moving from triangular to linear

The design concept behind most modern kitchens is based on incorporating three out of the four major products in the kitchen into an ergonomic triangle. However, with inclusive kitchen design, the main priority is to develop a linear layout, so that food can be transferred sideways along the work surface from the hob to the sink, from the prep area to the oven, and back to the bench. The aim of inclusive kitchen design is to eradicate the need for the user to have to lift heavy, hot pans out of an oven and twist to place them on a bench situated behind them.

Working with wheelchairs

Spending time measuring the space, the client's reach and movement capabilities, the size of the wheelchair and its movement arc are all essential before any





DROP-DOWN

Optimising the use of storage space available to wheelchair users via drop-down cupboards

Images courtesy of AKW

design involving wheelchairs is prepared. Companies may offer consultations to architects, installers and designers to help with this process, and during the initial visit 150 to 200 measurements may be taken to ensure that as much of the kitchen as possible will be accessible to them in the final design, including pull out work surfaces, drop down units and rotating corner unit shelves.

Many refurbishment projects feature a narrow kitchen that is difficult to navigate, so the turning circle needs to be increased, using raised height, recessed or rebated plinths to allow the wheelchair footrest to rotate under each unit. Such design details also allow the user to get as close to the work surfaces as possible.

Working with visual impairment

If designing with the visually impaired in mind, colour and lighting can have a dramatic impact on a user's experience in the kitchen. Highly contrasting shades enable users to distinguish between separate areas, while lighting can help to make the contrast yet more apparent. The amount of natural light will also affect the choice of colours as they change in different light sources, with floor, wall, furniture and accessory colours looking much brighter in direct daylight than under artificial light sources.

In addition, equipment and appliances should be simple to locate for the visually impaired and placed where the individual user would expect to find them. The use of tactile devices and controls or those with auditory feedback also enhance accessibility and ease of use.

Building in flexibility

Ultimate flexibility can be built into any kitchen with the inclusion of adjustable work surfaces. Rise and fall tables, which can be straight or L-shaped and accommodate all needs in multi-user environments, as well as allowing for totally free access space below worktops for wheelchair users. They can be smoothly controlled with simple user interfaces that can be positioned in various locations, and feature smart safety stop and collision detection functions.

Similarly, drop down cupboards enable wheelchair users to make full use of the storage space in their kitchens without limiting access for ambulant users. Doors should also be supplied with 170° opening, where possible, for ease of access and all drawers should have an option to be soft close, while cupboard handles need to allow for comfortable use with arthritic hands, for instance.

As the need for accessible living spaces grows, it is the job of the architect, designer and installer to put in place solutions that meet the requirements of all household residents, including those with a disability, to ensure maximum comfort and independence. Sometimes the traditional design process needs to be turned on its head to ensure this, but with the right knowledge and equipment it is becoming easier than ever before to create safe and inclusive rooms in the home that are responsive to everyone's daily needs.

James Dadd is marketing director at AKW

The rise of smart buildings

Keith Carey of Salto Systems takes a look at the trends having a significant impact on access control, and how they are putting smart systems at the heart of how buildings will be operated in the future



The success of the cloud and its benefits are growing and this has given rise to new perspectives in the industry

The Harper Concert Hall in Iceland

There is a lot of talk in the industry right now about the rise of 'smart buildings', but products that deliver buildings that are smart to own, operate and manage are already available.

An access control system is sometimes seen as a small part of the overall building but in fact it is absolutely central to how the owner will operate that building. It needs to work with other integrated sub systems including CCTV, alarms and fire to provide effective and time-saving management of all online, offline and wireless systems including access points and applications via, where possible, one software package.

The key for the architect and their client is to select an access control solution that balances security with accessibility, and advanced technology with affordability. By embedding high performance electronic access control into their building infrastructure, architects can ensure the building owner or operator can protect their people, assets and building while providing world-class facilities. It's about realising tomorrow's keyless buildings today with innovative thinking and advanced technology.

Cloud technology

Cloud technology is steadily growing in the access control market, but what are the benefits of using it? The success of the cloud is growing fast, and this has given rise to new perspectives in the industry. Many commercial clients are recognising the advantages that cloud solutions can offer especially when you incorporate the right security measurements. We saw its potential early and were among the first manufacturers to bring an advanced cloudbased electronic locking solution to the access control market.

The versatility cloud access control can bring to a client – particularly small offices, retailers and the serviced apartment industry – is considerable. It provides functionality and performance with a flexible management system that requires no software installation and negates the need for complex IT infrastructure. All you need is an online device with an internet connection to make





access control a simple and secure solution for clients to manage keys, users and doors across multiple locations – enabling full control of who can access what, when and where at all times.

Mobile technology

From an access control point of view mobile means you can send a key electronically to a smartphone. This replaces the need to carry a fob or smart card. One of the fastest growing users of this is the hotel industry where a guest makes their booking online and receives their key – via secure encrypted technology – on their phone. The app on the phone and the key sent to that app gives them access to all the doors they will need to use while on-site and at the end of their stay the key deletes off their phone automatically.

Is there a future for access control in the Internet of Things?

The Internet of Things (IoT) is undoubtedly an exciting opportunity for all access control companies, allowing devices to be usefully connected like never before. Today, our world is generally becoming increasingly connected. The importance of access control in IoT will grow as IoT devices become more widespread and building systems become smarter and more connected.

The proliferation of devices which can be and are connected to the internet – building security, cameras, heating systems and doorviewers – will continue to grow, changing the way we live, work and play, and driving the increased adoption of smart connected access control solutions in the years to come.

Access control's role in the rise of the smart home

Over time electronic locks will rise in popularity. We have seen this happen in commercial markets in the last decade, and now focus is moving to the residential market.

Mobile technology is key in the smart home and IoT connectivity will help companies to rapidly drive forward into this market.

Keith Carey is marketing manager at Salto Systems

Charcon supplies award-winning Quarry Garden at the National Memorial Arboretum



Charcon, the commercial hard landscaping division of Aggregate Industries, has supplied the Institute of Quarrying with quality commercial flag paving and kerbs to the award winning IQ Quarry Garden at the National Memorial Arboretum in Staffordshire. Mark Barter, Sales Director for Charcon, comments: "It has been an honour to be involved in this project and see the garden installed as a permanent fixture within the National Memorial Arboretum for people to enjoy for years to come. Not only does the Quarry Garden aim to convey to the public how efficient quarrying can be, it also fosters young talent by supporting local students on their horticultural journey. It has been great to showcase the wonderfully creative ways of using Charcon's Eco range products, which with their quality and durability, will truly stand the test of time in the Quarry Garden." Charcon's 600mm x 600mm EcoPave® Textured flag paving in Grey Fleck has been used throughout the garden. This sustainable product, containing 50 per cent recycled or reclaimed materials, incorporates uniquely formulated Cornish aggregates to optimise performance, durability and the aesthetic appeal of granite.

01335 372 222 www.charcon.com

Smartlock security in the Highlands



Dunalastair Hotel set in the heart of Kinloch Rannoch, was first converted into a hotel at the turn of the last century. In 2014 the hotel started its multi-million pound refurbishment. An important aspect of the hotel managements refurbishment plans was to incorporate the

very latest access control technology. **Securefast's** state of the art OnDoor Smartlock Wireless Network system provided the perfect solution. Each of the 32 bedrooms were fitted with the ASL951BW wireless locks in a brushed stainless steel finish which give a single operation on the inside and card control from the corridor side.

sales@securefast.co.uk

Resiblock the best form of defence



In September of 2017, Defence Munitions Crombie specified, through their contractors Carillion Amey, **Resiblock** '22' for the sealing and stabilisation of refurbished Concrete Block Paving at their base in West Fife, Scotland. After discussions, Resiblock '22' was recommend by Resiblock, and

ultimately specified by Carillion Amey, as this globally utilised jointing stabiliser can prevent fuel infiltration with the application of a second coat. This now sees DM Crombie join the list of MoD sites sealed with Resiblock including; RAF Spadeadam and RAF Kinloss.

custserv@resiblock.com






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www.securefast.co.uk Sales Hotline: 01704 502801

Tobermore hard landscaping specified at British Airways i360

The Terra Firma Consultancy provided an informal landscape design advisory service to Marks Barfield Architects, sourcing the most appropriate hard landscaping solution at British Airways i360, the new landmark attraction on Brighton beach. The Terra Firma Consultancy presented Marks Barfield Architects with Tobermore's Sienna Duo - a block paving product with a striking granite aggregate finish that offered the contemporary look desired for the iconic structure.

Robyn Butcher, Landscape Architect at The Terra Firma Consultancy, explained the objectives of the high-profile project and her role within it: "The design vision for the external landscape was to provide an attractive landscape to accompany the highly anticipated British Airways i360 building and enhance the experience for visitors."

Built at the landward end of Brighton's historic West Pier, British Airways i360 is a modern-day 'vertical pier' that offers a new perspective on Brighton and the south coast. Visitors are gently lifted from ground level to a height of 138m in a giant glass observation pod. The modern design, engineering and method of construction are innovative, just as the West Pier was in its time.

Robyn noted that due to the contemporary style of the design and build, paving products were the most suitable hard landscaping material for the project. "The aesthetics of paving was ideal for the envisioned design and, as other areas on the beachfront close to the project were due to be refurbished with new paving in the near future, we knew that paving around the British Airways i360 building would create continuity with these existing elements."

Robyn was involved in the process of sourcing and assessing paving products for Marks Barfield Architects and she was highly impressed with the quality, aesthetics and performance offered by Tobermore's Sienna Duo block paving.



The attraction was completed in August 2016 and was officially opened by His Royal Highness The Duke of Edinburgh during a special ceremony in October 2016.

British Airways i360 has also achieved the Guinness World Record for the World's Most Slender Tower, with a diameter of just 3.9m at its widest point.

0844 800 5736 www.tobermore.co.uk





Proving permeable paving

The trade association Interpave has just launched a new case study showing how concrete block permeable paving provides a comprehensive and cost-effective sustainable drainage system (SuDS) for a new housing development without additional land-take. The case study explores a SuDS scheme at Fleetwood Crescent, the 28-home first phase of a new development in the Eastfield area of Peterborough for award-winning housing association Cross Keys Homes. It makes extensive use of concrete block permeable paving, reflecting Peterborough City Council's desire to incorporate SuDS in developments. The estate road is a trial site for the adoption of permeable paving by the Local Highway Authority and will be adopted under the 'Section 38' process, and its performance monitored. All the concrete block permeable paving has been designed and constructed in accordance with Interpave technical guidance. This scheme demonstrates how concrete block permeable paved drives, parking and adopted roads on a typical new housing development can attenuate, store and treat runoff from all the hard surfaces without additional land-take or other SuDS features.

0116 232 5170 www.paving.org.uk

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