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MORPHEUS HOTEL, MACAU

Zaha Hadid Architects wraps hotel with world's first free-form high-rise exoskeleton to put casino resort on the design map

JEAN BISHOP INTEGRATED CARE CENTRE, HULL

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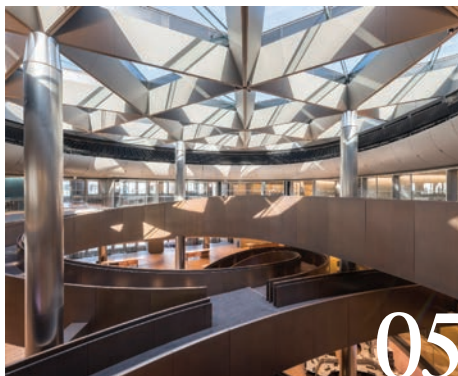
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05



26



59

CONTENTS

11.18

NEWS, VIEWS & INSIGHTS

- 04 Industry news & events
- 13 Ask The Architect: FaulknerBrowns
- 15 Site Lines: Evolving modular design
- 18 International Focus
- 20 New Arrivals
- 21 CPD Focus
- 22 Appointments & news
- 43 Heating & Renewable
Energy Showcase

PRODUCTS

- 24 Planning & design
- 46 Groundworks & drainage
- 48 Structural elements
- 50 External envelope
- 64 Insulation
- 68 Interiors
- 80 Safety & security
- 81 Landscaping & external works
- 83 Classified & directory

PROJECT REPORTS

- 26 **Playing with geometry**
James Parker spoke to architect Viviana Muscettola about creating the world's first free-form high-rise exoskeleton for the Morpheus Hotel, Macau
- 37 **A caring collaboration**
An innovative healthcare project in Hull was driven by a desire to integrate health and social care options for the elderly. Roseanne Field reports

FEATURES

- 47 **GROUNDWORKS: FLOOD RESILIENCE**
Sustainable drainage enters the mainstream
Mark Manning of SDS looks at how sustainable drainage is finally being seen as a mainstream option in order to shoulder the impact of climate change
- 49 **STRUCTURAL ELEMENTS**
Not just hot air
ADF reports on how the roofing industry is joining forces to tackle the fire risks posed by gas torch roofing installation methods, with hot air being one alternative
- 59 **EXTERNAL ENVELOPE: GLASS & GLAZING**
Performance vs looks: a view
Different buildings have differing needs with respect to aesthetics, performance and function. Guardian Glass reports on getting the balance right
- 61 **EXTERNAL ENVELOPE: ROOFLIGHTS**
Shedding light on the case for rooflights
Rooflights are now an essential element to consider in modern designs, says John Godley of Hambleside Danelaw Building Products, explaining the reasons why
- 65 **INSULATION: ACOUSTICS**
Sound advice for office acoustics
Mike Carrick of Siderise Group discusses how designers and specifiers can create quieter workspaces, improving privacy and delivering exceptional sound reduction
- 75 **INTERIORS: BATHROOMS & WASHROOMS**
A sustainable future for water
Glenn Payne from Grohe discusses sustainable solutions for bathrooms as well as the innovations making their way into UK homes

Managing Editor

James Parker
jparker@netmagmedia.co.uk

**Advertisement Manager/
Joint Publisher**

Anthony Parker
aparker@netmagmedia.co.uk

Editorial Co-ordinator

Shelley Collyer

Editorial Assistants

Roseanne Field
Jack Wooler

Editorial Contributor

Sébastien Reed

Studio Manager

Mikey Pooley

Production Assistants

Georgia Musson
Kim Musson

Sales Executives

Suzanne Easter
Ian Fletcher
Kim Friend
Steve Smith

**Audience Development
Manager**

Jane Spice

Managing Director

Simon Reed

**Advertising &
Administration**

t 01435 863500
info@netmagmedia.eu
www.architectsdatafile.co.uk

Press Releases

editorial@netmagmedia.eu

**Subscription circulation
enquiries**

circulation@netmagmedia.eu

netMAGmedia Ltd

Cointronic House
Station Road, Heathfield
East Sussex, TN21 8DF



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FROM THE EDITOR



“As a business, we have one expense – people. Anything we can do to make them more efficient has to be a good economic deal, rather than shoehorning them in”. These are the words of Mike Bloomberg, financial media billionaire, former New York Mayor, and a man widely acknowledged as the ideal client. Part of this is presumably because he doesn’t just regard buildings as being statements of corporate power, but as being places for people, on both efficiency as well as holistic grounds.

His European headquarters building, sensitively planned to be medium-rise to fit into its City of London setting, was designed to an outstanding level of material quality by Foster + Partners. It has now proved to be the RIBA’s favourite too, picking up the Stirling Prize. Some have complained that far less expensive contenders (it cost £1.3bn) offered equally good architecture in their context, however it is hard to deny how impressive the HQ is on all levels. From the bronze fins specially designed to bring in fresh air, to the magnetic timber floors, to the expanses of aluminium ceiling ‘petals’ attenuating sound and cooling the building, evidence is everywhere of extreme care and attention to detail – a testament to the UK profession that gives a big reason to be cheerful.

A lot of its qualities are people-focused, echoing Mr Bloomberg’s words, such as in providing a wide circulation ramp and an overall level of comfort which is unusual for commercial buildings. The open-plan layouts are focused around making staff productive as well, tapping into the ‘issue du jour’, and one which will not go away as the UK struggles to ensure that firms up their productivity in future years.

The many environmental qualities that affect a workplace can provide crucial support not only to employees’ motivation to succeed, but also their ability to concentrate and perform at their best day to day. Acoustics are of course one of the most important elements, and internally Bloomberg is perhaps most notable for how quiet and calm – almost library-like – its spaces are. It feels like a place where concentration is prioritised above all.

Back in the less inspiring everyday, with Michael Bloomberg having been contrastingly scathing about Brexit, his views have now been echoed by leading lights in the architecture profession. They have finally put their heads above the parapet in numbers, co-signing an ‘open letter’ to Theresa May from Piers Taylor of Invisible Studio. With names such as David Chipperfield, Niall McLaughlin, Paul Monaghan, Robin Nicholson, Sophie Twohig, and Stephen Hodder, the list supporting the strongly worded letter is a powerful showing by the profession, against increasingly bleak prospects in terms of hopes for a deal with EU.

Says Taylor: “Cooperation across borders is critical to the success of our practices. Much of our work is pan-European, and many of our staff are from the EU...We believe that without being members of the EU this success would not have been possible.” He goes on to say: “Under proposed immigration rules, your definition of a skilled worker excludes almost all of those who come to work in our industry...this is devastating.”

The question is, will anyone listen?

James Parker
Editor

**ON THE COVER...**

Morpheus is the fifth in a group of high-rise hotels within the City of Dreams integrated hotel/casino complex in Macao. It stands out as an ambitious and unique design statement with the world’s first free-form high-rise exoskeleton. For the full report on this project, go to page 26
Cover image © Virgile Simon Bertrand

STIRLING PRIZE

Fosters' Bloomberg HQ wins Stirling Prize

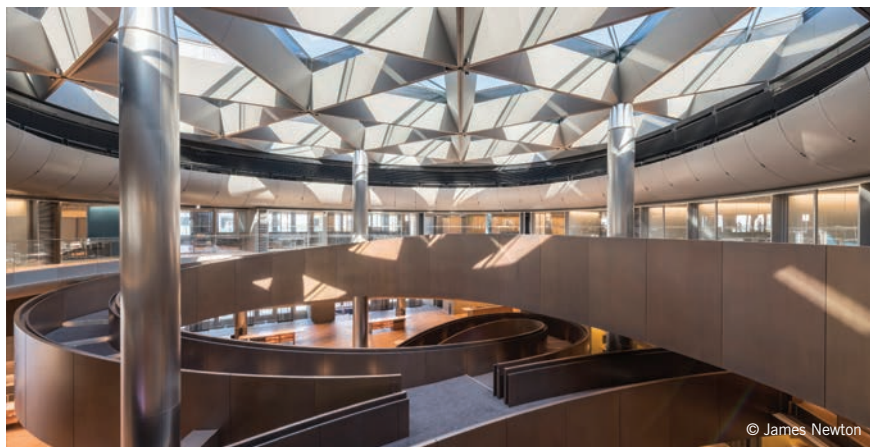
Bloomberg's European headquarters, designed by Foster + Partners, has won the 2018 Stirling Prize following a unanimous decision by RIBA judges.

The financial media giant's HQ in the City of London was described by RIBA president Ben Derbyshire as a "monumental achievement". Thought to be the largest stone building constructed in the City since St Paul's Cathedral, the RIBA said it was a "project which has pushed the boundaries of research and innovation in architecture".

Derbyshire said the 1.1 million ft² building has "not just raised the bar for office design and city planning, but smashed the ceiling." Bloomberg achieved BREEAM Outstanding with a rating of 98.5 per cent, making it the world's most sustainable office building.

The scheme comprises two buildings connected by a bridge, either side of a new public arcade, and provides a workplace for 4,000 staff. Although Fosters had permission to design a building over double the height, Bloomberg sits at a modest 10 stories, "seeking to create a dialogue with the City that surrounds it".

The building incorporates a museum displaying the Roman Temple of Mithras and contrasts a restrained exterior with a



dynamic, open-plan interior.

Instead of a large central core formed of lifts and staircases, services are pushed to the edge with the staff at the core. Key design features include the 'Vortex' – a dramatic double-height space created by three curved timber shells, the 'Pantry' – a large concourse and café space with views across the City, and a 210 metre-high bronze 'ramp' linking open-plan office floors.

Pioneering technologies include multi-function ceilings fitted with 2.5 million

polished aluminium 'petals' to regulate acoustics, temperature and light.

Fosters also developed innovative power, lighting, water and ventilation systems to utilise waste products, respond to the building's external environment and adapt to occupancy patterns.

RIBA concluded: "This ground-breaking project demonstrates what is possible through close collaboration between highly-skilled, imaginative architects and a sophisticated, civic-minded client."

AWARD

Sir Nicholas Grimshaw awarded RIBA Royal Gold Medal for Architecture

Sir Nicholas Grimshaw is to receive the 2019 Royal Gold Medal, the UK's highest honour for architecture, awarded by the Royal Institute of British Architects (RIBA).

Given in recognition of a lifetime's work, the Royal Gold Medal is approved personally by Her Majesty The Queen

and is given to a person or group of people who have had a significant influence "either directly or indirectly on the advancement of architecture".

Announcing the award, RIBA president Ben Derbyshire said: "It was my privilege to chair the panel that selected Sir Nicholas Grimshaw for UK architecture's highest accolade. For more than half a century, his influence has been exceptional."

"He is responsible for an extraordinary number of buildings and infrastructure projects of international significance, and for the continuous development of an architecture which places technology at the heart of the aesthetic."

Derbyshire concluded: "His influence on architecture extends beyond his work as a practitioner. He is an educator,

champion for the UK architectural profession and for culture more widely. He is an inspiration to a future generation of architects and his recognition with this Royal Gold Medal is well overdue."

Responding to the announcement of his award, Grimshaw said, "I am thrilled to hear about the Gold Medal and would like to thank those who supported my nomination. My life, and that of the practice, has always been involved in experiment and in ideas, particularly around sustainability; I have always felt we should use the technology of the age we live in for the improvement of mankind. I would like to thank everyone who has ever worked in the office for contributing to our bank of ideas, and for helping to make it an enjoyable and humanistic place."

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EVENTS

AWARDS

Structural Awards 2018
16 November, London
www.istructe.org/structuralawards

EXHIBITIONS

Disappear Here
2 May - 24 November, London
www.architecture.com/whats-on

FESTIVALS

World Architecture Festival
28 - 30 November, Amsterdam
www.worldarchitecturefestival.com

SEMINARS

Response to Grenfell with Jane Duncan
20 November, Plymouth
www.architecture.com/whats-on

TRADE SHOWS

Architects@Work
23 - 24 January, London
www.architect-at-work.co.uk

Surface Design Show
5 - 7 February, London
www surfacedesignshow.com

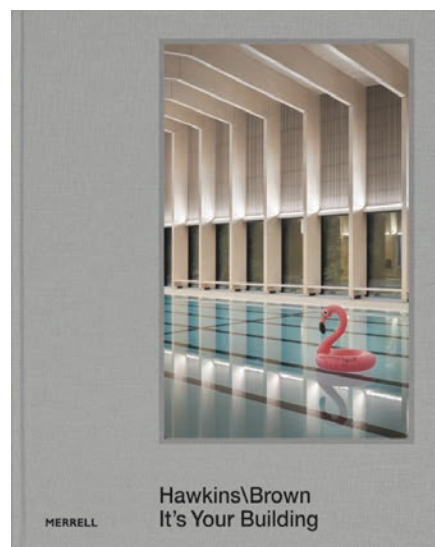
BOOK

Hawkins\Brown: It's Your Building

Celebrating its 30th anniversary in 2018, architectural practice Hawkins\Brown has produced an extensively illustrated book which examines fourteen projects in detail, plus insightful essays on related themes interspersed throughout.

With an introduction by architecture journalist Hugh Pearman, 'Hawkins\Brown: It's your building' begins with Pearman's examination of the formation, history and philosophy of the practice, based on interviews with its two founding principals, Roger Hawkins and Russell Brown. A full analysis of the projects follows, each comprehensively illustrated with photographs, detailed plans and renderings. Hawkins\Brown commented: "As Pearman says in his introduction, one word that springs to mind when looking through the book is 'range'. This is a practice that could never be typecast."

Working on projects as diverse as the major upgrades to Tottenham Court Road Underground Crossrail station, the revitalisation of Sheffield's Park Hill estate, and the construction of the innovative



Corby Cube civic and cultural centre in Northamptonshire, Hawkins\Brown has demonstrated "remarkable versatility".

The 14 detailed case studies are interspersed with engagingly written essays by members of the practice. These explore themes such as the integration of art with architecture, the importance of urban planning, and the opportunities afforded by new technology. The result is a "highly readable and informative insight into one of the country's leading and most versatile architectural practices," said the firm.

BOOK

An affordable, zero-carbon and zero-waste way of life: ZEDlife

As concern for sustainability in the built environment grows, ZEDlife from RIBA publishing "offers a timely intervention".

More than just a guide to affordable green living, in this book, leading architect and sustainability pioneer Bill Dunster demonstrates "practical and positive ways to achieve a clean, green future that doesn't cost the earth".

ZEDlife is the vision of Dunster's ZEDfactory: an architectural practice exclusively committed to low carbon building and development. It pioneers routes to reduce people's environmental impact through Zero Energy Development (ZED) whilst at the same time increasing our quality of life through stimulating, distinctive and sustainable design.

With clients around the world, ZEDlife marks a seminal moment for ZEDfactory. It is "set to provide vital reading for all those invested in seeing the built environment and society more widely successfully transition towards a low-carbon model – with relevant information for students as well as experienced practitioners," commented RIBA.

From small-scale ideas to large-scale solutions in buildings and urban planning, the book offers a "comprehensive and interdisciplinary approach to achieving sustainable design". Full-colour case studies of projects from across the globe illustrate that zero-carbon living is achievable today.

Bill Dunster commented: "When there's no top down plan that doesn't involve



collateral toxic waste, it's up to us all to build our own future that works. ZEDlife assembles the latest tools that define a clean, healthy, affordable and hopefully peaceful way of living. He added: "Ranging from a single room to high-density communities – this joined up and practical thinking can regenerate optimism for 'Generation ZED'. ZEDlife will help householders, students, architects, engineers, clients, local councillors, planners, policy makers, politicians and investors meet the challenges of the century ahead."

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WORLD ARCHITECTURE FESTIVAL

The best international proposals of 2018

The World Architecture Festival (WAF) has revealed the winners of 10 WAFX prizes. The prizes are awarded to future projects that “identify key ecological and societal challenges, which architects are actively seeking to address over the next 10 years”. These challenges span diverse topic areas including climate change, energy saving and carbon emissions, water wastage and shortage, ageing populations and health issues, reusable materials, smart cities, building technology, cultural identity, ethics and power, and justice.

The prize winners will present their projects live at the World Architecture Festival being held on 28 and 29 November in Amsterdam. The overall winner will be crowned at the festival’s Gala Dinner on 30 November, the culmination of the three-day event at the RAI convention centre in the Dutch capital.

The WAFX judges said they were impressed by the diversity of innovative approaches by architects and designers across the globe, which varied from innovative solar panel fields in The Netherlands, to urban green corridors in Bangkok, eco farms in rural Vietnam and river parks in Colombia.

The WAFX 2018 Prize winners are:

- Re-Use – Beloit College Powerhouse, Illinois, US, by Studio Gang
- Climate, Energy and Carbon – Highway Solarpanel Field by 70F Architecture
- Ageing and Health – The Alder Centre, Liverpool by Allford Hall Monaghan Morris
- Food – Cuchi Organic Eco Farm, Vietnam, by IF (Integrated Field)
- Building and Technology – W350 Project, Tokyo, by Nikken Sekkei
- Power and Justice – Tower Inten city, South Africa, by Savage Dodd Architects with UrbanWorks
- Water – Medellin River Parks/Botanical Park Master Plan, Colombia, by Sebastian Monsalve + Juan David Hoyos
- Ethics and Value – Sheltainer – Where Humanity Meets Hope by Sheltainer
- Smart Cities – 10 KM by Shma Company Limited
- Cultural Identity – Ataturk Culture Center, Turkey, by Tabanlıoglu Architects



CLOCKWISE (FROM TOP LEFT): 10 KM by Shma Company Limited; Beloit College Powerhouse by Studio Gang; W350Project by Nikken Sekkei; Sheltainer - Where Humanity Meets Hope by Sheltainer; Cuchi Organic Eco Farm by IF (Integrated Field)



CLOCKWISE (FROM TOP LEFT): Ataturk Culture Center by Tabanlıoglu Architects; Medellin River Parks/ Botanical Park Master Plan by Sebastian Monsalve + Juan David Hoyos; Highway Solarpanel Field by 70F Architecture; The Alder Center by AHMM; Tower Inten city by Savage Dodd Architects/UrbanWorks

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ASK THE ARCHITECT

Lee McLaughlin, partner at FaulknerBrowns Architects, answers *ADF*'s questions on what makes him tick, design approaches, and current and future issues



WHAT HAS BEEN THE MOST SATISFYING PROJECT YOU WORKED ON?

Our Hebburn Central project was particularly pleasing in many respects – notably that we achieved something outstanding, having been appointed from day one to a contractor client. A lot of people in the industry bemoan the challenges of design and build and so forth, but that project made a significant contribution to the industry and its community – it was visited by the Stirling Prize judging panel but was unsuccessful – next time perhaps.

HOW FAR DO YOU GET INVOLVED WITH DEVELOPMENTS IN MATERIALS AND WHAT IS YOUR FAVOURITE RECENT EXAMPLE?

We take inspiration from precise construction detailing and material technology, and we push this on most of our projects, no matter how primitive the product we are looking at. Take stone for

example, and the staircase Foster + Partners designed for Apple at Orchard Road in Singapore. A thesis in craftsmanship, precision and materiality.

ARE YOU ABLE TO TAKE AN EXPERIMENTAL APPROACH WITH MATERIALS ON PROJECTS?

We are constantly searching for new materials, systems and processes by which to deliver architecture. Taking a reductive position on design seems even more relevant today in our busy lives. Simplicity and rationale are key.

Emphasising clean lines and designing for manufacture and assembly are paramount for us and we put a lot of research and development to test on Hebburn Central. We worked closely with steel fabricators to optimise the material cuts to avoid waste and meet fairly optimistic commercial targets, the architecture has an expressive respect for the structural capability of its frame and its materials.

We created an entirely bespoke envelope system composed of large format weathered steel, aluminium and glass – it needed to have a monolithic industrial character that was focused on proportions and off-the-shelf lightweight systems weren't right.

IS THERE A BIG DIFFERENCE BETWEEN WORKING WITH PUBLIC AND PRIVATE CLIENTS IN GENERAL?

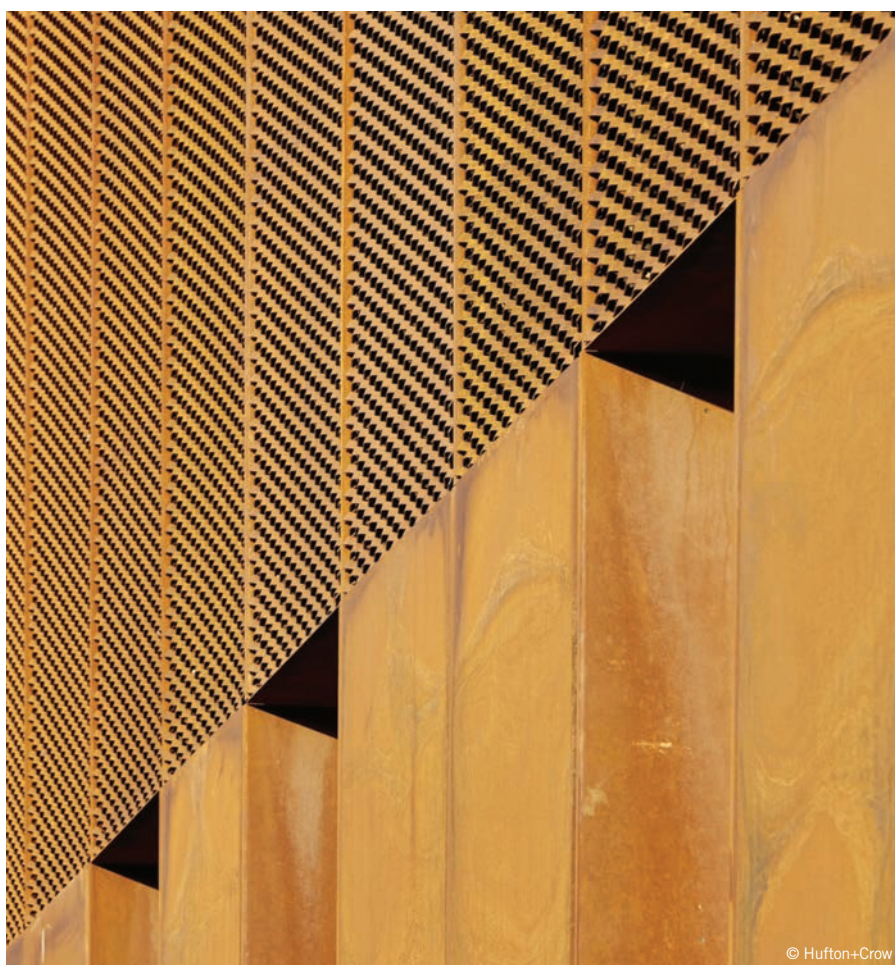
In general, no, they are the same. It's all about inspiring the individuals involved and taking them on the journey.

DO YOU PREFER MASTERPLANNING OR DOING THE FINE DETAILING?

They are inextricably linked. A masterplan is just as applicable to the design of a cup as it is to the regeneration of a new quarter in a city. You can't set a grand vision and then walk away and leave it to others. It's all about commitment. The best architects understand the impact of their lines, their sketches at every scale, be that the city or how a piece of stone turns a corner. As T.S. Eliot said, "Between the idea and the reality...falls the shadow". There is a great difference too between what one dreams up and what actually comes to pass in reality. A masterplan and fine detailing are absolutely linked.

IS BIM MORE OF A MONEY-SAVING TOOL THAN A BOON FOR THE DESIGN PROCESS?

It's powerful at the right stage and I have been lucky enough to work with



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some talented people who can boss it in a way that we hadn't seen at the start of our journey. It's powerful in the production and coordination process, its role in the design process is open to interpretation, but we have some very talented people ensuring it's a boon for us.

WHAT STANDS IN THE WAY OF GENUINE COLLABORATION CURRENTLY?

Nothing, it's just about appetite.

HAS BREXIT AFFECTED YOUR PRACTICE AND WHAT ARE YOUR HOPES AND FEARS?

It is still quite difficult to tell for us. We work in Europe and beyond and we are focused on continuing that. You mentioned collaboration – Brexit feels like the antithesis of that.

ARE YOU MANAGING TO JUGGLE WORKING IN PRACTICE AND YOUR ACADEMIC TEACHING WORK SUCCESSFULLY, OR IS IT STILL A CHALLENGE TO BE MASTERED?

We have been, and continue to be, heavily involved in running teaching units at a

number of universities and it's great to be part of a practice that offers something back. We are ambitious as a firm and thankfully big enough to manage practice and academia between all of us, with some talented colleagues taking up the more demanding side of academia. I am lucky enough to hold visiting tutor and examiner roles at institutions in England and Ireland, which works for me at the moment. Perhaps that might increase, but we have a lot to do in practice at the same time. It's all about balance.

WHAT SINGLE CHALLENGE OR INNOVATION WOULD MAKE AN ARCHITECT'S JOB EASIER?

Who wants the easy way out? Some of us enjoy the pain!

FROM YOUR EXPERIENCE HOW DO UK COMMERCIAL PROJECTS DIFFER FROM OVERSEAS EXAMPLES AS A DESIGNER?

For us it's all about process, and this is constant. So far our approach has been transferable between our UK and international projects. We don't pronounce a difference, and that's really important to us and how we work. ■

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SITE LINES

Evolving modular design

Architect James Walsh gives his views on the merits of a component-based approach concept for modular buildings, which could shift them away from their former stigma

As the move to modular construction gathers pace, what are the key design drivers when tackling a modular project, and how do we learn from the mistakes of past failures?

The first thing to say is that traditional architects are not best placed to design a modular building, as the process is not something that sits well with designers: terms like 'standardisation,' 'repetition', and 'designing from the plan' (not to the urban context) send shivers down their spines. It requires a fundamental shift in thinking from a contextual urban design response to a manufacturer-led production mindset.

Starting points

The starting points are simple – it must be designed as a modular building from day one, translating buildings post-planning into modular designs is costly and inefficient. The second key building block is a project must be based on production design parameters. Seems simple, but if you are to manufacture something it needs to be the same component and not many variations of a component.

80 per cent of the building needs to be 'the same' – not 'almost the same' with many minute variations, but the same. What do we

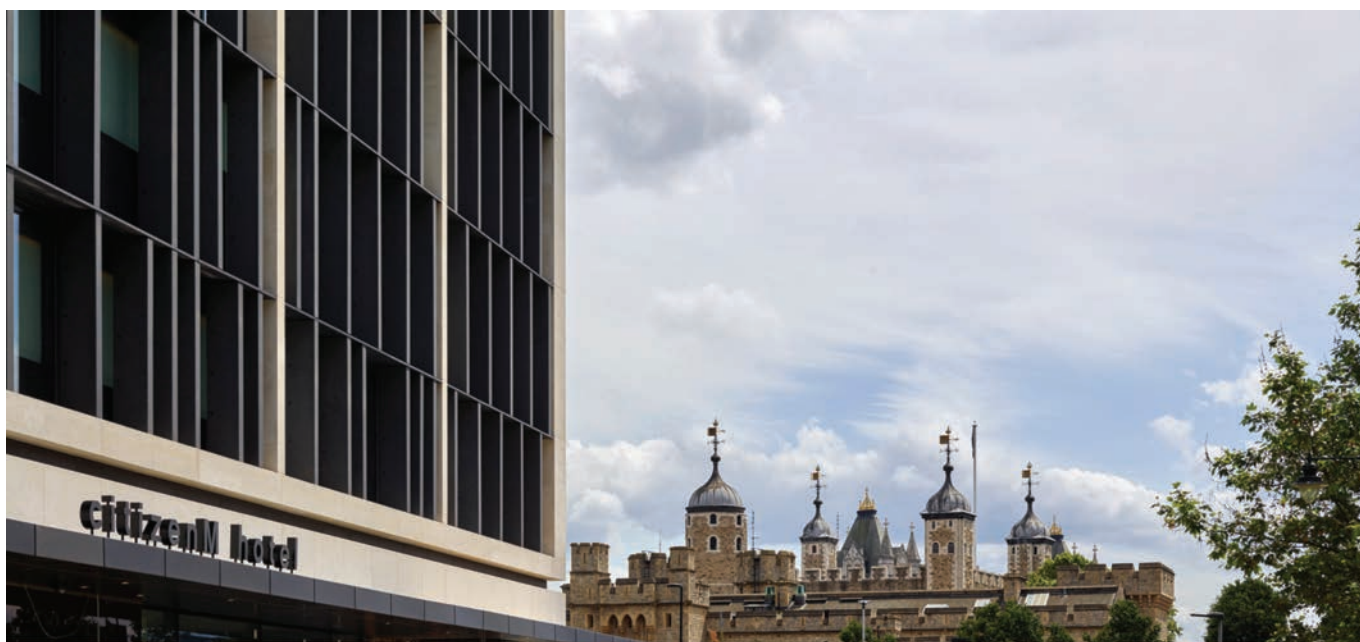
mean by 'the same' however? What elements can be fixed and what elements are open to variation? The answers lie within the production process, and are in common with the car industry.

Standardisation & customisation

Customisation is just that, you can amend a standard product through product variation: an example being that a Tesla and a Fiat use the same wiper motor and accelerator foot pedal, but look completely different. Most cars within a range sit within the same frame, but the panelling is never the same. The engine block is the same across many cars, but the speed possibilities vary due to customisation.

The same is true with buildings. The overall frame size needs to be the same, height, width, depth, the internal arrangement doesn't. The windows' position needs to be the same size and location, the cladding doesn't. The M&E systems need to be in the same locations, with the same basic layouts, but upgrades and site variations can be accommodated.

The best example is the Victorian house. These are essentially the same design and layout, but infinitely customisable. You will never



CONSISTENT

CitizenM Tower of London, a hotel whose design by Studio Anyo used the same modular units throughout



Traditional architects are not best placed to design a modular building as the process is not something that sits well with designers

hear a planner or homeowner object when you say you want to drop a replica Victorian terraced house into a street, but all hell breaks loose when you suggest you want to put in a modular home.

Victorian bedrooms are roughly the same height, width and length, they tend to have bay windows and marble fireplaces, the same chimney design, I could go on. This is the ultimate modular prototype house. They rarely have the same window detailing, but all have the same bay window construction method. All are stock brick, with colour the only slight variant, yet no one is complaining they are of a highly repetitive design, in fact the opposite – the regular rhythms of this design is highly sought after.

Moving on

The facts are that the loss of the quality of house design since the Victorian era in the UK is based around the poor planning system, combined with developers seeking profits. There is a real fear this already low base of design quality that is prevalent in the UK will be further exploited by developers using cheap modular system design.

Modular design is associated with the failed experiments with prefabricated concrete panels and prefabricated schools, both stand-out examples of the poor quality planning system and cost-driven design. The use of repetition was excessive, while no design controls were employed to harness the qualities of repetition.

To optimise modular building design, we need to move the conversation on. “Repetition refers to one object or shape repeated; pattern is a combination of elements or shapes repeated in a

recurring and regular arrangement; rhythm – is a combination of elements repeated, but with variations.”* The modular unit is the starting point for the design and not a design feature, unless, like the CitizenM hotel group’s approach, it is the design motif in itself. It is important that designers don’t attempt to reengineer a traditional facade concept back into a modular product.

Combinations in action

To create a pattern using modular design you need to start combining the units into a larger grid, either to relate to the existing context by reducing the grid, or descaling the building into a modernist approach by combining the units. To bring rhythm into the equation, you need to combine the patterns into blocks which can relate to the surrounding context.

This approach can be seen in our design for the CitizenM Tower of London, where the Dutch love of modernism had to be tempered with the English love of context, given the site’s UNESCO World Heritage listing. Here the same modular units were used throughout and the window was fully complete in the factory, including water tightness, fire and acoustics. An external skin was applied to locate the building and move it from a modular expression to a piece of contextual architecture. A veil of fins was applied to the windows to create pattern, with a continuous rail used to vary position.

Despite the appearance of randomness, 50 per cent of the fins hit the line of the modular grid. The rhythm was created by combining the modules into classical bays using an overlaid Portland stone system supported from the modules. All in all, this building has never been exposed as a modular building and sits within numerous conservation zones and a World Heritage listing.

This approach can be used in a historic context but if you need a truly traditional brick facade or hand set stone, it is technically feasible to complete the facade in the factory and overlaid using a traditional method. There are only minor impacts on the programme benefits, if the facade is detailed correctly.

The best approach is to embrace the pattern and express it using modern, lightweight materials, like our Marriott project at Luton airport, celebrating the rhythm with an angular facade. There are no real limits to the design possibilities – just the limits of your imagination and understanding of the principles. Like every cladding design of course, it needs to adhere to rules like fixing point, deflections, and glass size.

Conclusion

When approaching the planning of a modular building, the plan must be regular: based on components that are repeated. Variation, however minor, leads to additional unit counts which affect price and ultimately the viability of a modular build.

As a rule, 80 per cent of the building should be the same unit and the remainder can vary, usually around the core and the ends of the building to maintain efficiency. The blocks should be stacked vertically, and M&E should run straight down – this makes sense in any building.

Variation of design should be as the Victorians did, in the detail rather than the plan. Best to regain the respect the Victorian architects had, by reintroducing high quality housing using component-based design.

James Walsh is founder and director of Studio Anyo

*Source: www.sophia.org/tutorials/design-in-art-repetition-pattern-and-rhythm



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ATATURK STADIUM, TURKEY AFL ARCHITECTS

AFL Architects has released a fly-through of the proposed redeveloped Atatürk Stadium, created as part of the firm's production of Turkey's UEFA Euro 2024 bid. With a capacity of 92,000, the new design brings crowds closer to the game, improving the layout of the original Olympic Stadium and providing state of the art hospitality and VIP facilities. The stadium incorporates a 360-video wall around the seating bowl. Enveloping all of this is a white GRC exoskeleton with wind capture technology, allowing the stadium to generate energy from the hilltop site. The design of the cladding takes inspiration from historic Turkish hats and artwork, reflecting the layered history of the region and founder of the Republic of Turkey – Mustafa Kemal Atatürk.



VERDLOVSK PHILHARMONIC CONCERT HALL, RUSSIA ZAHA HADID ARCHITECTS

Zaha Hadid Architects have been selected by the jury of the international design competition to build the new Sverdlovsk Philharmonic Concert Hall in Yekaterinburg, Russia. Providing a 1,600-seat Concert Hall and a 400-seat Chamber Music Hall, the new auditoria are, said the architects, “nestled within the surface deformations of the suspended canopy; liberating the lobbies from obstructions to open this space as a vibrant new gathering place for the local community”. Enhancing the building's connections with the surrounding urban fabric of the city, large glazed facades blur the boundary between interior and exterior; “inviting visitors to experience the spaces within that celebrate public gathering, civic forum and creative endeavour”. The Philharmonic Concert Hall's procession of interconnected public spaces continues through the building to its rooftop terrace overlooking the Church of All Saints.



LEAF ACADEMY, SLOVAKIA BOGLE ARCHITECTS

Work has commenced on the first phase of Bogle Architects' new boarding school for LEAF Academy in Slovakia. The project for students aged 15 to 19 was won by Bogle through an international design competition in 2015. The scheme is being developed in six distinct phases, with Phase 1 encompassing a group of residential buildings arranged in two clusters of four blocks that include dormitories for 400 pupils and three teacher accommodation blocks. The design of these blocks references the pitched roofs of typical farmstead buildings while delivering modern student accommodation.



NATIONAL KAOHSIUNG CENTRE FOR THE ARTS, TAIWAN MECANOO

Taiwan's national arts centre, the National Kaohsiung Centre for the Arts (Weiwuying), has officially opened. Incorporating a 2,236-seat Opera House, a 1,981-seat Concert Hall, a 1,210-seat Playhouse, a 434-seat Recital Hall and an Outdoor Theatre, the centre is a new cultural hub for East Asia. The venue "utilises its architecture and programme to combine artistic excellence with complete openness and accessibility," said architects Mecanoo. The heart of Weiwuying is the vast, sinuous Banyan Plaza open to the public at all hours and home to a wide-ranging programme of participation. The single sweeping building covers a surface area of 35 acres (141,000 m²) and is set in a 116-acre (470,000 m²) subtropical park, making it what's thought to be the world's largest performing arts centre under one roof.



CUBE, THE NETHERLANDS KAAN ARCHITECTEN

KAAN Architecten has designed CUBE, the new Education and Self Study Center at Tilburg University. This compact and ostensibly low structure blends into its surrounding green landscape and into the larger architectural ensemble of the Dutch educational campus. Located in the north-west corner of the campus, the 11,000 m² building serves all faculties and is in constant use by 2,200 students and lecturers. CUBE is anchored to the landscape by paved pathways that guide users to its entrances on the south-side corners. In order to secure a free-flowing, open building and to avoid any sense of crowding, the heart of CUBE is a spacious indoor study plaza flanked by a transparent auditorium and two patios. On all sides, the building features a homogenous layout that leaves no closed-off facades, but exudes complete equality on all sides.



THE AMBERLY, USA WOODS BAGOT

Global architecture and design studio Woods Bagot has just opened its first North American tower. Located at the nexus of Brooklyn Heights, DUMBO and Downtown Brooklyn, The Amberly is the all-new, highly anticipated 33-storey luxury rental tower. A striking addition to the Brooklyn skyline, The Amberly's design was inspired by the historic brownstones of Brooklyn and the warm terracotta facade was intelligently patterned to maximise light and views in the living and dining areas by giving way to floor-to-ceiling windows, while maintaining privacy within the bedrooms. Located at 120 Nassau Street, The Amberly will have 270 homes ranging from studios to three-bedroom residences, with select units offering private outdoor space.

NEW ARRIVALS

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



(L-R) Mark Nugent, Ruairi Reeves, Lianne Knotts, Frank Ellis

FOUR NEW PROMOTIONS MEDICAL ARCHITECTURE

Medical Architecture has bolstered its leadership by promoting four senior staff. Lianne Knotts and Ruairi Reeves are now shareholding directors, while Mark Nugent and Frank Ellis become associates. They will work alongside fellow directors Christopher Shaw, Bob Wills and Paul Yeomans as the company leadership team. Senior director Christopher Shaw said, "Medical Architecture is growing and we are introducing new people to our senior team. As individuals we each have proven aptitude; together we make a highly capable leadership panel. Our clients will be confident we have the skills, knowledge and resources to deliver well-considered design for the most demanding future healthcare projects."



(L-R) Rafail Tsartsaris, Dan Edwards, Rhys Bevins, Shawn Loo

TECHNICAL TEAM PROMOTIONS BE DESIGN

BE Design have announced four new promotions across its technical team. With 40 years' combined experience, Dan Edwards, Rhys Bevins, Shawn Loo and Rafail Tsartsaris will now support the senior team directly with project design and client management whilst mentoring and developing the next generation of engineers and architects at the firm. Stephen Oakden, director at BE Design said, "We're a close family. Dan, Rhys, Shawn and Rafail have all worked incredibly hard to get to where they are – showing enthusiasm, passion and technical expertise across every project they've designed and delivered. I'm proud to announce their promotions and wish them all the best of luck in their new roles."



SANDER SCHUUR BELATCHEW ARKITEKTER

Belatchew Arkitekter has appointed Sander Schuur as its new creative director. Schuur holds a master's degree in Architecture from Delft University of Technology, Holland. Schuur previously served as architect and director of business development at White Arkitekter as well as an architect at UNStudio and Asymptote Architecture in New York. Schuur commented: "Belatchew Arkitekter is a creative and innovative company, renowned for pushing the envelope whenever they develop new architecture." He added: "I look forward to running innovative and successful projects, where the architecture covers more than the individual building".



SONIA PAROL URBAN EDGE ARCHITECTURE

Urban Edge Architecture has appointed Sonia Parol as senior associate director. As part of her new role, Sonia will be looking to develop strategic business partnerships, further expanding Urban Edge's workload into care and residential, as well as exploring opportunities for the use of innovative solutions such as modular construction. Sonia has worked for the Stamford-based practice for the last two years as its head of care and specialist residential, has overseen Urban Edge's continued growth into the care sector and has led the design and delivery of several major senior living projects, including Bishopstoke Park, an innovative retirement village for Inspired Villages Group.

CPD FOCUS

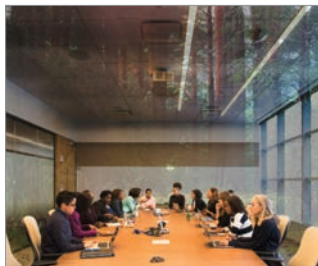
The latest CPD courses, seminars and documents for architects

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

SWEGON'S CPD SEMINAR, A BREATH OF FRESH AIR



This CIBSE accredited CPD seminar from Swegon outlines the importance of properly selecting an air distribution system and the impact this can have upon the comfort and well-being of end users and building occupants. The seminar explains the variety of room requirements and what product to use where, when and why. For consultants, building service engineers and architects, having a thorough understanding of air distribution systems will aid the design of a particular project. 01746 761921 www.swegonair.co.uk/cpds

RENOLIT LAUNCHES NEW RIBA APPROVED SURFACE DESIGN CPD



RENOLIT has launched a new CPD seminar on 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

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STEP ON IT: HOW TO SPECIFY A SAFER STAIRWAY



The RIBA approved CPD *STEP ON IT!* from Quantum Flooring Solutions looks at the guidelines for the specification of a safe stairway. The presentation and discussion deals with the subject of how to make commercial, public and shared stairways safe and meet with all current building regulation guidelines. The seminar lasts 45-60 minutes including time for a Q and A session. All seminars are part of the RIBA core curriculum syllabus and earn double CPD points for those attending the seminars. 0161 627 4222 www.quantumflooring.co.uk

SPECIFYING HARDWOOD TIMBER EXTERNAL DOORSETS



A RIBA CPD seminar entitled *Specifying Hardwood Timber External Doorsets*, from Urban Front, has recently been updated and is available to architects and construction professionals. Learning aims include information on fitting into Architectural Glass, challenges with maintenance, accessibility, door security, design features, and various regulations that must be met. The CPD is very visual and offers various opportunities to handle samples and lasts approximately 45 minutes plus questions. 01494778787 www.urbanfront.com

NEW RIBA APPROVED 'ENGINEERED WOOD FLOORING' CPD SEMINAR LAUNCHED BY KÄHR



Kährs has launched a new RIBA approved CPD seminar for architects, designers and trade professionals. The seminar, titled *Engineered Wood Flooring* educates on the construction of engineered wood, and how the product can be effectively specified within both domestic and commercial projects. Environmental accreditations, install methods and examples of references are covered within the forty minute seminar. Learning aims of the seminar include: what is engineered wood, the installation process, environmental considerations, shaping the design brief, budget considerations, accessories and how to maintain an engineered wood floor. Throughout the CPD a variety of domestic and commercial references are used to show how the design brief can be fulfilled and exceeded by using engineered wood products. There is also the opportunity for samples to be demonstrated and handled throughout. *Engineered Wood Flooring* by Kährs aims to further educate architects, designers and trade professionals on working with engineered wood across any type of project, and has been Riba assessed and approved as of September 2018. The seminar runs for forty minutes with an additional twenty allocated to questions, and is followed by a complementary lunch. 023 9245 3045 www.ribacpd.com/kahrs-uk/4209/overview

BRE publishes aluminium cladding system test



A year after Grenfell the task of safeguarding tower block residents remains one of our greatest urban challenges. UK specifiers and building control officers who can no longer turn to desk top studies for reassurance on safety performance are now looking to the most accredited test houses to put in place live and strictly monitored fire tests. In addition, the September Guidance Circular to Heads of Local Authority Building Control Departments and Approved Inspectors requires that responsible officers must look for clear evidence to confirm that “satisfactory evidence has been submitted that the requirements of paragraph B4 of Schedule 1 are being met”. These amendments to the 2010 Building Regulations relating to 18 metre plus buildings require cladding to undergo a full scale test.

The BRE's fresh round of tests on Aluminium Cladding systems highlights the benefits of using a product with zero spread of flame characteristics. The innate fire safety qualities of aluminium have long been recognised and made it the go-to material in the provision of an efficient and attractive building envelope. But as

tragically revealed at Grenfell, laminating it to petrochemical based structural substrates can result in disaster.

In a newly published report, BRE testing has shown that aluminium cladding, in this instance a 3mm aluminium cassette system from Fusion Facades, combined with intumescent fire stops around openings and between floors will actively provide fire protection to the building fabric and the residents within by effectively preventing the spread of a fire.

Specifiers are directed to Report Number P110509-1001 Issue one BRE Global Classification Report. 18th June 2018. Fire performance test in accordance with BR 135:2013 Annex B Test method BS 8414-2:2015 + A1:2017

The report shows in detail the results of a fire test which featured 136mm thick MetSIP panels, 60mm thick Rockwool insulation, an 80mm cavity and 3mm Fusion Facades aluminium cassette panels.

The test measured three specified critical parameters;

- External fire spread
- Internal fire spread
- System burn through

In all instances the system proved to be

compliant. The Fusion Facades aluminium cassettes remained firmly attached to the fixing system. With the exception of panels immediately above the combustion crib which were partially consumed, all the remaining panels suffered only discolouration of the coating. Critically there was no evidence of surface spread of flame.

Mike McKee of Fusion Facades reports that the company will stand ready to meet with Building Control Officers, specifiers and cladding contractors to enlarge on the details of the test and the reported results.

“Our industry has a duty to assist local authorities, housing associations and landlords on replacement products and new build projects at this time of heightened concern surrounding aluminium cladding. Industry professionals and tenant associations alike will find much to reassure them in the rigor and scope of the BRE test. The results have unequivocally confirmed our long held belief that well designed aluminium cladding systems present no danger and can, in effect add to the safety of the structure in the event of a fire”

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ARP Ltd has announced the launch of its photo competition. All you need to do is take some quality images of any ARP products which have been fitted and send them into ARP. Products can be gutters, fascias and soffits, copings, other bespoke pressings and downpipes in either aluminium or cast iron.

Winners will be chosen based on the best images and all those who enter will receive a free thermal mug as a thank you (while stocks last). The competition will run until 14th December, with two Google home devices being won in October, two in November and one in December, giving you plenty of time to get your images in. Full terms and conditions and entry details can be found on the ARP website.

ARP is a leading UK manufacturer of aluminium and cast iron rainwater products. Renowned for its specialist knowledge and quality products, ARP can offer both the specifier and the installer the highest standards of performance, aesthetics, and durability. Its product range is made from the highest quality aluminium and cast iron and the company's range of profiles ensure it has a style to suit any project.

0116 298 9495 www.arp-ltd.com/photo-competition

Gorick marks 40 years in the industry



Celebrations have been taking place at Centaur Technologies as chairman Jeremy Gorick marks 40 years in the liquid roofing industry. Jeremy has been a key figure in driving the incredible growth of liquid roofing products. A well-known figure in the industry, Jeremy immediately set up Centaur Technologies with Phil Richardson and Bob

Stanfield, two key former directors at Liquid Plastics, and together they developed the company's flagship Centech PU hybrid polyurethane roofing solution – a quality liquid roofing system that is durable, cost effective, and inherently safe.

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GEZE UK celebrates 30th anniversary



2018 is a milestone year for GEZE UK, which celebrates 30 years in the business as a 'go to' manufacturer and supplier of innovative door and window solutions. GEZE UK, is part of the global GEZE GmbH, a family-run business where traditional values are combined with pioneering strategic vision. So, it was

entirely fitting that to mark three decades of business success, its UK workforce and their families should enjoy a fun-filled family day of celebrations, hosted at Rodbaston Hall.

01543 443000 www.geze.co.uk

Virtual Reality Provides an Accessible Introduction to Tiling Systems

Thanks to a new Virtual Reality (VR) initiative by market leading tiling systems manufacturer, Schlüter Systems, architects and specifiers can now tour the company's state-of-the-art UK headquarters from the comfort of their own chair.

Designed by Lewis and Hickey Architects, Schlüter-Systems' current UK offices opened in 2015. The 3480m² premises routinely receive an enthusiastic reaction from visitors and are packed full of the company's innovative solutions in situ. Recognising the power of the facilities and the ideas they inspire, the team at Schlüter-Systems Ltd set about producing a visual introduction to the company, utilising the immersive experience of a Google 360 Virtual Tour.

A new way to get to know Schlüter-Systems, this unique asset aims to give architects and specifiers across the UK an innovative insight into the company. Through use of a VR headset, individuals can engage at will, delving in and out as they wish and co-ordinating their own experience of the premises and products. The tour was developed in conjunction with specialist photographers and leading providers of Google 360 Virtual Tours, Striking Places, who have previously produced tours for the RSPCA, Kwik Fit and Westminster Abbey amongst many others.

"Architects are courted by hundreds of manufacturers a year, many of whom take similar approaches to attracting their

attention," says Joachim Backes, Managing Director for Schlüter-Systems UK, "We wanted to explore a more engaging avenue, knowing that these creative professionals like visuals, product interaction and to explore a company at their own convenience. Our VR tour addresses all of these concerns and allows them to gain a more rounded and accessible impression of what Schlüter is about than they would from standard

digital resources."

Schlüter-Systems' portfolio consists of waterproofing and wetroom, underfloor heating, profile and balcony and terrace solutions – the majority of which go unseen within a finished tile or stone project. The company's on-brand UK premises are designed to bring these often-invisible products to life through images, displays and semi-concealed installations.

Amongst other applications, the VR version of the tour is anticipated to add a new interactive facet to Schlüter's CPDs. By gaining virtual access to Schlüter's Application Gallery, which contains 'pods' simulating various different rooms, CPD attendees will quickly be able to put Schlüter's solutions into context. With one of Schlüter's expert advisors on-hand to answer any questions, this should lead to an enriched learning experience, not to mention a welcome break from the norm.

A TourDash interactive overlay version of the tour, providing extra information on its different elements, can be accessed via desktop, laptop, tablet and phone.

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MORPHEUS HOTEL
MACAU

Playing with geometry

A new hotel in the south east Asian casino hotspot of Macau is a rare hospitality sector project for Zaha Hadid Architects, but a typically groundbreaking technical achievement for the practice. James Parker spoke to architect Viviana Muscettola about creating the world's first free-form high-rise exoskeleton

Macau has positioned itself as Asia's most popular entertainment destination, and with over 32 million tourists visiting in 2017, chiefly for the resort's casinos, it has a strong case. Development has sprung up in the 21st century to service this large market as China's prosperity has increased, with pastiches of Las Vegas hotels that are themselves pastiches of European architecture, including The Venetian and The Parisian.

As a result, the arrival of a landmark new building creating its own futuristic statement, rather than harking back to the past, is a striking shift for the Cotai Strip, the hotel district of Macao built on reclaimed land. The region is now connected to Hong Kong across the Pearl River estuary via a 34 mile long bridge – the world's longest sea crossing.

The new hotel, called Morpheus, is the fifth in a group of high-rise hotels within the City of Dreams integrated hotel/casino complex, run by client Melco Crown Entertainment. However it stands out as an ambitious and unique design statement built to bring a wider range of holidaymakers to Macao.

As the first hotel that Melco has operated as well as owned, CEO Lawrence Ho wanted a flagship building that “represented the company's ambitions for the future,” project director at ZHA Viviana Muscettola tells *ADF*. Ho contacted Zaha Hadid herself in 2012 to see if she was interested in producing a concept.

Muscettola says the practice made it clear at the first meeting that they weren't interested in creating another Las Vegas-style

hotel, and wanted instead to create a true ‘destination’: “We were completely aligned in the intention to create something which people would come to Macao specially to see.” Because of this, she says, “it had to reflect a new century design language.”

The architects were given “quite a ‘brief’ brief,” essentially stating the minimum room requirements for what was a constrained site, and worked up a couple of concepts. The client opted to go for the more experimental option.

Muscettola adds: “Ourselves and the client were a particularly good match, because Lawrence was as visionary as us in terms of wanting to design and build something for the future of Macao in general, for entertainment and hospitality.” Working initially from the London office, and then using its Hong Kong base and the skills of ZHA architect Bianca Cheung, Muscettola's team arrived at a flamboyant and yet also efficient design solution.

Site & form

According to the project director, “from the beginning” (a favourite phrase of hers, illustrating the firm commitment to the design vision from client and architect), “one aspect we were sure about was that in contrast to the rest of City of Dreams, we wanted a continuous facade all the way to the ground.” Therefore rather than a traditional tower and podium, at ground level the building would give pedestrians a clear sense of the overall form, rather than have a visual disconnect between lower and upper stories.



FUTURISTIC

The landmark building creates a futuristic statement on the Cotai Strip, in contrast to its hotel neighbours
© Ivan Dupont



The most arresting aspect of the overall form is the three massive voids carved from the centre of the block, turning the building into a hybrid of a solid volume and two towers connected by two organically-shaped bridges

“This is something the office has been researching quite a bit in other projects, making the presence of the skyscraper recognisable if you are sitting under it.” Another more practical driver was that the designers were confronted with a requirement for 150,000 m² gross floor area, within a footprint of 99 metres x 52 metres, and a height restriction of 160 metres with Macau airport being nearby.

While the facade deliberately obscures the fact due to the web of aluminium-clad steel exoskeleton wrapping the entire exterior, there is in fact a podium within. This consists of four levels including the main lobby and gaming areas, which connect to other parts of the resort, retail and a spa (containing ‘real’ snow). Muscettola comments that the client had key requirements for this area: “It had to be porous while having enough footprint, giving enough visual connection between the different programmes.”

The most arresting aspect of the overall form is the three massive voids carved from the centre of the block, turning the building into a hybrid of a solid volume and two towers connected by two organically-shaped bridges. While achieving the straightforward requirement of bringing light into a deep-planned building, this also creates a sculptural presence in the city inspired by the Chinese art of jade carving.

There is something of the sense of a futuristic, avant-garde arch, but in fact the building has a genuinely unique aesthetic.

The dynamically undulating glass facades also provide hotel and restaurant guests with exciting and unusual views of the building’s structure from within. This keeps them engaged with the building’s distinctive nature, and provides a new and unique visual backdrop for many rooms, ameliorating what are otherwise fairly mediocre external views. Muscettola says that for the client it was “important to make people want to explore the inside of the hotel they are in, rather than leaving to go somewhere else.”

She says that the idea of “carving out” the core was present in the very first sketches, and are essential to how the hotel is a “a place of continual discovery” for visitors. This discovery starts at the 40 metre atrium, continuing to a pair of glass lifts which run up the sides of the voids, then to the two bridges at level 21 and level 30 which house restaurants, and finally the swimming pool in a sunken terrace on level 40.

The diagrid-formed structural exoskeleton becomes free-form to clad the curving glass facades of the voids, but also has an architectural role on the flat sections of the building. It becomes increasingly less dense as the building ascends, for structural

reasons, but this also means less restrictions to views for the upper floors of guest rooms, including luxurious two-storey 'villas' at the top level. These surround the swimming pool, giving it an intimate, courtyard feel and a human scale. The exoskeleton continues over the top of the building to also form the inner facade here.

Exoskeleton

The design intent behind creating an exoskeleton was essentially to further emphasise the dynamic form using the structure itself, and in this way Morpheus echoes other ZHA projects. "It came from the idea of reinforcing the free-form shape of the building and fusing it with its own structure," says Muscettola.

Buro Happold, who undertook the structural engineering in close collaboration with ZHA, were also instrumental in the decision to go for an exoskeleton, having done an early study to demonstrate it would be an efficient method on Morpheus. Muscettola: "Of course it's more challenging from a construction point of view, but in terms of efficiency of the structure it's the best solution for this kind of volume articulation."

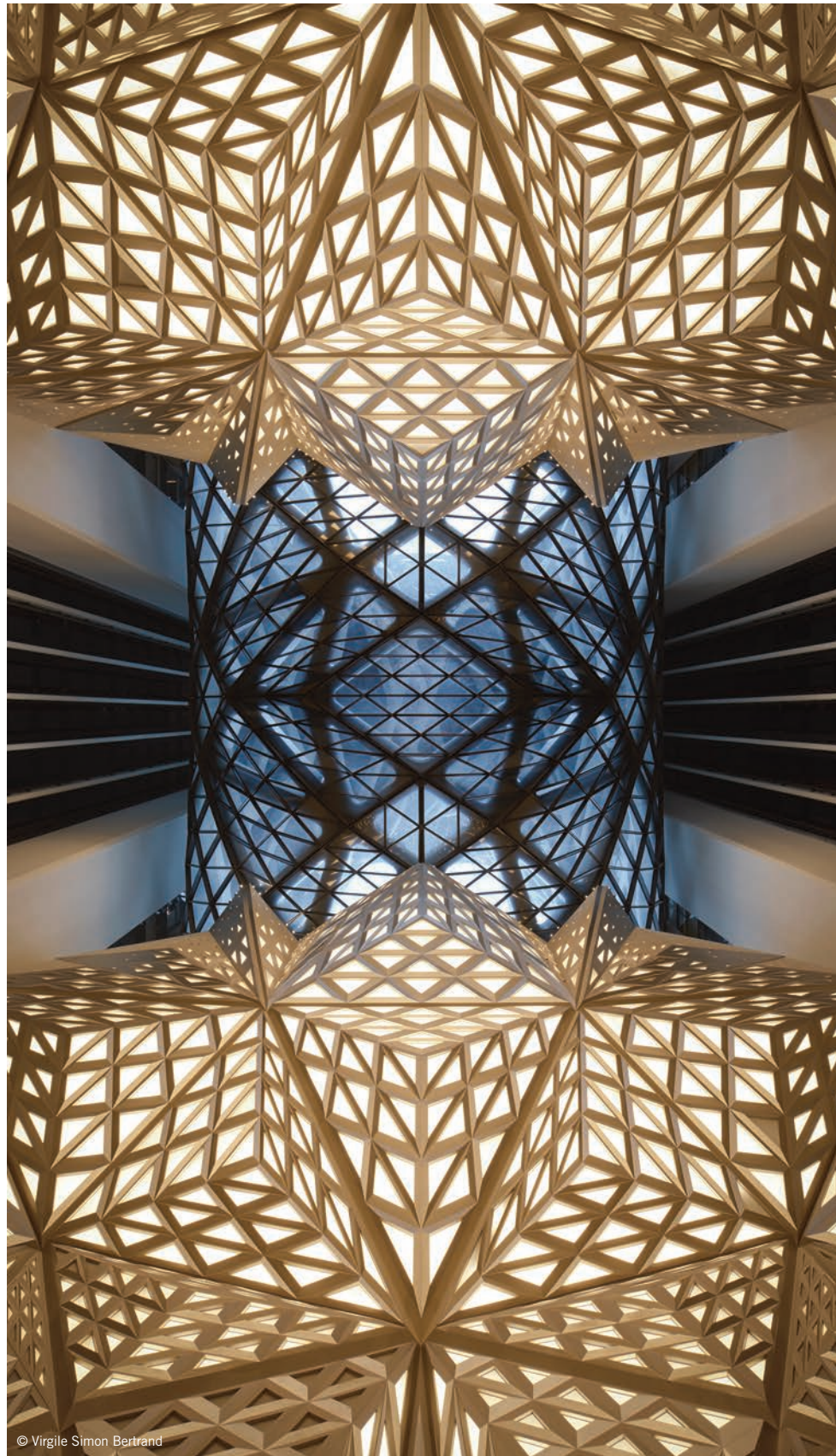
The hotel also needed to be flexible to adapt to fast-changing guest expectations. Muscettola says that most of the hotels in Macau have a "very quick turnaround of internal programme". As upgrades in technology occur and guests' demands shift, hotel owners here tend to refit every four or five years.

She explains that the use of the exoskeleton as a structural solution was as much of a result of the client's ongoing requirements as aesthetic desires. "Having most of the structure outside of the building would free up space and give a lot of flexibility for future-proofing the building," she says.

Engineering

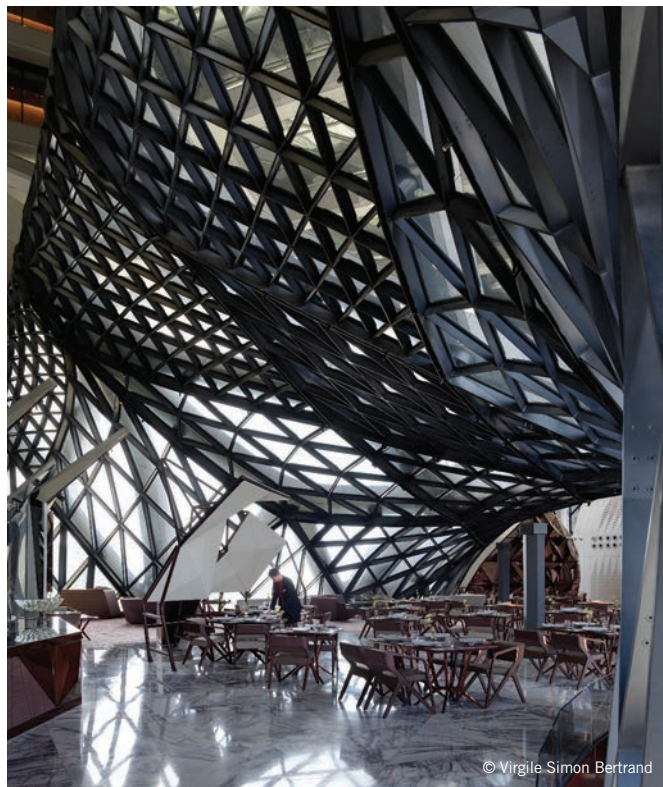
Muscettola asserts that as a practice, ZHA "don't do engineering," but "want to work with the tectonics of a design and have them working as one element, one challenge." There was undeniably a major engineering challenge in achieving the unprecedented feat of a tall building with a free-form supporting exoskeleton.

The exoskeleton is partly responsible for lateral stability by being connected to floor beams using stubs within nodes in the diagrid – these being in turn connected back to concrete cores. As a result, there are very few internal columns.





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GEOMETRY CHALLENGE

The project team needed to be highly motivated to complete construction and fit-out in under three years
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The exoskeleton is divided into three parts, firstly relatively standard flat wall sections, then curved sections at the corners, then finally the fully free-form sections following the organic shapes of the voids. In turn there are three types of glazing system – double-glazed unitised on the flat areas (“more than 60 per cent of the project is straightforward off-the-shelf floor to floor systems” says Muscettola), curved double-glazed at corners, and single-glazed in free-form areas. Here, to ensure structural integrity, the systems are formed as composites of triangular glazing panels – secondary steel ‘macroframes’ attached to the exoskeleton via stubs.

Full aluminium sheet cladding was chosen (in off-white) for the exoskeleton instead of exposed steelwork, with the latter presenting issues in terms of steel connections and nodes, aesthetics, and requirements for fire and corrosion protection. This more costly option also however provided the pragmatic solution to visually align the exoskeleton with the glazing behind in free-form areas – essentially it would match the curvature of the glazing so the steel didn’t have to, and avoided the need for double-curved sections.

Muscettola explains: “The front and back face of the cladding follow whatever the glazing does in terms of curvature. The other

two sides follow whatever the structural members are doing.” She adds: “The good part is that the surfaces of the cladding are always singly curved.”

Software & collaboration

In 2008 ZHA principal Patrik Schumacher coined the term ‘parametric’ architecture to describe the practice’s vision of avoiding strict repetition, and instead pursuing the creation of more organic and free design forms with the help of software and algorithms. Although Morpheus is an experimental project in the luxury sector, in a highly competitive hotel environment where time is money there also needed to be a rigorous focus on efficient and quick solutions to ensure it met its three-year construction window, and software would be instrumental in this.

The architects adapted existing 3D design tools to efficiently create the design of unique free-form areas on Morpheus, as Muscettola explains: “I don’t think this would even have been built 10 years ago. In terms of producing the amount of information, developing the design at the speed that we did would have been impossible without the use of 3D tools.” These included Grasshopper, Rhino and special plugins that ZHA created for this

project with other companies.

The entire project team needed to be highly motivated in order to complete all construction and fit-out of a pioneering project with such a range of complex geometry in under three years. Muscettola puts it simply: “They are not going to do what we ask them to do if you don’t have a good way of collaborating. While she says that the client was instrumental in this, having a “good technical team fully employed by them,” and being hands on all the way through the design and construction. She adds: “The vision from the client was brought all the way down to every consultant – the challenges were down to every fabricator, to find solutions that were outside the box.”

Interiors

While most hotels make do with a forecourt and canopy to welcome guests, the canopy here is the building itself, guests entering via the porte-cochere formed underneath. They are then dazzled by a 40 metre high atrium, where the external triangular structural motif is repeated in two spectacular feature walls framing the space. These are three-dimensional and formed in triangular metal sections (aluminium at ground level and GRG above), each formed of smaller, backlit triangles.

Completing the composition is a roof formed by the exoskeleton wrapping the bottom internal face of the hotel’s first central void. Its symmetrical pattern of triangles adds to the kaleidoscopic overall effect, letting daylight stream in from above.

The white marble floor’s pattern was also designed by ZHA, with yellow stone inlays to imply the circulation path guests will take. There is both a strong focus on the refinement of materials and design, and an intense sense of formal order – perhaps something of a contrast to the more free-form aspects of the exterior.

The 21st floor ‘Yi’ restaurant, offering modern Chinese fare, is arguably the most dramatic internal space after the atrium. Sited on the bridge, the exoskeleton curves sharply over the space, but the interior has been designed to provide a contrasting level of intimacy.

‘Pods’ of tables are surrounded by sculptural screens, reflecting Chinese society’s habits of having private gatherings in separate rooms. Each screen is formed of hundreds of bronze-finished steel leaves, offering privacy (for example from the lifts passing nearby up the interior faces of the voids) while also allowing discreet views



© Virgile Simon Bertrand

out and light in. Designed by ZHA, these impressive structures are simultaneously somewhat forbidding, and protective.

Conclusion

The client’s aim was to provide a hotel which would fully represent their ambitions as a major operator, and reach towards the future to distance Morpheus from its nearby competitors. Also, it provides a special place in itself for guests to remain, its very structure creating spectacular views where there were none. It’s also a true celebration of architectural geometry – one minute in an orderly, disciplined fashion in the atrium, and the next throwing away the rules externally.

In its bold exuberance, Morpheus might have been something of a gamble for both client and architect, somewhat appropriate in Asia’s gaming capital. However due to a major team effort supporting the realisation of the design’s keen sense of pragmatism allied to playfulness, an architectural milestone has been reached.

ZHA’s Muscettola says close collaboration was a feature throughout this project, and was core to “a very smooth process” between client, architect and the rest of the project team. Delivering a groundbreaking hotel of this complexity at pace – without glaring crises – is, says the project director, a testimony to the “respect” and “open discussion” that characterised this job. As one of Zaha Hadid’s final projects, it’s also fitting that the building is a game-changer. ■



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PROJECT FACTFILE

Architect: Zaha Hadid Architects
Main contractor: Dragages Macao
Area of high performance glazing: 43,388 m² (Saint-Gobain Coolite)
GFA: 150,000 m²
Build cost: £767m
No. of beds: 780
No. of exoskeleton connections: 2,500 (1200 nodes/1300 bolted)

New hotel given rooms with a view



A leading aluminium fenestration systems manufacturer, **Senior Architectural Systems** is continuing to get positive reviews for its work in the hotel sector after being specified to deliver the attractive glazing package for the new Doubletree by Hilton in Hull. Senior's thermally-efficient SPW600e aluminium windows complement the rainscreen facade of the building and have been used to create a pleasant interior environment for guests and to provide them with exceptional views across the city. Senior's slim line SF52 aluminium curtain walling has also been installed to the ground floor.

www.seniorarchitectural.co.uk

Altro Ensemble is the stylish choice



New Altro Ensemble modular flooring system is delivering on chic style and sound reduction at the four-star Radisson Blu Hotel in Mannheim, Germany. Designers of the 229 room hotel used Altro Ensemble luxury vinyl

tiles to create the perfect ambience in the guest rooms, restaurant, corridors and state of the art conference area. From colour blocking to geometric patterns, with a range of plank and tile sizes and textures, Altro Ensemble gives design freedom to create luxurious floors for commercial interior spaces.

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New Terrazzo floor innovation shimmers in London's Leicester Square



A new and innovative MMA terrazzo flooring system has been installed as part of a restaurant refurbishment project in one of London's most prestigious locations. Close to 100 square metres of Mondéco Rapide – a new fast-turnaround seamless resin terrazzo flooring system from Flowcrete UK – has been installed in and around the restaurant's central bar area. Flowcrete has reinvented traditional resin terrazzo systems with Mondéco Rapide; a fast-curing, flexible terrazzo resin system, which offers a significantly reduced project downtime and can be laid over a variety of substrates. It provides a luxury finish with extensive design potential including colour and pattern options featuring locally sourced British marble aggregate blends. It is a four-component system that provides a non-porous finish in a range of decorative colours. Mondéco Rapide is ideal for a variety of different environments including airports, hotels, restaurants, supermarkets and shopping centres. Edward Booth, sales & marketing manager for Milestone Industrial Flooring said: "By using the Mondéco Rapide, we were able to work during nights ensuring other trades could access the site in the day."

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London hotel continues to make rooms more comfortable with secondary glazing

The Arch London is a majestic boutique Hotel situated in one of the most distinctive of London districts, Marble Arch. The hotel cleverly blends Georgian architecture and inspired contemporary touches.

It preserves many of the original period features, but also incorporates some very contemporary designs with stunning artworks from rising British talents. RDD Interior Architectural Design finished this stunning refurb in 2009 and as part of the upgrade; Selectaglaze was consulted to enhance the hotel's sound and ethical environment protocols.

Selectaglaze had previously installed 40 secondary glazing units to guestrooms and suites overlooking Great Cumberland Place utilising a combination of its Series 20 and Series 90 heavy duty vertical sliders. Once again, the hotel's requirements were to improve the standards of energy and noise insulation, particularly to the



suites at the front of the building.

The latest installation included Series 60 tilt-in vertical sliders fitted in rooms on the third and basement floors. This bespoke unit has tilt-in panels which is useful when windows have unequal pane sizes or if frames are needed to fit close together. On the fifth floor, rooms were treated with the Series 10 2 pane horizontal sliding unit; a slim and versatile system that provides easy access for cleaning, as well as for ventilation.

All units were finished in white and matched to the existing frames. The new secondary glazing will now help lower energy bills and afford the guests a good night sleep, in the heart of the metropolis.

Ray Goertz, General Manager said: "At The Arch London, our goal is to provide the most comfortable and enjoyable stay to all our valued guests. We had to look no further than having Selectaglaze assist us in realizing our goal by adding more secondary glazing to some of our rooms, both to cancel out noise ingress and also to prevent heat loss. We are extremely happy with the results and wouldn't hesitate recommending Selectaglaze." Founded in 1966 and a Royal Warrant Holder since 2004, Selectaglaze has gained a reputation as a leading secondary glazing specialist, creating sensitive designs with low visual impact.

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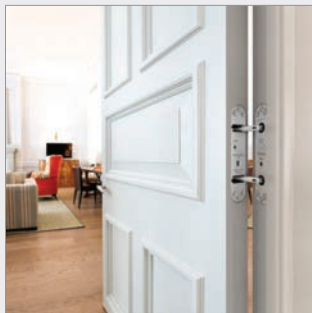
Advanced Emergency Lighting Protects Exclusive Knightsbridge Hotel



The Berkeley in Knightsbridge, London, is now protected by a Lux Intelligent emergency lighting test system and MxPro fire panels from Advanced. More than 200 Advanced luminaires have been installed in the historic hotel, on Wilton Place, which is part of the same stable as Claridge's. They are monitored and controlled by a Lux Intelligent panel, connected to the building's fire system. Most of the luminaires are from the Advanced LED-Lite range, which can be recessed into ceilings, offering an aesthetically pleasing solution in the public areas of the prestigious building. Lux Intelligent, ensures all emergency lighting is functioning and compliant to BS5266-1. The system can be retrofitted onto existing wiring and luminaires, keeping installation costs to a minimum. It is one of the most flexible systems available with panels supporting 1-4 loops, 249 devices per loop and up to 200 panels in a network. Lux Intelligent is also compatible with most third party lights and luminaires, including LEDs, giving installers and end users unprecedented purchasing freedom. Lux Intelligent systems can also be remotely managed and monitored using web and iOS apps via the Lux Intelligent Cloud.

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**BUILDING
PROJECTS**

JEAN BISHOP INTEGRATED CARE CENTRE (ICC) HULL

A caring collaboration

An innovative healthcare project in Hull was driven by a desire to integrate health and social care options for the elderly beyond the city to the wider UK. Roseanne Field reports

According to 2017 data there were approximately 11.8 million people aged 65 and over in the UK – and it's been predicted that by 2050 that number could reach 19 million.

In turn, hospital admissions are also steadily increasing year-on-year, with many being elderly people relying on continuing care. NHS Hull Clinical Commissioning Group (CCG) therefore identified a gap in provision, and a vision to offer an alternative service for elderly patients in need of care, but not necessarily a hospital bed. In 2013, they approached LIFT company Citycare and NHS health

planners Community Health Partnerships to work with them on a new integrated care solution to fill that gap.

Medical Architecture, a practice whose name gives away their exclusive healthcare specialism, were approached by Citycare to attend a competitive interview for what would be the Jean Bishop Integrated Care Centre (ICC) – named after a much-loved local fundraiser. The centre is located in East Hull which, explains practice director and senior architect Paul Yeomans, has one of the highest levels of hospital admissions across the city, and an average life expectancy below the national average.



ABOVE

The unit combines low rise accommodation for the elderly with a fire station

FACING PAGE

Upon entering, patients are immediately able to see out to the central courtyard

It was therefore natural that this location was chosen for the ICC, which is hoped to be the first in a series of “care hubs” as Yeomans describes them. “The overall vision was to respond to emerging national thinking around the idea of integrating health and social care,” he says.

An alternative approach

Integrated care, says Yeomans, is about “delivering joined-up support for those with long term conditions, rather than the episodic support at times of crisis that acute hospitals are geared towards.”

Although other integrated care provision already exists within England – based around different NHS organisations working together – the Jean Bishop ICC is “based on the earlier thinking, but goes much further,” says Yeomans.

One obvious example is the fact that the building also houses a fire station. This unusual mix was the result of mutually aligned needs: Humber Fire and Rescue Service (HFRS) needed a new facility and the ICC was the perfect opportunity to showcase how such public services can work together and provide added value. “The ability to share facilities with health partners made sense,” comments Paul Yeomans.

Chris Blacksell, chief fire officer for HFRS explains further: “We recognised that the people we were working with to try and prevent them having fires and other emergencies, were the same people our health colleagues were working with.” As a result of being located in the centre, fire service staff are able not only to ‘educate’ patients on fire safety, they also provide a falls response team.

As well as the fire service, the centre houses geriatricians, GPs, advanced nurse practitioners, pharmacists, therapists – physio and occupational – as well as social services and the voluntary sector. “You don’t normally see all these team members when you go to an outpatients appointment,” says consultant physician in elderly care at the centre, Dr Dan Harman. “We’re trying to deliver care in a different way to keep people as independent as possible for as long as possible.” The centre has facilities for undertaking blood tests, x-rays and CT scans.

Describing the primary aims of the project – beyond increasing the area’s average life expectancy – Yeomans says the client wanted to “reduce admissions to hospital via a community based integrations and assessment approach, and reduce the length



of stay of episodes through availability of reablement services.” As well as the key health-related drivers, they were also mindful of tackling social isolation and security issues the elderly often face. “We want to improve quality of life,” he explains.

A design challenge

Designing a building that was, in certain respects, the first of its kind, was always going to prove challenging. But what made this even more testing for the practice was that they were designing the building with no specific end-user in mind. The CCG works with partners – including GPs, NHS trusts and the local authority – on staffing. However, “at the time of briefing,” explains Yeomans, “the CCG hadn’t commissioned the services that would be going into the centre, so the design team couldn’t engage with the staff that would eventually use the building”.

They worked with key stakeholders within organisations likely to end up involved, but naturally, “their input was necessarily informal and detached.” Additionally, along with the CCG and Citycare, they analysed data to ensure they were optimising space provision, while catering for the expected population.

It was, says Yeomans, through this

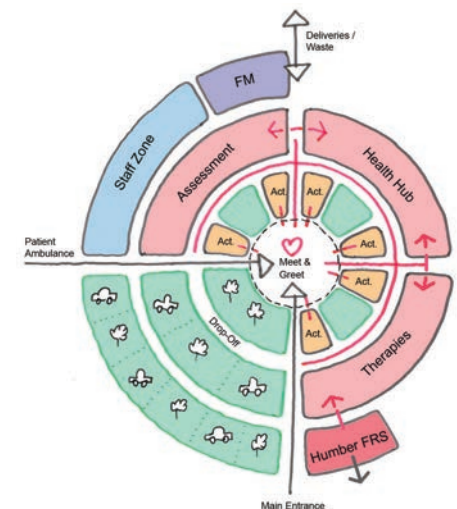
“careful planning” that they achieved an 18 per cent reduction in floor space compared to conventional hospital standards. He credits this as being key in the project gaining business case approval. This also naturally proves more beneficial to the patients in this setting, he says, “getting away from the ‘miles and miles’ of hospital corridors and keeping the building at a friendly scale – hard to quantify, but an important consideration.” It also encourages the integration of the services through shared office and social spaces.

Working with the various stakeholders also required a great deal of thought. “Planning meetings required care, political adeptness and sensitivity to differing and often conflicting organisational objectives,” says Yeomans. “At each stage we were able to present data; reasonable benchmarking that helped the commissioning team to develop a sustainable shared vision for the project.” This data covered a variety of areas including 3D modelling, sketches, workshops and reports.

The other tricky aspect to navigate was keeping costs down. Fixed at £7.5m, Yeomans explains that the budget “was reasonably tight for the amount of accommodation needed, plus the extended

“By organising the welcoming point at the heart of the low rise building, all the clinical and support functions are nearby and accessible”

Paul Yeomans, Medical Architecture





It was important to Medical Architecture that the building had the right look and feel in order to steer clear of the more traditional institutional aesthetics

gestation of the design.” However, obeying this constraint was actually another factor in seeing the project get underway. “The cost, based on the floor area, was an important driver towards getting the project off the ground, giving the existing health services in Hull confidence to sign up to the new model,” says Yeomans.

A thoughtful layout

It was important to Medical Architecture that the building had the right look and feel in order to steer clear of the more traditional institutional aesthetics. “Reducing the ‘hospital’ feel was important,” says Yeomans, giving the example of entering through a cafe space “which is convenient for waiting between consultations and helpful for orientation within the building.”

The ICC was intentionally built in an area with a high older adult population so that the services would be “on their doorstep”. Says Yeomans, “A visit to hospital is a traumatic experience, so the easy access was one way to reduce the stress of engaging with the health service.”

The architects had to ensure the building itself was fully accessible, and could be easily navigated by its elderly patients. The

simplest way to ensure easy access for all patients – including wheelchair users and those arriving on hospital beds – was to locate all services they would need on the ground floor.

The building is arranged, in a “pinwheel formation” around the reception/cafe area. “By organising the welcoming point at the heart of the low rise building, all the clinical and support functions are nearby and accessible,” he says.

This layout means a patient can attend a planned consultation, during which necessary tests are taken. The analysis can then take place elsewhere, and results can be ready the same day. When a wait is necessary, “comfortable and convenient” waiting areas are available – also beneficial to any carers who may be accompanying patients. “This process might take several visits over a period of weeks in a hospital setting, but can be dealt with in a day at the Jean Bishop ICC,” Yeomans explains.

The practice also employed “thoughtful internal finishes” to help with navigation. Says Yeomans, these “address colour contrast/dementia issues, but are also part of a robust wayfinding strategy that assists the visitor to find their way into the

building, but just as importantly, find their way out.”

The fire station is attached to the building, located in its own space at one end – a conscious decision so emergency vehicle access wasn’t affected by patients visiting the centre, and vice versa. It also made sense from a design point of view explains Yeomans: “If the HFRS business case didn’t receive approval, there would be minimal redesign as the service wasn’t embedded at the heart of the building.”

Although not integrated with the rest of the centre, the fire service still has access to shared facilities. “The aim is that the fire services get involved in the therapies wing,” Yeomans says.

Non-institutional

Upon entering the building, patients are “immediately able to see out to the central courtyard,” Yeomans says, adding it’s “a very important factor”. As well as offering views out, this use of glass allows lots of natural light in. Rooflights also let further daylight into spaces. “The therapeutic and non-institutional character of the design is immediately apparent,” says Yeomans. “The planning logic of interspersing clinical and public spaces fosters a sense of reassurance and wellbeing. This is central to the experience of patients, staff and visitors.”

To reinforce the idea of wellbeing, the practice made a conscious effort to reduce “the clutter of hospital fittings that often get fitted as standard – wall protection ‘rub rails’ for example,” says Yeomans. “By omitting these and concentrating on handrails we went a long way to getting away from the hospital feel.” Bespoke fitted furniture has been included in the reception and consultation areas, to “drop a note of solid quality into key spaces.”

Generous ceiling heights also played an important part in giving the building a less institutional feel, but these heights fluctuated due to necessary servicing and access requirements above the ceiling in places. “We strove to get the head space and daylighting where we felt it was most needed, in the deep plan waiting spaces for example,” he says.

The centre includes a variety of community spaces, including rooms which can be booked by local community groups. This, Yeomans says, forms an important part of the patient experience. In these spaces they’re able to share advice with one another, helping address the social issues of loneliness and isolation. “People coming

and going and recognising faces is an important part of the ethos,” he says.

Other design considerations included grouping services to create integrated panel systems (IPS) – enclosures that sit behind washbasins, normally housing pipework. These are fitted with access panels, so they can also be used for storage of items such as patients’ belongings, helping keep rooms tidy while preventing pipework from being a “utilitarian intrusion”.

The centre is naturally ventilated as much as possible, although some treatment rooms required some form of mechanical ventilation. The centre has achieved a BREEAM Excellent rating, thanks to the design’s ‘fabric first’ approach, as well as elements including PV panels, LED lighting, and a sustainable urban drainage system.

The building has also been designed with flexibility in mind to adapt to changing healthcare needs. The accommodation can be “changed easily as services develop,” says Yeomans, and “occupancy zoning” allows for certain parts of the centre to remain open when necessary while others are closed.

Overall, due to the tight budget, Yeomans admits “there is no great innovation at detail level”. He explains further: “The emphasis is on doing simple things well and getting the patient environment right.” Despite the limitations, the building has a clean, modern look, punctuated by a couple of features such as yellow-framed oriel windows, which help “communicate a structure and order to the linear form”. The modern theme is further enforced through the use of glazing in doors and screens.

Reception

Since opening in May this year, the centre has reportedly been very well received and has already made significant contributions towards reducing NHS costs and admissions. Alan Johnson, former health secretary and current independent chair for Citycare gave his view that this type of facility is the future: “I think this is something the rest of the country will be looking at very carefully”.

Looking forward, the centre hopes to reduce unplanned hospital admissions by up to 20 per cent, which is projected to save the NHS £5.8m a year. “Overcrowding shows how acute hospitals deal well with trauma and episodic treatment, but are poorly suited for complex and continuing care of an elderly population,” says Yeomans. “There is a broad consensus in the NHS that a new class of infrastructure is needed, and the Jean Bishop ICC sets that new direction.” ■



ORIEL WINDOWS

The unit's clean lines are punctuated by oriel windows
All photos © Jill Tate 2018

PROJECT FACTFILE

Client: Citycare
Architect: Medical Architecture
Contractor: Sewell
Structure & Civils: GGP Consult
Services Engineer: Anderson Green
Landscape Architect: One Environments
Building Control Approved Inspector: Morgan Wolf
Acoustician: Hepworth Acoustics



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The brightest and boldest Altro floor and wall products have been used to refurbish Haven House Children's Hospice, in Woodford Green, Essex, with rainbow staircases and cleverly colour zoned areas making the facility strikingly beautiful inside and out. The Haven House rainbow staircase has been created from different colours of Altro Suprema™ and Altro Walkway™ 20 safety flooring. Haven House Family and Community Support Manager Judi Porter says: "Walking through the corridors at Altro's HQ we were struck by how the floors and walls flow together beautifully, and we wanted to achieve that effect."

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Polyflor launches Verona Pure Colours



Polyflor is delighted to announce the launch of the Polysafe Verona Pure Colours collection. Building on the success of the Original Polysafe Verona colour palette the Pure Colours collection features a new and contemporary decoration in a selection of 18 tonal hues, perfectly suited for installation within a wide range of commercial and residential environments to ensure the underfoot safety of occupants. Polysafe Verona PUR contains recycled content through the use of natural recycled aggregates and is 100 per cent recyclable via the Recofloor scheme.

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Yeoman Shield Twin Handrail Chosen for New Care Unit at William Harvey Hospital

Yeoman Shield were assigned by main contractors Bauvill Construction to install a wall and door protection system as part of the scheme to create a new Cardiac Critical Care Unit (CCU) and Cardiology ward along with an access corridor at William Harvey Hospital in Kent.

The access corridor was fitted with Yeoman Shield's Guardian Twin Handrail in a stunning colour combination of burgundy and mid grey with matching accessories and attractive stainless steel connective brackets helping to add a unique touch to the décor of the area.

Chosen for its dual functionality the Guardian Twin handrail incorporates an ergonomic upper handrail as support for people who require assistance and a lower robust protection rail, which sitting slightly forward guards both the handrail and the walls from marking and damage caused by the passage of wheeled equipment.

The same Guardian Twin Handrail system



was also deployed in the CCU this time with a red lower rail, a striking contrast to the mid grey handrail. Matching red Corner Protection Angles, both 90° and 135°, were installed to vulnerable corners protecting from impact damage.

Fire doors in the unit also benefitted from the installation of Yeoman Shield's fire rated door protection products, shielding the door from impact damage that can be detrimental to the functioning of a fire door.

Fire rated door edge protectors to both meeting and hinged edges as well as door protection panels were added to the door

without affecting the integrity of the original fire door.

Yeoman Shield were able to assist with exacting time scales on the project by a quick turnaround of product and service with a site survey, manufacture and installation of the product being completed in two weeks.

Paula Stone, Head of Operational Facilities Management at East Kent University Foundation Trust commented "The lower wall protection element of Yeoman Shield's Guardian Handrail now fitted in our high traffic areas will reduce the cost of repairs and maintenance overtime. The upper handrail of the system will help less abled patients get around hospitals giving them something to grab on to if needs be, helping to prevent falls.

"The design of the rail has the added benefit of being easy to clean which adheres to our infection control policies."

0113 279 5854 www.yeomanshield.com

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Highlander has been developed using the best burning technology to give you a stove with cleaner burn and high efficiencies of up to 84 per cent. The Air Wash System has been designed to keep the glass clean to give a full view of the superb flame pattern.

www.dunsleyheat.co.uk

Electric ESSE offers double hob capacity



ESSE's new 990 ELX offers double the hob space in addition to all the benefits of a modern multifunctional electric range cooker. A natural evolution of ESSE's proven 990 EL, the ELX incorporates a three-zone induction hotplate for instant heat on demand and a large plancha-style steel hotplate. Combining the convenience of electricity with the versatility demanded by professional chefs, the innovative new 990 ELX delivers the proven performance of ESSE's best-selling electric products. The 990 ELX is available in a choice of 20 beautiful colours including contemporary matt finishes. RRP £7,950.

www.esse.com

LG adds heat pump to R32 range



LG Electronics has added its latest Therma V air-to-water heat pump to its popular range, operating on the low GWP R32 refrigerant and available in 5kW to 16kW 1Ø and 12kW to 16kW 3Ø, in a wide operating range of between 10-135Hz and water temperatures up to 65°C without an electric heater. It comes with an energy

label rating of A+++.

The new version of the Therma V Monobloc contains a plate heat exchanger, expansion tank and a Grundfos water pump. The new unit has a higher capacity due to the choice of refrigerant along with a lower GWP, when compared to R410a.

uk.aircon@lge.com partner.lge.com/uk/index.lge

Office refurbishment at East India Dock



As part of the massive £6m transformation programme, air terminal devices from expert manufacturers Waterloo Air Products plc were fitted in the newly refurbished office space for new businesses Anchor House in London's East India Dock. This was part of an 11-month programme by P&R Morson, who worked to upgrade the multi-let office accommodation, located at the

northern gateway to Canary Wharf. Waterloo developed the popular mill finish to give architects the industrial styling they want and can be used with exposed or feature ductwork.

01622 711500 enquiry@waterloo.co.uk

Viessmann introduces new air-source heat pumps with noise-reduction technology



Viessmann has introduced the Vitocal 200-A and Vitocal 222-A, with innovative noise-reduction technology. Both operate so quietly that they are suitable for densely built-up areas such as terraced housing estates, and both have high energy efficiency with low operating costs. Both heat pumps feature Viessmann's new Advanced Acoustic Design. This combines a sound-optimised fan designed to harmonise the acoustic frequency range with intelligent speed control to reduce airborne noise at full- and partial-load operation. This effectively stifles the lower frequency sound of conventional heat pumps which can be perceived as disturbing. The result is that the pumps are barely audible; noise pressure in night mode at a distance of three is a mere 35 dB(A). Installation of the Vitocal 200-A and 222-A is easy. No minimum distance is required between the indoor and outdoor units, no refrigeration leak test is required because the cooling circuit is hermetically sealed, and no F-gas certificate is needed because the connecting pipes to the outdoor unit are filled with water. These new heat pumps are also simple to operate, via the Vitotronic 200 control unit with its easy-to-read plain text and graphic display.

info-uk@viessmann.com

School retires old float valve



A primary school has retired its Aylesbury cold water storage tank valve after 24 years of service, so its successor can now take the strain. Spare parts were no longer readily available to fit a valve of that age, so manufacturers **Keraflo** recommended that the best solution was to upgrade the system by fitting the modern version

of the Aylesbury K-Type valve. The school's Site Manager, Gerard McGuire, told Keraflo that he had experienced very little trouble with the valve. He said: "It's been going for 24 years, which is not bad. You can't argue with that as it's been working constantly over that time."

0118 921 9920 www.keraflo.co.uk

Vickers makes savings all round



Thanks to an energy management system (EMS) from Vickers, DS Smith – one of the world's leading providers of corrugated packaging and a specialist in plastic packaging – has enjoyed impressive cost savings in excess of 60 per cent, and reduced its carbon footprint by 27 tonnes over a three year period. Installed in 2015 Vickers' EMS was primarily specified to control the company's consumption of gas in their warehousing facility. The investment was also projected to make cost savings of 30 per cent. However, after just three years, the company has more than doubled its projected savings by reducing gas expenditure by a remarkable £5,665.

www.vickers-energy.co.uk

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ESSE's new Bakeheart embodies everything we know about warmth and comfort in a compact cooking stove. Hand-built in the UK, the 5kW Bakeheart combines a graduated temperature cast-iron hotplate and 32-litre oven in an elegant upright stove engineered around a large glass-fronted firebox. With efficiency over 82% and an energy rating of 'A+', this clean-burning stove is approved to burn dry, seasoned wood in smoke control zones.

www.esse.com

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Stokvis EVOLUTION boilers



The new EVOLUTION boiler ranges from Stokvis Energy Systems are ideally suited to power such projects. The R40 EVOLUTION and R600 EVOLUTION series represent the latest generation of Stokvis Energy Systems' long-established and widely-specified boilers, which can be installed along with the manufacturer's H Series Heat Interface Units (HIUs) to supply heating and domestic hot water to individual dwellings. As a highly experienced supplier working with a network of installers, Stokvis Energy Systems can offer specifiers extensive design support from conception through to commissioning.

www.stokvisboilers.com

BBA Certification For Clearbound System



Clearstone Paving has spent 10 years developing a robust, versatile and fit-for-purpose resin bound surfacing system: 'Clearbound'. The quality of its Clearbound installations has been recognised with certification from the British Board of Agrément. Its BBA certification No. 18/5546 assures the materials, installation and durability of the Clearstone resin bound surface can be relied upon to perform year after year. BBA approval means Clearstone will continually meet the standards expected of its certificate and architects and specifiers of its Clearbound system will continue to get solid reassurance of robust testing, consistency, reliability and fitness-for-purpose.

www.clearstonepaving.co.uk

Stunning street attracts Tech Giant



AET Flexible Space, a leading provider of underfloor air conditioning has returned to 33 Glasshouse Street in London to complete Cat-B fit-out works on the 2nd, 3rd and 5th floors for one of the world's leading tech giants. AET engineers carried out additional fit-out works for the incoming tech giant including the supply and installation of additional Fantiles, return air grilles and underfloor air baffle to cater to the proposed high density layout and accommodate the additional cooling requirements.

01342 310400 www.flexiblespace.com

Latest news, views and more



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www.subscribepage.com/adf

Sustainable drainage enters the mainstream

Mark Manning of SDS looks at how sustainable drainage is finally being seen as a mainstream option in order to shoulder the impact of climate change

The effects of climate change were recently spelled out in no uncertain terms in a watershed report by the Intergovernmental Panel on Climate Change. In it scientists made a last-ditch plea for unprecedented change to stop our planet warming to catastrophic levels. Frequently underestimated compared to the effects of coastal and river flooding however, surface water flooding threatens millions of homes and businesses across the UK.

Sustainable Drainage Systems (SuDS) are key to building resilience, and the good news is that they are finally becoming mainstream. In August, there were encouraging results from the Government's review of how effective including SuDS in the National Planning Policy Framework (NPPF) has been in promoting greater uptake in England. It found that almost 87 per cent of all approved planning applications reviewed included explicit mention of SuDS.

For architects involved in commercial or housing schemes, the consideration should no longer be whether to include SuDS. Instead the question is, what will constitute a great design?

Published in July, the revised NPPF added a requirement for SuDS to provide, where possible, 'multifunctional' benefits. Instead of just being a means of getting rid of excess water, drainage becomes an opportunity to reuse or recycle it, and to work with nature to create biodiversity or public amenity.

The new emphasis reflects wider ambitions to encourage 'blue green' infrastructure in urban environments, combining the best that nature can provide with engineering expertise to produce a transformational result.

The SuDS toolbox

Considering the multifunctional benefits of blue green infrastructure should help architects and landscape designers to deliver a 'management train' of components that is both attractive and pragmatic. Chosen from

a broad SuDS toolbox of natural and engineered features, they can enable one another to work to optimum efficiency.

For many years below-ground modular geocellular storage has been a standard means of storing excess surface water robustly to prevent flooding. We are increasingly seeing below-ground storage combined with above-ground public amenities like playing fields or landscaped areas. Using below-ground attenuation can enable a drainage design to incorporate above-ground features like a pond or swale, while achieving the required hydraulic capacity and performance in the space available.

By including storage underneath a dry pond or detention basin, an amenity such as a playing field can be provided, designed to flood only infrequently during severe storm events. Alternatively, the underground tank can provide an overflow ensuring that a pond or wetland continues to operate efficiently and wildlife is protected.

Greater involvement of Water Companies in the adoption, ownership and creation of new and retrofit SuDS assets is an important positive in building overall infrastructure resilience. This includes important revisions to the Sewers for Adoption 8 manual to be published in Spring 2019.

Storage tanks for saving rainwater for re-use can be integrated into domestic or commercial rainwater harvesting systems. Leading water companies are also beginning to offer developers infrastructure charge discounts for including water saving initiatives in developments or avoiding surface water connections to the sewer. This means there's a good case for promoting rainwater reuse initiatives that combine flood risk management with water saving across sites.

Mark Manning is business development manager at SDS



ABOVE

At the Berewood development in Hampshire, above and below-ground SuDS devices combine to optimise drainage efficiency. Image courtesy of Grainger plc

BELOW

At the Stortford Fields housing development, the UK's largest SDS GEOLight installation is located underneath two football pitches



Builder and plasterers essentials



One of the world’s largest construction manufacturers: **Simpson Strong-Tie**, has released a new catalogue of structural connectors, beads and meshes aimed squarely at the repair maintenance and improvement sector. The 2018 ‘Builder and Plasterers Essentials’ brochure includes all of the core products that the professional builder or plasterer reaches for when renovating or extending homes. Simpsons’ Sarah Greenway explains: “We wanted to provide something more accessible to the builders merchant. We spoke to our customers and they told us what they really like to see in the catalogue (and what they don’t particularly need) and this is the result – a brochure focussed entirely on the things that matter to the RMI sector.

The lighter and easier to navigate brochure is available online from the Simpson Strong-Tie website, hard copies are available on request.

01827 255600 www.strongtie.co.uk

Helifix Dixie micro-piles support statue



The versatile **Helifix Dixie** piled foundation system has recently been installed to support a statue of World War II hero, Air Chief Marshal, Sir Keith Park. Due to the proximity of this new statue to both electrical and drainage services, Dixie micro-piles were selected as a reliable and cost-effective alternative to traditional concrete foundations. These Helifix pipe piles screw into virtually any type of soil, quickly and easily, with minimal disruption, noise or spoil removal and would be easier to extract from the ground in the future, by simply being ‘unscrewed’.

020 8735 5200 www.helifix.co.uk

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www.norbord.co.uk






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Not just hot air

ADF reports on how the roofing industry is joining forces to tackle the fire risks posed by gas torch roofing installation methods, with hot air being one alternative

Gas torches are a popular tool among roofing professionals for installing bitumen materials or for drying out roofs. However, when gas-supplied torches do not conform to best practice guidelines or are used incorrectly near potentially flammable abutment details, it can have catastrophic consequences.

As a result, the National Federation of Roofing Contractors (NFRC) launched its campaign 'Safe2Torch' in July 2017, with the aim of significantly reducing the risk of roof fires. It actively promotes and educates about safe working practice and safe specifications by identifying detailing situations where it is 'unsafe to torch', and then applying appropriate and alternative hot air methods. This gives manufacturers, architects, contractors, and clients assurance and confidence in the roof construction process.

Gas torches are a standard tool for installing membranes or drying out substrates in preparation for new roofing applications. Propane is the most common choice of gas for torches as it is relatively cheap and widely available. Unfortunately, it is also highly flammable and a source of ignition when flammable materials are present, e.g. insulation and timber.

In 2013, a fire caused £17m worth of damage at a hotel on the Isle of Man when a roofer was using a gas blow torch to dry out timbers. The naked flame set fire to the flammable resins, and the result was not only substantial damage but also placing lives in danger.

Promoting responsible & safe roofing applications

The NFRC launched Safe2Torch to encourage safer practices for those using gas torches for roof work and safer design specifications from the outset for responsible build processes. Architects, surveyors and contractors who design and specify roofing structures which require hot works need to assess the associated hazards and reduce or remove the risks of fire involved.

By identifying such hazards in the form of flammable abutment details and substrates, the specification will include a torch-free alternative solution, usually in the form of hot air technology – i.e. no naked flame will be present. In the UK this is generally provided in the form of 120V hot air welding or drying.

Clive Day, technical director at Welwyn Tool Group, the UK distributor for Leister Hot Air Tools, comments: "We recognise that as safety regulations on the roof become more prevalent, safe installation solutions are required. We have a comprehensive range of hot air welding equipment to meet all flameless membrane bonding and welding requirements on the rooftop, ensuring contractors are fully compliant and can continue to secure installation opportunities".

Doug Ross, projects director at Bauder, expresses his support for the Safe2Torch campaign: "All major manufacturers or system suppliers have adopted the NFRC's Safe2Torch initiative and the availability of high quality and reliable hot air tooling plays a major role in roofing contractors being able to deliver safer solutions on site."

Ross continues, "Bitumen waterproofing provides durability and a long service life, and hot air technology provides an alternative installation method to safely address waterproof detailing in potentially combustible areas."

"Roof fires are quite rare events, but each is highly publicised and regardless of the cause, highly detrimental to our industry. It is right therefore that we collectively adopt these safer practices and detailing methods to help eliminate this unnecessary issue."

The Safe2Torch campaign will directly affect at least 50 per cent of all the flat roofs installed in the UK. It is designed to support specification designers to comply with the Construction Design and Management Regulations 2015, and joins with the HSE-led 'Helping Great Britain Work Well' strategy, promoting a safer and healthier working environment.



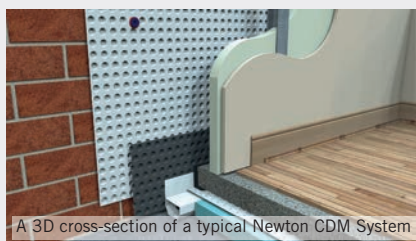
The Safe2Torch campaign will directly affect at least 50 per cent of all the flat roofs installed in the UK

A Flood-Proof Waterproofing Solution for Your Home

In recent years the UK's winter storms have been a firm reminder of the threat posed by flooding. In 2015 especially, storms Desmond, Eva and Frank wreaked havoc on over 16,000 residential homes. Newton Waterproofing examines how cavity drainage systems can assist those who are recovering from, or facing the threat of flooding.

Cleanup

The greatest challenges following a flood are to make damaged properties fit for



A 3D cross-section of a typical Newton CDM System

reoccupation, and to protect them from future flooding.

However, one of the biggest delays in the cleanup is the need to allow saturated walls to dry out. This can be as slow as one month per inch of wall thickness, and cannot begin until all contaminated materials are removed and a 'Decontaminated Building and Sanitation Certificate' has been issued.

Recovery

Speeding up this process is therefore a crucial part of any effective flood management strategy, and internal cavity drainage systems are perfect for the role. The cusped waterproofing membranes create an air gap between the membrane and the wall, providing two major benefits:

- Separating the damp wall from the internal environment, allowing new surfaces and finishes to be installed immediately
- Creating positive vapour pressure that 'moves' dampness out of the property. As



vapour moves from the inside to the outside in an attempt to equalise, damp in the walls is also moved outwards

Reoccupation and Remediation

Cavity drainage systems maintain the structure while protecting internal environments, allowing new finishes to be applied with peace of mind, and enabling reoccupation significantly earlier than if the walls were required to dry out naturally.

Finally, cavity drainage systems also protect properties against future flooding, forming an integral part of an overall flooding solution.

01732 496511

www.newtonwaterproofing.co.uk

Roofshield preserves the character



A historic farmstead conversion in Westmarch, Dundee is set to benefit from the added protection of Roofshield, which has long been recognised as one of the highest performing roofing membrane solutions, providing a pitched roof underlay, which is both air and vapour permeable. Jason Stewart of Circinn Developments comments: "It was important to maintain a strong traditional character to the buildings, preserving the stone finish exterior and slate roof. As part of the roof construction, we insisted on the Roofshield membrane from the A. Proctor Group to ensure the highest level of protection."

01250 872261 www.proctorgroup.com

Structural solution helps cut costs



A survey and design exercise has helped reduce costs and transform a disused mill into a luxurious new residential accommodation building. Rhodes & Partners undertook the work on the Grade II listed building, and devised a solution which helped minimise the need for costly temporary work by utilising as much of the original structure as possible. Rhodes & Partners' Technical Director, Peter Graham explains: "Part of the structure had suffered a high degree of deflection, but we were able to design a detailed system of cross-bracing which stabilised the building and allowed the refurbishment to proceed."

0161 427 8388 www.rhodesandpartners.co.uk



Images © Kate Bowe O'Brien

Melting with the environment

What at first appears to be a fluid transition between earth and sky is, on closer inspection, a reflective upper floor made of ALUCOBOND® naturAL Reflect, which allows the building to meld with its surroundings. The West Limerick Children's Centre, located in the southwest of Ireland, supports children with mental and physical handicaps and promotes their integration into society.

The organization of the centre's floor plan is based on the 'onion principle': an interior infrastructure is surrounded by a corridor lit by skylights. This corridor provides access to the spaces of the outer layer, where therapy rooms, waiting areas and offices are located. In every room, a ceiling-high glazed façade creates a fluid transition between interior and exterior. All children, regardless of height, age or physical limitations, have the opportunity to enjoy the view of the garden.

The base of the structure, glazed on all sides, is given an irregular rhythm by means of black window frames. The interior distribution of space cannot be determined from outside; the building creates an impression as a single unit. Above the glazing, the surrounding landscape is reflected by a

high upper floor, which is clad with reflective ALUCOBOND®; trees and cloud formations are mirrored, integrating the building into its environment. On the south side of the structure, the jutting roof ensures protection from the sun and prevents direct sunlight from penetrating into the therapy rooms.

In order to prevent any potential negative effect on individual patients, the interior spaces have been decorated in light, neutral colours. Furthermore, the architects place great value on the best lighting for the interior spaces, with as much natural light as possible. Besides profiting from the direct light that shines through the glass façade facing the garden, the therapy rooms and offices also take advantage of the diffused illumination from the skylight in the corridor.

A meticulously selected combination of materials has helped the SATA team of architects create an unusual and surprising effect: while the floor-to-ceiling glazing on the ground floor allows the interior to meld with the surrounding garden, the reflective ALUCOBOND® facade becomes part of the natural environment, changing appearance according to the season and weather.

Paul Herbert, Specification Manager
07584 680263

Richard Geater, Sales Manager
07584 680262

Richard Clough, Business Development Manager
07760884369

www.alucobond.com

PROJECT DATA:

Project: West Limerick Children's Centre

Location: Newcastle West, Country Limerick, Ireland

Facade material: ALUCOBOND® naturAL Reflect

Construction system:

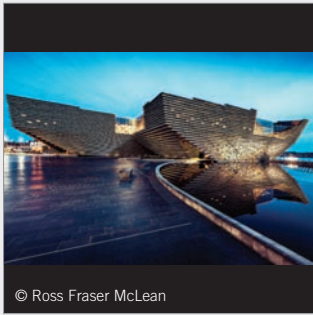
Tray Panels on bolts

Architects: SATA + ballinacurra house

Fabricator / Installer: Multi Roofing

Year of construction: 2014

SFS fastening solutions deliver superior envelope quality for Dundee's new V&A



© Ross Fraser McLean

High performance A4 austenitic stainless fasteners by SFS will play a vital role in ensuring that the stunning new V&A Dundee will retain its superb visual appeal throughout its lifespan. A market-leader in building envelope fastener systems has partnered with Sika Sarnafil and Q9 Cladding Solutions to deliver a secure and durable warm roof for the highly acclaimed museum, which is the first V&A outside London and explores Scotland's design heritage past, present and future. Their comprehensive building envelope package will ensure the visually stunning facade delivers on the architect's aesthetic goals throughout its lifespan. SFS worked closely with membrane manufacturer Sika Sarnafil to ensure that the innovative design of the V&A warm roofs could be delivered sustainably, and to a superior build quality for maximum longevity. Sika Sarnafil S327 membrane was installed with the Sarnafast fastening system, which includes thermally broken SFT sleeves and SFS's BS-S-4,8 austenitic stainless steel grade A4 (316) fasteners. The tapered insulation system was also installed with BS-S-4,8 fasteners which were combined with Sika SBT sleeves and SBIW insulation washers.

0113 2085 500 www.sfsintec.co.uk

Bradite "will take market by storm"



British manufacturer of high quality protective coatings Bradite is set to take the specialist paint market by storm with the launch of a new multi-purpose product that is suitable for use on all surfaces. Bradite 'One Can', the first all-purpose water-based primer and finish in one can, will be available at stockists nationwide from Autumn 2018. The unique product is an interior and exterior, anti-corrosive, quick drying, low odour, low VOC, primer, undercoat and finish. It offers the decorator a single pack, direct-to-substrate paint that provides superior stain locking and adhesion properties.

01248 600315 www.bradite.com

Wood has never looked so good



The Hunter Douglas Architectural range of exterior wood ceilings, are available in a wide choice of solid wood, veneered wood and metal woodprint finishes. They are ideal for external environments where open, light construction are desired and create a warm and unique appearance to a range of external applications including,

soffits, canopies, walkways and atriums. They are available in different panel sizes and configurations and include curved finishes, straight or diagonal patterns or a combination of the two.

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Reynaers has been shortlisted for the Glass and Glazing Industry awards

Judges at the G18 Awards have shortlisted the leading aluminium systems company in the 'Training and Development Initiative of the Year' category for its new Training Centre. This is the sixth year in a row that Reynaers has been a finalist in the prestigious awards, showcasing the very best projects, suppliers and campaigns in the glazing industry.

The dedicated Training Centre is part of Reynaers' Knowledge Centre, a £6 million development in Birmingham's Northfield. The state-of-the-art facility opened in 2017 following the company's UK success in both commercial, trade and residential markets and has welcomed more than 1,230 guests since opening its doors.

A team of four specialised training instructors offer both practical and theoretical training courses within the centre, with bespoke courses also available to suit the individual requirements of fabricators, installers and main contractors.



The centre also hosts CPD seminars to meet the needs of architects and induction courses for Reynaers employees.

The G Awards have been running for more than a decade. Reynaers has been shortlisted every year since 2013, in multiple categories including 'Promotional Campaign of the Year - Trade' in 2017 and 'Best New

Product' in 2016.

The G18 ceremony and gala dinner will take place on the 30th November at the London Hilton on Park Lane.

0121 421 1999

www.reynaers.co.uk/en-UK/reynaers-training-centre-uk

X-Wood Cladding – a natural choice for Stunning New Home



Freefoam Building Products X-Wood Cladding has been used as a sleek contemporary feature to the front and rear elevation of a stunning new home on the outskirts of York. With such an individual design and high specification the owners wanted to ensure all exterior components were robust, stylish, long lasting and hard wearing. Homeowner Peter Jennings explained "We were introduced to the Freefoam cladding range from a local supplier, Revival Building Products Ltd, and immediately liked the X-Wood range." X-Wood is an innovative PVC-U exterior cladding that looks and handles like wood but without all the usual maintenance issues associated with timber. Freefoam have used their manufacturing expertise to design and produce a 16mm attractive high performance cladding board comprised of three different layers - a heavy duty through coloured plastic foam core, covered with a durable plastic skin and then coated with market leading Renolit film which creates a hard wearing, stable material with a beautiful subtle woodgrain effect finish. The range is available in a choice of six contemporary colours. For a video please visit www.youtube.com/watch?v=6La-b6Y-6Vc

01604 591110 www.freefoam.com

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1, 2 & 3, CWCT and more. It also offers a range of WinMark™ Certification schemes which ensure your company complies with Secured by Design, Approved Document Q and NHBC Standard 6.9.

www.wintechtesting.com

Promat provides assured fire protection



Assured passive fire protection for a spectacular central atrium in Dublin city centre's largest and most prestigious new commercial development has been provided by over 300m² of Promat SYSTEMGLAS® Ferro. SYSTEMGLAS Ferro was selected thanks to its 360 degree 'wheel of assurance,' which

ensures all the fire resistant glazing screens are checked for compliance at every stage from design and specification, through manufacture and during installation.

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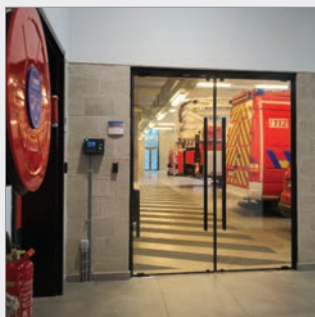
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Menai Science Park. 1,300m² of Corian® cladding in Glacier White. Specified by Faulkner Browns Architects. The façade was created by expert Corian® Industrial Partners, Unique Fabrications.

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Unique design and unrivalled fire protection with Lunax doors



Lunax, recently acquired by Vetrotech Saint-Gobain, is delighting architects throughout the UK. With the addition of this new solution, Vetrotech Saint-Gobain has enhanced its range of systems in line with the growing architectural trend of combining building transparency, design and high safety standards. Traditionally, form has followed function when it comes to fire protection – but Lunax has changed that. Incorporating versatile Contraflam safety glass and just four discreet clamps, its aesthetic appeal combines on-trend transparency with heightened fire safety. The development of Lunax has been driven by achieving not just fire protection, but beautiful aesthetics that maximise natural light, whilst integrating its four framing solutions. Doors can be customised with a large choice of handles, screen printing, coloured glass and many additional door accessories. Architects have the option to specify single, double or asymmetrical double doors - ideal for both new build and existing spaces. And as a building's design affects the wellbeing of its occupants, architects are increasingly seeking to source products that address this. Crucially, Lunax doors are fire resistant on both sides.

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SageGlass® announces voice control



SageGlass®, a pioneer of the world's smartest electrochromic glass, announces that its dynamic glass is now able to be integrated with voice controlled speaker systems. Building occupants can now control the dynamic glass tint via simple voice commands to optimise daylight

and outdoor views while preventing heat gain and glare. This offering is expected to be integrated into larger building management systems so building owners and facilities managers can manage SageGlass along with other voice-enabled smart devices in the building.

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SWA members offer the real steel deal



Member companies of the Steel Window Association routinely engage in many types of contemporary contracts aside from the demand for 'Replica Refurbishment' work. One of the key reasons that specifiers can source suitable solutions for diverse projects is the amount of effort and resources the SWA has put into product development over the decades. So when specific challenges arise, members know they can consult the SWA's technical committee as well as colleagues at other manufacturers. Choosing an SWA member to manufacture and install your steel windows and doors ensures that you are receiving the highest standard of service.

www.steel-window-association.co.uk

Schueco viewed as 'go-to' solution



Originally launched in 2014, the AWS 70 SC outward-opening aluminium window from Schueco UK delivers Schueco's renowned 'build quality' at an economical price, a formula that has led to it being widely specified for domestic projects right across the country. Its versatility and excellent performance in use means

that many specifiers now view the Schueco AWS 70 SC window as the 'go-to' solution for projects where high quality is paramount but budgets are tight. The Q Mark product certification that it was awarded in 2017 has further boosted its popularity.

mkinfobox@schueco.com www.schueco.co.uk

Sapa package picked for new school



Aluminium curtain walling and windows from the range at Sapa have been used in constructing a stylish new school in Cambridgeshire as a result of the manufacturer's national supply chain agreement with Kier, and the main contractor's past experience of working with the fabricator. The project team has made expressive use of Sapa's E52 and DF75 Si windows in bringing natural light and ventilation to the occupied spaces, as well as security and architectural expression.

01684 853500 www.sapabuildingsystem.com/en/uk

New windows for period country home



Located in the heart of the Nottingham countryside is Felley House, a period country home set in two acres of private land. When replacement windows were required for the home it was no minor job. It was Paradise Windows that undertook the installation,

electing to replace with PVCu REHAU TOTAL70 chamfered profiles in white. Z-section profiles were used in the manufacturing to facilitate fitting around the stone mullions present in certain windows at the home. Mark Millward, managing director at Paradise Windows said: "I'd only ever recommend REHAU for a project like this".

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Cembrit Patina clads new centre



Cembrit has donated its Patina fibre cement and HD cladding to a worthy project that has seen the North Kensington area around Grenfell Tower benefit from a new community centre. Bay 20 is a new two-storey community space on St Marks Road, close to the Tower, which was built by an acclaimed DIY television show. The new multi-use community building provides facilities for local people, including a new cafe that will be used by the community for many years to come. The Cembrit Patina cladding boards have provided an aesthetically pleasing finish to the ground floor external walls.

sales@cembrit.co.uk

Glazing systems from C.R. Laurence to increase safety, security, and function

The privately funded, \$350 million Banc of California Stadium is the most expensive MLS facility in league history. C.R. Laurence (CRL) manufactured and supplied custom all-glass entrances, glass railings, and bullet resistant transaction systems to enhance the aesthetics and function of the stadium.

CRL's DRS Door Rails and Blumcraft® Panic Handles were installed throughout the stadium, including VIP entrances and suites. DRS Door Rails provide clean, uninterrupted glass spans, which give the entrances a contemporary, all-glass aesthetic. They feature patented Wedge-Lock® technology that offers exceptional glass holding power and a faster installation time. The accompanying Blumcraft® Panic Handles are ideal for high-traffic applications such as sports stadiums and further enhance the all-glass visuals using a slim and elegant tubular design.

Select areas of the stadium incorporate CRL's TAPER-LOC® Frameless Glass

Balustrade System. With its clean sightlines and minimal hardware, TAPER-LOC® improves views while increasing safety. CRL's Hand Rails were installed with LED lighting for improved visibility and aesthetic appeal. Available for toughened laminated and monolithic glass between 12 and 25, 52 mm and in a wide choice of finishes, TAPER-LOC® is a dry-glazed railing system that offers a hassle-free alternative to the mess and awkwardness of working with cement. With no scaffold required, the system enables installation to be completed from the safe side of the balustrade from start to finish, which is particularly useful in retrofit projects or when a broken glass panel needs to be changed as it eliminated the need for expensive scaffolding, cuts installation times and provides safety and security for installer and end user.

The system is easy to specify as it has been tested to meet the strictest building code requirements such as European BS6180:2011 and AbP, and American ICC-ES and 2015 IBC



updates. The system uses a horizontal design, which allows it to be adjusted, dismantled and re-set. The aluminium base shoe, available in 3m lengths, can be surface or fascia-mounted, and provided drilled or undrilled.

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Performance vs looks: a view

Different buildings have differing needs with respect to aesthetics, performance and function, but few building materials can have as great an impact on all three as glass. Guardian Glass reports on getting the balance right

The aesthetics, performance – and the function – of glass are intrinsically linked; one cannot be considered without the others. Many aesthetic qualities of glass products can be provided with multiple performance features – and vice versa. Choose the right glass and architects can benefit from the best possible performance combined with the most appealing look.

In the last few decades, the glazing industry has been involved in a ‘performance race’, but with performance improvement increments becoming smaller and smaller as glass technologies mature. Often these minor performance improvements come at a cost – of decreasing the aesthetic appeal of glass.

If we were to improve glass selectivity (i.e. the ratio between light transmission and solar factor), the aesthetics of the glass and the colour of the light inside the building would probably not be desirable for either the architect or for the comfort of the building’s occupants.

For glass facades today, the trends are for neutrality, high light transmission, reflectivity (glass that is highly reflective or that has as little reflection as possible), big glass sizes, and shapes (e.g. curved or bent glass).

Forward-thinking manufacturers share a goal to provide the highest performing as well as the most attractive glass products. By encapsulating flexibility, colour and function, our products help architects realise their most inspired visions.

Glass manufacturers are working very hard to provide their customers with glass products that are high performing but without compromising on the aesthetics. We recently launched a new glass product that shows improved aesthetics with a more neutral and consistent colour, regardless of the viewing angle. A recent exemplar project demonstrates what can be achieved.

Case study: La Casa del Desierto

SunGuard SNX 60 was selected for La Casa del Desierto (‘The Desert House’)



© Gonzalo Botet

project. This was a demanding but creative project which was completed recently in the Gorafe Desert in Spain. It had one clear objective: to demonstrate first hand, across the four seasons, the importance of glass in our daily life and in one of the most adverse and extreme environments in Europe.

La Casa del Desierto stands on a wooden structure and is fully glazed using energy efficient Guardian Glass products. The design of this innovative and highly energy efficient house is the result of the combined efforts of a large as well as experienced team of architects, together with a variety of glass specialists, engineers and consultants. The team was led by Spela Videcnik of OFIS Architects working with Guardian Glass and energy consultants from AKT II and Transsolar.

Working with partners to solve specific issues

Many manufacturers work closely with industry partners to propose efficient glass solutions to their customers, which are fully tested and approved for specific applications and for solving specific challenges. This means that it is our aim to propose specific solutions to architects, cladders and our customers, which will address the problems they face.

For glass facades today, the trends are for neutrality, high light transmission, big glass sizes, and shapes



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Shedding light on the case for rooflights

Rooflights are now an essential element to consider in modern designs, says John Godley of Hambleside Danelaw Building Products, explaining the reasons why



Rooflights play a vital role in the modern building, but are often overlooked. They are the common link to many aspects of building design and can help the designer, the building owner and the occupier achieve a more sustainable, energy efficient and enjoyable place to work and to live in. Well considered rooflight design, done at the outset of the building concept can have dramatic effects on all aspects of the building from the owner's potential asset value to the well-being and productivity of the occupants.

Buildings that provide high levels of natural light are more positive working environments than those which are dependent upon artificial light. It is known that people respond better to working in natural light conditions, as the eye and brain functions work better, resulting in improved concentration and overall performance. Plus, of course, less dependency on artificial light significantly reduces energy consumption and running costs as well as impacting positively on a building's overall carbon footprint.

In new buildings, where high levels of insulation are now being installed, the most significant savings in energy can be realised through the utilisation of the free resource that is natural daylight. The energy consumed by artificial lighting far exceeds the relatively small amounts of heat energy that are lost through increasing the rooflight area, which is a small part of the whole building fabric. The amount of energy required to light a well-insulated building is far greater than the amount of energy required to heat it, and can be the greatest single energy use in the operating the building.

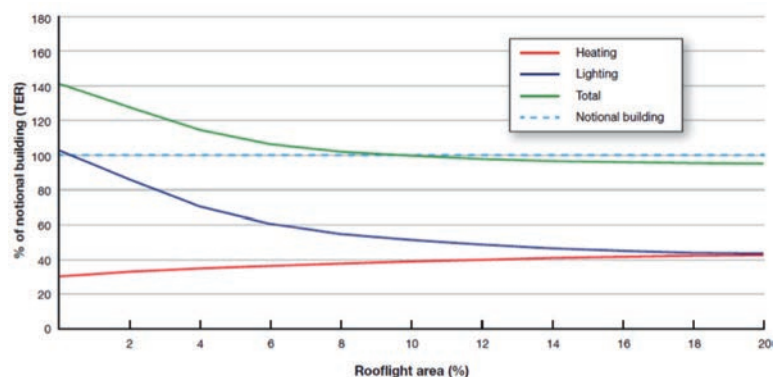
Of course, artificial lighting will always be essential in most occupied buildings subject to requirements, particularly in the

winter months or in areas where localised specific or constant lighting levels are required, but even low energy lighting systems can create relatively high energy demands. This is even more likely when the lighting is turned on and left on throughout the daylight hours irrespective of need, and where automated lighting controls have not been incorporated into the design.

Thermally efficient insulated rooflights can further reduce heat loss and energy consumption. The effectiveness of rooflights as a contributor to energy efficiency are acknowledged in the Building Regulations Approved Document Part L. It recommends that industrial and commercial building structures should have a rooflight area of 10 per cent to 20 per cent, subject to limiting solar gains. Research by De Montfort University and published by the National Association of Rooflight Manufacturers (NARM) demonstrates the savings that can be made by increasing rooflight areas.

The graph below demonstrates the reduction in CO₂ emissions of a typical notional building as the rooflight area is increased to the optimum 16 per cent to 18 per cent, and used in conjunction with a fully automated lighting control system.

In new buildings, where high levels of insulation are now being installed, the most significant savings in energy can be realised through the utilisation of the free resource that is natural daylight



Source: NARM NTD06.2 2014 Designing with Rooflights



Rooflights are a simple and cost-effective choice to introduce a more even and useable distribution of natural light

Rooflights are a simple and cost-effective choice to introduce a more even and useable distribution of natural light, particularly in large structures where light is required deep into the building or in enclosed areas that cannot be lit through an external wall. Increased areas of light-diffusing rooflights, often with lower light transmission or improved thermal performance, can optimise the energy performance of the building, and there are many permutations of performance to choose from. Reduced areas of rooflights with high light transmission levels and poor diffusion that create glare and hotspots, while still leaving areas of shadow and gloom that must be overcome with localised artificial lighting, only demonstrate poor consideration to the daylight design.

Another element to consider is a BREEAM assessment. Many local authorities now insist on this before they will give planning permission, therefore it is vital to optimise the rooflight design, distribution and product type. Using rooflights with low or reduced embodied carbon is a further example of good product selection that can have a significant effect on the BREEAM assessment.

Ultimately, the key considerations for specifiers are as follows:

- Clients need buildings to meet stringent regulatory requirements that will continue to tighten – or even exceed them.
- Achieving a BREEAM rating of 'Excellent' as opposed to 'Very Good' can make a significant difference to the developer who is looking to let a large industrial or warehouse building to a prospective client.
- Having a building that is lit by natural daylight will improve the efficiency, productivity, mental alertness and the general health of the occupants that work in the building.
- In combination with good air-tightness and low fabric U-values, a reduction in the use of artificial lighting is the best way the building occupier can lower the energy cost of running the building.

When considering the design of a building it is now vital that rooflights, rather than being an afterthought, are treated as an essential design element right from the start.

John Godley is technical manager at Hambleside Danelaw Building Products

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Solar control glass in neutral grey launched



Guardian Glass has introduced a new double-silver coated solar control glass with a grey, neutral appearance that meets current architectural trends for glass facades and windows. Guardian SunGuard® SuperNeutral™ (SN) 63 not only satisfies current architectural

design trends, but also offers a range of performance enhancements, including: high light transmission (63 per cent in double insulating glass unit and 56 in triple IGU); excellent thermal insulation; excellent solar control (33 per cent in double IGU and 30 per cent in triple IGU); very low external reflection and neutral and low internal reflection.

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UK's largest structural glass facade



G-Smatt Europe has been selected as the provider of what is thought will be the UK's largest structural, glass media facade for Axiom – Yorkshire, the largest out-of-town retail, leisure and entertainment development in the UK since Bluewater. The announcement was

made at Revo 2018 by Philip Lunn, Chairman of Axiom, who said: "We are excited by the opportunities and creativity provided by G-Smatt's glass media facades and are confident that it will help to deliver a truly memorable visitor experience."

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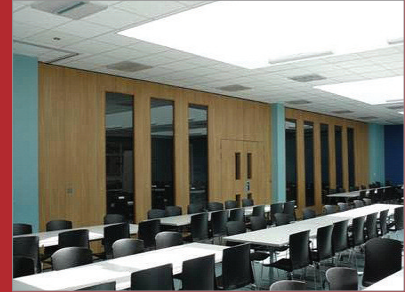
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Sound advice for office acoustics

Mike Carrick of Siderise Group discusses how designers and specifiers can create quieter workspaces, improving privacy and delivering exceptional floor-to-floor, room-to-room sound reductions

A well-designed office is an important investment that will attract talent and ensure workers are engaged and productive. With noise being high on the list of annoyances in the workplace and a cause of work-related stress, good acoustic design is a necessity and should be in harmony with interior aesthetics.

From the outset it's important to use materials which will achieve good acoustics and solve any sound transmission issues. Not only must the design satisfy the legislative requirements, it should also meet the client or end user's 'wish list' of acoustic behaviour. Proper acoustics is the key objective for a comfortable environment.

Reducing cross-talk

The sound separation achieved between adjoining rooms or offices is often severely limited by 'cross-talk' via a common void. This common problem occurs when the transmission loss associated with this sound path is less than that provided by the primary separating element, for example, a partition. The voids affected by 'cross-talk' include suspended ceiling voids at partitions, access floor voids below partitions and cavities between the floor slab edges and external facades.

To effectively reduce sound transmission or 'cross-talk' via hidden voids which sit above office partitions, ceiling void barriers should be installed directly in line with the partition.

The Sound Reduction Index or SRI (Rw) of the cavity barrier is not normally required to equal that of the partition itself. This is due to the presence of other obstructions in the room-to-room sound path such as the suspended ceiling. The individual performance of the barrier need

only be sufficient to correct the shortfall between the partition and the untreated cross-talk path.

Suspended ceiling systems

The actual value of these paths can vary substantially. For ceiling voids, 15-40 dB Dnfw (DnCw) would usually be associated with most suspended ceiling systems. An acoustic engineer can assess a minimum SRI value for the cavity barrier with knowledge of either the existing overall path value or details of the individual path obstructing elements.

Occasionally conditions arise that demand substantially higher SRI values of the cavity barrier, such as ceiling voids formed by open-cell or substantially perforated suspended ceilings. Twin barrier or multiple element arrangements can then be employed to accommodate almost all possible sound performance criteria. In this situation, Rw values are for the barrier arrangement alone. Room-to-room performance (DnCw) would normally be significantly higher.

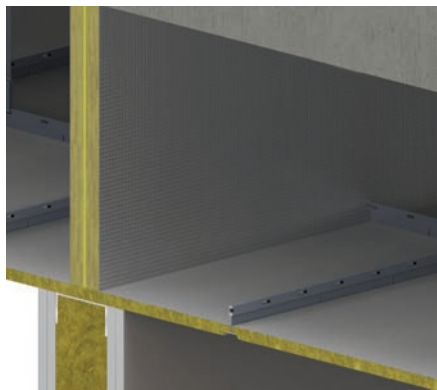
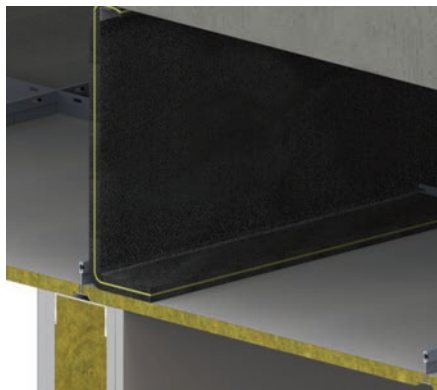
Curtains to noise

When you combine the evolving and changing nature of the workplace with modern lightweight construction, such as curtain walls, this can also present a number of challenges when it comes to acoustics.

The overall sound performance in a curtain wall building is effectively controlled by the 'weakest link'. This means that very careful consideration should be given to any potential weak point to ensure it does not become the 'limiting factor' in the overall sound transmission performance. The curtain wall together with the movement joint should all be considered as potential weak points and thoroughly assessed accordingly.



Acoustic comfort in the built environment has become a concern to society and a challenge to designers



Making it soundtight

Involved in projects throughout the world and having manufactured acoustic and fire insulation products for more than 40 years, we offer a large range of tried and tested product enhancements specifically developed for both building interiors and the facade industry. From flexible and semi-rigid acoustic barriers for suspended ceilings to acoustic void closures for tops of walls and fire stops for profiled decks, the company's ceiling void barrier range is designed to effectively reduce sound transmission via hidden voids.

Designed to reduce vertical and horizontal sound transmission in curtain wall buildings, this comprehensive range includes a choice of effective and proven acoustic void barriers and barrier overlays for facades that deal with all common sound path problems and are frequently used to assist in reducing flanking transmission between adjacent internal areas.

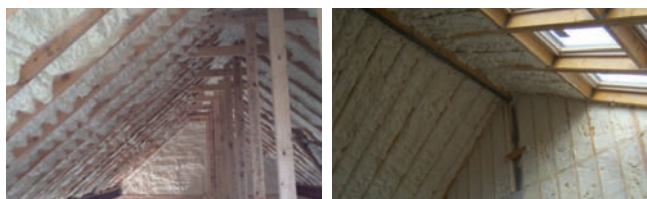
Acoustic comfort in the built environment has become a concern to society and a challenge to designers. It is all too common when considering the specification of the seal between the slab edge and the facade, for product selection to be based exclusively in

terms of compliance to the relevant fire regulations. For facade engineers, architects and their clients, it is essential that due consideration is given to both the acoustic implications and performance of the closure arrangement, ensuring any potential weak point in curtain walled buildings is controlled. The cavity seal should ideally always be selected at the design stage because at this point, the largest range of suitable products is potentially available to the designer. Products can therefore be selected based on cost-effectiveness, ease of installation, and acoustic performance. Post or remedial treatment severely limits available product selection. Also it is invariably more expensive, and less practical to install, and may not always be fully compliant.

Often the acoustic design of offices does not receive the attention that most other architectural elements would. A superior acoustic environment should be a given. The use of performance-enhancing products will mitigate against these issues and ensure any potential noise issues are eliminated.

Mike Carrick is head of acoustics at Siderise Group

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Ecophon strengthens its solo offer



Ecophon has launched the latest extensions to Ecophon Solo™, a market leading family of free hanging acoustic panels. The new additions to the already extensive product portfolio of versatile acoustic absorbers provide architects and designers with even greater choice and creative freedom. Following the recent growth in the architectural popularity of baffles, Ecophon have taken their offer to the next level with Ecophon Solo™ Baffle

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Soundtect launches Freestyle®



UK based Acoustic solutions supplier – Soundtect recently announced the launch of its Freestyle® product range, a lightweight, semi rigid sound absorbing panel that can be used in a variety of design and interior solutions.

What makes Freestyle® so innovative is its incredible versatility – providing the perfect noise absorption solution in any domestic or commercial interior design spec. Made from 100 per cent polyester, 70 per cent of which is post-consumer recycled material. Freestyle® is completely safe, environmentally friendly, non-toxic, non-allergenic and incredibly easy to maintain – simply vacuum.

www.soundtect.com

Sto helps create the right impression



One of the largest-ever UK projects to be undertaken using StoTherm Classic M insulation and the Sto-Rotofix Plus fixing system has now been completed in Scotland. The Sto products have been used on the new Portobello High

School, which has been built adjacent to Portobello Park in Edinburgh. Graham Barr of JM Architects in Edinburgh said: “We were looking for large, smooth surfaces on the elevations, and the Sto solution allowed us to create these as the external wall insulation could be installed without the need for any visible movement joints.

01418 928000 www.sto.co.uk

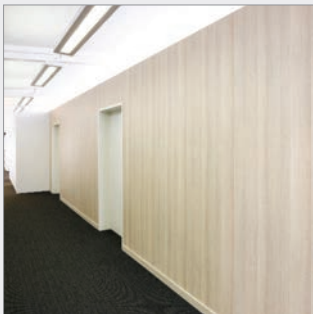
Creating the perfect acoustic ambience



The Experimentarium museum in Hellerup, Denmark has been listed as one of the ‘Greatest Places to visit 2018’ by Time Magazine. Following an extensive renovation, guests can now dive into a virtual submarine safari, zoom in on the world of microorganisms or travel through the Tunnel of Senses to explore sight, touch, smell and sound. However, one distraction they will not hear are the loud echoes and reverberations in the exhibitions and galleries from the noise and chatter of the thousands of daily visitors. This is because architects CEBRA have specified Trolldtekt wood wool panelling extensively throughout. These panels, in white and grey, counterpoint the museum’s raw and industrial feel and contrast with the design elements of the copper, aluminium and glass. Trolldtekt ceiling panels provide a very high-performance sound absorbing surface which absorbs and reduces the noise and reverberations bouncing off the interior hard surfaces. In addition, because the ceiling is suspended, it can be removed or adapted to accommodate exhibition changes within the 11,500sqm of public space.

www.trolldtekt.co.uk

Make offices out of the ordinary with UNILIN, division panels



UNILIN, division panels, designs and manufactures HPL and melamine surfaces for use in commercial environments and through its Evola and ClicWall ranges, it can provide office spaces with innovative, authentic looking surfaces that are durable and easy to maintain. In fact, UNILIN can offer office space designers a flexible way to approach walls, partitions, furniture and surface treatments; with different looks that all possess the same low-maintenance, splash-proof, scratch-resistant, fade-resistant and durable finish. Sharing 106 decorative effects, Evola and ClicWall offer everything from rustic wood and formed concrete effects through to brushed metal and solid colours. Working as a dazzling backdrop to an equally dazzling reception desk, creating a seamless look in kitchens, or simply as a stylish feature wall in meeting spaces; ClicWall features a patented Uniclic profile. Combined with an easy-slide strip for rapid installation, it is one of the easiest wall panel systems available today. In a size of 600mm x 278.5mm, the 10mm thick panels are also available in FR (fire retardant) specification.

info.panels@unilin.com www.unilinpanels.com



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BauderROCK

Noise Reduction and Sound Absorption

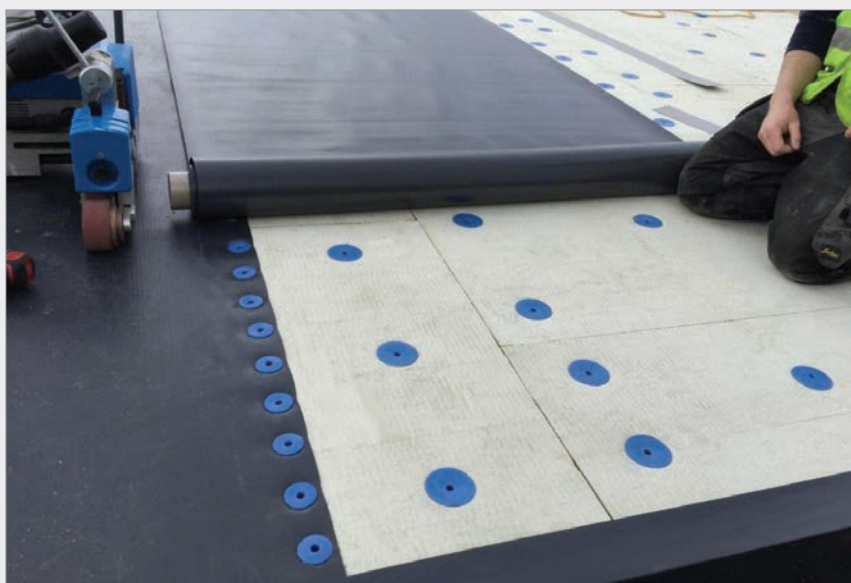
BauderROCK insulation within a waterproofing system provides exceptional benefits for airborne sound and rain noise reduction, and sound absorption within a building. This insulation is suitable for all flat roofs utilising single ply or bitumen membranes in a warm roof construction.

Mineral fibre insulation is produced through spinning molten rock to create a mass of fine, intertwined fibres and pressed into boards. The insulation is produced as flat board, trapezoidal infills or tapered to create falls on the roof.

BauderROCK is particularly beneficial where projects need to deliver a high level of sound diminution for the building occupants. Addressing the acoustic performance of a flat roof early in the design process is key in ensuring an effective solution. The three considerations in acoustic design are airborne sound, rain noise intensity and sound absorption.

Airborne sound

Airborne sound, such as road, rail and air traffic, and surrounding industrial operations, is transferred from a building exterior envelope into the building interior. The BauderROCK mineral wool insulation significantly reduces noise transmitted through the roof by 47-48dB.



Rain noise intensity

Rain noise reduction is a separate consideration, relating to the impact rainfall can have on the indoor noise levels. The BauderROCK predicted Rain Noise Intensity reduction measures between -52.5dB and -52.0dB (235mm and 255mm), making it a suitable choice to meet the acoustic requirements in all room spaces in educational and healthcare buildings.

Sound absorption

Noise created from within a building requires a sound absorption solution. Reducing this noise level is especially crucial in buildings such as sports halls and manufacturing plants where there is often a great deal of noise generated from within the building. BauderROCK Acoustic Infill provides high performance sound absorption when utilised with perforated metal decks. Bespoke infill trapezoidal 'wedges' are cut to fit the specified roof deck. The combination of optimised density, fibre direction and excellent fit provides a significant improvement in sound absorption when used together with BauderROCK insulation on perforated metal roof decking constructions.

A BauderROCK system of 235mm offers a U value of 0.15 W/m²K and 255mm a U value of 0.16 W/m²K. By incorporating the air and vapour control layer (AVCL), we are able to deliver a single system that meets both the acoustic and thermal requirements of current building regulations.

Key features

- Increased acoustic performance
- Non-combustible
- Zero GWP rating
- Zero ODP rating
- Multi-purpose facing

0845 271 8800
www.bauder.co.uk

New Colour Collection for Yeoman Shield's Smooth Protection Panels

Yeoman Shield have expanded the colour range of their Smooth Wall Protection Panels to 22 stunning shades.

Previously only available in a small selection of "pastel" hues, a new vibrant mix of colours has been added to the range with exciting options such as Ruby, Fuchsia



and Lime sitting alongside more tranquil favourites like Linen and Ivory.

Yeoman Shield's panels with a Smooth finish are manufactured from a PVCu material and are available in standard sizes of 2440 x 1200mm and 3050 x 1220mm and are 2.0 or 2.5mm thick dependent on the colour and finish chosen. The new Pastel colour collection has a Satin finish whilst the Accent range has a Gloss finish.

Fire tested and of a food grade quality these panels are a great addition to areas in public buildings such as washrooms, kitchens, restrooms and cafeterias, providing a clean and hygienic covering for walls. They can also be utilised as an impact protection system for walls in places that experience light to medium impact damage.

Whichever shade or finish you choose installing Yeoman Shield Smooth Protection Panels will certainly add interest and flare to any interior design scheme.

For more information on Yeoman Shield



smooth protection panel range including the new colour card please call or you can email.

0113 2795854 smooth@yeomanshield.com

Manage the expectation of stylish independent living



Helping a client manage the expectation of lifestyle changes is being simplified with a new service from Closomat. It means that the complete process is efficiently managed by a team expert in, and dedicated to, ensuring smooth, compliant new build and refurbishment projects. The service covers all elements, from choosing the configuration of a Closomat Asana shower toilet through to installation, and future servicing/maintenance. The Closomat Asana is claimed to offer the ultimate in intimate hygiene. The wall-hung, hidden cistern WC has integrated douching and drying so there is no need to manually clean oneself (or be wiped clean) after going to the toilet. The contemporary-styled WC features a raft of options, including flush mechanisms, flush plates, and mounting panels - all of which affect the overall bathroom aesthetics, and user satisfaction. The Closomat Asana is the latest evolution in Closomat's range of bathroom fixtures and fittings designed to enable independent living. The range includes shower seats, shower chairs, ceiling track hoists, washbasins, changing benches, toilet lifters and even a body drier.

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

The DallFlex family by Dallmer



The DallFlex shower drainage system from Dallmer offers a great amount of choice and flexibility for both refurbishments and new developments. The DallFlex drain body can accommodate a wide range of shower channels including CeraFloor and CeraWall, as well as Zentrix and

CeraNiveau. Depending on the channel, DallFlex can be installed at floor-level or directly in the wall to suit individual taste and budget. The stainless steel shower channels are available in matte or polished surfaces, as well as with additional PVD coatings.

www.dallmer.com

Relaunch of Tile Backer Boards



Abacus Elements is well known as the go-to brand for waterproofing and wetroom solutions in the bathroom, creating innovative and flexible designs coupled with ultimate build quality. What

sets the new Elements Backer Boards apart from the competition is the engineered quality; for "behind the tiles" security. The key features of the board include insulating properties, exceptionally high compressive strength, and impressive environmental credentials. The cost-effective Backer Board system is lightweight, easy to handle and cut, and ideal for application with electric underfloor heating.

www.abacus-bathrooms.co.uk

Osmo UK expands range of adhesives



Osmo UK, an eco-friendly wood and finishes specialist, has expanded its range of wood adhesives with a new durable product developed for use in the home. Introducing the D3 Express Wood Adhesive, a ready to use water resistant adhesive that is specially formulated for use on interior and exterior wooden furniture and joinery. The hard-wearing formula of the D3 Express Wood Adhesive is suitable for gluing all types of wood. Developed not only to secure wood to wood, the versatile adhesive can fix paper, cardboard, and textile-backed PVC to wood and board.

www.osmouk.com

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www.architectsdatafile.co.uk/adf-reader-survey

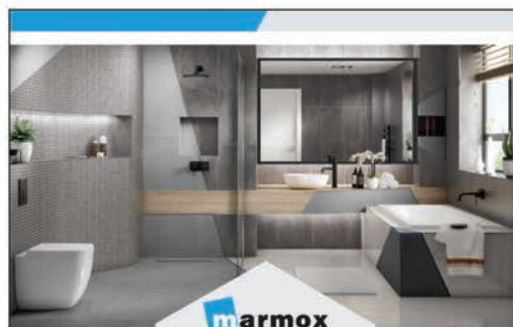
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Evaporating Energy Costs in the Washroom

Imagine a brand new, “green” building. It’s been designed with sustainability in mind every step of the way, from the cladding materials on the wall panels to its energy-efficient lighting system. However, the washroom also provides opportunities to support the architect’s green objective, facilitate long-term savings through sustainable operation and uphold the original aesthetic vision.

In recent years, evolving consumer preferences have driven demand for hand dryers with faster dry times. Thus, high-speed dryers (or jet dryers) that hasten traffic flow have increased in popularity, especially in high-traffic washrooms. However, facilities that employ jet dryers should take special care when it comes to product selection. Specifically, many jet dryers are primary culprits of high energy usage and long-term increased operating costs in the washroom. Further, costly operation often prompts facility managers to replace products such as hand dryers early in the washroom’s lifetime-compromising the designer’s functional intention.



For exceptional energy savings and enduring design, Bobrick has introduced the industry’s lowest wattage jet dryer for sustainability and economy. The new B-7125 InstaDry™ surface-mounted high-speed hand dryer supports the high-speed hand-drying experience that today’s patrons expect, without the high operating costs typically associated with competitive units.

Functioning at only 200 watts, InstaDry is

ideal for high-traffic facilities such as airports and other transportation hubs, stadiums, restaurants and retail spaces. Even in the busiest environments, InstaDry has a life expectancy of approximately 7,500 hours, which can equate to nearly ten years in some facilities. Its annual operating costs can be up to 80 per cent less than other leading dryer brands and its low power consumption allows multiple units to be installed on one circuit breaker.

In the 1940s and 1950s, hand dryers took between 30 and 40 seconds to dry hands thoroughly and operated at about 2300 watts-roughly equivalent to the energy requirements of two dishwashers in 2018. Today, InstaDry makes it easier for facility operators and managers to achieve their goals and operate washrooms with high economic and environmental value. For architects, that sustainable operation enables design decisions that endure and products that aren’t replaced by less aesthetic accessories early in the washroom’s lifetime.

020 8366 1771 www.bobrick.co.uk



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Magrini baby changing units are available in a choice of colours to suit modern commercial washrooms.

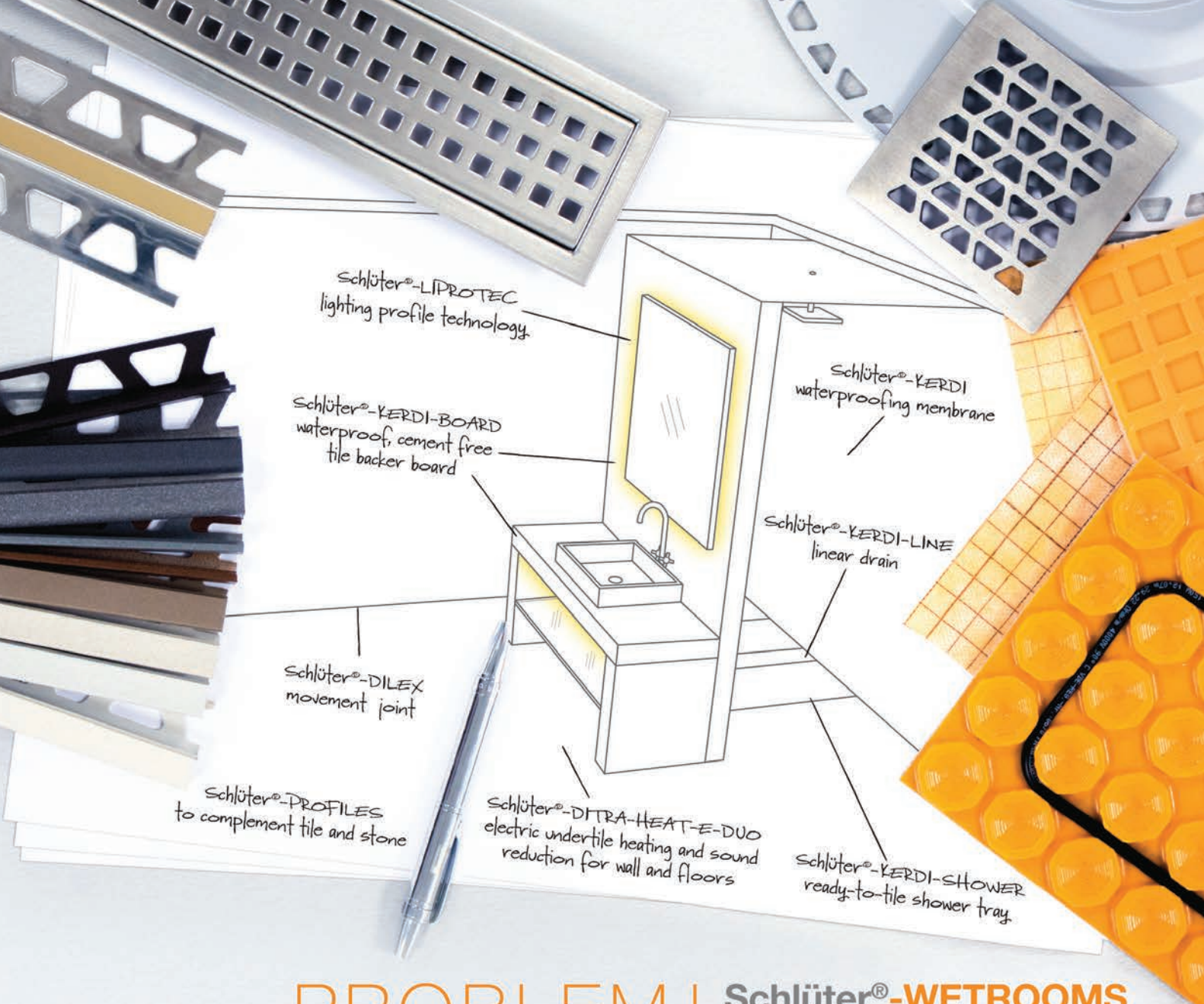


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A sustainable future for water

Glenn Payne from Grohe discusses sustainable solutions for bathrooms as well as the innovations making their way into UK homes

Water – our most natural resource, spans 70 per cent of the planet's surface. Thanks to nature's wonderful recycling system, it is a resource that, in the western world, is taken for granted. However, when we take into consideration that there is no more fresh water on earth today than there was a million years ago, and that only 3 per cent of the earth's water is suitable for human consumption, it becomes clear as to why the topic of sustainability has increased tenfold in recent years.

To put it into perspective, the global population, which currently stands at over seven billion people, has to share this 3 per cent of usable water for washing, cooking and sanitisation. Thus there is growing urgency on demand for water, and focus on the need for manufacturers to deliver sustainable solutions for our homes, offices and public buildings to help reduce consumption, and ease the strain on nature's purest resource.

International certification programmes are growing in abundance across the globe. The value that rating systems such as BREEAM and LEED can add to a project is immeasurable. Not only do they help to facilitate the sustainable construction, design or refurbishment of buildings, but they also set a benchmark of excellence, which in turn helps identify areas of improvement and inspiration for the future.

The management of water currently only plays a small part in these accreditation systems – 6 per cent reduction required for BREEAM and 10 per cent for LEED – which is much less than the reductions required for energy. Is it time for change, in light of the pressures placed upon this precious resource, and the growing number of intelligent solutions available on the market?

In the fields of design and architecture, leading manufacturers are providing innovative, functional and design-centric solutions to both the residential and commercial sectors to try and alleviate some of these issues. When it comes to



considering sustainable solutions in residential properties, it is important to find water-reducing products that address the daily activities that cause the biggest deficit. A similar thinking can also be applied to many public and commercial buildings too. Interestingly, a fifth of the daily water used in an average household is consumed in the kitchen, but only 2 per cent of this is for drinking and cooking. A staggering 32 per cent is used for toilet flushing alone, and 36 per cent for washing, bathing and showering. As the three biggest contenders for water consumption, and consequently, wastage, these are the areas that sustainable developments should consider tackling with more eco-friendly solutions.

The integration of smart water systems will allow consumers to track consumption, detect micro leaks and frost risk, and in case of a detected burst pipe, automatically shut off the water supply



Water saving solutions for commercial & residential projects

When it comes to the specification of more sustainable systems for water saving in showers, most accreditation systems require shower systems to run between 7.5 l/min – 9 l/min, and this is made feasible thanks to flow restricting ‘mousseurs’, and technology that allows equal dispensation of water from each nozzle in the shower head. This actually reduces water usage while maintaining a high quality shower experience for users. Some thermostats are also fitted with eco buttons that can reduce consumption by up to as much as 50 per cent.

In terms of taps, although traditionally associated with commercial interiors such as public toilets, infra-red taps are now being introduced to the residential market. Water is only dispensed when sensor detects movement thus the water-saving results really are tangible.

Finally, one of the easiest sustainable specifications in any bathroom is addressing the toilet flush system. It is incredible to think that almost a third of daily water usage is going back down our drains after flushing. Flush systems compliant with

BREEAM should have an effective flush volume of 4.5 litres or less, and there are many brands offering these efficient solutions in a range of styles and designs.

As we move further into the digital age, new and exciting sustainable innovations are beginning to make their way into the home. The integration of smart water systems will allow consumers to track consumption, detect micro leaks and frost risk, and in case of a detected burst pipe, automatically shut off the water supply.

Exciting water saving innovations are entering the market each year, but what does the future hold? Soon we will see the option to pre-programme a bath to fill to a pre-selected level and temperature, with no excess water being wasted trying to find the optimum temperature. On the other hand, shower systems can be paused to temporarily stop the water flow while the user is applying soap or shampoo, before the flow is restarted again at the same volume and temperature. Each of these small steps will make a big difference to the burden we bear on the precious resource of water.

Glenn Payne is head of projects at Grohe

The tap that combats disease, infection and headaches.

The Optitherm tap is designed to make life easy.

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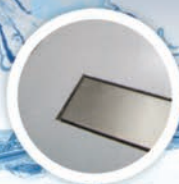
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The OTL Square grating system is perfect for use with mosaic tiles thanks to the natural 'dished' effect of the manufacturing process.

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www.onthelevel.co.uk

Grow through the colours of nature with Antron® Carpet Fibre



Grow is one of the defining themes shaping colour in commercial interiors. The Global Colour Trend Forecast looks at how colour will impact commercial spaces in the forthcoming years. Presenting Grow alongside three other key themes of Play, Primal and Reflect; the forecast is now in its fifth edition. Focusing on green, Grow addresses our need to feel closer to nature, tackling the nature-deficit caused by increased urban living. It smartly mimics botanicals and earth in rich, nature inspired colours, patterns and textures. The Grow palette is found within INVISTA Antron® Lumena™ carpet fibre, now featuring 19 new colours driven by the results of the forecast. With more than 300 different stain-resistant and fade-resistant colour options, Antron® Lumena™ includes metallic shades in mineral, silver and granite through to vibrant flashes of fuchsia, oceanside and citron. Antron® Lumena™ carpet fibre provides carpets with permanent colour through a solution-dyed multi-hollow yarn. With rich and vivid colour, standing up to wear and easy to maintain; Antron® Lumena™ carpet fibre performs faultlessly in busy commercial spaces.

www.INVISTA.com

New pricing concept simplifies process



Decor Systems, a national supplier of blinds and curtains for office, residential and mixed-use developments, has introduced a new pricing system which aims to dramatically simplify and speed up the costing process for architects. Decor Systems have been able to develop a simple m²

pricing guide (called UP) which allows any architect to calculate the price for window coverings without needing to go through the process of requesting and waiting for a quotation, which dramatically speeds up the design cycle, especially when different solutions are being considered or where the design is subject to change.

01302 761122 www.decorystems.co.uk

Stress free departures at Cardiff Airport



Luxury vinyl tiles from Polyflor's Expona Bevel Line Collection were used as part of a brand new departures area which was recently unveiled at Cardiff Airport, which features Expona Bevel Line in the Portland Stone and Light Oak designs. The light, clean, contemporary design of

the Portland Stone tiles complements the classic Light Oak planks, defining seating areas and walkways, and creating a calming, stylish environment perfectly suited for the soon to be bustling departure area. Versatile, both designs work well alongside the lounge's slate grey colour, a decision inspired by the famous Welsh slate heritage.

0161 767 1111 www.polyflor.com

Supporting the Grenfell Community



As part of the ongoing support to the Grenfell community, Abet Laminati and Formwise are proud to have helped realise the ambitious DIY SOS Grenfell project to build the replacement Dale Youth Boxing Club and new Community Centre. Abet donated 12mm compact grade high pressure laminate in a grey Zebrano finish for the washrooms and cubicles, as well as a graphite grey for the lockers. These were supplied to Formwise Washrooms, a manufacturer, supplier and installer of quality cubicles, panels, lockers, changing room furniture and panelling. Formwise managed to design, fabricate and install two complete changing rooms including toilets and shower cubicles in the boxing club as well as washroom facilities in the community centre. Compact grade laminate is perfect for this kind of heavy-duty application where aesthetics and visual appeal need to be coupled with high performance and long-life cycles. Suitable for both wet and dry areas, they are known as hardwearing, durable and very attractive solutions for cubicle, partition and locker applications with excellent resistance to impact, scratches and abrasion.

uk.abetlaminati.com

Delivering safe hot water



Horne Engineering Ltd, designers and manufacturers of specialist thermostatic mixing valves, showers and taps for healthcare, secure, sport & leisure, education and accommodation markets, are delighted to unveil a brand new Show Van, which aims to showcase their clever and versatile product range to end-user clients, architects, consulting engineers, and FM providers. Glasgow-based specialist camper-van conversions firm, Caledonian Campers, have created an outstanding bespoke conversion, paying the very closest attention to every detail of the fit-out and product installations – from the flooring, to the wall and ceiling panelling, to the lighting and the central heating system! Long wheel-based and high-roofed, the van has standing head-room and is fitted out with a very comprehensive sample of the current product range of showers, medical tap, mixing valves and the patented ILTDU, In-line Thermal Disinfection Unit. The on-board computer also allows for slide shows of installations and media presentations to further illustrate a point or concept. Centrally heated, and with hot and cold liquid refreshments available, the Horne Show Van will tour year-round and operate, initially, across Scotland.

01505 321 455 goo.gl/rda7W2

BAL Flexbone - the architect's choice for fast track floor tiling on any substrate

When specifying floor tiling, products that save time and ensure the project is fail-safe are always valued.

Providing fast-track project completion and protection against lateral movement, new BAL Flexbone uncoupling solutions provide architects and designers with all the answers.

Uncoupling mats provide a protective layer between substrates which have the potential to contract or expand such as concrete, sand and cement, anhydrite (calcium sulphate) screeds or heated screeds.

Failure to protect against this lateral movement can cause tiles to either fracture, or de-bond from the background.

Following the launch of the award-winning BAL Rapid-Mat in 2014, the Flexbone range offers two very different solutions to the UK market with the launch of Flexbone 2Easy and Flexbone VARied.

Unique to the UK, BAL Flexbone 2Easy is a floating mat system – this means that no adhesive is required underneath the mat i.e. the mat is truly uncoupled!

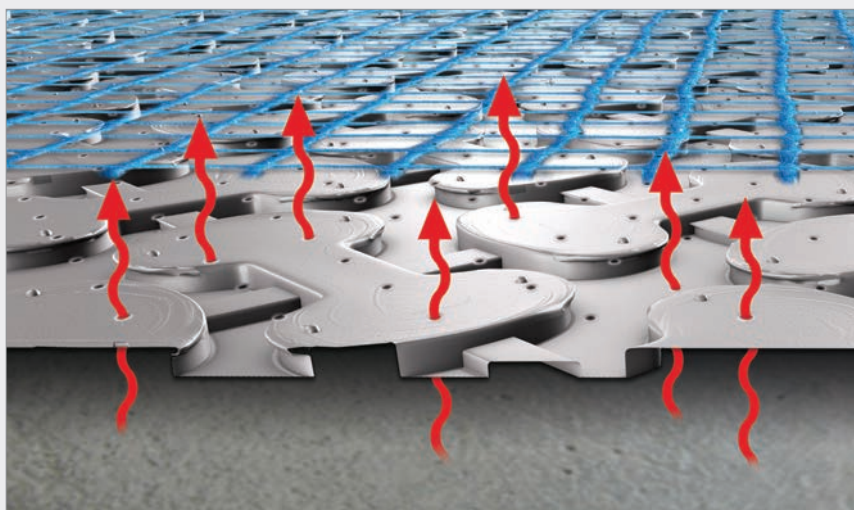
Because no adhesive is required, as long as the floors are level and solid, preparation of the substrate is reduced to a quick sweep of the floor. No removal or residue, no removal of laitance and no priming of the surface is needed. This means that contaminated and stained floors, wooden floors, cracked screeds and mixed substrates can be tiled immediately.

As well as time savings from the lack of preparation, materials costs are also significantly reduced with no need for primers, plus a massive adhesive saving of 2kg/m², when compared to laying bonded cavity mat systems.

Time trials indicate the removal of subfloor preparation for installations provides a circa 50 per cent time saving!

Lengthy waiting times on new screeds are avoided as Flexbone 2Easy can be laid on new sand:cement screeds when they are ready to be walked on, or new anhydrite screeds that aren't fully cured (up to 1.5 per cent CM residual moisture). This means no more projects on hold for weeks on end waiting for the screed to dry!

Fast-track installation is possible as any residual moisture in the substrate is distributed evenly through a system of



perforations and channels in the mat, meaning the screed can fully cure under the tiling with no issues.

Because BAL Flexbone 2Easy is laid loose as a floating system, it is perfect for heritage projects where it is necessary to protect historic, sensitive substrates, or rental properties where tenants cannot alter the original décor, plus areas where the ability to change the floor fairly regularly can be a requirement – e.g. retail stores.

BAL Flexbone VARied is a bonded mat system, with the same installation process as other fixed cavity mat systems in the market.

Unique to BAL Flexbone is the patented GripLock Technology and unique bone structure.

The patented design has been independently tested to provide the highest shear strength (providing more accommodation of higher levels of lateral movement) and the highest tensile strength (to stops tiles 'popping-off', or cracking under pressure). These highly flexible and deformable properties ensure all tile installations are protected from lateral movement and pressures, while a special fleece provides for vapour pressure compensation.

As well as providing long-term benefits in terms of strength and flexibility, the unique bone structure also makes for significantly faster installations as the design ensures the trowelling-out of adhesive on the surface

layer is fast and easy.

Fixer trials have shown that the unique bone-shaped cavities are much easier and faster to fill with adhesive than the conventional square or round cavities.

Less adhesive is required, and trials indicate areas can be completed circa. 30 per cent faster.

BAL Flexbone VARied can be used anywhere – for a varied number of installation environments!

BAL Flexbone VARied provides a waterproof layer, meaning no tanking is needed in wet areas such as bathrooms, showers and wetrooms when BAL Flexbone VARied is installed.

The bonded mat is perfect for high load-bearing and commercial areas such as shopping malls, airports, car showrooms, office building and hospitals, as well as light or medium traffic areas.

Both mats are available in 20m rolls or easy to install 2x1m sheets and are suitable for use with all tile types, including natural stone.

As with all BAL products, BAL Flexbone uncoupling mats come with the manufacturer's unique 25-year guarantee – unlike other cavity mats available.

When used with BAL adhesives, grouts, and sealants, this provides a fully guaranteed tiling system.

01782 591100 www.bal-adhesives.com

Material World

Following the enormous success of its first Product Specification Showroom which opened in London in 2016, James Latham has just launched its second showroom, this time in Manchester.

Just like the London studio, the new Manchester facility reinforces Latham's single-source supplier status, showcasing an enormous range of its exclusive and semi-exclusive decorative panel and timber materials all under one roof.

Rob Goodman, Specification Manager, James Latham said, "This new showroom really is a one-stop-shop for specifiers and has been created to inspire the North West's architectural and design community who are looking to specify materials for both inside and outside the building, providing expert advice and enabling them to keep abreast of the latest trends and developments in surface solutions."

"James Latham's enormous product portfolio includes some of the most recognised panel and timber brands in the world and just like our London showroom, this new facility is the perfect platform to



showcase the sheer breadth of our offering, all from a single source."

As well as a showroom, the space is also being used for networking events, surface and material launches and demonstrations, presentations, meetings, training and CPD seminars.

Please visit James Latham's website for updates on forthcoming events and follow them on twitter and facebook or why not drop in and take a look around.

The showroom, which is located at 31a Tib Street, Manchester, M4 1LX is open between 9.00am and 5.00pm, Monday – Friday.



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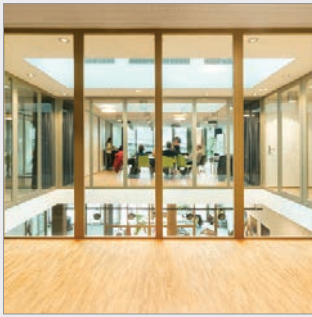
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Vetrotech Saint-Gobain Environmental Product Declaration helps specifiers



As part of its ongoing drive to become a key partner in sustainable construction schemes, Vetrotech Saint-Gobain has issued an Environmental Product Declaration (EPD) for its Contraflam 30 range. Verified by an independent third-party, the EPD is based on analysis of the product's lifecycle and details its environmental footprint, from raw material extraction through to production and processing. The EPD acts as an essential aid for specifiers and architects involved in projects with the aim of obtaining green building certification such as LEED, BREEAM, HQE or DGNB. Valid until 2023, the EPD itself can be viewed on the international EPD system's website, environdec.com. Rob Wood, Vetrotech UK general manager, outlined the reasons for the EPD: "This EPD represents several things for us and our customers. Although Vetrotech is recognised as the 'go to' partner for high-security and fire-resistance, we wanted to leave specifiers in no doubt over the unrivalled sustainability credentials of our systems. Reducing the environmental impact of construction is a huge priority for our industry – and rightly so."

024 7654 7620 www.vetrotech.com

Howe Green bespoke access covers fit for the challenge at underground station



Photo Credit: DMC Contracts

Howe Green Ltd, a leading UK manufacturer of fabricated metal floor, wall and ceiling access covers, has supplied over 850 specially designed and manufactured floor access covers for an underground station.

An access solution was required in order to provide safe, secure and easy access to building services concealed beneath the floor. The Howe Green bespoke duct covers were based on the 7500 Series Medium-Duty Floor Access Covers. With a 69mm depth the access covers were manufactured with an extra thick baseplate and reinforcements to meet the demands of a highly trafficked area.

The access covers were installed by DMC Contracts Ltd and were infilled with two different types of flooring dependent upon their location. The main duct run in the station concourse uses Conservation Smooth pavings from Marshalls. The access covers in the other areas of the station are infilled with Granazzo.

The 7500 Series can withstand up to a five tonne pneumatic wheel loading and is resistant to rust and corrosion. It can be supplied as a single cover, duct run or as a multipart unit. A fire rating option is available.

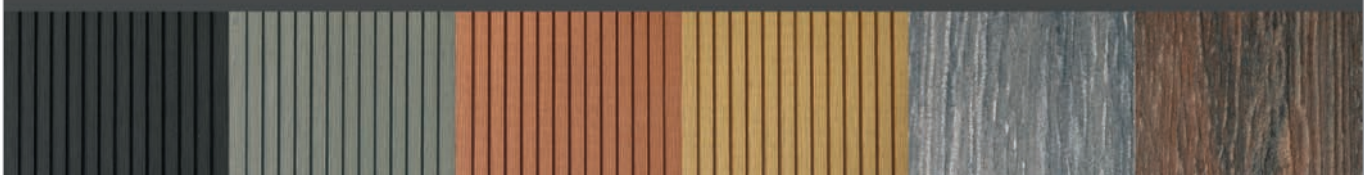
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Hauraton RECYFIX® PLUS drains the new City Quays in Belfast City Centre

The City Quays development, currently under construction, is a £250 million investment to regenerate 20 acres of unused dockland in Belfast City Centre. The development will eventually include 'Grade A' office space, residential blocks, leisure facilities, a large hotel and retail complex all with designated car-parking. Once complete it is planned the City Quays project will achieve a BREEAM Excellent standard, one of the highest sustainability ratings for new developments.



At about 250 metres long, the new City Quays promenade is laid with a two tone granite block pavement which is drained with 230 metres of Hauraton RECYFIX® PLUS 200 channels fitted with Class D400, HEELSAFE ductile iron gratings.

The RECYFIX® PLUS channel unit is made of tough, virtually unbreakable recycled polypropylene (PP) formulated to be very resistant to daily temperature fluctuations from frost conditions to strong sunlight, including the Ultra Violet (UV) spectrum. The channel unit also features galvanised steel top edges which house the ductile iron gratings.

Complying with the requirements of EN 1433, the PP is given its UV resistance by adding just sufficient carbon black as a stabiliser so that the structural strength of the material is unaffected and a consistent appearance is maintained. The PP is also naturally resistant to de-icing salt.

Andy Beirne, Area Project Manager for Hauraton Limited was please the project



went so smoothly, "The channels were delivered to site with their gratings factory fitted, yet as each one metre unit weighed less than 25kg ground-workers Earney Contracts Limited found them easy to handle and install. As with all Hauraton surface water drainage channels, the performance of the RECYFIX® PLUS range complies with European Standards (hENs) and carries the CE mark".

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Denso protection for pipeline bends



G & J Engineering are nearing completion of a high pressure pipeline diversion project for Wales & West Utilities in Newton Abbot, Devon. The pipeline bends are being installed for a housing development in Hele Park and are protected with Winn & Coales Denso Protal 7300. The development is based on a 800mtr diversion of a 500mm high pressure pipeline. The job involves two 5-way stopples with multiple drillings under pressure and line stopping. Denso Protal 7000 is a fast curing two-pack epoxy coating for protection of buried pipelines. It is applied by brush or trowel. It can be applied up to 1mm in one coat without slumping.

020 8670 7511 www.denso.net

Resiblock celebrate 15 year partnership



A 15 Year Partnership between a company and their client is always a cause for celebration, and with the recent manufacturing of nearly 20,000 Litres of the 'Legendary' Resiblock '22', both Resiblock Ltd and Hong Kong International Airport celebrated in style.

Coming in at almost 50,000m², the latest works are the largest single area at Chek Lap Kok Airport to be sealed with Resiblock '22' since the partnership 'took off' in 2003. The latest sealing works will take the total area sealed by Resiblock at Hong Kong International Airport to over 175,000m², that's an area almost the size of Vatican City!

mail@resiblock.com

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