PROTON BEAM THERAPY CENTRE, MANCHESTER How HKS brought a human-centred design to The Christie Hospital's pioneering NHS proton beam therapy centre for treating complex cancers

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MUCH WENLOCK SOCIAL HOUSING A Passivhaus scheme which worked with difficult Shropshire terrain

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FROM THE EDITOR



A s the Brexit quagmire reaches almost farcically depressing depths, it's very tempting to turn one's back entirely on the mess and focus on something indisputably positive. Also, given that the world of speculation (whether it's about empty shelves and huge job losses, or that leaving the EU is the greatest idea the UK's had) is so necessarily intangible, it feels more and more important to focus on concrete examples of success. At least, in the architecture world, that is something we are not short of.

When it comes to concrete, we have a fantastic example of a futuristic healthcare project on the cover of this issue, which is exactly the right kind of tonic currently to remind us of what is possible in the real world. At a modest £125m, the new Proton Beam Therapy Centre at the Christie Hospital in Manchester provides a new hope for patients with complex cancers, because it can treat tumours in a way that avoids the harmful side effects of traditional radiation therapy.

While it appears a relatively unassuming building from the exterior, the real trick that architects HKS have pulled off, as well as creating the first completed NHS unit on this scale, is to bring a sense of openness and nature to what is, to a large extent, a concrete bunker. The linear accelerator that fires protons to the individual patient 'gantries' requires so much concrete that the rear of the building is dominated by the material, from the ground floor upwards. However, the front is open and welcoming, enabling patients undergoing weeks of this treatment to feel a semblance of normality, as well as sociability, in a manner emulating the famous Maggie's Centres now dotted all over the UK. The difference here is that this building is a giant housing for pioneering high-tech equipment, cleverly combined with a human-centred facility.

I find healthcare projects particularly inspiring – when they manage to deliver environments which nourish the soul as well as treat the ailment in a way that works for clinicians – because the odds are stacked against them, particularly in the NHS. With money being scarce, there are many ways in which budgets can be squeezed, and quality lost, so architects deserve special praise for achieving design that doesn't compromise in these settings.

That said, the unit at The Christie was not particularly expensive by modern healthcare standards, like its sister project, nearing completion at the University College London Hospitals. That project – designed by Edward Williams Architects and Scott Tallon Walker, is also much more complex, extending several stories underground, and we look forward to seeing how it turns out in 2020.

Healthcare projects do not have to be filled with cutting-edge equipment to be successful however. The Bromleyby-Bow Health Centre in east London is widely lauded not because of its evolving set of buildings, but how it represents a genuine social enterprise in the community, and puts aspects like art therapy at the centre of its services. This sort of thing is what makes healthcare special, and this rubs off on architects who embrace it.

James Parker Editor



ON THE COVER...

The first large 'high energy' NHS proton beam therapy centre has been completed, at The Christie NHS Foundation Trust, Manchester

Cover image © The Christie For the full report on this project, go to page 35



AWARDS

Structural Awards showcase the best in engineering

The Institution of Structural Engineers (IStructE) has revealed the shortlist of the 2019 Structural Awards, featuring 49 outstanding projects from around the globe.

The awards are now in their 52nd year, celebrating the "best of the best" in structural engineering, said IStructE. The shortlisted entries are divided into 12 categories, "each highlighting the prolific work of structural engineers and the invaluable service they deliver".

The scheme recognises the positive impact these professionals have which can be observed daily, "from soaring skyscrapers and gravity-defying bridges to buildings designed to withstand extreme conditions". Finalists include:

- The V&A Dundee by Arup category: The Award for Structural Artistry (building structures)
- La Reference in Haiti by Eckersley O'Callaghan – The Award for Structures in Extreme Conditions
- KnitCandela in Mexico City by Block Research Group, ETZ Zurich – The Award for Small Projects
- Turanga Library in Christchurch, New Zealand by Lewis Bradford

Consulting Engineers – The Award for Structures in Extreme Conditions

Other shortlisted structures include the world's tallest statue in Kevadia, India, a sports stadium with a roof consisting of rotating petals in Hangzhou, China, and a 22 metre deep 'mega-basement' under a five-star hotel in London, as well as buildings showcasing the world's best seismic performance in San Francisco, New Zealand and Haiti.

Significantly, many of the projects demonstrate how using state-of-the-art technologies, such as BIM, can be used to help foster sustainable approaches in the built environment.

Following strict judging criteria, shortlisted entries were selected for excellence, creativity and innovation, as well as elegance and detailing. Sustainability, economic viability and value for money were also core considerations.

The complete shortlist can be found online at www.structuralawards.org. The winners will be announced at the awards dinner and ceremony, which takes place on 15 November at the Brewery, London.

EXPANSION

CPMG opens in Birmingham

CPMG Architects is continuing its sustainable growth strategy with the announcement of a new Birmingham office in Bull Street's The Lewis Building, to be headed up by director Anil Parmar. This announcement comes following the appointment of Richard Flisher as the firm's new managing director earlier this year.

With headquarters in Nottingham and a London office which opened four years ago, the national business is now expanding its design services and award-winning expertise into the West Midlands area.

Anil Parmar, director at CPMG said; "We have developed a wealth of Birmingham contacts through a consistent pipeline of work over the last 10 years or so, and the time is now right to build on those relationships and develop our offering in the West Midlands market."

The team has completed a number of flagship projects in the Midlands in recent years

The team has completed a number of flagship projects in the Midlands in recent years, including the 2018 RIBA award-winning Vijay Patel Building at De Montfort University, Cripps Health Centre and the Air Traffic Control Tower at Birmingham Airport. As well as this, the team boasts numerous developments across the UK as a whole, including HMS Belfast Visitor Centre, and a large portfolio of schools projects across the UK and in particular in the London boroughs.

CPMG has more than 30 years' experience specialising in the education, commercial, health leisure, manufacturing and interior design sectors.

EVENTS

AWARDS

Restaurant & Bar Awards 03 October, London www.restaurantandbardesignawards.com

Architecture MasterPrize 14 October, Spain www.architectureprize.com

EXHIBITIONS

Open House 21 - 22 September, London www.openhouselondon.org.uk

FESTIVAL

World Architecture Festival 04 - 06 December, Amsterdam www.worldarchitecturefestival.com

SEMINARS

Building Brum: On the Rise 19 September, Birmingham www.architecture.com/whats-on

TRADE SHOWS

100% Design 18 - 21 September, London www.100percentdesign.co.uk

Offsite Expo 24 - 25 September, Coventry www.offsite-expo.co.uk

Decorex International 06 - 09 October, London www.decorex.com

RIBA

RESIDENTIAL

Architects turn Waltham Cross car park into apartment building

Todd Architects has submitted plans to redevelop an underused car park above a shopping centre in Waltham Cross, Hertfordshire, into 119 apartments.

Totalling approximately 8,800 m², the mix of one and two bed units, alongside a number of three bed family homes, will sit above The Pavilions Shopping Centre in the heart of the town. The homes will be contained in two blocks connected by exterior walkways, with internal amenity space and a landscaped roof terrace and garden, accessible to all residents.

The architects' design replaces the dated and visually cluttered facade, removing the "brooding" red brick and "establishing a light, clean palette with a gradation of tonal colour easing the structure into its surroundings," commented the firm, as well as improving the backdrop for the nearby listed sculpture of Alexander of Abingdon. "Glass balustrades and glass-clad panels on the upper levels will play with the natural light and help articulate the building" said the architects. Expanded aluminium mesh will enliven the parking structure while a reconfigured retail area will include uniform shop fronts and a glazed entrance to the shopping centre.

External green spaces are a core element of the design, with landscaped areas and green roofs in an attempt to improve local bio-diversity as well as residents' well





being. The main roof garden is interspersed with semi-circular and irregular rounded planters which act as benches and create a meandering walk, while the roof terrace is designed with a mix of hard and soft landscaping, together with seating area, pergola, artificial lawn, games area and BBQ space.

Visit 2019's Great British Buildings

The Royal Institute of British Architects (RIBA) has announced the programme for Great British Buildings 2019, which gives members of the public a rare chance to look around some of this year's RIBA award-winning buildings.

From London's restored Battersea Arts Centre, to the historic Hollis Building in Sheffield, Great British Buildings "invites people to explore the buildings crowned the UK's best."

The RIBA invites visitors to enjoy

"talks, tours and unique opportunities to meet the architects as they reveal the stories behind their buildings, what inspired them, and what makes their project an award-winner".

Commenting on the programme, RIBA president Ben Derbyshire said, "This year's RIBA Awards have seen an exceptional range of projects, showcasing the UK's great architectural ambition, innovation and skill. We're really pleased to give the public this rare chance to go behind the scenes and see first-hand what makes each building so special, with the return of our Great British Buildings programme."

Great British Buildings 2019 will run from September to November.



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AWARDS

Shortlist announced for ABB LEAF Awards

The shortlist has been announced for the 2019 ABB LEAF (Leading European Architects Forum) Awards. Comprising new architecture, planning and development projects, this year's awards have seen a record number of entries across the 16 diverse categories, including the new categories of 'Best Arts & Culture Building' and 'Best New Start Up Practice'.

The shortlist includes projects of all scales and complexities from across the world. All of the shortlisted projects "include buildings that are setting the benchmark for the international architectural community," said the organisers.



Best Arts & Culture Building Project

- GOA, 'Gravitational Field 2018 The City Delta', Shanghai, China
- Johnston Marklee, 'Menil Drawing Institute', Houston, US
- Nikken Sekkei, 'Kokugakuin University Learning Centre', Tokyo, Japan
- Open Architecture, 'Dune Art Museum', Qinhuangdao, China
- Open Architecture, 'TANK Shanghai', Shanghai, China
- Steven Holl Architects, 'Glassell School of Art', Houston, US

Best New Start Up Practice Project

- AOE, 'Courtyard No. 1', Shandong, China
- DaeWha Kang Design, 'The Living Lab', London, UK

- Mozhao Architects, 'Living Art Pavilion', Shajing, China
- Nathanael Dorent Architecture, 'Ruins Studio', Dumfries, Scotland, UK
- Unitedlab Associates, 'Hadohilljo Townhouse', Jeju Island, South Korea

Best Tall Building Project

- 5+design, 'Crystal Laputa', Chengdu, China
- Avcı Architects, 'Balance Günesli', Istanbul, Turkey
- Pelli Clarke Pelli Architects, 'Salesforce Tower', San Francisco, US
- Zaha Hadid Architects, 'Nanjing International Youth Cultural Centre', Nanjing, China

Best Regenerative Impact Project

- DC Alliance, 'Renovation of Nanjing Confucius Temple', Nanjing, China
- Marcy Wong Donn Logan Architects, 'Ford Point Revitalization', Richmond, US

Best Mixed Use Building Project

- Hangzhou 9M Architectural Design Co.'Greentown Yiwu Peach Blossom Land Living Experience Centre', Yiwu, China
- Innocad Architecture, 'Haus Salzkammergut', Gmunden, Austria
- Interval Architects, 'Tower of Bricks', Hengshui, China
- JEMS Architekci, 'P4', Warsaw, Poland
- Skidmore, Owings & Merrill, 'Manhattan Loft Gardens', London, UK
- West-line Studio, 'Up to the Mountain and Down to the River', Fuxing Town, China
- Zaha Hadid Architects, 'Generali Tower', Milan, Italy

Best Residential Building Project – Single Occupancy

- AR Design Studio, 'Creek House', Bosham, UK
- FujiwaraMuro Architects, 'House in Toyonaka', Osaka, Japan
- Origin Architect, 'Urban Home of Nature', Beijing, China



• Sanjay Puri Architects, '18 Screens', Lucknow, India

Best Residential Building Project – Multiple Occupancy

- DC Alliance, 'Han Ling Yin Xiang', Zhejiang, China
- Kavellaris Urban Design, '101 Maling Road', Canterbury, Australia
- Sasaki Architecture, 'Daita', Tokyo, Japan
- Skidmore, Owings & Merrill, 'Manhattan Loft Gardens', London, UK
- Skidmore, Owings & Merrill, 'New Futura', Singapore
- Tchoban Voss Architekten, 'Housing on Holzhalbinsel', Rostock, Germany
- UNStudio, 'The Scotts Tower', Singapore

Best Interior Design Project

- AD Architecture, 'AD Architecture Office', Shantou, China
- Archstudio, 'Layering Courtyard', Beijing, China
- BEHF Architects, 'Telegraf 7 Office JP Immobilien', Vienna, Austria
- Design Studio MAOOM, 'Coffee Nap Roasters 2nd', Seoul, Korea
- DP Architects, 'Work, Meet and Dream! Designing Workplaces to Inspire Youth', Singapore
- LSDCASA, 'Oct&Vanke The Riviera', Nanchang, China
- Naruse Inokuma Architects, 'Nine Hours Namba Station', Osaka, Japan
- Nikken Space Design, 'West Japan Railway Company Twilight Express Mizukaze', Various Locations, Japan
- Origin Architect, 'Urban Home of Nature', Beijing, China

Best Commercial Building Project

- AOE, 'Courtyard No. 1', Shandong, China
- Gianni Ranaulo Design, 'The Village Outlet Shopping Center', Lyon, France
- KTX archiLAB, 'Cloud of Luster



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Wedding Chapel', Himeji City, Japan

- Nikken Sekkei, 'Shanghai Greenland Centre', Shanghai, China
- Nikken Sekkei, 'Sumitomo Fudosan Azabu-Juban Building', Tokyo, Japan
- Pelli Clarke Pelli Architects, 'Salesforce Tower', San Francisco, US
- Tchoban Voss Architekten, 'Große Bleichen 19', Hamburg, Germany
- Yoshihiro Onodera Architects, 'KP-Project', Saitama-ken, Japan

Best Hospitality Building Project

- Basalt Architects, 'The Retreat at Blue Lagoon Iceland', Grindavík, Iceland
- gad line+ studio, 'Songyang Original Cottage', Langshu Village, China
- Lacime Architects, 'Xitang Ancient Town Tourist Centre', Jiashan City, China
- STUDIO QI, 'Annso Hill', Tengchong, China
- Tohata Architects, 'The Thousand Kyoto', Kyoto, Japan
- Zaha Hadid Architects, 'Morpheus Hotel', Cotai, Macau, China

Best Refurbishment Project

- Antao Design, 'New Headquarters of Antao: Planet No. 16', Hangzhou, China
- Franklin Azzi Architecture, 'Beaupassage', Paris, France
- gad line+ studio, 'Stray Birds Art Hotel', Chenjiapu Village, China
- Kris Lin International Design, 'Navigator', Tianjin, China
- Marcy Wong Donn Logan Architects, 'Uber Advanced Technologies Group R&D Center', San Francisco, US
- ODA New York, '10 Jay Street', New York, US
- Officeuntitled, 'Woodlark Hotel', Portland, US
- Zhang Hua Studio, Tianjin University



Research Institute of Architectural Design & Urban Planning, 'Millet Vinegar Museum', Zibo City, China

Best Public Building Project

- Aedas and Rogers Stirk Harbour + Partners (Joint Venture Designer), 'Hong Kong-Zhuhai-Macao Bridge Hong Kong Port Passenger Clearance Building', Hong Kong
- Andrew Bromberg at Aedas, 'Hong Kong West Kowloon Station', Hong Kong
- Enota, 'Termalija Family Wellness', Podcetrtek, Slovenia
- Nikken Sekkei, 'Nagasaki Prefectural Government Office', Nagasaki, Japan
- Pelli Clarke Pelli Architects, 'Salesforce Transit Center', San Francisco, US
- Steven Holl Architects, 'Hunters Point Community Library', New York, US
- Yazgan Design, 'Dakar Arena', Dakar, Senegal

Best Achievement in Environmental Performance Project

- Andrew Bromberg at Aedas, 'Hong Kong West Kowloon Station', Hong Kong
- Chain10 Architecture & Interior Design Institute, 'The Green Isle', Kaohsiung City, Taiwan
- Holodeck architects, 'Austrian Embassy', Bangkok, Thailand
- LUO studio, 'Longfu Life Experience Centre', Puyang County, China

Best Future Building Under Construction Project

- II BY IV Design, 'Aqualuna', Toronto, Canada
- ODA New York, 'Postkantoor', Rotterdam, The Netherlands
- Pascall+Watson, 'Tiruchirappalli International Airport New Terminal',



Tiruchirappalli, India

- Sanjay Puri Architects, 'Learning Courtyard', Aurangabad, India
- Sanjay Puri Architects, 'Prestige University', Indore, India
- Skidmore, Owings & Merrill, 'Moynihan Train Hall', New York, US
- Yazgan Design, 'OIZ Office', Ankara, Turkey

Best Urban Design Project

- Enota, 'Koper Central Park', Koper, Slovenia
- Mozhao Architects, 'Zishe Planting Pavilion and Planting Terrace', Shenzhen, China
- Skidmore, Owings & Merrill, 'Cornell Tech Campus Framework Plan', New York, US
- Zaha Hadid Architects, 'The Kensington', London, UK

Best Facade Design & Engineering Project

- Chapman Taylor, 'City Plaza', Wuppertal, Germany
- Marcy Wong Donn Logan Architects, 'Center Street Parking Garage', Berkeley, US
- Skidmore, Owings & Merrill, 'Manhattan Loft Gardens', London, UK
- Tezuka Architects, 'Tomioka Chamber of Commerce', Tomioka City, Japan
- Zaha Hadid Architects, 'Morpheus Hotel', Cotai, Macau, China

This year's ABB LEAF Award Winners will be announced on 24 October, at the Berlin Marriott Hotel. Special awards will include the Overall Winner presentation to the project that represents the most iconic architectural landmark and the Lifetime Achievement Award. **MEDITE CLEAR** – MDF designed for use in the most environmentally sensitive and wellbeing-conscious specifications



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RIBA AWARD

UEL graduate wins RIBA award for north London glasshouse 'transformation'

Charlotte Harris, a University of East London (UEL) graduate who is now a lecturer in the University's School of Architecture, Computing and Engineering (ACE), has won a prestigious architecture award from RIBA.

HASA Architects, of which Ms Harris is a founding director, have won a London Regional Award for their Highgate Bowl project, which involves the transformation of a derelict horticultural glasshouse in Highgate Hill, north London. The project has "brought the building back into public use as a community garden and versatile event space," said RIBA.

HASA Architects made "small scale, low-cost, yet highly effective interventions" to remodel and repurpose the 300 m² building. The design was inspired by the frame and construction of the original building.



Charlotte Harris commented: "It explores the possibilities of this forgotten piece of the city by bringing it back into public use through a series of small scale interventions in the form of new external and internal pathways, rooms and furniture pieces. These guide visitors through the large open bays of the glasshouse, while framing views of the surrounding landscape and Bowl beyond."



The detailed design was developed using physical models and 1:1 mock-ups of the structural elements and the works were carried out in six weeks, phased into three separate packages: restoration, application of protective film to the glass, and installation of the joinery elements. The plywood components were manufactured offsite and assembled in 10 days.



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VIEW POINT



Camilla Siggaard Andersen of Arup explores how, regardless of the construction industry's myriad motives, the worth of projects that architects and designers create is ultimately about their social value – how they shape peoples' lives





When populations and, in turn, industries grow, we construct ever more complex structures, find astute technical solutions, and engineer economic models to help us



meet the bottom line. We have largely succeeded in answering to the demand by continuously supplying bigger, taller, longer, and, more recently, greener projects. But is this enough? I'm not convinced.

Winston Churchill famously said: "We shape our buildings and afterwards our buildings shape us". Since then, an abundance of research has reinforced the truth of the statement. In his book 'Happy City', Charles Montgomery explains how the design of hallways in buildings determines the likelihood of neighbours becoming friends. He also points out that your ability to concentrate at work may be linked to whether you were subjected to traffic jams en route. The former is a product of building design, the latter, of car-centric urban planning.

In 2007, the BBC reported that people with 'dirt exposure' could benefit from a



healthier, happier hormonal balance, while Dr Frances E. Kuo has published research since the early 2000s showing that urban greening reduces aggression and crime in inner cities. Yet, green space is still often regarded as a nice-to-have amenity, or a tick-box exercise.

An analysis of the 2016 US presidential election by *The Atlantic* suggests that places which invite diversity through mixed land use, building stock, and functions either create or attract more people with left-wing political views, while the opposite is true for places that are more uniform.

And at the most basic level, researchers working at the intersection of architecture and neuroscience, such as Colin Ellard, Oshin Vartanian, and Moshe Bar, have demonstrated how our brain interprets the shapes, textures, and colours of the built environment. As it turns out, we are



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We are also inevitably shaping a social landscape; impacting on the ability of individuals and communities to live healthy, happy lives; we are either creating opportunities for people, or we are taking them away

biologically programmed to be on edge around hard angles, while soft and curvy spaces put us at ease.

All of these studies have come to the same conclusion. When we shape the physical world, we are also inevitably shaping a social landscape; we are impacting on the ability of individuals and communities to live healthy, happy lives; we are either creating opportunities for people, or we are taking them away.

Legislation has followed suit, setting out the new standards that professionals in the built environment industry are expected to meet. In 2012, the Public Services (Social Value) Act was introduced, and in 2015, the United Nations released the 17 Sustainable Development Goals. The former calls for all public sector commissions to consider wider economic, social, and environmental conditions. The latter is a universal call to action to end poverty, protect the planet, and ensure that people enjoy peace and prosperity.

These issues may seem a little too ambitious to tackle with a simple building or infrastructure project. However, with nine out of ten people in the UK living in built-up areas, and with clear connections between the built environment and people's physical and mental wellbeing, every project must endeavour to make a positive difference. We must deliver 'social value'.

Social value is commonly described as a 'triple-bottom line' that considers social, economic, and environmental impact, from a community perspective. It is a concept that summarises the responsibility of the building industry to consider the wider repercussions of a project on people, for all of the reasons outlined above.

To achieve this, we need to embed ourselves in communities, listening to their

needs and wants, and redefine our idea of success accordingly, across all avenues of the building process. We have to build not to prove the strength of metal, but to support the strength of people. We have to design spaces that optimise natural light as well as social encounters. When we build roads, we have to consider both what they connect and who they divide. A facade has to protect the inhabitants of the building from poor weather and make the passing pedestrians feel safe and welcome. Everything we have learned to do has to do more.

To add meaningful social value to our projects, we have to design with people at the very heart of the process and at the forefront of decision-making. It can be complicated, because as much as we try to calibrate, calculate, and validate the wider societal impacts of buildings, places, and infrastructure, we will never be able to fully capture the value of human experiences in a spreadsheet. However, we have another unifying factor within our industry; we like a challenge. That's why we build.

Camilla Siggaard Andersen is design lead at Arup Digital Studio

NEW ARRIVALS

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



(L-R) Sara Bayer, Joe Moyer, and Jen Stencel © Magnusson Architecture + Planning

THREE NEW ASSOCIATE PRINCIPALS MAGNUSSON ARCHITECTURE AND PLANNING (MAP)

Magnusson Architecture and Planning (MAP) have announced the promotions of three Senior Associates – Sara Bayer, Joe Moyer and Jen Stencel – who will be joining Chris Jones as Associate Principals. The four will continue to manage many of the firm's projects and teams, "while expanding their capacity and ability to deliver high quality client experiences and design work," said the practice. It added: "They have been integral to the firm's recent successes." Together, Bayer, Moyer and Stencel have more than 40 years of experience and expertise in all aspects of design and construction administration. "Individually they have been responsible for producing award-winning projects, deploying innovative technologies and assuring the timely completion of healthy, beautiful, affordable and supportive housing developments, all hallmarks of MAP's work."



DAVID FOSTER LK2

LK2 have appointed a new architect to join its team to support the delivery of a number of high-profile projects. David Foster has taken up the role at LK2 after working on several schemes across the UK including cinemas, residential developments and retail units. David said, "I'm delighted to have joined LK2 at an exciting period of growth for the business. The unique blend of LK2's commercial architecture and sport and leisure consultancy services very much appealed to me." David will be working closely with LK2's directors and project architects to develop concept designs into "technically proficient buildings from inception through to completion," said the firm.





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SITE LINES

Serving student wellbeing needs

Students in the 21st century face a wide range of health and wellbeing challenges as well as technological demands. James Allison of architects Bennetts Associates discusses an example of thoughtful improvement of student wellbeing facilities for Cambridge University

In the digital age, where a wealth of information can be accessed at the click of a button, established higher education institutions are facing a challenge to adapt and to redefine their role, and the value they offer students. Change in universities is being driven by rapid technological advancements and by the expectations of modern graduates who require skills to ensure they are prepared for the world of work in the 21st Century. As pressure on students and institutions increases, investment in human-centred spaces is key to cater for these changing behaviours and to promote social connection, diversity and wellbeing among university communities.

Earlier this year, Bennetts Associates delivered the new Student Services Centre for the University of Cambridge. The project comprises refurbishment of the Grade II listed Arts School with construction of a new interlinked building. It is situated in the historic heart of Cambridge on the New Museums Site, which holds many of the university's science buildings, and has been transformed following the demolition of redundant buildings. The project has also created a series of courtyards and pedestrian routes through a previously inaccessible and neglected part of the city centre. These new spaces offer a natural setting in which students and staff can spend time away from their work.

The Student Services Centre aims to significantly improve student welfare by co-locating seven student support services from across the city into a single, easily accessible address. The project provides highly flexible teaching spaces – a priority for the world-class institution – and has been designed to meet the changing needs of the students. It offers numerous benefits for the relocated departments in terms of operational efficiency by sharing facilities and increased productivity, through the provision of spaces to encourage collaborative ways of working.

Adapting to new working practices and student requirements is important when considering how universities distinguish their brand and offer in an increasingly competitive market. Many institutions are evolving by offering shorter courses to provide top up skills or the opportunity to re-train. Flexible learning



STUDENT SERVICES CENTRE The new facility – a refurbished listed arts school plus an interlinked addition – aims to significantly improve student welfare in Cambridge





In the future, to ensure longevity and whole life efficiency of their buildings, it is likely that universities will require increasingly robust as well as adaptable facilities

experiences allow for customised, on-demand education and places to nurture collaboration, innovation and entrepreneurship. The Student Services Centre marks a strong commitment to providing the best possible quality of services. It is a modern building conceived specifically with the evolving requirements of the university and building users in mind, offering students and staff a tailored environment.

The variety of new and refurbished spaces within the building responds by providing opportunity for learning, collaboration and interaction. Shared spaces for staff and students, including breakout areas and tea points, are purposely situated near activity and adjacent circulation routes. Students have access to information and social contact through a range of visual displays, self-service areas and face-to-face consultations – including informal drop in sessions, scheduled appointments, seminars and lectures.

Offsetting the requirement for active, public spaces, the building also provides a number of secluded, private spaces necessary for quiet working and confidential interaction. The University Counselling Service, situated on the top floor of the new wing offers counselling and mental health support for students and staff, and therefore requires a private environment in which to welcome visitors.

This was achieved by locating the service away from areas of activity and creating an independent entrance off primary circulation routes. Visitors can arrive and depart discreetly, without having to encounter public spaces on their way through the building.

The quality of the internal environment within the building is key to promoting student wellbeing and the quality of support they receive. Spaces such as the central atrium in the new wing or the main reception in the Arts School offer comfortable environments with good access to daylight and views out to the landscaped areas. The building is highly accessible and inviting through the sensitive selection of materials for building elements and application of colour and fabrics to furniture and fittings.

In future, to ensure longevity and whole life efficiency of their buildings, it is likely that universities will require increasingly robust and adaptable facilities. The selection of durable, sustainable materials will be key in allowing for flexibility and change to meet future higher education requirements. The design of the Student Services Centre seeks to address this through the construction of a durable insitu concrete frame, designed to provide column-free open plan offices and spaces for exams, which are adaptable to different layouts and changing needs. In the next few years, in order to facilitate the changing nature of education, students are likely to require access to up-to-date and integrated technologies within buildings, together with a mix of flexible study spaces.

Our work on the Student Services Centre began with an extensive briefing and consultation process, with each of the seven University services taking space in the building. This was fundamental in understanding operational requirements of the staff and the key university stakeholders, but also crucially informed our thoughts on how the building could respond to the changing requirements of the students.

We hope that through the variety and arrangement of spaces created within the building, students will feel socially connected with their peers; have access to a diverse learning community and be able to preserve their physical and mental wellbeing while making the most of their university experience.

James Allison is associate director at Bennetts Associates



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BLAGOVESHCHENSK CABLE CAR TERMINAL, RUSSIA UNSTUDIO

UNStudio has been selected as the winner in the competition for the first ever cross border cable car, which will carry passengers across the frozen Amur River to connect Russia and China. The new cable car line will connect the cities of Heihe in China and Blagoveshchensk in Russia in a matter of minutes. Comprising of two lines and four cabins – each with a capacity of 60 passengers and extra space for luggage – journey time will be approximately seven and a half minutes, while actual travel time will be three and a half minutes. The terminal building is "shaped as an open and welcoming gesture, allowing visitors to enjoy commercial spaces in one connected movement, with a clear navigational direction towards the departure platforms," said UNStudio. The building's internal circulation is "reflected on its exterior, opening its cultural and commercial programmes towards the public realm of Blagoveshchensk."



BILBAO FINE ARTS MUSEUM, SPAIN FOSTER + PARTNERS

Foster + Partners have won the expansion and remodelling of the Bilbao Fine Arts Museum. The proposal seeks to "reorient the museum towards the city by restoring the facade of the existing building and making it more permeable, while enhancing the institution's unique identity," said the architects. The guiding principle behind the project is to make the 1945 building the "primary protagonist" by restoring its original entrance and its logical internal sequence of spaces. A unique structure rests respectfully across the 1945 and 1970 buildings at the rear, equipping the museum with 2,000 square-metres of new galleries on a single open, flexible floor – an ideal gallery space for any museum curator.



THE BRYANT, NEW YORK CITY MAGNUSSON

Magnusson Architecture and Planning (MAP) have announced the start of construction for The Bryant, a 62-unit affordable and supportive development in the Bronx. Designed to create a safe, stable community for all tenants, The Bryant will offer several spaces for shared use, including a multi-purpose room for meetings and events, a children's room, a landscaped backyard with a children's play area, a laundry room, and a library overlooking a green roof. Large windows will fill apartment interiors with natural light, making the homes "calming, restorative and inspiring". The building will meet the requirements of Enterprise Green Communities including EPA 'Energy Star Multifamily High Riser Program' compliance.



YORKVILLE – THE RING, CHINA LEAD8

Lead8 have announced their appointment to Hongkong Land's recently unveiled 'Yorkville – The Ring' scheme in Chongqing – an innovative retail development possessing one of the largest indoor botanic gardens in China. The commercial development occupies a total of 430,000 m² with approximately 154,000 m² dedicated to the seven-level mall, 14,000 m² to the retail street, 111,000 m² to the 'super grade A' office building, and 6,000 m² to the indoor botanic garden. Allowing visitors to feel as though "they have walked into a rainforest," in the words of the designers, the indoor botanic garden will feature three distinct themes – the Soul Tree, the Aerial Forest and the Riverside Hills. The garden has a 24-metre airborne waterfall that will nourish over 70,000 plants of over 300 different species.



MATRIX 1, THE NETHERLANDS MVRDV

Located in the heart of Amsterdam Science Park is MVRDV's design for Matrix 1, an office and laboratory complex that combines standard laboratories with "playful and spacious social areas". The design has been achieved with a zigzagging staircase that is inspired by, and is an extension of, the network of paths on the campus. The spacious stainwell forms the social heart of the building and is fully visible to the outside world thanks to the glass facade. Matrix 1's stairwell "will allow scientific workers to feel pampered in the same way that has become normal in the tech sector," greeting users immediately upon entering the building, and operating as "a perfect meeting place to stimulate interaction between different users". Entrances on both sides of the building are also connected via a large, inviting atrium.



ONE BANGKOK, THAILAND LEAD8

Lead8 has been appointed to the renowned international team designing One Bangkok, the highly-anticipated future development that delivers 1.83 million m² square of integrated mixed-use accommodation on a 16 hectare site in the heart of Bangkok. One Bangkok will be Thailand's largest integrated development comprising premium grade A office buildings, luxury and lifestyle hotels, luxury residential towers, interconnected retail precincts, art and cultural hubs, and public space. The development is expected to accommodate up to 200,000 people daily following its full completion in 2026. One Bangkok aims to be the first LEED-Neighborhood Development Platinum development in Thailand. There will be eight hectares of green and open spaces, with architecture and tropical planting "seamlessly intertwined to establish a tranquil setting in a vertical environment". An urban green park, combined with a network of pedestrian streets and alleyways, sky parks and public plazas will "become a new global and 'people-centric' landmark destination".

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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

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MUCH WENLOCK HOUSING SHROPSHIRE

Raising the standard

Jack Wooler explores the architects' strategy behind a social housing scheme in Much Wenlock, Shropshire – a project which shows how Passivhaus can be achieved in a design that also worked with difficult terrain.

n the steeply sloping site of Callaughtons Ash, Much Wenlock, a new social community is now up and running, providing an exemplar in sustainable building.

Completed in July 2018, the £2m development of one, two and three bedroom homes displays locally sourced clay tiles and bricks with UK grown timber cladding, all built to the Passivhaus standard. The stringent albeit voluntary test far exceeds Building Regulations and requires a mixture of reduced heat loss from a highly insulated structure, plus passive heat gains, to vastly reduce overall energy consumption.

Comprising two shared ownership and 10 homes for social rent, the super-green development is intended as a model for sustainability, unlocking small greenfield sites, and improving the quality of family living in rural areas of the West Midlands.

Architype, a practice based in neighbouring Herefordshire which specialises in ecological design, was responsible for this project. As such it has been heavily involved in the process from start to finish.

They were not chosen by chance; the architect's managing director (Jonathan Hines) had previously given the client a talk on sustainable design and Passivhaus, and identified this housing project as an ideal pilot for testing out the standard in the area.

The finished development has achieved this ecological ideal successfully, with social housing proving to be an ideal place for the standard to flourish – leaving residents better off both in terms of their finances and their wellbeing, and providing another exemplar case study of hitting the standard to add to the practice's portfolio.

The objectives

As part of the neighbourhood development plan Much Wenlock town council have been undertaking, a specific set of objectives was decided at the outset. "Some of that involved high quality design space, utilising local materials, aspirations for high levels of sustainability, and quite involved consultation," says Paul Neep, associate at Architype.

"Also, what was key of course was the delivery of social housing, because it is an area of Shropshire where people are having to move out because of the cost of living within the town."

This neighbourhood plan, alongside the lack of affordable housing in the area, were the initial drivers of the scheme – with the Shropshire Housing Group, who have now become part of the Connexus Group, working in close collaboration with the town council to achieve it.

The architects worked alongside the client closely during this time, "almost as a combined process," says Neep. "All the consultation events, and a lot of the design workshops included representatives from the council, as well as from the client group, in order to develop what they could see as being an aspirational project – an example of how development should be undertaken in Much Wenlock."



"It helped that the neighbourhood plan was developed to a level where it was going to support development outside the settlement boundary"

Paul Neep, Architype

Navigating planning

Being involved in the process early on, the architects were able to work with the project team closely right from the planning stages, benefitting the scheme greatly. Planning is rarely the simplest part of the development process however, and this can be especially true of greenfield sites.

"It helped that the neighbourhood plan was developed to a certain level where it was going to support development outside the settlement boundary, based on the fact that it would be social housing," explains Paul Neep.

"So actually having the plan developed to the extent it was, and having the support of the town council throughout, carried some weight, and gave us a much smoother ride than it would have been otherwise."

The architect adds however that the project team still had to explicitly justify the reasons why the development was appropriate on that site, and how the design of the scheme was appropriate for the location.

This was again achieved largely by the project's adherence to the neighbourhood development plan and its aspirations. For example, the practice specified local materials and styles, taking reference from architectural precepts within the town, while delivering high levels of sustainability, and providing the project with a sense of community and place.

In addressing the concerns, adds Neep, "we actually had the opportunity to do something the planners were quite keen on seeing come forward anyway."

Allocating land

Finding a site was of course an important part of the early process. The team were blessed in this respect – when the practice first got involved, the architect had the opportunity to review five sites across town. As part of the neighbourhood development process, there had been a call for sites, and various land owners had put their sites forwards.

"We took a trip around the town and reviewed them all," says Paul Neep, "alongside consultants looking at access and highways, and drainage as well, and did a bit of a process of reviewing the broad constraints, opportunities, and capacities of the sites."



The one that was eventually chosen was the one that presented the least constraints, particularly with regards to drainage, but it is actually quite a steeply sloping site.

There is around a one in 10 gradient across most of the site, which of course introduced challenges into the design and build processes – including the knock on effect of the gradient on water run off from the nearby fields.

Neep explains the challenges this proposed: "A farmer's field extends quite a long way further up the hill, so in extreme storm events the road at the bottom of the site was typically in quite deep water – so trying to manage that through the design process was quite challenging."

Another issue thrown up in addition to the close proximity to the nearby agricultural land was the adjoining residents. The site is on the very edge of the development boundary, and as such the nearby residents were an important part of the consultation process: "I can't say they were completely happy," says Neep, "but I don't think people tend to be when there's a development going on in the field next to their houses." "But still, most of them were brought round by the end of it – after what we went through with them in terms of consulting, having explained the project's ethos and quality of the design."

Layout

Such a sloping site proposed challenges to the layout of the development, with the terrain having "more effect on the design of the layout than anything else," says the project architect.

The team reportedly went through an "amazing" number of iterations of possible layouts for the project; as Neep explains – "when you have a steeply sloping or otherwise difficult site, small changes can ultimately result in even the best layout needing a complete redesign."

The layout that the team arrived at was focused around the homes being as close to south facing as possible, in order to maximise the solar gain necessary for Passivhaus living.

"In terms of the orientation," adds the architect, "with Passivhaus, it's about creating a good balance between window sizes in order to make sure you get enough

GREEN SPACE

The project was designed as a cluster of houses around a central public green space that all the homes have an interaction with





CLADDING

Following a large amount of discussion between architect and client, thermally-modified poplar cladding was chosen

All images © Richard Kiely

solar gain, and minimising the heating risks during hot weather – that itself had quite a big impact on the design of the houses and how they look."

These nearly-south facing homes now gently follow the contours of the land, making the site work as well as possible in terms of access to the dwellings – with an entrance into the site leading to a public space in the middle of the homes.

This access to the homes wasn't just important in terms of the project's functionality, the space was also utilised in creating a sense of community: "The idea was that it is a cluster of houses arranged around a central public green space, that all the houses look back onto and have an interaction with, with parking arranged off it and the road going around them."

Materiality

The sloping site appears to have been a factor that runs through almost all aspects of the project, including the buildings' materiality: "The terrain gave us an opportunity to utilise some of the high quality materials we had specified into the landscape, with elements of brickwork

integrated around the buildings and in the plinths of the homes, giving a little more interest into the level design."

The ultimate client, the Shropshire Housing Group, were continually consulted in the specification of such materials – and what they wanted was for the project to have a feel of the locality.

"In terms of the materials palette across the site, it is very typical of Much Wenlock," explains Neep. This is especially exemplified in the clay bricks and clay roof tiles that can be seen across the development. All the way round the plinth of the houses are clay bricks, which have also been used within the retaining wall structures.

"The clay roof tiles themselves were actually quarried and made within 25 miles of the site – in Brieley Hill," says the architect. "The lime render was from a company in Much Wedlock itself as well, and so we were able to support the local economy in that way."

The timber cladding is something that went back and forth between the practice and client for some time: "They were incredibly keen on finding a timber cladding product which had a more defined lifespan on it, and we typically as a practice use more natural, 'hairier' type timber cladding products, such as douglas fir, larch or cedar."

What the practice eventually found was a thermally modified timber cladding. Uncommon in this particular context, it's a UK-grown hardwood – poplar. While not typically used in construction, the thermal modification process makes it more durable, and as such, suitable for this type of use.

"Ultimately," says Neep, "what we were able to do was deliver a timber cladding which was much crisper in its detailing, more robust, and less susceptible to movements and mould growth."

That addressed a lot of the concerns that the client had, as well as a lot of the concerns that were raised during the consultation period. "There are some examples nearby where timber cladding has been done badly – so this was an opportunity to provide a more robust, stable, and attractive product, as well as being UK grown," he adds.

The interiors of the buildings were left largely down to the Shropshire Housing Group and their standard specifications. With many of their maintenance items already being in stock, there was little want for any major differentiation from their typical interiors.

It was important however that the buildings be easily maintainable, so the architects went through "quite an involved" process with their maintenance and repair teams to look at how to make that as straightforward as possible for them.

The architect adds: "I think the internal environments created by Passivhaus, with the fresh air, daylight from windows, and the good levels of ventilation, in themselves made it an incredibly comfortable place for residents, regardless of specification."

Reflections & reactions

The project has gone down well so far – especially with the town council and the neighbourhood planning department.

"I've spoken to the local councillor and other members of the council, and they're all incredibly keen for further phases to take place," says the architect. "It's looking absolutely stunning; everything is weathering, the timber's looking great now, and the landscape has just made everything settle in."

At an event the project team hosted



recently to unveil the Passivhaus plaque, the architects were also able to meet some of the scheme's residents. "I had a chat with some of them, and the stories we are hearing back about how little heating that's been required has been absolutely fantastic," says Neep.

"I heard one of the residents say that they only switched their heating on for a couple of days last year, and even then only for the early mornings to heat up the bathroom on the building's north side."

Besides the anecdotal evidence, the team are just about to get the first year's worth of monitoring data and post-occupancy studies, which will be analysed to find out just how everything is doing – though it seems clear from the residents that everything is performing as it should.

Neep concluded: "It's been a great project to be involved with. We're already working with a few other local authorities and social housing providers across the country, so there certainly seems to be a lot of interest in the project – we hope we can be involved in a few more."



FIRST FLOOR PLAN



GROUND FLOOR PLAN

Gilberts helps Papworth deliver healthy performance



The new Royal Papworth Hospital is set to achieve the highest energy efficiency, sustainability rating yet awarded to a UK hospital, helped in part through Gilberts Blackpool. Gilberts' ability to work closely with the design team and respond quickly to queries through its active pre-order service, enabled a timely solution to the challenges of meeting the key design criteria. As a result, more than 2,300m² of Gilberts' high performance louvres have been incorporated into the external facade, to ensure appropriate weather protection and ventilation of the plant needed to service the building, which is predominantly served by a ground source heat pump. Tom Leung, HOK project architect explained: "We worked closely with the main contractor and Gilberts as sub contractor to develop solutions that balanced the physical performance, aesthetic and commercial challenges." Added Gilberts louvre sales manager John Hanger: "Gilberts has a respected technical and R&D team, who provided an active pre-order service giving prompt advice and costings, to facilitate an acceptable solution."

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A new hope

A pioneering cancer treatment centre in Manchester saw international architects HKS harnessing high-tech methods for attacking tumours using proton beams, while providing a human-centred facility. James Parker reports

Proton beam therapy is an advanced and highly precise form of radiotherapy that fires protons at tumours, rather than the more established method of using x-rays. Like more traditional methods however, proton beams contain high amounts of radiation, but are precisely targeted at tumours and dissipate on contact. This means they are less likely to harm healthy tissue nearby, making the therapy particularly helpful in treating complex cancer cases such as in the brain and spinal cord, and in children for whom damaging growing tissue can cause sideeffects in later life.

This technology has been developed over recent decades for use in cancer facilities, with a few small privately run centres having been opened in the UK. However it is only recently that the first large 'high energy' NHS proton beam therapy centre has been completed, at The Christie NHS Foundation Trust, Manchester, a specialist NHS cancer treatment centre. The NHS decided around a decade ago to fund two proton beam centres, at a cost of £125m each, and The Christie teamed up with Central Manchester University Hospitals NHS Foundation Trust and Salford Royal NHS Foundation Trust to bring one to Manchester.

Compared with the UK's other facility, buried deep underground on a site at University College London Hospitals NHS Foundation Trust (UCLH), The Christie – relatively speaking – offers a straightforward built result. However behind the scenes, the building by architects HKS provides a carefully-wrought mix of high-tech and an intense focus on alleviating the rigours of undergoing cancer



treatment for users, by providing a high quality environment.

The architects' relationship with the NHS' proton beam programme extends back to 2010, and a feasibility study undertaken for Birmingham University Hospital, before the strategic decision was taken to fund two centres in the capital and Manchester instead. The Christie Hospital wanted a facility that would be as supportive and



NATURE

The architects HKS included a variety of naturethemed elements throughout, including backprinted glass artworks in lift lobbies





empowering as possible for its adult, teenage and paediatric patients, who have to undergo a daunting and lengthy process.

Proton beam therapy uses a large 'cyclotron' particle accelerator to generate the protons, which needs to be shielded in concrete – at 6 metres thick at its widest point in this facility, with 2 metre walls common. There are three 'gantries' positioned to the rear of the unit in a concrete bunker. These can rotate through 360 degrees to target the beam precisely at a predefined spot before the patient arrives (to lie immobilised on a static 'robot arm'), the gantries' structure extending a full three stories.

Procurement & briefing

As a result of this being a necessarily technology-led facility, the genesis of this project was equipment vendors expressing interest via an OJEU (Official Journal of the European Union) advert in autumn 2013. "There weren't many vendors back then who had actually delivered these facilities," says project architect Franko Covington.

The winning firm was Varian, who have worked with The Christie in traditional radiotherapy rooms – and with the architects at the satellite radiotherapy unit the practice designed for Salford Royal Infirmary NHS Foundation Trust. HKS came on board with Design & Build contractor Interserve as part of the NHS Procure 21+ procurement framework used for the project, which offers the benefit of cost savings from using preferred suppliers.

Interserve also had an ongoing relationship with The Christie, having built a brachytherapy and teenage and young adult unit on the site, a key driver for the architects to sign up with them. Covington adds: "they chose us because we were the only UK practice that had done proton beam internationally."

The practice visited units in the States as part of its research, however the set up here was going to be somewhat different. Unlike privately-run units, which are designed to throughput patients as quickly as possible while maintaining efficacy of treatment, this unit was designed to prioritise the needs of patients before, after and during treatment, with less pressure placed on maximising revenue.

Covington explains the differences: "Private units have lots of patient prep spaces outside each treatment room, so that one patient can be prepped while another is being treated." Here, as a result of the patients being prepared in the treatment room, space is freed up outside, and at The Christie the architects were able to provide more space for paediatric recovery.
It also meant that on a site with a fairly constrained footprint, scanning functions could be on the same level as the treatment rooms, maximising convenience for patients and staff – who verify exactly where a tumour is, or how it's reacting to treatment. This was particularly relevant given that proton beam therapy often requires patients to attend sessions for five days a week, over a six to eight week period.

Design theme

The outline business case for the project included a design developed by Scott Tallon Walker who also designed the UCLH proton beam therapy facility under construction in London. The contrasting concept developed by HKS, inspired by vegetation to the south-west facing front of the site, divided the building into three themes horizontally. These were 'nature' for the front, more public portion, 'human care' for what Covington describes as the "semi-private" ancillary and consulting spaces to the centre, and 'science' for the rear of the building, where the treatment gantries (and a proton beam research room) are located. Supported by the clinicians, this concept would extend through to finishes and artwork.

Covington explains: "We pushed waiting space to the front – that allows us to have all our public functions on one side, and gets more and more private as you get closer to the treatment bunker." The overarching benefit of this strategy was the creation of generous, daylit waiting spaces on the front facade, including a large double-height volume on the first and second floors.

Outpatients

The client also wanted to maximise use of the site beyond proton beam therapy however, as the addition is "quite a chunk," says Covington, "and planning stipulated we could only go up to five stories." He adds: "The proton beam element would only take up two or three stories, so we had to think about how else to use the site."

He says that from the outset it was clear The Christie wished to bring their outpatients function into the new building, and that was "a big challenge, because outpatients receives significantly greater volume than proton beam." (Outpatients sees around 40,000 patients per year, versus around 650 patients for proton beam therapy).





ABOVE

The building's design provides a generous link from outpatients in the ground floor back to to the existing Christie Hospital



As a result, the entire ground floor is given over to outpatients, except for a separate front door and reception for proton beam patients – leading to an information area and glazed meeting room – as well as the main stair and lift up to the first floor waiting area. For outpatients, there is a link to the main hospital to the rear of the unit, which "maximises that connection," says the architect, "a well-lit, really wide link corridor that ties back to the hospital street and dining room, which is used by outpatients and staff."

Outpatients provision is dramatically improved, with rooms now all HBN compliant when some had previously been very cramped. The architects also redesigned existing outpatients space to provide a more suitable area for the service, with the overall provision essentially doubling in size.

As one side of the building sits along the concrete bunker, access to natural daylight is limited, therefore all consultant and waiting spaces are grouped around the external glazed walls opposite. More private outpatient exam rooms are located to the centre of the building.

Proton beam levels

The layout is efficient for staff but also straightforward for proton beam patients. After ascending from the separate entrance, they come into the main reception on the first floor (the main treatment level), and turn left for the adult and teenage waiting space, or right for paediatrics – which takes up roughly two-thirds of the support spaces on this level.

"The clinical flows are all very discreet, from anaesthetic to recovery," says Covington, and the concise plan makes them as short as possible. The layout was informed by the need for safeguarding children through separate clinical flows from adult patients (in addition to their distinct clinical needs such as for anaesthetics and recovery).

Adults have a fully-glazed, double-height space, which "took cues from Maggie's Centres," in terms of not only its spatial quality, but the amenities on offer to provide a few home comforts. "They'll be here every day for weeks, so we provided a little kitchen area to give a bit of a domestic feel. Also we wanted it to be social so they can share their experiences with other patients, because they'll see the same faces." There is an artificial tree in a planter – as a result of infection control requirements for immune-compromised patients – attractive 'natural' bent timber seating, and a large geometric artwork by Acrylicize suspended from the ceiling, promoting the nature theme by resembling a tree canopy, as well as providing acoustic benefits. Perforated external aluminium vertical fins help to add to the tree canopy effect, dappling light into the space, while ameliorating solar gain.

Teenagers have their own waiting area here, designed with advice from the Teenager Cancer Trust, with a teen-friendly sofa plus TV and gaming consoles. "They have space to hang out and be teenagers, it's nice they have the ability to retreat somewhere," says Covington.

Also on this level are control rooms for the proton beam equipment, including a full time base for Varian staff to monitor the gantries and particle accelerator, as well as a control room for treatment spaces that's run by clinical staff.

Level 2 is 'pretreatment' – including rooms where patients are interviewed and examined a few days before treatment, or where bloods may be taken – here is also a mezzanine overlooking the main waiting space. There's a similar layout to level 1 in terms of adult/paediatric waiting, and off the latter is a landscaped external play courtyard, featuring light-reflecting porcelain tiles, and timber seating.

Covington says that the courtvard had to start at level 2 rather than the level below "because so much support space was needed there," however it has the benefit of shorter walls as a result. With levels 2 and 3 mainly containing office/admin, it brings valuable natural daylight into middle of the floor plan to benefit staff wellness. The main treatment planning space, comprising around 20 workstations, is located here - where staff can 'model' tumours and decide how to treat them, plus physics and oncologists' offices. "Clinical staff really like it because there's natural daylight into all office spaces," says Covington. There's also a small terrace where adult patients can get some air, its access separate from the paediatric area.

Where not given over to air handling rooms and power rooms sitting above the proton beam gantries, space on Level 3 houses a range of office accommodation. There are also multi-disciplinary meeting rooms which function as lecture halls, set up for visiting oncologists and radiation specialists, who can link audio/visually to universities and help further knowledge of



proton beam and its future uses in healthcare. Level 4 is currently shell space, but has been specified for future inpatient use when the client requires.

In terms of artwork, the architects designed nature-themed elements such as kitchen splashbacks and tree-themed vinyl

CLADDING CONTRASTS

The building's exterior is relatively sober, with a champagne-coloured anodised aluminium rainscreen, breaking up the darker cladding of adjacent buildings All images © The Christie





PROJECT FACTFILE

Client: The Christie NHS Foundation Trust Architect: HKS Structural engineer: Arup Proton beam vendor: Varian Floor area: 133,000 ft² Start on site: 2015 Opened: April 2018 backprinted glass in lift lobbies – which change from trunk to branches as users ascend the levels. The glass interview rooms are fritted with geometric patterns which play off the sculpture in the main waiting area. For paediatrics, the client commissioned lively jungle-themed murals, including a 'Proton Panda' character who clinicians encourage children to spot.

Exterior & structural

The project was specified to a tight budget, partly due to the Procure21+ strictures, and

local suppliers and "standard yet robust" components were used wherever possible. The exterior is relatively sober, with a champagne-coloured anodised aluminium rainscreen, breaking up the darker cladding of adjacent buildings. However the high-tech nature of the building is signalled by a continuation of The Christie's language of LED strips at high level, and to the rear the concrete slab at ground level is glazed and enhanced with the geometric graphics, and backlit.

A key structural challenge was presented to Arup to ensure that radiation does not leak out as the proton beam is pushed down a vacuum pipe from the linear accelerator, and guided using electromagnets to each gantry. This pipe extends to a fourth room with a fixed beam which will be used for research into future use of the technology.

This meant that the individual pours making up the immense volumes of concrete in this building needed to be carefully sequenced, so they interlocked seamlessly in order to protect spaces outside. Covington explains: "Each pour needed to key in to the next so that you didn't have joints in a straight line offering a path. The radiation can find the smallest cracks."

The whole project was modelled in 3D, "down to the light switches." BIM (using Revit) was also essential to coordination, "especially when we had three vendors," says Covington. "We had four structural models – one for each of the gantries then another one for the rest of the building, plus six M&E models and four architectural models."

Conclusion

Funding for the research room had to come from donations, but luckily the client is "very successful" in this area, says Covington, however the efforts made to deliver this speak of the collaborative and engaged approach that characterises this project. For example, the project team climbed Kilimanjaro in 2017 (including Franko and HKS colleagues, plus members of The Christie Hospital's project team, and several staff from Arup), raising an impressive £50K.

This is just one example of the unprecedented contribution this project makes to UK healthcare, in terms of the high-tech treatment benefits, but also the way it treats patients as people first and foremost. The project's final testimony is the patients' reaction – a 10 year old boy who attended with his mum and liked it so much that he wanted to bring his dad back with him the next time.



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Case study: Aurora

CP Electronics helps Aurora set new standard for sustainable development

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New NHS Mental Health Facility chooses Smart Access Control Solution

ealth services and their funding have long been in the news, with social care and mental health coming in for particular attention. While nationally this is a problem, there is good news in East Anglia with the opening of the 16 bedroom Samphire Ward at Chatterton House, a new acute care mental health facility in King's Lynn, Norfolk.

The operating trust wanted a modern contactless access control solution for their facilities in Norfolk and Suffolk. They wanted a solution that offered cost savings by not having to wire all doors. SALTO access control was chosen for new and refurbishment projects, with a view to possibly retro-fitting the new solution across all the existing sites on a rolling upgrade basis as time and future budgets allow.

Security and Infrastructure Manager for the Strategic Estates department at the trust, Paul Evans, says: "By choosing SALTO they were able to specify a mix of online and



offline equipment. The cost saving for offline equipment enables us to specify more internal offline doors to become controllable as part of the access control system, thus giving us greater flexibility and security for our facilities."

Simon Clarkson, Health and Safety Director at certificated SALTO partner AC Leigh, said: "The client needed precise tailoring of access levels and the SALTO solution has empowered them with an easy to use but adaptive system. The use of this stand alone largely battery operated system will provide significant cost savings over the years to come compared with other systems, and will deliver a reduction in engineer call-outs and simplify system administration making for a long term secure and reliable access control solution for the trust."

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Safe and secure windows with appeal



A high specification security window that also respects the external appearance of heritage and historic buildings has been launched by **Crittall Fendor**. The SwingVent Heritage window acknowledges the fact that many NHS and private healthcare providers occupy buildings that were designed and built in the Victorian era. The T60 provides a traditional steel window external

appearance while the inner SwingVent window presents the full range of special safety and security features. These include an anti-ligature flush internal frame so as to help prevent attempts at self-harm.

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Following consultation with architects, **Static Systems Group** has introduced its latest bedhead services trunking solution, Vistr Headwall[®], which has been designed specifically to help create a therapeutic healthcare environment that is conducive to patient well-being and a speedy recovery. Vistr Headwall features a decorative graphic fascia that truly enhances a patient's surroundings by incorporating light and

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New designer radiators at 100% Design



Vasco radiators perfectly combine style and functionality with award-winning design. At 100% Design, Vasco is launching two new electronic versions of Oni & Mono Beams. With a wide range of different colours and shades to choose from, Vasco radiators can blend harmoniously or make a statement in

any room. All of Vasco's aluminium radiators are produced from 100 per cent recycled aluminium and are in turn 100 per cent recyclable, delivering the perfect ethical choice for their customers.

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100% Simonswerk Hinges

Leading hinge manufacturer **SIMONSWERK** will again be exhibiting at the 100% Design Exhibition at Olympia London on the 18th - 21st September, showcasing the latest developments in hinge technology. Visitors to the SIMONSWERK stand, number M3a, will be able to view additions to the award winning TECTUS range including the new TECTUS Glass which has recently been awarded 'Best new product design and innovation 2019' at the Architectural Ironmongery Specification Awards. Organised by the Guild of Architectural Ironmongers and in conjunction with the Royal Institute of British Architects (RIBA).

Also on show will be the widely specified CE marked TRITECH fire rated solid brass hinge with new PVD finishes and new versions of the heavy duty VARIANT range with Finger Protection, 400kg weight carrying capacity and "Care" options – the latter specifically designed for public sector buildings where frame dimensions need to allow real clearance widths for doors to open with a 90° angle.

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100% design® C C 18-21 September 2019 Olympia London

100% Design at 25

The major design event 100% Design brings a wide range of features to London this September for its 25th birthday celebrations, including 'a sense of Finland'



To coincide with the show's 25th edition, Talks with 100% Design returns for more than 50 in-depth conversations and debates with designers and architects, and a specialist look at trends and issues This year marks the 25th anniversary of 100% Design, the UK's leading design trade event. Celebrating a quarter century of introducing some of the industry's most influential designers, makers and producers, the 2019 show will present a stellar line-up of more than 400 exhibitors showcasing the latest products across furniture, lighting, textiles, glazing, surfaces, accessories and more. Striking installations, inspiring collaborations and innovative projects feature thoughtprovoking experiences and push the boundaries of design.

New for this year, 100% Design will showcase 'A Sense of Finland' curated by Finnish/English designer Hanna Laikola, founder of HEMLO, in collaboration with renowned Nordic brand Tapio Anttila Collection and Polar Life Haus, the long established eco log house company. With Finland voted the 'happiest country in the world' for the second year running, the pavilion will allow visitors to experience the sounds, sights, touch, smell and taste of Finland in the middle of London. The specially built eco log house will be filled with calm sounds of the forest and timber floors sourced from the best quality Finnish wood. The house will present the very best of Finnish furniture, products and lighting which are focused around sustainability, well-being and healthy living environments, highlighting the Finnish philosophy that simple things make us happy.

Another addition for 2019 will be the brand new exhibition space, Detail London. Located within one of Olympia's lavish Victorian reception rooms, it will showcase the latest high-end contemporary soft furnishings and wall coverings from international design companies, like Amsterdam based Studio Desimone Wayland Glamora and Barbara Osorio Fabrics. The exhibition will benefit from its own dedicated entrance on Olympia Way as well as direct access to 100% Design and provides a brand new destination for the luxury interior design community during London Design Festival.

This year will see the return of Design Fresh, a celebration of emerging talent selected by 100% Design at New Designers, with a further selection by Barbara Chandler, design editor of Homes & Property at *The Evening Standard*. Each designer has been chosen for their explorative ideas and original products. Following the success of the 2018 show, the feature is going one step further by welcoming back previous Design Fresh creatives to nominate the next wave of talent. The showcase will demonstrate the breadth of rising designers and exciting new perspectives.



Back by popular demand, 100% Design will be part of the West Kensington Design District, a hub that inspires design enthusiasts and is, say the organisers, a 'must-visit' district during the London Design Festival, with an engaging programme featuring design brands, globally recognised cultural institutions and unmissable events. It will be brought to life by an array of partners including the Design Museum, the world's leading museum devoted to contemporary design. Award-winning textile studio, Kirkby Design will bring an original 1967 Victoria Line tube carriage to 100% Design as an exciting and immersive venue. The interiors of the tube will be upholstered in Underground Volume II fabrics, a new collection of velvets which recreate iconic moquette designs used for seating fabric across the underground from the 1930s to the present day.

To coincide with the show's 25th edition, Talks with 100% Design returns for more than 50 in-depth conversations and debates with designers, architects and a specialist look at trends and current issues. Curated by Katie Richardson, the four-day programme will see an increase in issues-based content exploring topics such as climate change, wastage, materials, the circular economy, sustainability and how design can and is making a difference. The talks run across the main stage and Forum area, with an hour each day on the Forum dedicated to architecture.

100% Design will provide a platform for a mix of new interior brands and established names including British furniture maker Benchmark. They will launch the Sage Collection of furniture by award-winning American architect David Rockwell that has a specific focus on health and well-being within the built environment. Hayche Furniture will also be launching four new collections at 100% Design, including Dune by Pauline + Luis and Backer by Daniel Schofield.

100% Design takes place at Olympia London, from 18 - 21 September. For more information and to register please visit ww.100percentdesign.co.uk

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Rockfon set to discuss acoustical challenges in hospitals



Pascal van Dort, **Rockfon's** Global Acoustics Ambassador will be speaking at the forthcoming Healthcare Estates Conference in October. With an education in Building Acoustics and years of experience helping to overcome complex acoustical challenges Pascal will be drawing on his expertise to look at the important issue of wellbeing in the built healthcare environment. In 2018 the World Health Organization (WHO) updated its Environmental Noise Guidelines for the first time since 1999, stressing that noise has negative impacts on human health and is becoming a growing concern. In western Europe alone at least 1.6 million healthy years of life are lost due to noise. Busy environments are bound to be noisy and hospitals are no exception. According to the WHO, the impact of noise on a patient can raise blood pressure, increase incidences of heart disease, affect physiological health, and prolong recovery time. A sound-optimised workspace is important for those working in healthcare environments. During his presentation Pascal will look at how evidence-based design can overcome the acoustic challenges that come with a busy environment.

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McAvoy to showcase latest advancements



The McAvoy Group, one of the UK's leading offsite specialists, will be presenting its full range of offsite solutions and latest innovations at Healthcare Estates 2019. Delegates will also have the opportunity to experience the Group's award-winning

virtual reality technology at the event. A team of offsite healthcare specialists from McAvoy for both permanent and interim hospital buildings will be available throughout the event to assist health service providers, architects and specifiers looking to expand capacity more efficiently, to meet the increasing demand for patient services.

www.mcavoygroup.com/healthcare







Where innovation, technology and leadership meet

Set to be the biggest event in its history, Healthcare Estates takes place in October at Manchester Central, with an expected 240+ exhibitors and over 4,500 attendees. This year the event has the themes of 'Fund, Design, Build, Manage & Maintain,' and new for 2019 it is hosting the IFHE (Europe), and including content to attract an international delegate base

Healthcare Estates' busy visitors and delegates set aside valuable time to find solutions to the challenges they face on a daily basis, and keep up to date with the latest product innovations.

This year's conference programme has something for everyone. With the show hosting the International Federation of Hospital Engineering, experts on healthcare estate management, healthcare engineering, and the healthcare architecture and construction supply chain from all over the world will speak both at the conference itself, and during a dedicated afternoon session in the new Plenary theatre.

Streams & keynotes

The annual conference will have four streams – Strategy and Leadership, Engineering and Facilities Management, Planning, Design and Construction, and Innovation. The exhibition and conference also have a new look, with a Plenary Theatre in the exhibition hall, where keynote presentations will be given at the start of each day. The keynote sessions are free to attend for delegates, exhibitors, 'VIPs', speakers, and apprentices. This year's keynote speakers are:

- 8 October Simon Corben, director and head of profession, NHS Estates and Facilities, NHS Improvement, and Alasdair Coates, CEO of the Engineering Council.
- 9 October Professor Michail Kagioglou, Dean of the University of Huddersfield,

and Alan Sharp, CEO at the Mater Hospital in Dublin. The 'motivational speaker' will be Sally Becker, the 'Angel of Mostar'.

The conference is the paid for element of the event, which entitles you free access to all sessions including the exhibition and theatre sessions.

With this year's Healthcare Estates event hosting the IFHE, the afternoon of 9th October will feature – in a dedicated session in the Plenary theatre – international case studies and content from the US, the Falkland Islands, Germany, and Ireland, covering exemplars in hospital design, energy saving, and facilities management.

Exhibition theatres

Seven exhibition theatres will give visitors plenty of opportunity to catch up on the latest products, regulations, and best practice. The exhibition and theatres are free to attend as a visitor (however, visitors do not have access to the conference which is paid for). The theatres are:

- Design and Construction Zone featuring the latest project case studies, and findings from post-occupancy evaluation, sharing best practice in exemplar design and construction.
- HVAC & Engineering Theatre sponsored by SolXEnergy.
- Water & Infection Control Zone run by The Water Management Society.





Award-winning product design company, Safehinge Primera has developed a range of doorsets and locksets to

help reduce the risk of suicide in inpatient environments. At first sight their products might look similar to others on the market, but look more closely and you'll discover crucial design details that could help you save a life. **Stand number E7.** The Design and Construction Zone theatre will feature the latest project case studies, and findings from postoccupancy evaluation, sharing best practice



- Apprentice Zone The Troup Bywaters +Anders (TB+A) team will discuss their experiences with apprentices, with past apprentices available to give advice and perspectives.
- Energy and Sustainability Zone content delivered by the Carbon and Energy Fund, showcasing the latest techniques and innovation to reduce the service's carbon footprint.
- Facilities Management Zone focusing on issues that 'hard' and 'soft' FM teams face day to day.
- Fire and Security Zone presenting and promoting "the latest solutions to fire safety needs". Speakers from a wide variety of fire and security companies and associations with first-hand experience tackling fire safety issues within healthcare estates.

Awards

The Healthcare Estates IHEEM Awards Dinner takes place on 8 October at The Principal Manchester. The after-dinner speaker is Peter McDonald, a former consultant general surgeon at Northwick Park and St. Mark's who will give a glimpse into both the lighter, and occasionally the more serious, side of his surgical work. The award categories are:

- New Build Project of the Year, sponsor: Bender.
- Refurbishment Project of the Year, sponsor: engie.
- Product Innovation, sponsor: SPIE.
- Architectural Practice of the Year, sponsor: Rockfon.
- Apprentice of the Year, sponsor: Troup Bywaters+Anders
- Sustainable Achievement, sponsor: bam.
- Estates and Facilities Team, sponsor: HEJ.
- Consultancy of the Year, sponsor: Styles & Wood.
- IHEEM Lifetime Achievement Award, sponsor: IHEEM.

Visit the website www.healthcareestates.com for the full shortlist as well as the full conference programme.

For free to gain access to the exhibition and theatres at www.healthcare-estates.com





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Smoke control at West Kowloon Rail Terminus stays on track with SE Controls

ong Kong's West Kowloon Rail Terminus is using more than 800 actuators from SE Controls Asia Pacific as a key part of the building's smoke control system to ensure that all 423 vents open simultaneously to ensure escape routes are kept clear of smoke should a fire occur.

Designed by Aedas Architects, the £8.5 billion (HK\$84.4 billon) multi-storey structure uses 4,000 glass panels in its extensive glazed facade and curved geometric floating roof design, which allows natural light into the building, as well as creating a 45 metre high atrium.

Opened in late September 2018, more than 80,000 passengers are expected to use the new terminus each day to travel between Hong Kong and the Chinese cities of Guangzhou and Shenzhen on the new 579 seat high speed trains, which can reach up to 236mph (380km/h). The rail station's ticket office, platform and separate arrival & departure level extend four floors below ground level.

West Kowloon's complex curved geometric glazed design was installed by facade sub contractor, Permasteelisa Group with input from the Inhabit Group who acted as facade consultants for the main contractor Leighton Gammon JV.

An integral part of the curved facade was the incorporation of 432 bottom hung smoke vents, each of which is a different size and has its own unique parallelogram or trapezoid



shape due to the structure. In addition, as they are located in the uppermost level of the inclined clerestory glazing and skylight of the terminus roof, none of the glazed smoke vents were installed vertically.

As the atrium acts as a single large smoke zone, every smoke vent opens automatically when a fire is detected, to provide maximum smoke and heat exhaust ventilation. To achieve this, SE Controls Asia Pacific recommended and supplied a total of 866 SEPO failsafe pneumatic actuators, as well the pneumatic pressure and force calculations and the designs for the special brackets used



on each vent. Depending on the size of the vent, either two or four failsafe locking catches are installed on each ventilator.

Once the automatic atrium vents are fully open and hot air is vented, make up air enters the building below the 2.5 metre smoke layer through the escalator void openings with fans operating to compensate for the volume of smoke being vented from the fire area. Automatic fire suppression systems and supplementary smoke curtains are also installed as part of the building's fire protection systems.

SE Controls Asia Pacific Director, Alex Luk, explained: "We have been involved in a number of iconic and innovative projects including the Kai-Tak Cruise Terminal, the Hong Kong-Zhuhai-Macao Bridge as well as the West Kowloon terminus."

He added: "Each project had its own specific challenges and with this one, the synchronised operation or more than 400 smoke vents, each with its own individual shape and dimensions, was a unique task, where we used our extensive experience to develop the final solution. The entire project is an outstanding achievement and has already made a positive impact on the landscape, as well as for travellers. I'm delighted and proud that we were involved in such a key part of the building's safety systems."

01543 44 30 60 www.secontrols.com

Decorative casings from Encasement for new National Memorial Arboretum building

A n £8.1 million events building at the National Memorial Arboretum in Staffordshire, is using external decorative column casings, bulkheads and parapet capping from Encasement to conceal structural steelwork and enhance the building's exterior for the thousands of visitors it receives each year.

Designed by Glenn Howells Architects (GHA), the 'Aspects' events building provides a permanent facility with flexible spaces at the Arboretum enabling a wide range of events to be held in the 2,500 sq.m building, which incorporates a banqueting kitchen, lounge area and configurations to host up to 500 people.

Both the main entrance canopy and the covered terrace area at the rear of the building are supported by 12 structural columns, each of which are concealed by 200mm square decorative casings from Encasement's Forma range of metal casings.

Standing 4,500mm high, the column



casings are manufactured from Alucobond[®], an architectural composite that bonds an aluminium skin to a flame retardant or noncombustible core material to give a strong, lightweight and safe decorative solution.

As the building makes extensive use of glazing to provide panoramic views of the Arboretum site, Encasement also supplied a further eight Forma Alucobond 'half-column' casings to conceal the glazing system's external vertical supports to integrate with the building's exterior design.

To maintain a consistent exterior finish, 20 Alucobond exterior bulkheads from Encasement's 'Vecta' range were supplied by the company in sections along with a series of PPC coated aluminium parapet cappings.

01733 266889 www.encasement.co.uk

Eurobrick update BIM & CAD information

Europrick were first to introduce a comprehensively designed and tested brick slip cladding system to the UK in the early 1990s - providing a fast, flexible and cost effective way to get the real look, feel and durability of brick and stone walling. Recently, Eurobrick has been working with online platforms to provide better quality digital content for people working with their systems, including architects and specifiers.

Eurobrick already provide a number of digital downloads on their website, including technical drawings, product and installation guides and certification for planning. They have now updated their offering through Bimstore and FastrackCAD.

The online information library, Bimstore, offers BIM (Building Information Modelling) information to the construction industry. BIM is a collaborative approach to projects that uses digital technologies to provide greater clarity and detail for the building as a whole and make planning more efficient. BIM allows you to embed asset data and a 3D model into plans to help manage and maintain assets throughout the project lifecycle. It is now the required standard for many local authorities and is used by most major construction companies.

Eurobrick's information on Bimstore allows users to input 3D models of their P-Clad and X-Clad systems, to produce 3D project installation details and from these, generate system quantities required – enabling Eurobrick to provide an accurate estimate for the project. From the 3D models of their building, users can generate photo realistic visuals using any of Eurobrick's ranges of brick and stone blends, to get a clearer idea of how the final project would look. You can view Eurobrick's BIM content at www.bimstore.co/manufacturers/eurobrick.

Eurobrick have also updated their information on FastrackCAD, an architectural database that allows registered users to view or download free CAD files. These are simplified 2D versions of Eurobrick's standard detail drawings, which can be input into working drawings to save time during planning. You can view Eurobrick's CAD download on www.fastrackcad.com in the brick slips and stone cladding section.



01179 717 117 www.eurobrick.co.uk



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Happy 20th Anniversary JS Air curtains



Having been founded in 1999, JS Air Curtains is celebrating two decades of preventing doorway draughts across the UK. The West Sussex based air curtain specialist is still located at its original head office in

Rustington, but has grown from having around 90 units in its catalogue to offering over 450 air curtains. Commenting on the anniversary, JS Air Curtains' UK sales manager, Kerry Jones, said: "The Company's successful growth over the last 20 years has largely been due to offering a comprehensive range of air curtain styles, supported by friendly expert advice at very competitive prices."

www.jsaircurtains.com

Tata Steel launches new system guarantee



Tata Steel is pleased to announce the launch of its new Platinum[®] Plus guarantee, designed to offer assurance to architects, specifiers and building owners with the provision of tailored specification advice, technical support and a guaranteed system performance of up to thirty years. The Platinum[®] Plus guarantee provides

customers with the assurance of a high-quality, robust and enduring building system, supported by Tata Steel's comprehensive service. This includes tailored specification advice to suit the building's function, technical assistance and on-site installation checks, all to ensure long-term performance and confirm that it is constructed correctly.

01244 892449 www.tatasteelconstruction.com

Cavity Wall Protection Package



Cavity Trays of Yeovil is supplying Cavitray Protection Packages containing all the protective elements necessary to keep the building dry. Delivered on a 'per plot' basis, packs include reveal caviclosers, cavitrays for window and door openings, bullseye circular cavitrays, threshold cavitrays, sill cavitrays, caviweeps and cavivents.

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When Sitek Engineering expanded the office space at its Norwich headquarters, it found that the sound of people walking in the extra workspaces built on a mezzanine floor made of chipboard was disturbing employees in the offices below. Sitek Engineering contacted Blue Sky Property Services who suggested

Norbord's CaberAcoustic, chipboard flooring that has been upgraded with an attached acoustic layer on the underside. Being familiar with Norbord's fantastic reputation, Blue Sky Property Services ordered a pallet of 28mm CaberAcoustic panels. James from Blue Sky Property Services said: "We will certainly be specifying it on our next project."

www.norbord.co.uk

Waterproofing inverted roofs

Sarah Spink, CEO of the Liquid Roofing and Waterproofing Association (LRWA) provides specification advice on waterproofing inverted roofs, which are increasingly popular

The popularity of inverted roofs continues to grow with the construction of these systems offering many benefits. From a design perspective, inverted roofs enable additional space to be created on top of buildings that can be used for a variety of purposes such as a terrace for residents or a green roof to improve environmental performance.

Another major benefit is that an inverted roof – also known as a 'protected membrane', or 'upside down' roof – is constructed with the insulation on top of the waterproofing covering. Insulation boards are loose-laid on top of the membrane and then weighted down with paving slabs or gravel ballast. This protects the waterproofing membrane from extreme weather as well as UV degradation.

Liquid benefits

Most inverted roofs are installed on concrete decks, and a range of waterproofing systems can be used. Specifying a liquid-applied waterproofing system can, however, offer many advantages compared to other waterproofing methods.

Liquid technologies result in seamless and flexible membranes that fully bond directly to the substrate, providing excellent waterproofing performance with toughness, flexibility and adhesion over a wide range of temperatures.

They are also quick and easy to install, especially around any detailing, and root resistant grades are available, specifically designed for use on green roofs.

Correctly installed and maintained, liquids can guarantee that a roof remains watertight for more than 25 years. Some liquids such as hot melt monolithic systems, which are frequently used for inverted roofs, even have a British Board of Agrément (BBA) certified life expectancy of 'the life of the structure it is applied to', providing clients with reduced building maintenance, peace of mind, and whole life cost benefits.



Specification considerations

In the last decade, the liquids sector has grown rapidly, which has attracted more manufacturers into the market. It is important for specifiers to select products, which have independent accreditations such as BBA, BDA and ETA certificates, and that also have the ISO 9001 standard.

Trusted trade associations such as the LRWA can also provide guidance and technical support to ensure the most appropriate product choice.

The importance of U-values

Another key consideration for specifiers – and something the LRWA continues to





assess – is ensuring correctly calculated U-values are in place for every project. In inverted roof systems, the Design Lambda value should always be used, as this takes into account the rainwater cooling effect. Not using the declared Lambda value means the insulation will not meet the U-value requirements.

Changes to flat roof guidance

Architects should also be aware of recent changes to one of the key British Standards for roofing. BS 6229:2018 – 'flat roofs with continuously supported flexible waterproof coverings' – Code of Practice was published at the end of last year.

It describes best practice in the design, construction, care and maintenance of roofs with a flat or curved surface, at a pitch no greater than 10°, with a continuously supported flexible waterproof covering.

The guidance reflects the fact the flat roof industry has evolved significantly over the last 15 years, with new challenges driven by Building Regulations and fire requirements, as well as new materials and systems.

With the progress of Part L of the Building Regulations and the requirement for more thermal insulation, the new In the last decade, the liquids sector has rapidly grown, which has attracted more manufacturers into the market – it is important for specifiers to select products, which have independent accreditations

standard recommends the use of warm and inverted roofs and advises against cold roofs. This is because of the difficulty of forming and maintaining an effective air and vapour control layer below the insulation and of providing sufficient cross ventilation above the insulation.

There is also a section providing advice on maintaining the thermal performance of inverted roofs. As Part L evolves, this is becoming more important, and long-term results will be under close scrutiny.

Sarah Spink is CEO of the Liquid Roofing and Waterproofing Association (LRWA)





DML Expanded Metal Lathing – Hits 100,000 Sheets a year!

Simpson Strong-Tie is celebrating the production of its one hundred thousandth ' DML' Expanded Metal Lathing sheet. The UK's most versatile, reinforcement mesh option, available in a sheet size of 2,400 x 700 x 0.40. The bead and mesh range from Simpson Strong-Tie is going from strength to strength, increasing in popularity as builders opt for a solution to suit a wider variety of applications. UK Marketing Manager, Kyle Perry explains: "Our DML is something of a fan favourite; used as a general purpose reinforcement mesh, helping prevent cracking occur, when different materials meet. We can also provide this galvanised for internal use or stainless steel to fight those unforgiving weather conditions externally. Made in the UK at our head office and manufacturing facility in Tamworth, it's a marvel and a joy to watch the efficiency these are being made with by our very skilled team - making the DML an easy fit for most situations. The rate we're making them, we will be producing enough DML next year to go from our head office to Edinburgh, Scotland!"

01827 255 600 www.strongtie.co.uk

Mapei strengthens expectations in University of Essex structural repair



apei products have been specified for a structural repair project at the University of Essex in Colchester. The Reinforced Concrete framed podium that provides a link between the university buildings and a roof to the service roads at lower ground was partially demolished, with the remnants of the podium being reused with a new building structure.

In a structural survey commissioned by the University, and undertaken by engineers Mason Navarro Pledge (MNP), it was concluded that the second beam required strengthening to support loads that would be applied in a permanent state due to the heavy use of the link bridge. The beam showed signs of significant corrosion at the support of the existing footbridge, and the columns had areas with steel corrosion and delamination of concrete due to low concrete cover.

Working hand in hand with engineers and specialist contractors Cemplas Waterproofing and Concrete Repairs Ltd, Mapei proposed a complete Concrete Repair and Protection solution in accordance with TR55, Design Guidance for Strengthening Concrete Structures using Carbon Fibre Composite Materials.

Cemplas Waterproofing and Concrete Repairs Ltd completed the works to a very tight schedule thanks to the Fast Track nature of the materials used on site; during the



project, a total of three Mapei systems were used for concrete repairs, structural strengthening and protection.

Concrete Repairs:

The concrete was found to be badly deteriorated in certain areas of the beam, and the columns had areas where the concrete had spalled due to corrosion of the reinforcement steel caused by low concrete cover. Mapei recommended removing the deteriorated concrete and then cleaning the steel prior to the application of Mapefer 1K, a onecomponent corrosion-inhibiting protective mortar for the reinforcing steel. The beam was then repaired with Mapemortar HB R3, a high build thixotropic mortar which can be applied on vertical and overhead situations without formwork to a depth of up to 70mm per layer. The columns were repaired with the structural rapid-setting, thixotropic fibrereinforced mortar Planitop Smooth & Repair R4 which can be applied between 3mm and 40mm in depth.

Structural Strengthening:

After repairing the beam, it was prepared by rounding the corners. An even coat of Mapewrap Primer 1 was applied to the concrete surface, and whilst still fresh, Mapewrap 31 – the two-component, medium viscosity epoxy resin was applied. Mapewrap C UNI-AX HM 600, a high-strength, unidirectional carbon fibre fabric with high modulus of elasticity, was laid into the Mapewrap 31, which impregnated and bonded the fabric. Alternate layers of Mapewrap 31 and Mapewrap C UNI-AX HM 600 were applied until the correct build up was achieved to meet the Strengthening design. Once the final layer of Mapewrap 31 was applied, Quartz sand was broadcasted in to the wet resin to provide a key for the protective covering system to be applied on top.

Protective System:

Mapelastic Guard, a protective twocomponent, flexible cementitious mortar was applied to provide an effective protection for a 50-year design life. It was the ideal choice for the engineer as it protects the concrete against the penetration of aggressive atmospheric agents that can lead to corrosion, and protects the concrete in areas of low cover as a 2mm coating of Mapelastic Guard corresponds to 30mm concrete cover. In addition, it helps to protect the Mapewrap C UNI-AX HM 600, and because of its light grey colour gives a uniformed concrete appearance, blending the repair into the building.

0121 508 6970 www.mapei.co.uk

SPSenvirowall's new Cavity System is the perfect combination of form and function

PSenvirowall is bringing a new Cavity External Wall Insulation System to market that not only provides the aesthetic appeal that architects and specifiers want, but also delivers significant benefits in lightweight construction with building regulation compliance for buildings up to and over 18 metres with an extensive range of brick and render finishes.

Experts and leading external wall insulation and facades supplier, SPSenvirowall has announced its latest fully tested and accredited addition to its expanding range of innovative systems – The Cavity System.

Extensively used on lightweight structures, cavity systems create a drainage void between the cladding and the sheathed framed structure. SPSenvirowall Cavity Systems 1 & 2 are the next generation of this solution.

The speed at which the LSF and insulated cladding can be erected and weatherproofed, provides extensive benefits to developers, often removing the cladding from the critical path, bringing forward the internal trades and thereby shortening the contract period, thus eliminating the problems associated with brick and blockwork construction.

This modern method of construction has proven extremely popular over recent years and dominates the build method used for mid to high rise structures, which is an ideal scenario to specify and install the new SPSenvirowall Cavity Systems.

The SPSenvirowall Cavity Systems consist of EuroClass A1 components, which are mechanically fixed back to the inner sheathing board to create the designed cavity width, with either the insulation board fitted directly to the A1 fillets (CS1 system) or a secondary A1 sheathing board and insulation (CS2 system).

A proprietary base coat render is applied to the mineral wool insulation boards with a reinforcing plastic-coated glass fibre mesh prior to the application of the required finishes.

The Cavity Systems benefit from a KIWA BDA certification and is accepted by leading building warranty and insurance providers. In addition, the new system from SPSenvirowall is compliant with approved document B and Technical Handbook section 2 and has a minimum EuroClass Reaction to Fire



classification of A2 –s1, d0. With an A rated fire classification, the Cavity System meets the requirements of the building regulations for buildings over 18 meters in height.

The system can accommodate a range of finishes, including SPSenvirowall high performance textured finishes – Silicone, FlexiSil and Enviromin as well as brick effect facades – SpeedySlip and BrickStick, offering the traditional appearance of brick which is extremely durable and lightweight.

Kevin Mangan, Innovation Manager said: "We are pleased to introduce our new Cavity (CS) System into the market. Providing a fully accredited external wall insulation system, accepted by most building warranty and insurance providers. It's quick and easy to install and an extremely cost-effective solution to providing brick and render finishes to lightweight fast track construction up to and above 18 meters."

SPSenvirowall is a leading UK supplier of external wall insulation systems to the construction industry for new build, refurbishment and offsite applications.

Supplying insulation systems, high-quality decorative renders, façades and rain screen cladding solutions, SPSenvirowall offers a





value-added and integrated service to any construction project.

Through an exclusive UK distribution partnership with Dynamic Cladding, SPS Facades Limited offers innovative external rain screen cladding systems with a wide range of glass and stone finishes

To find out more about SPSenvirowall or book a CPD for our New CS 1 & 2 Systems, please contact the company.

01535 661633 www.spsenvirowall.co.uk

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new ways to expand the limits of design, as well as bring true individuality to the buildings they create, ALUCOBOND® design meets this demand and allows unique designs and colours to be placed on the facade or to choose designs from an existing 'décor collection' for stunning effect.

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formability (bending and folding) of ALUCOBOND[®] products, as well as the ability to produce 3D effects, vary the depth of colour and use metallic finishes, ALUCOBOND[®] design offers even greater design possibilities.

ALUCOBOND® design is perfect for use across either the entire facade or just section where a 'touch of the creative' may be desired. Due to the high-quality varnishing process together with the company's experience and expertise of surface finishing, ALUCOBOND® design is also extremely durable and robust retaining its finish through the typical lifecycle of the building.

Creating the surface finish can be facilitated using ALUCOBOND® Designmaker, the company's innovative and inspirational tool for architects, designers and planners that allows the creation of individual surface designs in facade concepts. The files created can be exported to PDF format or as CAD data generated directly through the ALUCOBOND® Designmaker program.

To learn more about ALUCOBOND[®] design or to sign up for further updates about its products and services visit the company's website.

075 84 68 02 62 www.alucobond.com

Facades Academy

@ The Building Centre, November 2019

This November Kingspan Facades is proud to support **Facades Academy**, a month-long series of events including talks, think tanks, workshops, hacker forums and panel discussions covering many of the important issues facing those working within building envelope design and construction. We begin with a panel discussion on sustainability with guest experts and supported by New London Architecture on 6th November.

REFURBISHMENT FUTURE BUILDINGS DESIGN FUTURE SAFETY CLIMATE CHANGE COLOURS COLOURS FUTURE MATERIAL FUTURE MATERIAL



For more information about what's happening and to see the agenda of events taking place in November at the Building Centre.

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EBUILDING CENTRE



www.kingspanfacades.co.uk

Lindapter Girder Clamps provided an easy to install solution for a cladding system



German discount supermarket chain, Lidl, has built a brand new headquarters on a 4.6ha area with a gross floor area of 130,000m² in Heilbronn, Germany. Part of the development included a requirement for a facade sun protection cladding system for the multi-storey staff car park. Main contractor Leonhard Weiss sub-contracted this building element to Colt International, a specialist cladding designer and installer. The challenge was to find a suitable method of connecting the cladding system to the steel structure on the car park, and one that was easy to install. The engineers at Colt International designed a T-shaped steel bracket with an end plate incorporating four pre-drilled holes. Lindapter Type A Girder Clamps with M12 bolts were specified for the end plate connection to achieve the required tensile resistance and safe working load. The decision to use Lindapter Type A Girder Clamps was influenced by independent technical accreditations, which include the CE mark (ETA-13/0300), TÜV and Lloyd's Register approvals. Lindapter Type A Girder Clamps provided a drilling and weld free connection onsite that was quick and easy to install.

01274 521 444 www.lindapter.com/Downloads/Market_Brochures

Building solutions for climate change



The vast majority of existing buildings are vulnerable to climate change. Architects are increasingly adopting 'materials in motion' to find new ways of creating dynamic designs that have aesthetically pleasing features. Metal cladding facades are visually captivating and

provide a number of performance-related benefits. The metal meets energy-efficient performance specifications and can be integrated into multi-functional designs. Visit the **Vulcan** Cladding Systems website to find out more about their range of composite cladding and weatherboard cladding.

0208 681 0617 www.vulcansystems.co.uk

Metalline helps transform old Glassworks



Metalline has played a leading role in the transformation of an old Glassworks in Bristol. The new build $\pounds 75m$ project is part of the regeneration of the Temple Quarter enterprise zone in the city and includes a new office development at 3 Glass Wharf. Metalline supplied and manufactured over 3,000m² of bespoke aluminium

rainscreen panels which included large 4.0metre x 2.0metre panels featuring a 3D effect diagonal crease across each panel to enhance the light and shaded appearance of the facade. Each of these panels were finished and delivered in batch quantity to ensure continuity of colour.

01543 456 930 www.metalline.co.uk





www.knaufinsulation.co.uk

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To contact our Specification Team about your project, visit www.knaufinsulation.co.uk/rainscreen-solutions





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Wall-to-wall thinking

As part of meeting our commitments to reduce emissions to net zero by 2050, Chris Miles of Kingspan Facades looks at the options for specifiers when it comes to holistic approaches to maximising thermal efficiency in facades

n June, the UK became the first major economy to pass laws to achieve net-zero emissions by 2050. Improving the energy efficiency of buildings has been identified as "a key pillar of any credible strategy" to meet this ambitious yet vital goal, as well as "one of the cheapest" and most practical ways to do it. It is clear that over the next 30 years the industry must rapidly change and adapt its methods of construction, and deep discussions are already happening in the architectural community on the best materials and approaches to do this. With approximately 19 per cent of the UK's total emissions attributable to heating buildings, the building envelope is a logical place to start.

Future constructions

Through-wall facade systems are a popular choice for many buildings in all kinds of sectors. From simple, single-component insulated panels to multi-layered built-up designs; they offer a holistic solution which enables high levels of thermal efficiency to be met, without compromising on other performance aspects such as fire, acoustics, environmental impact and weathertightness.

A built-up system offers the widest range of design potential. As all the elements are separately installed, it allows different combinations of insulation and rainscreen finishes to be selected to suit each project. However, considerable attention must be paid to detailing to ensure all the components are installed together to achieve the designed airtightness, insulation continuity and to minimise thermal bridging.

Meanwhile, while there may be less variety with panelised systems, their singular, factory-engineered construction simplifies detailing, providing greater assurance of reliable levels of insulation and airtightness. Available in an array of profiles and colours, they can also reduce the length and complexity of the construction programme, limiting on-site



adjustments and waste.

A good compromise is a facade construction which uses insulated panels to provide weathertightness and thermal performance, and an external support structure for the preferred cladding. This enables buildings to be made as energy efficient as possible and weatherproof at an earlier stage than with a conventional built-up system, while retaining greater design freedom.

Material potential

Just as there are different advantages to using different systems, component materials also require careful consideration. For example, while mineral fibre can be more suitable for buildings where reducing external noise is a requirement, rigid thermoset insulation has a much lower thermal conductivity, allowing high levels of With an estimated 80 per cent of the buildings that we will occupy in 2050 already built and only 15 per cent of those constructed after the introduction of insulation and energy performance standards in 1990, the refurbishment of existing stock will be critical to meeting the UK's decarbonisation goals



thermal performance to be achieved with a slimmer build up. This not only creates more useable space but is also proven to increase daylight levels penetrating through windows. As well as improving occupant wellbeing, it may help to reduce a building's artificial light demand.

It is also important to think beyond energy efficient design to the sustainability of the materials themselves. Manufacturers are increasingly looking to minimise the impact of their products through maximising the use of recycled content and improving the efficiency of their processes. Many modern panelised systems are also designed to be easily disassembled at end of life and then recycled or reused.

What already exists

With an estimated 80 per cent of the buildings that we will occupy in 2050 already built, and only 15 per cent of those constructed after the introduction of insulation and energy performance standards in 1990, the refurbishment of existing stock will be critical to meeting the decarbonisation goals.

Where the original structure is sound, through-wall facade systems offer a simple

retrofit solution that can be a much more cost- and time-efficient solution than demolishing and rebuilding. They enable both the energy efficiency and overall look of a building to be transformed, maximising the return on investment on the original structure whilst also eliminating carbon emissions from the demolishment process and reducing waste to landfill – all helping to reduce the environmental impact of the project.

Enveloping the issue

There are many aspects for the architectural industry to consider as the UK moves forward on its climate commitments and it will be interesting to hear the discussions and solutions coming out of forums like the new Facades Academy at the Building Centre in London. Whatever transpires, flexible and high-performance solutions, such as through-wall facade systems, will be crucial to creating buildings which are ready to meet a plethora of demands, both now and in the future.

Chris Miles is regional sales manager at Kingspan Facades

Major London project embraces RCM's Y-wall



RCM are currently supplying a regeneration development in Canning Town, London with 100,000 sqm of their A1 non-combustible BBA certified fibre cement building board. The project is one of RCM's largest Y-wall orders to-date. The Brunel Street Works will provide a mix of tenures and exciting spaces, which will add to the neighbourhood's sustainability and vibrancy. RCM, the through wall solution supplier, were successfully appointed to supply 100,000 sqm of their A1 Y-wall sheathing board to Errigal through its strategic partner Walls & Ceilings International Limited. The board is a high-quality flexible calcium silicate based fibre cement building board. With its excellent fire properties as well as high levels of dimensional stability, it is an exceptional board for use in multiple applications. The RCM fabrication team are overlaying the Y-wall onto the SFS drawings and then optimizing and fabricating the 100,000 sqm of sheathing board to the required panel sizes. The benefit of this is minimizing any cutting on-site as well as dramatically reducing waste. RCM are exhibiting at UK Construction Week, 8-10 October, NEC Birmingham – stand B485.

0800 612 4662 info@rcmltd.biz

Kalwall helps famous Brewery take the LEED



Kalwall[®] translucent cladding has helped the New Belgium Brewing company accomplish a raft of sustainability awards for its latest brewery on the East Coast of the USA. Specified by international architects Perkins + Will, the new brewery in Asheville has been hailed as a showcase for the art of sustainable practice and design. The project earned three LEED Silver Certifications for the Distribution Center, Gold for the Brew House and Platinum for the 'Liquid Centre'. At the SEAL Business Sustainability Awards event, all this helped New Belgium Brewing be recognised as one of 'The 50 most sustainable companies in the world'. The innovative use of Kalwall in the clerestory adds to the building's striking appearance as well as contributing valuable points for the LEED ratings. Not only does Kalwall diffuse daylighting deep into the interior but it removes shadows and glare and the stark contrasts of light and shade. The system also enhances simplicity in external design by eliminating the need for blinds, curtains or solar control. Kalwall's insulating properties also mean that U-values down to 0.28 can be achieved, thereby helping with the important requirements of Part L.

www.structura-uk.com/kalwall

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Interpon D2525 features an extensive range of highly durable finishes for use on exterior architectural metal components, offering excellent alternatives to anodised aluminium, corten steel, copper and GRC.

This enhanced polyester technology meets the demanding weathering requirements of the leading industry specifications including Qualicoat class 2. Key benefits include proven long-term weathering resistance with an extended guarantee of up to 40 years and lower maintenance requirements.

Featured project: One Angel Square, Northampton Finishes applied: Anodic Bronze Y2214F, Bronze YW283F, Steel Bronze 2 Y2217F, Ordos Sable YW387I, Patah YW267I and Mars Sable YX355F.







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Sto helps restore Spanish City



Spanish City, a century-old landmark building in the north east has undergone extensive refurbishment using a portfolio of products provided by **Sto**. The building has benefitted from the use of Sto's external wall insulation, finishing

render and innovative paint technology, as part of a £10million restoration project. Sto's Regional Sales Manager, Peter Bishop explains, "Our StoTherm Classic K insulation, Stolit MP render and StoColor Dryonic paint formed a perfectly integrated system. They have helped bring the building back to life, and they now also protect it from the harsh weathering effects of its coastal location."

0141 892 8000 www.sto.co.uk

Bradite brightens cycle centre



When an enthusiastic group of Suffolk mountain bikers wanted to paint and protect the interior of their newly extended workshop and headquarters, they selected **Bradite's** easy-to-use 'One Can' quick dry coating. 'One Can,' which was launched by

coatings specialist Bradite last year, is the first all-purpose, water-based primer and finish product of its type. Designed for both interior and exterior use, the single pack paint is touch dry in 30 minutes, low odour, low VOC and can be used on any correctly prepared substrate. Black and orange were selected for painting the interior.

01248 600315 www.bradite.com

Wraptite® membrane installed on high rise



Wraptite[®] airtightness membrane, from A. Proctor Group, has been installed on a new high-rise student accommodation project in Newcastle Upon Tyne. Main contractor Opto Property Group and sub-contractor Halcyon Cladding & Roofing required a Class B fire

rated air tightness membrane. Wraptite offers a safer and simplified membrane system, conforms with the required Class B rating, and it provides a fully self-adhered vapour permeable air barrier certified by the BBA. The membrane bonds back to the substrate, ensuring a simplified design to achieve airtightness and easy installation method.

01250 872261 www.proctorgroup.com

FGS completes more than 100 projects



Facade & Glazing Solutions (FGS), which was divested from the Saint-Gobain Group 12 months ago has since completed more than 100 projects and has secured more than £40m of new projects since it gained independence. The commercial glazing

and facade installation company made the announcement on its first anniversary. Craig McGilvray, FGS Chief Executive Officer, said: "We are pleased with our financial progress and remain on target to break-even in 2020 and to achieve a turnover of \pounds 50m by December 2019". He added: "Our focus is now on the future."

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Kerto LVL elements for fast construction

ocated within the established historic campus of Cranleigh School in Surrey, UK, the new van Hasselt Centre was built using a hybrid structure combining steel and wood. Kerto[®] LVL (laminated veneer lumber) was used in floor and roof elements to stabilise the steel frame. Use of light and green Kerto LVL products enabled fast installation on the construction site.

Cranleigh has its roots in a community school launched in 1865. As part of the school's ongoing Masterplan development project, two disused squash court buildings were redeveloped and expanded.

A new building of 2,525 square metres covering the area was constructed around a steel frame with stabilising Kerto LVL wood elements for the floor and roof. Architects Allies & Morrison were given the task of designing the building.

Fast Light Green Kerto LVL

The design team convinced the school of the feasibility of the steel-timber concept and Kerto LVL Ripa elements. All the coordination and decision making thus took place at the design stage rather than on the construction site. This sped up the work onsite.

"Timber is used extensively in this project and is inherent in its design concept. The structural timber is exposed to view throughout, providing maintenance-free soffits that give character and warmth to the building's spaces," says Jack Stephenson from the architects Allies & Morrison. "The RIPA technology allows the ribs and deck to be designed as one module, which increases the span by approximately 40 per cent. The prefabricated timber panels were chosen not only for visual reasons but also for their fast installation and lightness."

The project was coordinated using BIM (building information modelling) Revit and IFC files. This improved the coordination between the architect, engineer, steel manufacturer, element manufacturer and construction site, minimising mistakes and problems onsite.

Enhanced loadbearing properties

The van Hasselt Centre's structure consists of a steel frame superstructure, with Kerto LVL elements creating the floor and roof.

The Kerto LVL Ripa roof and floor elements used in the Cranleigh School project were manufactured by Belgian company Dupac. The Kerto LVL Ripa elements design



technology is an innovation by Metsä Wood that allows wide spans without supporting partition walls or pillars. It is based on Metsä Wood's Kerto LVL wooden panels, which feature outstanding dimensional stability. Based on Kerto LVL S-beam and Kerto LVL Q-panel loadbearing components and structural gluing, it enables very long spans for elements of up to 20 metres.

Floor panels were constructed using 37 mm thick Kerto LVL Q-panels as deck and 73 x 358 mm Kerto LVL S-beams as ribs. The roof panels were constructed with 25 mm Q-panels and 45×300 mm S-beams.

The acoustician required a concrete screed on top of the timber panels. Kerto LVL Ripa was the only structure capable of easy load transfer within the maximum depth. The elements were chosen because they enabled long-span, lightweight, shallow depth and high capacity.

Compensating for frame tolerances

The Kerto LVL elements give stability to the steel frame. As the steelwork had rough tolerances, elements and details were designed to allow for bigger steel tolerances.

To allow varying levels of steel while still retaining the same floor level, a top-hung connection with bearing ribs on the steel was used. The top-hung detail was specially designed for the project, with glued elements and screw reinforcement. Using Kerto LVL in the roof elements allowed big openings, bringing light to the rooms.

Easy connections, speedy installation

The Kerto LVL elements were screwed to the pre-drilled steel structure and to each other.



Because most of the details were left exposed, it was essential that connectors were partly hidden or completely invisible. This was achieved through careful design, cooperation with the architect and the use of tailored detailing.

All services in the wooden elements were pre-drilled to limit work onsite and minimise damage.

Up to 60 minutes of fire resistance

The Kerto LVL floor elements were designed to withstand 30 minutes of fire, with an additional 30 minutes achieved through the application of a fire retardant coating, bringing the fire resistance class to R60.

The timber elements of the roof structure in the corridor areas had factory flame protection, with additional flame treatment applied on site.

Prefabrication saves time on the construction site

The elements were entirely prefabricated, a decision that allowed work to be done simultaneously onsite and offsite, thereby accelerating the installation phase. Careful logistics planning – down to the order in which the elements were loaded on trucks to speed up installation – ensured just-on-time deliveries, minimising the need to store material onsite while enabling uninterrupted installation.

The properties of the Kerto LVL elements as reinforcements in a steel frame structure, combined with fast and easy installation, allow fast completion of even demanding structures.

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Aesthetics come from its slim 55mm profiles, seamlessly integrating with the Comar 5P.i ECO LT casement window system. Comar 7P.i ECO LT has been tested to BS 6375 which ensures the door performs well against the rigours of the British weather, reducing draughts and providing excellent weather proofing.

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The highest standard in Camden

Chris Wood of Lomax + Wood tells *ADF* how Lomax + Wood helped transform a Camden landmark in to a luxury London hotel

omax + Wood were selected, from the UK's finest timber window specialists, to design and produce a range of premium quality oak windows and doors for the Standard Group's first UK hotel. The building, a local landmark was previously the Camden Town Annexe with a brutalist seventies style, now reimagined as the "new cultural crossroads of London".

The made-to-order European oak windows and doors were used on the ground floor and eighth floor, while the more utilitarian windows were used elsewhere. Oak was chosen to add a level of warmth and luxury to what had previously been nicknamed by the local residents as "the egg box".

An important part of the specification process was to ensure sustainable timber was used in this element of the building. Lomax + Wood are committed to sourcing from sustainable sources, to this end they have worked hard to achieve FSC® Chain of Custody which is deemed by many to be an environmental gold standard. This work was undertaken in partnership with BM TRADA who are also deemed to be a mark of quality in the woodworking industry. The FSC® (Forest Stewardship Council®), believes in 'Forests For All Forever'® - a mantra that not only covers the timber itself but those people who live and work in the world's forests, alongside the preservation of the flora and fauna. This overall belief in areas outside of just the

The objective of the project was to transform the building, maximising its full potential and giving it the ability to fulfil the newly designated purpose of a luxury London hotel in an extremely competitive market timber itself makes FSC[®] Chain of Custody unique among timber schemes.

The objective of the project was to transform the building, maximising its full potential and giving it the ability to fulfil the newly designated purpose of a luxury London hotel in an extremely competitive market. To this end the challenging brief included large curved on plan windows, sash windows, bi-folding doors and heavy-duty entrance doors. The bell boy entrance door was a particularly unusual detail for Lomax + Wood, with a bespoke aluminium cover with circular cut outs, manufactured to cover the timber door behind.

Working closely with the contractor and architect during various design meetings both on and off-site, Lomax + Wood were able to meet strict design elements within the build to ensure the overall look carefully matched what was imagined initially while maintaining a high-performance product throughout.

Some of these design elements included provision for pivot floor springs to kitchen area doors, heavy duty concealed doors closers to main restaurant areas and automated entry to the bellboy entrance.

In addition, Lomax + Wood were also tasked with achieving a high technical glazing performance. This included both acoustic and solar factors.

The biggest challenge was incorporating all of the above within multiple product types, to different areas, while maintaining strict sight lines throughout the full perimeter of the building. Each unit had to seamlessly link together with external and internal linings along with a 'hanging basket' rail detail at mid height to match the appearance at first design stage.

The overall requirement was for a 'handmade look', with internal and external linings added to the ground floor windows and a dummy peg detail on the corners. All the ironmongery was bespoke, with some handles for the ground floor reception and bar areas by Forms & Surfaces, sourced from the US. Door cylinders were also bespoke, as an





additional length was required to accommodate the unusual frame thickness.

Overall the project was challenging but Lomax + Wood specialise in producing high performance, made-to-order timber windows and doors to meet our clients' specification and aesthetic requirements. In this case, detailed CAD drawings were produced with supporting samples to ensure the architect's and client's vision were realised.

In addition to timber windows and doors, Lomax + Wood also provide aluminium composite products which are on display alongside our traditional range at our head offices in Essex.

Chris Wood is managing director of Lomax + Wood



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Kloeber launch new website



A market-leading door and window supplier, Kloeber UK Ltd, is delighted to launch its new website, designed to highlight the company's quality products and services. The updated website comes at an exciting time of growth and expansion. This user-friendly platform

with new imagery, animated bifold and sliding door configurations and an exciting revised layout, will enable customers to peruse Kloeber's wide range of products with ease. Matt Higgs, Director/ Co-owner commented: "We have had a strong emphasis on digital this year and needed to evolve our website to support this strategy."

www.kloeber.co.uk

Senior's products flock together



Senior Architectural Systems has played a key role in the major refurbishment of Doncaster's historic Grade II listed Wool Market. A key feature of the new Wool Market are its stunning glazed facades which have been created through the use of Senior's SF52 aluminium curtain wall

system. Combining enhanced thermal performance and offering exceptionally slim sightlines, Senior's SF52 curtain walling system has been integrated with Senior's high performance SPW 501 aluminium commercial doors. Further access has been provided through the use of Senior's ALI FOLD aluminium folding sliding doors.

www.seniorarchitectural.co.uk

Rely on the strength of steel windows



The appeal of steel framed doors and windows has truly stood the test of time. While the success is based in part on steel's inherent strength and elegant sightlines, customers who engage with members of the Steel Window Association (SWA) are

actually tapping into a manufacturing heritage which often extends well back into the previous century, with experience of many different project categories. Choosing an SWA member to manufacture and install your steel windows and doors ensures that you are receiving the highest standard of fabrication, installation and customer service.

www.steel-window-association.co.uk

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BakerHicks design super power artwork structure at Heathrow



BakerHicks, the multi-disciplinary design and engineering company, has completed their part in the installation of a canopy of brightly coloured umbrellas which is currently on display at Heathrow Part of an initiative by the ADHD Foundation, the 'Umbrella Project' is designed to help raise awareness of neurodiversity and challenge stigma and promote the celebration of 'super powers' Appointed by Mace, the global consultancy and construction business, BakerHicks designed the highly complex cable tension structure that suspends the 300 umbrellas above the Heathrow Terminal 5 Arrivals forecourt. Spanning a 70m x 40m area, the engineered web comprises an impressive 3.5km of cable and weighs approximately one tonne. Working closely with the cable suppliers, Ormiston Wire Limited, BakerHicks were also responsible for the design of all cable connections. Computer analysis modelling was used to predict deflections and elongations in the cables, and thorough tests on scale models were also carried out to assess how the structure would react in various weather conditions, ensuring the safety of all passers-by.

01926 567800 www.bakerhicks.com

CUPA PIZARRAS supplies luxury roofing



A listed building in the seaside town of Helensburgh required a complete re-roof in order to accommodate new luxury apartments. Due to strict planning restrictions, **CUPA PIZARRAS'** Heavy 3 slate was specified due to its close resemblance to the original Scottish slate used on the project. Similar to

Ballachulish slate, Heavy 3 has the same blue-black colour and thickness of 7-8mm, giving it the strength to withstand the high wind speeds and driving rain that is common throughout Scotland.

020 3904 3001 www.cupapizarras.co.uk

Brett Martin adds to the Cascade range



Brett Martin Plumbing and Drainage has launched a new colour option to the Cascade Cast Iron Style Rainwater and Soil Systems range, adding Chartwell Green to the mix of eight heritage colours, allowing self-builders to capitalise on this increasingly popular and

harmonious colour on windows and doors on both new build and renovation projects. Sought after for its tranquil aesthetic and historical appeal, Chartwell Green will bring a touch of country charm to homes. The complete colour range delivers the traditional appearance of Cast Iron with the convenience of modern plastic materials.

028 9084 9999 www.brettmartin.com

Marley Alutec updates its online offering



A leading manufacturer of aluminium guttering, fascia and soffit solutions, **Marley Alutec** has launched its new and updated website. The website has been revised for architects and specifiers to easily access the information they require using a clean and contemporary design,

as well as introducing new roof drainage calculators and Product Specification Generator. Redesigned with simple navigation in mind, online users will now be able to find in-depth product information quickly due to new individual product pages. The pages allow users to easily identify the main USPs of product ranges.

01234 359438 www.marleyalutec.co.uk

Imperial introduces first dual-faced brick



Imperial Bricks, a leading supplier of traditional handmade, pressed, waterstruck and wirecut bricks, has introduced a new range of Pre-War Common bricks with a difference. Unique to the UK and available from Imperial Bricks, the bricks are 'dual-faced', with one 'clean' face/header, and one weathered. This allows

builders to use either face, whether matching up to existing brickwork for RMI, using the 'clean' or weathered faces or create a blend of mixed finishes to add character. This new brick is one of more than 50 shades and styles of bricks offered by Imperial.

01952 750816 www.imperialbricks.co.uk





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Look up to help achieve BREEAM

A quantifiable means of achieving BREEAM points is being pioneered by **Hambleside Danelaw**, via its Zenon GRP rooflights.

Manufactured in the UK, Zenon GRP in-plane rooflights are the first of their kind to attain an independently assessed Environmental Product Declaration (EPD). The accreditation enables a contribution of 1.5 points towards a building's BREEAM rating. Zenon's EPD applies to a range of site-assembled and composite panel rooflight configurations.

"Rooflights have always been acknowledged as contributing towards BREEAM, but it has always been an intangible element," explains Paul Hanratty, Hambleside Danelaw National Sales Manager Rooflights. "The EPD makes that contribution tangible, quantifiable; it gives reliable evidence."

A CPD on the topic is available from the company.

01327 701900 www.hambleside-danelaw.co.uk

Big Foot supplies custom support



Big Foot Systems has supplied custom support for acoustic screening on the rooftop of a mixed-use development of luxury flats, offices and retail outlets at Hatton Wall in Holborn, London. The acoustic screening surrounds a group of condensers and associated plant on a

PVC membrane and green roof which effectively blocks plant noise from the surrounding private homes. Thanks to its in-house technical surveyors, a highly skilled engineering team and engineering tools, such as ANSYS (FEA/CFD), Big Foot Systems is able to design support systems to meet the unique requirements of each project.

01323 844355 enquiry@bigfootsupport.com

Dakea provides ultimate solution for home



When David Proctor of dPArchitects NW required a roof window that could significantly reduce noise and provide low U-values, he opted for **Dakea's** Ultima roof window. "I was immediately impressed by the sound reduction technology," said David. Dakea's Ultima incorporates Noise

Block Technology which consists of several elements designed to work together to lessen noise. Dakea's Ultima has an excellent U-value of $1.2 \text{ W/m}^2\text{K}$ – resulting in superior heat insulation which ensures a comfortable indoor temperature all year round.

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Kingspan TEK villas ready for the summer



The Kingspan TEK Building System has been used to construct five luxury villas at the Porth Veor Manor Hotel. The Kingspan TEK Building System of structural insulated panels was specified for the project for a variety of reasons. The Kingspan

TEK panels feature a high-performance rigid insulation core which is sandwiched between two layers of OSB/3. The panels were factory cut to the villa's designs by SIP Hus Ltd. This allowed them to be installed quickly and efficiently once onsite, with the structural shells erected in just five weeks. The panels feature a unique jointing system which reduces thermal bridging and also allowed air leakage to be reduced.

01544 387 384 www.kingspantek.co.uk

Forward-thinking flexibility in housing



The Lower Mill Estate, a development of sustainable holiday homes in the Cotswolds, is offering holiday homemakers the best in bespoke, energy efficient properties with the help of the **Kingspan TEK** Building System. The diverse selection of residential

properties have benefited from the Kingspan TEK Building System's scope for individual design and off-site construction, which has improved construction efficiency. The Kingspan TEK Building System has enabled clients to enjoy a truly bespoke experience, where they can be involved in the very early stages of designing their property.

01544 387 384 www.kingspantek.co.uk

Launch of VSH MultiPress to UK market



Manufacturer of integrated piping systems, **Pegler**, has announced the latest addition to its portfolio of brands with the launch of VSH MultiPress. A new multilayer pipe system, VSH MultiPress, incorporates many revolutionary features as part of both its design and

molecular construction that set it apart from other plastic piping systems. The secret of VSH MultiPress pipe lies in the aluminium layer with additional inner and outer layers of polyethene (PE-X) and the way these layers are linked delivers enhanced resistance to loads generated by internal pressure and high temperature.

www.pegleryorkshire.co.uk

UFH solutions for complex projects



Specifiers frequently encounter property developments where the constraints of the site, the building or the client means a solution for a complex project is required – often this is why an architect is commissioned. **Nu-Heat**, with over quarter a century of experience with underfloor heating (UFH) and renewables, are well

placed to be your first port of call to discuss a complex project and produce a bespoke solution for you and your client. Help your clients feel the difference – contact Nu-Heat's specialist UFH advisors.

info@nu-heat.co.uk

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i.

ModuSat[®] FUSION score big on efficiency

Evinox Energy are thrilled to announce the launch of ModuSat® FUSION, the 'perfect fit' prefabricated utility cupboard for communal and district heat network developments. Cupboards are supplied fully fitted, pre-tested and ready to install on-site, complete with Heat Interface Unit (HIU), Cooling Interface Unit (CIU) (Optional), Mechanical Ventilation and Heat Recovery unit (MVHR) and all associated piping and electricals.

Combines compact design with first class manufacturing

The ultra-compact design allows for all utilities and services to be contained in one area away from the kitchen and living space, making ModuSat[®] FUSION both practical and visually pleasing in the modern apartment setting.

Engineered and manufactured offsite to an approved design, Evinox use LEAN manufacturing principles with full assembly and end of line testing, and quality approvals including ISO9001, IS14001, BSOHSAS 18001 (health and safety), which when



combined ensure the highest possible product quality and consistency. Utility cupboards are available in a standard configuration or built bespoke to project design requirements, and Evinox's in-house design and manufacturing capability enables high volume supply, with the ability to meet the most demanding of timescales.

The 'smart' choice for efficiency ModuSat[®] FUSION offers the unique combination of ultra-compact design with 'smart' high efficiency HIU performance, with features including - timed Keep-Warm functionality, which allows for minimal use of heat network energy; high performance at low temperatures to meet the GLA requirements & SAP; DHW return temps under 25 degrees, as recommended in CIBSE Code of Practice, and the ability to deliver an excellent VWART! - all backed up by Independent testing to the UK standard from BESA with published results.

Get connected!

Not only are they the 'perfect fit' on site, ModuSat FUSION cupboards feature 'plug and play' communication connection for diagnostics, commissioning and metering data – and everything can be accessed across shared building infrastructure. Evinox also provide open protocol access to metering data through a, customer configurable web-access to the SmartTalk® data logger, meaning the building operator can future proof the system and will never be tied to a single vendor for resident billing services.

01372 722277 www.evinoxenergy.co.uk/Fusion



How to transform your fireplace this autumn

By Niall Deiraniya, general manager, DRU Fires UK



Onsumers are looking for ways to transform their existing fireplaces. And if they live in homes where there is no chimney, they are seeking solutions to create new fireplaces.

The passion for wood

Recently, wood has been the most popular choice for anyone installing a new fire or stove. It is a sustainable fuel and looks beautiful when it is burning.

A good example is the Dik Geurts Ivar, one of a series of compact stoves that will fit into an inglenook chimney or stand alone in many locations.



The Dik Geurts Modivar has a choice of log storage compartments and plinths to suit different styles of living space.

If you would prefer to install a wood fire, there are many models. The Dik Geurts Instyle/Prostyle series includes fires from 55 cms to 1 metre wide.

The Spartherm range has single, two-sided, three-sided and tunnel versions. They also include electronic vertically sliding glass windows.

The convenience of gas

Today's gas fires generate a flame picture that is the equal of a real burning wood fire and



are more energy efficient.

The Global by DRU range is available in a selection of sizes with conventional and balanced flue versions.

They also include the Global cavity wall gas fire, which fits inside the wall cavity.

The inspiration of design

The DRU Maestro range includes 2-sided, 3-sided and tunnel fires. They have a Dynamic Flame Burner, which creates high and dense flames.

The Maestro 60 is a gas fire with a unique 'Summerlighting' feature. You can switch it from gas to electric mode in the spring and summer.

Bioethanol - the green solution

An alternative fuel is bioethanol, an odourless, colourless liquid derived from renewable plants.

Bioethanol fires include built-in, table-top and freestanding models. The new Ebios Passo E bioethanol stove was recently voted Best Fireplace Suite (other fuels) at the Hearth & Home awards.

So, when transforming your fireplace this autumn do you convert the existing chimney or opt for a freestanding model? If you're going to burn wood, how will you store it? If gas is your preferred option, do you want a classic fireplace or a contemporary model? And finally, should you consider bioethanol?

Whatever your conclusion, you can create the fireplace of your dreams this autumn.

0161 793 8700 www.drufire.com

From start to finish, from top to bottom, from design to installation, from hearth to cowl and everything in between, Flue & Ducting Ltd will work with you on any size project or site, no matter how big or small. We are completely flexible to meet our clients' demands due to our huge range of products and expertise.

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details at: www.flue-ducting.co.uk

Eco solutions for woodburning

Defra's publication of the Clean Air Strategy earlier this year saw the Government making it clear that 'Ecodesign' woodburning stoves would be an integral part of the UK's solution for air quality. Dennis Milligan of the British Flue & Chimney Manufacturer's Association explains more

F rom 2022, only stoves that meet the new stringent Ecodesign emission limits can be sold in the UK. Rather than wait until 2022, the Stove Industry Alliance (SIA) has marketed stoves that will comply with the Ecodesign regulations as 'Ecodesign Ready'. This has given flue manufacturers and installers real-life experience of installing the new stoves. The good news is the real-life experience of installing the stoves has mirrored the lab testing and modelling.

SIA Ecodesign Ready stoves can reduce particulate emissions (PM) by 90 per cent compared to an open fire, and 80 per cent compared to a typical stove manufactured 10 years ago. The stove manufacturers have employed a number of design features to reduce emissions. One of the ways in which they have achieved this level of reduction is to retain the products of combustion in the fire chamber longer before releasing them into the flue. This can reduce the velocity of the flue gases as they enter the flue. The higher efficiency of the stoves also means that the temperatures of the flue gases are lower. These changes emphasise the need for good chimney or flue design.

The chimney or flue for a stove relies on natural draft – the pressure difference between cold and hot air – to draw the flue gases up the chimney to the atmosphere. A potential reduction in velocity and temperature could reduce the draw of the chimney or flue.

Straight chimneys are always the best solution, but where this is not possible, the number of bends should be kept to a minimum and not exceed more than four. The angle of the bends should be no greater than 45° from the vertical, with the exception that 90° factory made steel bends or tees may be treated as being equal to two 45° bends.

Chimney or flue height is also important. In accordance with Document

J the minimum chimney height which is recommended for the minimum performance of wood burning and multi fuel appliances is 4.5 m from the top of the appliance to the top of the chimney. It should be stressed that this the minimum height, and some Ecodesign stoves may require more height. It is always advisable to check with the stove manufacturer's recommendations. The stove should always be installed a competent person, such as a HETAS installer. The installer should carry out a draw test when the stove has been installed to make sure it is working correctly.

One of the keys to a well performing chimney or flue is consistent insulation along the complete length of the flue. Clay/ceramic, concrete and pumice liners require insulation to be prepared and added on site. Stainless steel and ceramic system chimneys are supplied with effective insulation.

Double wall pumice chimney systems have an air gap between the walls of the inner and outer blocks. The air gap combined with the natural insulating properties of pumice provides effective insulation along the length of the chimney. Maintaining the flue gas temperature will enable the flue gases to freely escape to the atmosphere.

The Defra Clean Air Strategy also recognised the need to burn dry wood, like Ready to Burn, and regular maintenance. Burning dry wood and regularly sweeping the chimney or flue will reduce the build-up of soot and help keep the flue gases flowing freely.

In addition to the guidance provided by Document J the BFCMA has a produced a useful guide entitled 'General Guidance on the selection and installation of flues and chimneys for wood burning and multi fuel appliances in residential properties'.

This guide provides the latest advice and guidance on the use of five alternative



SIA Ecodesign Ready stoves can reduce particulate emissions (PM) by 90 per cent compared to an open fire and 80 per cent compared to a typical stove manufactured 10 years ago



One of the keys to a well performing chimney or flue is consistent insulation along the complete length of the flue

stove installation options allowed in BS EN 15287+A1: 2010, 'Design, installation and commissioning of chimneys', which are not listed in Document J. (Incidentally, the current UK Annex to BS EN 15287+A1: 2010 was published after the latest version of Document J).

The alternative stove installation options available can prove very useful to specifiers in the design and installation of new stoves. Where the guide refers to the installation of a Defra exempt appliance, this can also be read as applying to an Ecodesign stove.

Dennis Milligan is president of the British Flue & Chimney Manufacturer's Association

Mendip looks to the future with a stylish collection of Ecodesign Ready, low emission stoves



There has been a lot of talk in the media recently about emissions, either from diesel or woodburning stoves, and also open fires. Designed to reduce PM (particle matter) emissions by burning wood more efficiently and completely, **Mendip's** Ecodesign Ready models are future-proof and eco-friendly, already meeting the emissions and efficiency criteria for Ecodesign which comes into effect in 2022.

An open fire burns in a ratio of approximately 80:20. That is 80 per cent of the heat is lost up the chimney, with only 20 per cent of the heat being retained into the room. Along with the heat going up the chimney, there are high levels of emissions and particulates, and it is these that are concerning the government, especially in high-density living area, our towns and cities.

"Our stoves have all been tested by an independent test laboratory, and will emit approximately 80 per cent fewer particles than a stove manufactured 20 years ago, and approximately 90 per cent fewer than an open fire." Explains the MD of Mendip Stoves, Chris Baines.

01934 750500 www.mendipstoves.co.uk

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source products where required for its clients. With more than 10 years worth of experience in manufacturing chimneys, both domestic and commercial, Flue & Ducting Ltd truly can meet all of your needs.

01614802994 www.flue-ducting.co.uk

Easy-fit cast-iron fireplaces for new builds



Cast-iron fireplace specialists **CastTec** have launched a range of easy to install fireplace combinations that can be installed flat against a wall or used in conjunction with a standard 406mm (16") fireplace opening. Called the Integra Collection, both inserts and combinations can be

supplied in electric (plug and go), natural gas or L.P.G. using any flue application including balanced flue or wood burning and solid fuel (Eco-Design 2022 ready) with Defra exemption for use in smoke controlled areas. A copy of the new brochure can be downloaded from www.casttec.co.uk/images/brochure/integra_brochure_v7.pdf

www.casttec.co.uk

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20 Soho Square



20 Soho Square is a Neo-classical building with a stunning Portland stone facade and colonnade. The underfloor system, from **AET Flexible Space**, features on seven floors of the eight-storey building. The system is a CAM-C Direct Expansion system with supply and return air

distributed via the floor plenum. The Fantiles are standard TU4 fan terminals with EC motors for enhanced energy efficiency. Instead of a rooftop chiller providing chilled water, the building uses Daikin Heat Pump units to maximise use of space and energy efficiency.

01342 310400 www.flexiblespace.com

Vortice Vort Phantom installed at Roomzzz



NEC Services Limited has installed Vortice's new Vort Phantom void mounted heat recovery units and Lineo in line fans to the ongoing 74 room extension at the Roomzzz aparthotel in Newcastle. This boutique townhouse aparthotel is a beautiful Grade 2 listed building containing 14 individually styled, spacious apartments, situated on the bustling Quayside. Vortice has supplied six Vort

Phantom heat recovery units and 68 Lineo in line fan ventilation units to NEC Services which has been installing the units in the apartments along with Broadley Group contractors and Park Lane Properties Ltd.

01283 492949 www.vortice.ltd.uk

Hunter Douglas provide stylish entrance



A purpose-built university campus in the United Arab Emirates was heralded as a milestone for the country's education sector – and the highquality design reflects its significance. For the eye-catching atrium at the flagship campus of

Amity University in Dubai, interior design specialists IR Design specified **Hunter Douglas Architectural's** new range of wooden ceiling and wall systems with nano-perforations. The wood veneer panels contain countless microscopic perforations, which are hardly visible to the naked eye, being only 0.5mm in diameter, and provide superior absorption qualities up to α w: 0.95, NRC: 0.90 and SAA: 0.90.

01604 648229 www.hunterdouglas.co.uk

Latest news, views and more



If you like to be kept informed of all the latest news, views, and promotions for the architectural community, the ADF email newsletters can offer you regular updates straight to your inbox. The weekly Editor's Choice newsletter includes top news stories curated by the ADF editorial team, while the

monthly CPD Focus and fortnightly ADF Newsletter offer updates on products, services, events, and learning opportunities available from a wide variety of manufacturers and suppliers.

www.subscribepage.com/adf



New door closer opens more opportunities



Concealed door closer manufacturer, **Samuel Heath** has launched a new controlled, concealed door closer for use with concealed hinges which will offer many more opportunities for specifiers wishing to maintain a clean appearance to doors and interiors. Using the technological and engineering principles that have seen Samuel Heath's Powermatic door closers become market-leaders in the field of discreet door closing, the new Powermatic Axis door closer has been designed to work with SIMONSWERK's popular TECTUS concealed hinge system. Powermatic Axis is the culmination of close co-operation between both companies' technical and manufacturing departments, involving design, engineering and rigorous testing. The door closer has been successfully fire tested to BS EN 1634-1 for FD30 and FD60 fire doors and is currently being assessed for CE marking which will signify its compliance with BS EN 1154 and ability to enable doors to meet relevant accessibility requirements stipulated by Approved Document M and BS 8300-2: 2018. The cover plates of the closer, which conceal the adjustment fixings, are designed to match those of the hinge, both in shape and finish.

0121 766 4200 www.concealeddoorclosers.com

Salone's Top 15 Trends



INVISTA Antron[®] carpet fibre has revealed the top 15 trends and colours of the year; presenting inspiration from its discoveries at Milan's famed Salone del Mobile. Milano and Fuorisalone design events. In 'Top15 Trends & Colors 2019', now available for download from its website, www.antron.eu, Antron[®] carpet fibre presents colour palettes inspired by the diverse range of exhibits and installations encountered at the events. With themes such as light, nature, global craft heritage, sanctuary and respite, tribal design and the glitz and glam of the 80s revival; the resource is a fascinating insight into the future direction of interiors. Heike Schmidt, INVISTA Antron[®] carpet fibre, explains the concept behind the resource: "Colour is a key element of these relationships and so we wanted to explore this connection through the palettes available in our Antron[®] LumenaTM carpet fibre." With colour impacting every aspect of commercial interiors, the openly available 'Top15 Trends & Colors 2019' will also prove a useful tool for interior designers looking to future proof their projects with colours and palettes resulting from the world's largest interior design and furniture fair.

www.antron.eu www.INVISTA.com

Laying tiles over underfloor heating is easy with Kerakoll's system



Award-winning Biogel No Limits White fixed the limestone tiles over an underfloor heating system in the kitchen of this Cotswolds house. The Biogel range consists of two formulations (standard setting Biogel No Limits and rapid setting Biogel Revolution) that can be used on any substrate due to the inclusion of new polymers to give them a high shear strength. The consistency means that the adhesives wet the entire tile as well as the substrate, giving an excellent bond and superior performance. They also have a very low environmental impact with low CO_2 and very low VOC ratings and a large amount of recycled material in them. The tiles were then grouted with Fugabella Color. Safe and easy to work with, this is a new generation Resina-cemento hybrid grout that has just been launched in the UK. It does not contain Portland cement so it does not develop efflorescence. There are 50 different colours available, making it easy to specify one that fits with the colour scheme of the room. Contact the Kerakoll team for product details and technical advice.

01527 578000 www.kerakoll.co.uk

Callisto stars with Luceco



Luceco has recently launched a brand-new edition to their LED luminaire range. Callisto is a contemporary and stylish linear LED surface mounted luminaire, offering over 100,000 hours of maintenance free, operational life with an efficacy of 135 Llm/cW, and lumen output variants ranging from 11,000lm up to 32,000lm. Callisto is a high-level LED luminaire designed as an alternative to traditional HID and T5 lamp luminaires. Environmentally friendly, with no warm up time to produce 100 per cent light output and no maintenance over its lifetime, Callisto offers a cost-effective alternative to traditional luminaires. Suitable for many commercial applications such as front of house and high street environments, Callisto also benefits from IK10 rating so can be used in semi industrial applications as well recreational and sports facilities, offering both wide and narrow optical light distribution. Callisto is available as fixed output, DALI dimmable, emergency back-up variants, PIR and LiteIP and offers excellent photometric performance, as well as being a very visually pleasing energy saving luminaire.

01952 238 100 www.luceco.com

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ALGUI Dual finish stainless steel washbasin





Reeded glass shower screens



Reeded glass is the next big thing in bathroom design. Colour and curves, industrial to newdeco, creating the perfect bathroom has become on an interior designers dream. The DS402 shower screen from AQATA adds an aura of elegance and the slight blurring effect created by the reeded glass brings a touch of modesty to the showering area. The 10mm thick panel has a

smooth easy-to-clean internal showering surface and a reeded texture on the exterior, framed in chrome, matte black or polished gold and a colour co-ordinated towel-rail can be added as an optional extra.

01455 896500 www.aqata.co.uk

Flexible installation options with Kaldewei



Kaldewei's enamelled Cayonoplan shower surface adapts to many different structural requirements. For instance, if adequate height is available it can be installed at floor level. Where the bathroom does not allow for this the shower surface can be quickly installed directly on top of the floor tiles. Thanks to 22 different dimensions, its laterally-positioned waste

outlet and ultra flat tray support for the easiest possible assembly, the Cayonoplan is the ideal solution available in a generous range of sizes and colours, All Kaldewei steel enamel bathroom solutions are 100 per cent recyclable and are supplied with a 30-year guarantee.

01480 498053 www.kaldewei.co.uk

Efficient watersaving, effortless maintenance



Future-thinking architects are utilising the sustainable and aesthetic appeal of sensor taps, while building managers are taking advantage of a more reliable and cost-saving solution to water usage. People are switching on to the fact that a water saving of up to 70 per cent can be expected through the installation of

CONTI+ sensor products. How can CONTI+ technologies support your sustainable building objectives? Discover more or request a CPD. Contact Paul Musgrove, UK Development Manager.

paul.musgrove@conti.plus conti.plus

CCL Wetrooms launch Tilesure



CCL Wetrooms have launched Tilesure, a new Butyl Waterproofing and Decoupling Membrane, suitable for waterproofing wetroom floors on timber and solid floors. Tilesure is an evolution of the market leading RIW Tilesafe bitumen-

based membrane. Tilesure is a 1.4mm self-adhesive membrane containing a copolymer layer and polypropylene top fleece. The new membrane has superior decoupling properties of up to 12mm, ensuring that any movement in the floor substrate is accommodated, preventing the grout and floor tiles from cracking.

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



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Amtico Flooring expands flagship collection



Amtico has expanded its Signature collection of Luxury Vinyl Tiles (LVT) with the addition of 54 new products. Signature, Amtico's flagship collection of LVT, has been expanded to 217 products – 92 Woods, 74 Stones and 51 Abstracts – that have been carefully divided into 23 original complementing colour palettes, to help architects, designers and specifiers create truly aspirational spaces. can be laid in

traditional simple patterns, such as Uniform Block or Stripwood, or in one of the collection's 23 pre-designed laying patterns.

0121 745 0800 www.amtico.com/commercial

HB42 all-in-one in 400ml Eco-Foils



Hilton Banks has launched its best selling HB42 All-in-One Sealant and Adhesive in 400ml Eco-Foils, removing the environmental problem of disposing of the single use plastic cartridge, normally associated with these type of products. The new HB42 All-in-One 400ml Eco-Foils produce 95 per cent less waste than the single use

tubes and users get 38 per cent more sealant than in the 290ml plastic tube. HB42 All-in-One seals, sticks and fills, is flexible up to 230 per cent, can be over-painted and works in the wet. It is low in VOCs and bonds to almost anything; it is also food safe, fully curing in 24 hours.

www.hb42.co.uk

Monitor Audio In-Wall Loudspeakers



The CP-IW260X and CP-IW460X In-Wall speakers have overcome the challenges of scale to deliver the natural, full range audio energy you would expect from a freestanding high-end box. In a leap of engineering ingenuity, **Monitor Audio** has distilled the know-how driving its hi-fi speakers into a super-compact In-Wall format. Dedicated music lovers and home

theatre fans can enjoy the rich, detailed, high-impact dynamics they crave, from a speaker that physically disappears in the room.

monitoraudio.com/cp

Benif Interior Film selected for Gherkin



The Gherkin is one of London's most iconic buildings. As part of a recent refurbishment of the restaurant and bar areas on the 39th and 40th floors, Benif Zinc effect Interior film supplied by leading surface material distributor **David Clouting** was used by specialist

contractors T6 to refurbish tables, bar areas and even lift interiors. The work was carried out over four nights. Manufactured by LG Hausys, Benif is a self-adhesive, architectural film that can be quickly and easily applied to almost any interior surface.

www.davidclouting.co.uk

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Why movement joints are vital

Fluctuations in temperature and moisture cause movement in the subfloor and result in cracks transferring to tile and stone coverings – or worse, cause a loss of bond between the covering and the substrate which can result in overall damage to the surface covering. For this reason, industry standards state that all tile and stone installations should include the use of movement joints.

In many circumstances, movement joints are overlooked or left to the contractor; however, a lack of movement joints can be a contributing factor to many different types of failure. Furthermore, if movement joints are not included in the specification, liability for any resulting problems (even if the problem doesn't directly relate to a lack of movement joints) could fall to the architect, as it's their responsibility to specify the type of joint and location of them.

The question, however, is how do you provide the movement joints necessary to ensure a durable installation and what movement joints should you use?



Movement joints have to go through screed to the covering, with consideration to intermediate surface joints and therefore need to be designed into the specification. Understanding the types of movement that can occur – namely drying shrinkage, differential movement, deflection movement, structural movement, moisture movement and thermal movement – will help when deciding which type of movement joint will best counteract the resulting stresses.

In floors, there are two basic types of movement joints: structural and nonstructural. Both types will be subject to different movement patterns – for example, whether movement will occur from the covering through to the floor slab or just in the covering assembly, and this will affect the type of joint needed to prevent damage.

Pre-formed joints can accommodate roughly 15-20 per cent of their movement zone. Schlüter®-DILEX movement joints offer complete protection and are available to specifiers in a wide selection of materials, colours, and movement capability.

Schlüter-Systems Ltd has NBS Clauses and BIM Objects available on NBS Plus, National BIM Library and at the company's website.

01530 813396 www.schluterspecifier.co.uk

MMA Quartz or PU: what's the right floor for you?



Choosing the right floor for a food and beverage facility is a tricky task, as it will have to withstand a long list of challenging onsite conditions while consistently maintaining a clean and hygienic environment. Knowing when to apply an MMA quartz or PU requires understanding the floor's properties as well as what chemicals, impacts, traffic, temperatures and cleaning it will encounter. PUs are typically two-component systems (a resin and a hardener) that when brought together undergo a process of stoichiometric curing to form a solid layer. In contrast, MMAs work by using a catalyst to trigger a reaction that creates a single monolithic mass fused to the substrate. Both formulations have a textured finish, which enhances traction underfoot and helps to cut down on slips and trips in working environments that are often prone to wet conditions, spillages and frequent washes. The size and type of aggregates incorporated into a PU or MMA floor are often tailored to meet the required cleanability/slip resistance balance. This was the case at McVitie's production facility in Glasgow, which used **Flowcrete's** solvent-free, heavy duty polyurethane system Flowfresh RT in two different textures.

01270 753000 www.flowcrete.co.uk

Fly Forbo winning design paves the way for the future of banking



The versatile and contemporary aesthetics of **Forbo Flooring Systems'** portfolio has led to an array of its floor coverings being installed at the UK's first-ever Halifax flagship branch. The state-of-the-art project has been awarded top honours in the annual Fly Forbo 2018/19 competition. Designed by leading retail and brand consultancy firm, Honest, the 13,500 sq ft Halifax branch located on Oxford Street in Central London, replaces the former Dorothy Perkins and Burton flagship store. Spanning over three floors and split into different zones, the interior design incorporates vibrant colours and inviting furnishings to create a welcoming and homely environment. Michelle Hardy, Senior Creative at Honest, said: "We visited the Forbo showroom in Clerkenwell, which was the ideal source of inspiration, as we needed hardwearing, comfortable and contemporary floor coverings that would denote spaces without being overwhelming. Working closely with and utilising the knowledge and guidance of our Forbo Key Account Manager, we were able to identify an array of products from Forbo's portfolio that would help us to meet our objectives."

www.forbo-flooring.co.uk/flyforbo www.forbo-flooring.co.uk/retail



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Floors that define your space

A sporting advantage

Navjot Dhillon and Nick Egan of Gerflor discuss why specifying better quality flooring will give architects a key advantage in sports facilities

A key function of sports flooring is to help protect players from injury, and enhance their athletic performance. A sports floor surface is arguably the most important element of a sporting facility to its players, so those that design, build and manage indoor sports premises need high quality and sustainable sports floorings that provide the comfort, safety and performance aspects that are so crucial to everyone taking part.

The fundamental importance of the role of indoor sports floorings to environments like clubs, gyms, sports halls, leisure centres and multi-use facilities can therefore not be overstated, regardless of whether they are low impact or elite performance sport locations. This also extends to educational establishments like schools, colleges and universities where long-term injuries to the bones, joints and ligaments of budding athletes, especially those still growing, could cut short a potential sporting career.

Clearly aesthetics, acoustics, hygiene, resistance to wear, easy maintenance and good indoor air quality are key factors to sports venues. But when it comes to reducing the risk of injury, minimising the severity of an injury, should it occur, and helping to prevent both short and long-term impact injuries, then the choice of sports flooring is critical.

For specialist sports facilities with volleyball, badminton and other racket sport courts, for example, it is a case of selecting the ideal sports surface for the game, so specifiers may need guidance from specification specialists. Equally important is the correct choice of flooring for multi-use venues where there is a need to accommodate other activities, in addition to sport such as concerts, assemblies and examinations which require the use of occasional tables and chairs.

Flooring manufacturers specialising in sports flooring have therefore developed new product innovations to provide the best possible flooring solutions to meet the needs of varying sports facilities, and to achieve the perfect balance between co-efficient of friction and easy movement.

There are different types of sports floor, and the most commonly used include point elastic flooring for multi-use to elite sport levels, area elastic floors such as sprung wooden floors that are good for ball bouncing games, and floors with both point elastic and area-elastic properties offering combined benefits.

European sports flooring standard EN 14904 outlines the minimum performance requirements for a flooring to be classified as an indoor sports flooring. The standard covers point elastic and area elastic sports floorings.

Point elastic floorings offer three levels of shock absorbency compared with concrete to cater for different usage. Point elastic P1 flooring provides 25 per cent of shock absorbing retention, with P2 35 per cent and P3 45 per cent respectively. P3 flooring provides the greatest level of impact control, and will instantly absorb impact with the floor thereby meeting the requirements of elite sport flooring.

Additionally, the Impact Protection Index (IPI) indicates the protection levels that a sports flooring will provide. The higher the IPI level, the higher the protection from pain and immediate injury when falling, diving or sliding on the floor. The highestachieving products on the market have an IPI of 88 per cent, giving greater protection to players of high-risk sports. By contrast, an IPI of 50 per cent is more suited to lower risk sports.

Combined elastic and double density foam sport floor systems also benefit from foam technology that enables the lower layer to compress while the upper layer remains firm. The resulting deformation trough is twice the area of the foot allowing for greater freedom of movement in rotation while permitting a secure foothold that minimises risk of injury.





Today's indoor sports floorings couple visual impact with advanced technology to provide the heightened performance and safety characteristics that modern sports environments demand



Ultimately, shock absorbing P3 floorings are 12 mm thick with a foam layer and an IPI level of 88 per cent. P3 floorings comprising calendered PVC sheets reinforced with fibreglass grid also give outstanding stability. A P1 flooring with a double fibreglass grid offers greater resistance to indentation in multi-use locations.

What's more, sports floorings with built-in, easy-maintenance intelligent surface treatments provide a perfect compromise between slide and grip when appropriate sports shoes are worn, and a lower risk of friction burns.

Timber sports floorings are always popular for their traditional good looks. MFMA-certified Hard Maple is amongst the most robust timber sports flooring available, and when installed with an undercarriage system it provides a resilient, sprung floor with varied values of area elastic and shock absorbency.

Today's indoor sports floorings couple visual impact with advanced technology to provide the heightened performance and safety characteristics that modern sports environments demand. Attractive designs in PVC flooring, including wood effects, provide specifiers with the choice needed to create interiors that enhance their brand and image.

As the performance qualities required differ from sport to sport and venue-tovenue, the new generation of sports floorings is rising to the challenge of delivering 'champion' solutions.

Navjot Dhillon is marketing manager and Nick Egan is technical manager at Gerflor

Kährs extends its wood flooring portfolio with a new collection



Kährs has extended its wood flooring portfolio with a new collection of large format herringbone engineered wood designs, in styles described as 'Modern Classic'. The designs are suitable for both residential and commercial applications. Kährs Herringbone Collection consists of seven wood floor designs, in a range of on-trend colours and calm and lively grades. The board size for each design is 600 x 120 x 11 mm, striking the perfect balance between showcasing a classic design, but with a modern aesthetic. Each design utilises an engineered construction with a T&G locking system, and up to 30 years warranty. Head of Kährs UK Projects, Chris Parker, commented: "In recent years, Herringbone pattern flooring has become increasingly popular for both residential and commercial projects. These designs have the power to transform a standard space into something quite exceptional and Kährs can now offer the A&D Community a new stunning large format Herringbone Collection, in addition to the popular existing patterned floors within the range. With a variety of in-vogue colours, the interior styles that can be achieved are limitless."

023 9245 3045 www.kahrsflooring.com

Harlequin floors are feline friendly on the set of 'Cats'



Harlequin Floors, a global leader in advanced technology flooring for dance, performing arts, entertainment and events is delighted to have played a significant role on set for the recent production of the eagerly awaited film adaptation of Andrew-Lloyd Webber's stage show 'Cats'. Filmed at Warner Bros Studios in Leavesden, Hertfordshire, and featuring a star-studded cast of international singers, dancers and actors, the upcoming musical drama film is set to storm the box office when it is released on the 20th December by Universal Pictures. Over 550m² of Harlequin Liberty panels were hired for the set giving the cast a safe sprung floor on which to practice their lifts and jumps. The sprung dance floor panels were then covered in Harlequin Reversible Pro performance vinyl which helps prevent injury from slips and falls. Ballet barres and 15 mirrors were also bought from Harlequin to complete the professional dance environment in which the cast could train. Jamie Stirling 'Technical Development Manager' at Harlequin visited the set and oversaw the installation. He said "working on projects of this scale and prestige, which are often technically challenging, is a real privilege."

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British loudspeaker designer, Monitor Audio, has a range of Custom Install speakers for every situation. Their ultra-discreet in-wall and in-ceiling speakers deliver a stunning audio performance whilst protecting the room's décor. For more extreme environments, such as outdoor terraces or pool rooms, they offer a choice of speaker ranges, all of which deliver Monitor Audio's award-winning sound.







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Advanced confirmed as "Engineer's Choice" at Exclusive Central London Offices

Intelligent fire panels from global fire systems leader, Advanced, have been installed in a prestigious, $\pounds 134$ million Central London office building.

Situated in the prime London business address of St Paul's Churchyard, the ninestorey commercial premises, Condor House, stands adjacent to St Paul's Cathedral and just meters from Fleet Street.

Comprising 110,000 sq ft of high-quality office space, Condor House is home to a number of professional services firms including financial services provider Barclays Capital and investment bank Moelis & Company. Hailed by the installers as the "Engineer's choice", a network of Advanced's flagship 4-loop MxPro 5 multiprotocol fire panels have been installed to protect the site.

Responsible for the complete replacement of all elements of the integrated fire detection, voice alarm and fire telephone system installed at Condor House, including design, installation, programming, testing and



commissioning, were Essex-based firm and Advanced partners, WFP Fire and Security.

The 'closed' nature of the system meant that the cost for alterations and maintenance was higher than the market price of an 'open' system. WFP integrated the MxPro 5 open protocol control panels, that recently received FM Approval to the EN54 standard, alongside Apollo's XP95 range of detectors and interfaces. Advanced's PC-based graphical interface package, detailing the building layout to make it straightforward for the security team to have visibility and control over the fire system, was also provided.

Approved to EN54 parts 2, 4 and 13, MxPro 5 panels can be used in single loop, single panel format or easily configured into high speed, 200 panel networks covering huge areas and tens of thousands of field devices. Advanced's legendary ease of installation and configuration and wide peripheral range mean that MxPro is customisable to almost any application and it can be found in challenging and prestigious sites around the world.

Advanced, owned by FTSE 100 company Halma PLC, has a long history of protecting high-profile commercial property from HSBC's Canary Wharf headquarters in London to Sydney's famous Westfield Shopping Centre.

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The quiet fun solution

The London Gunnnersbury Park Museum is a perfect example of how high-performance acoustic solutions can solve the problem of noise in public and leisure places. As design trends continue towards minimal furniture and hard surfaces, it becomes increasingly important to reconcile aesthetics with personal comfort.

As part of its Heritage Lottery Funded redevelopment, London's once-neglected Gunnersbury Park Museum has been transformed. It now boasts new gallery and learning spaces as well as a brand-new exhibit telling the stories of local people. A new addition to the Regency Mansion is the pavilion, originally designed to house both the catering facilities and horse-drawn carriages that are a large part of the Park's heritage. When considering its redesign, the architects wanted to create a space that would provide a hub for the Park. It needed to be a space that emotionally connected with visitors to the Museum and regular users of the Park.

With this in mind, the designers decided to specify Troldtekt panels. With their natural



look and feel and acoustic properties, they were the ideal solution for the ceiling. It allowed them to use harder surface materials elsewhere to suit the architecture of the pavilion.

Path Design says, "We needed to ensure that we addressed what could be a relatively hard interior because of the heavy floors we needed for high traffic catering and the predominantly glazed elevations. As such, we looked to soften acoustically the space to reduce the background noise generated by the open kitchen and coffee machines, along with the general noise created by visitors."

Troldtekt panels are commonly specified throughout the UK and Europe to improve the interior acoustic environment. They offer high sound absorption, high durability, natural breathability and low cost life cycle performance in addition to inherent sustainability.

01978 664255 www.troldtekt.com

Improving water resilience



Soaring temperatures mean farms need to build their resilience to the threat of water shortages with a water storage lagoon that captures rainfall for use at drier times of year and allows them to use their full Environment Agency abstraction entitlement. A robust lining membrane like **Firestone's** GeoGard EPDM

system prevents the stored water from seeping into the ground. Flexible enough to absorb substrate movements, GeoGard EPDM has excellent U/V and hydrostatic pressure resistance. The membrane's large format also means the number of seams can be reduced, limiting the areas where the lining is most vulnerable, resulting in a hardwearing lining solution.

01606 552026 www.firestonebpe.co.uk

dormakaba launches new security solution



Stylish with intuitive access control, the new Argus range from **dormakaba** is a contemporarily designed barrier system that allows fluid movement whilst providing a first line of access security. The Argus range is the ultimate combination of efficient functionality and sleek styling,

available in three models – Argus 40, Argus 60 and Argus 80. Featuring glass or plastic door leaves, the Argus 60 and 80 models also feature soft ambient lighting options to complement interior design and create a warm, welcoming entrance for authorised visitors.

01462 477600 www.dormakaba.co.uk

Special tiled mural for 150th anniversary



BAL has helped an Uxbridge school celebrate their 150th anniversary by providing fixing materials for a special tiled mural. The large mural on the side of the school features a tree made up of handprints from every one of the 250 plus pupils and staff. Site manager Gerry McGuire tiled the mural using BAL's new

Flex One enhanced S1 standard set adhesive and grouted with Micromax2 in Snow. Suitable for use internally or externally, BAL Flex One has revolutionised the standard-set category with a long open and working time, excellent non-slip properties and six-hour set.

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Harrow School has IAAF-standard running track

The re-built athletics facilities at Harrow School included an IAAFstandard running track, facilities for long jump, high jump, discus and all the main athletics events, plus a water jump for the steeplechase and an area for the pole vault event – a relatively rare feature in UK school athletics facilities.

Hauraton SPORTFIX components installed at the Harrow School sports complex include; drainage channels around the edge of the running track, sand



traps and soft kerb edging around the long jump pit and a water jump kit on the steeplechase track.

At any time in the UK, rain can stop play and on tennis hard courts the build-up of water can take some time to run away if attention has not been paid to the surface water drainage requirement. At Harrow School tennis courts this is not a problem as a discreet drainage channel run located just below the net efficiently drains away any excess rainwater.

Over the years Hauraton have built up a fund of knowledge, second to none, of how to drain sports areas be they soccer grounds, athletic tracks or tennis courts.

Other components in the SPORTFIX range include; Electrical distribution shafts, Service channels for cable management, pitch dish edging components and drainage channels specifically designed for artificial turf pitches.

01582 501380 www.hauraton.co.uk





John Chambers wildflower matting supplied for Balancing Pond on new Bellway Homes Site

Green-tech has recently supplied 1,000sqm of John Chambers wildflower matting for a newly created Balancing pond on a new housing development.

PGE Landscaping Ltd is a professional landscaping, fencing and grounds maintenance company working within the construction sector throughout the Midlands and surrounding counties.

They were working on behalf of major UK residential property developer, Bellway homes on their Ashtree gardens development; a stunning development of new homes in the market town of Ashby-de-la-Zouch.

A balancing pond (also known as a balancing lakes, attenuation or retention ponds) acts as a temporary storage facility for watercourses like streams. Rather than water being discharged directly into the watercourse, potentially overwhelming it and causing flooding, the water is stored in the balancing pond.



John Chambers Wildflower Matting has been installed around the pond. It is a balanced mixture of wildflowers and grasses growing in a moisture retentive biodegradable felt, that provide an instant wildflower meadow. Made up of native wildflower species, the Wildflower Turf will provide beautiful blooms that will grow back year after year. As well as being lovely to look at, it will encourage biodiversity and over time will help build up and support an ecosystem.

Jon Austin, Head of Sales & Estimating from PGE Landscaping Ltd said: "We have



worked with Green-tech on numerous occasions and were really pleased with the quality of their John Chambers Wildflower Matting. It was delivered as specified and was easy to lay with instant results. The client was pleased and we've overheard local residents commenting on how impressive it is and how it has created a lovely view for those living in sight of it. They're just waiting for the ducks now! I have no hesitation recommending both Green-tech and the John Chambers Wildflower Matting."

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