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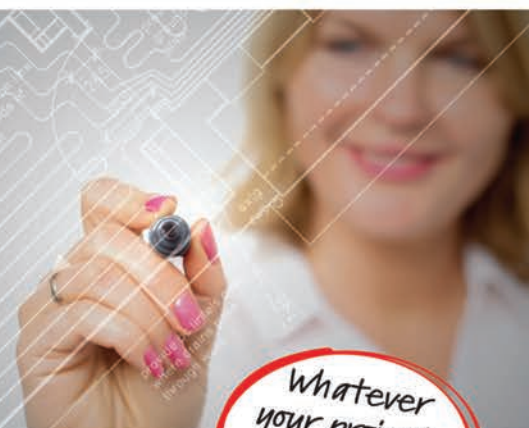
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FROM THE EDITOR



Under pressure to make positive steps to address the climate change agenda, the Government is overhauling Parts L and F of the Building Regulations (covering conservation of fuel and power, and ventilation respectively). Focused on issues in new housing, the consultation is designed to try and bring the industry to a point where it can deliver the Future Homes Standard in 2025 – i.e. a hefty 75-80 per cent carbon reduction compared with a Part L 2013-compliant home.

Housebuilders and designers are given two options within the consultation. The first focuses on improving building fabric only, by 21 per cent in terms of energy efficiency. The second option is based around fabric plus bolt-ons such as PV and heat pumps, to give a 31 per cent uplift, and the Ministry for Housing is explicitly gunning for this option to be adopted.

The theory is that constructing new homes to this standard now will mean that they will not need to be upgraded to meet it in 2025. As Richard Harrall, technical director at the Chartered Association of Building Engineers commented recently, “for some this won’t be enough” – the Future Homes Standard will fall short of meeting a “full zero carbon metric,” and will thus be a “disappointment.”

However, it must be seen as a major step in the right direction, flying directly in the face of current planning policies that enable the opposite of futureproofing, and in fact lead to something more akin to ‘built-in obsolescence’ in terms of Regs compliance for housebuilding.

Making housebuilders upgrade design now to futureproof their homes against the standard is in direct contrast to how they have been able to build out a development slowly over time – meaning they only need comply with the Building Regulations in force at the time of commencement. This ‘transitional provision’ has led to developments being finished with homes that are not compliant, with Regs having been updated in the interim.

Slightly farcically, this meant 2017-completed homes were built to 2006 standards. The Government is ending this – from 2020 any home needs to meet the relevant standards applying when it begins construction. This may be a pain for housebuilders, but is the necessary rigour to close the book on what has been a controversial issue.

Also, pulling together into one system via the new standard should help avoid the past issue of builders working on homes with various standards applying (such as the Code for Sustainable Homes), across various developments. This caused understandable confusion and, suggests Harrall, contributed to the performance gap.

If we hadn’t binned the Code, and instead made it mandatory, a lot of this central effort could perhaps have been put into something else.

James Parker
Editor

**ON THE COVER...**

Design Engine Architects’ new science and maths building at Charterhouse in Surrey is characterised by appropriately ‘vertical’ chimneys and roofs to tie in with the historic site.

Cover image © Jim Stephenson
For the full report on this project, go to page 38



Images © Peter Landers

BARS & RESTAURANTS

Cedar-clad cafe inspired by Crystal Palace 'dinosaurs'

Chris Dyson Architects have completed a new cafe in south London's Crystal Palace Park. The distinctive two-storey building comprises a cafe and terrace at ground level, and a community space at first floor level. Wrapped in half-round cedar shingles, the design references the scaly skin of the Grade I-listed dinosaur sculptures at the opposite end of the lake.

Funded by the Mayor of London, the cafe forms part of a package of

improvement and conservation works proposed for the wider park. Income generated by the new cafe will be used to fund improvements throughout the park, including the ongoing conservation of the iconic dinosaur sculptures and geological illustrations within the park.

The new building's orientation is perpendicular to the park's central axis, located at a key point that allows, for the

first time, an 'accessible-for-all' connection between the central axis and the lakeside path. Additional pathways and planting "help frame the building and terrace in the surrounding landscape," said the architects, with deciduous trees chosen to "invoke a strong autumnal colour and provide a visual connection to the existing trees of the park."

The cafe has four "active facades," with large amounts of glazing providing light and airy interior spaces as well as expansive, panoramic views of the dinosaur models and wider park. The first-floor terrace is connected via a footbridge to the lakeside path, improving the building's connectivity, while a chimneystack in black brick acts as a wayfinding landmark within the park.

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MIXED USE

London hotel by Sheppard Robson will have 'largest living wall in Europe'



Plans have been submitted for a 382-room, five-star hotel in the City of London designed by Sheppard Robson, which will feature one of the largest green walls in the world. The hospitality-led, mixed-use project has been designed for Dominus Group to absorb eight tonnes of pollution annually and will “set the standard for urban greening in London,” according to the architects.

As well as featuring “vertical landscaping,” the hotel will have 40,000 ft² of workspace, a sky-bar on the tenth floor, meeting and events space, a spa, and a ground level restaurant. Situated on a site on Holborn Viaduct, the proposed building “creates an opportunity to broadcast ideas

about how the built environment can address issues such as air quality, climate change and air pollution,” commented Sheppard Robson.

By also integrating 40,000 ft² of living wall within the facade, the building is projected to annually capture over eight tonnes of carbon, produce six tonnes of oxygen, and lower the local temperature by three to five degrees Celsius. It will contribute towards improving local air quality, by trapping approximately 500 kg of particulate matter (PM2.5 and PM10) per year.

The project “engages with the Urban Greening Policy set out in the GLA’s draft New London Plan, incorporating strategies

The wall will contribute towards improving local air quality, by trapping approximately 500 kg of particulate matter

to encourage more and better urban greening,” said the architects, while adopting measures for an ‘Urban Greening Factor.’ The projected score of 1.37 exceeds requirements by 45 times, resulting in what is believed to be the highest ‘greening’ score in Greater London.

EVENTS

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BOOK

Encouraging practitioners to design homes for sustainability and wellbeing

RIBA recently published 'Healthy Homes: Designing with light and air for sustainability and wellbeing,' which supports the argument that design solutions focused on sustainability should also positively impact the health and wellbeing of building occupants.

RIBA commented: "Intense interest in health and wellbeing in architecture may actually be relatively new, but many of the considerations relating to these in terms of design – temperature, air quality, noise and lighting – have a long history in design literature, for architects, engineers and urban designers."

"While currently a front-page issue in design advice for the workplace, designing for residential buildings, particularly high density and affordable housing has not been as readily explored," the publishers added. Considering the home as the most important space where people spend time, Healthy Homes explores "new areas of research and knowledge in relation to designing for wellbeing that haven't yet touched mainstream environmental design," including circadian rhythms, regular access to nature, social wellbeing and mental health.

Co-author Nick Baker and course tutor at the Architectural Association, said: "The only certainty of the future is that housing design will face ever growing environmental challenges. We believe that adaptability and evidence-based design responses will hold the key to success."

The book applies these key considerations to a range of areas from urban and neighbourhood design to architecture and material considerations.



RESIDENTIAL

Waugh Thistleton estate in Hackney given go-ahead

Waugh Thistleton Architects' design for the Kennaway Estate in east London was recently approved when councillors for the London Borough of Hackney voted in favour of Southern Housing Group's proposal to regenerate the estate.

The scheme will deliver 61 new homes, enhance the existing natural landscape, and create designated pedestrian routes, play spaces, cycle storage facilities and other amenities. An "exciting new workspace and much needed community centre will help ensure that the scheme benefits the whole neighbourhood," said the architects.

The 12 existing homes at Taverner House will be replaced by 61 new homes of between one and four bedrooms, together with new landscaping that will "enhance and reinforce pedestrian connections across the site." More than 50 per cent of the new homes provided will be affordable, comprising a mix of tenures including

social rent, Hackney living rent, shared ownership, and outright sale.

In collaboration with Source Partnership, Southern Housing Group consulted extensively with estate residents and neighbours during the design development to ensure a "sensitive and characterful building proposal." Southern Housing Group has also created a Residents' Charter that provides residents with assurances and security that protects their tenancy and offers them the 'right to return.'

The proposed development is comprised of three distinct volumes linked by external walkways, and seven townhouses that echo the form and character of adjacent Victorian terraces. External materials and detailing take their inspiration from the immediate surroundings, "ensuring that the building will sit comfortably within its context overlooking Clissold Park."



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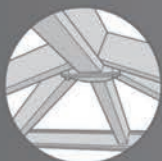
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RESIDENTIAL

Paul Cashin and Design Engine collaborate on contemporary Hampshire home

Located just north of the village of Upham, near Winchester, is Woodcote House – a contemporary new house build within the chalk hills of the South Downs National Park. This project replaces a series of brick buildings that had fallen into disrepair. After achieving permission at appeal, work started on the house in 2017, and it recently completed.

Woodcote House is a collaboration between Paul Cashin Architects and Design Engine. The property includes four large bedrooms, each with an ensuite, and countryside views from spacious open-plan living, dining and kitchen areas, which feature wide expanses of glazing. Other details incorporated into the design include bespoke joinery for the fireplace and bathrooms, specially fabricated slimline copings and cladding sections, and brick



cantilevers. The rural facing brick was chosen to “reference the memory of the buildings that this home replaces,” said the architects, while the landscape (designed by Andy McIndoe) has been shaped and planted to help the house settle into the landscape.

Internally the house has a simple layout, with single level large open plan living and kitchen spaces, and further accommodation areas split across two levels. A central spine links these spaces via a minimal timber staircase. Outside spaces are linked to the ground floor rooms with terraces and views to the South Downs, particularly to the north across the large gardens. The house meets Code 4 of the Sustainable Homes criteria thanks to its natural ventilation strategy and high level of insulation.



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MERGER

Penoyre & Prasad enter merger with Perkins and Will



Penoyre & Prasad, the architecture practice behind the Sibson Building for the University of Kent and University College London's Project Oriel, has merged with the London studio of global architecture firm Perkins and Will.

Coming weeks after a team of architects including Perkins and Will were awarded first place ahead of hundreds of global architects in a blind competition to design the new European Commission headquarters in Brussels, the merger will allow both practices to draw on the expertise of more than 200 London staff working across the civic, interior, commercial, residential, education, and healthcare sectors.

For Penoyre & Prasad, the merger will offer the practice a significant global platform on which to build, drawing on Perkins and Will's capacity in the realms of research and sustainability "as Britain aims to rise to the challenges posed by the climate emergency," commented the firms.

Penoyre & Prasad is currently on various UK frameworks, including University College London, NHS Shared Business Services, Notting Hill Genesis, and the recently won Wolfson College masterplan at the University of Oxford. The additional resources and global expertise of Perkins and Will are "set to strengthen Penoyre & Prasad's offering," added the firms.

The move comes as the London studio of Perkins and Will seeks to bolster its global platform and strengthen its client offering in the UK and wider European region, providing design, architecture, masterplanning and research services that span the entire built environment.

Perkins and Will's origins are in North America, where the practice enjoyed considerable growth due to its expansion within the health and education sectors. In 1935, the firm pioneered human-centred educational design in Chicago, Illinois, creating open classrooms that supported activity-based learning and provided access to the outdoors, "challenging the status quo," said the firm.

Now, the London studio of Perkins and Will believes that by joining forces with Penoyre & Prasad, they will be able to "cement themselves as industry leaders in the health and education sectors once more," which are "poised for considerable investment in the UK."

Penoyre & Prasad partner, Ian Goodfellow, said he believes "there is significant opportunity to blend this expertise with the range of services Perkins and Will provides across architecture."



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VIEW POINT

With architects increasingly asked to demonstrate the added value of their work, Dr Kelly Watson of Hatch Regeneris discusses how they can more explicitly harness the wider social value of projects

The social value agenda has visibly gained prominence and attention across a variety of sectors over the last couple of years, and this is certainly true for the UK design and construction sector. Both public and private sector clients are increasingly asking their suppliers and wider project teams to consider, articulate and evidence how they will deliver wider value as part of built environment projects. For local authorities, this requirement is driven by the Public Services (Social Value) Act 2012 which ensures contracts are awarded based on value for money, rather than upfront cost savings. Similar legislation has been developed in Scotland (Procurement Reform Act 2014) and Wales (Future Generations Act 2015).

Social value refers to the range of economic, social and environmental impacts that accrue to stakeholders, end users and local communities due to interventions, investments and developments.

Yet, too often this conversation is focused on the construction phase of development, with an emphasis placed on supporting jobs, offering training opportunities, apprenticeships, staff volunteering, and other CSR activities. While this is an important part of the social value story, it misses the potential to add value from much earlier in the project process, nor considers the impact of the designed asset once completed and in operation. It is a challenging ask for architects and designers, as their core contribution comes at a much earlier work stage, and there is less opportunity for design practices to offer project-related apprenticeships, training or outreach in the same way as a construction firm can.

Recognition that social impact is also generated through both the design process and the physical asset itself is growing. The



'Social Value in Design of the Built Environment' report by the Supply Chain Sustainability School argues that important decisions made during early design stages actually de-limit the kind of social value it is possible to achieve later in the project. The UKGBC 'Social Value in Development' report also emphasises the importance of considering social value across the full project process, from investment and commissioning decisions, all the way through concept and 'optioneering,' planning, detailed design, construction and post-occupancy stages. The MHCLG 'Building Better, Building Beautiful' Commission is another example of where the design of the built environment is gaining prominence at a national level, with its first report now available to read.

There are a range of emerging drivers that are pushing designers to consider social value measurement – it is becoming a work-winning factor for many projects,

with social value contributing up to 30 per cent of the quality score on some public sector contracts. The market is moving in this direction; it is a significant factor in being able to attract and retain talent, especially in the younger workforce. There is a growing consensus about the importance of responsible business practices, in a wider context of public sector cuts, socio-economic impacts of austerity still being felt, and an acknowledged climate emergency.

As a result, it is not just contractors who are required to answer social value questions as part of proposals and tenders. Architects, engineers and other designers also need to be able to articulate the added value of their work in a meaningful way.

For many, social value seems implicit to the core mission of the profession. However, a lack of evidence means the social contribution of architects is often overlooked. This is a challenging

Post-occupancy evaluation approaches still require a push towards social impact assessment rather than focusing on the performance of the built environment

proposition for designers, as the impact of design is often intangible, subjective and difficult to pin down. Post-occupancy evaluation (POE) approaches can help to tell this story, but still require a push towards social impact assessment rather than focusing on the performance of the built environment, even if this is from the perspective of the end user.

Recent research at the University of Manchester's Urban Institute has sought to plug this gap in available methods to capture the impact of design. During my PhD research between 2012-2016, social return on investment (SROI) was trialled as a novel form of social post-occupancy evaluation, and showed that it is possible to qualify, quantify and monetise the impact of high quality built environments. An SROI case study of Maggie's Nottingham was published in the RIBA's 'Building Knowledge: Pathways to POE' report. This was followed by a project, called 'Well Cities,' to develop and validate a multi-item scale tool to measure the psychological wellbeing impacts of place. This can be added to a POE survey as an extra module and represents a cost-effective way for designers to gather some primary evidence about the impact of their designs. These methods are applicable at a range of scales in indoor environments, the public realm, and for blue-green infrastructure.

Industry has also been capacity building in this area. We are working with a number of design clients to help them think through their approach to social value. This looks different depending on the client. For some, it is a strategic exercise to set a high-level approach that pulls together any activities currently underway, and embed a common set of practices into current process and policy. For others, the wish to demonstrate the impact of their work is leading to a case study approach to evaluating completed schemes retrospectively. Whichever way this journey is started, our aspiration is to help designers build social value into their existing project process so that it becomes



an embedded aspect of their practice, and a demonstrable contribution within built environment schemes.

Core principles for designers looking to maximise their impact include:

- Engaging with stakeholders and asking the difficult questions
- Promoting the value of engaging with end users and local communities as early as possible, promoting informed design that responds to evidenced needs
- Addressing social value risk and opportunity throughout the project
- Integrating social value objectives and targets into project processes.

Ultimately, designers have a unique opportunity to take a holistic perspective across the project lifecycle. For example, the connection between early stakeholder engagement, needs-informed design, post-project evaluation and social value is as yet unformed, but a significant opportunity.

The professional institutes are also recognising the need for designers to capture and evidence the social value contribution of their design work. RIBA is considering the idea of a social value overlay to its new 'plan of work,' which will drive increasing interest in social value across the full lifecycle of a project. This is tied to an initiative of the Architecture Research Practice Leads group, led by

Professor Flora Samuel at the University of Reading, to develop a social value toolkit. A group of designers, consultants and academics have been working together for the last 18 months to develop and pilot a simple and practical way for architects to capture and measure the social impact of their designs. The toolkit is due to be published by the RIBA practice committee in the new year, and draws on principles of SROI and post-occupancy.

This agenda is also growing within infrastructure engineering in the UK. The Design Task Force of the National Infrastructure Commission, as well as the regional commissions, are considering added value in the context of major infrastructure schemes, and the ICE has recently funded a social value research project being undertaken by 'Useful Projects.'

It is clear that the level of activity and interest around social value has skyrocketed in the last 12 months. For designers, there is a real opportunity to take the lead on embedding social value considerations across the project process, drawing on the emerging thought leadership around monitoring and assessment, and ultimately delivering and demonstrating improved design outcomes in the built environment.

Dr Kelly Watson is senior consultant at Hatch Regeneris

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PRACTICE PROFILE

Simone de Gale Architects

An agile firm with an open-minded remit, Simone de Gale Architects champions a wide range of design typologies, innovation in materials, and diversity in architecture. The practice's founder speaks to Sébastien Reed

Simone de Gale Architects founded her practice in London in 2009. Her aim was to realise a childhood dream to run her own architectural practice, and “share my vision of design with the world,” says de Gale. With her grandfather having been an architect in Jamaica, and her father and uncles working in construction in London, she grappled with the question of whether to pursue a career in the same industry at possibly a younger age than most designers.

The firm currently oscillates between 15 and 20 staff – roughly two thirds are designers. De Gale explains that the firm's size results from a strategy of staying agile as project requirements change, and new work is taken on or completed. She puts particular stock into those roles usually considered as ‘support’ in an architectural practice; business development and sales, marketing and promotion, accounting and office management, as key to the firm's longevity. Project staff range from architects to interior designers and project managers, who steer the bulk of the firm's design work.

Maintaining a broad scope, the four primary components which comprise the practice's work are masterplanning – ranging from 200,000 to 6,000,000 square feet; architecture – including residential, commercial and hotels; interiors – from commercial to luxury; and, finally, innovation. An unusual example of the latter is that Simone de Gale Architects has developed and patented an advanced technique of processing materials to make them more resistant to blast and pressure waves.

Dreams do come true

The practice's chosen mantra when bidding for work is: ‘We will achieve your vision’. For de Gale, it's about the fact the client's resources are at stake. “It is our duty to listen very carefully to what the client wants to achieve,” says the architect, “and then use our skills, creativity and expertise to go beyond their expectations, optimise the value of their assets and realise their dream or business strategy.”

A conscious effort is made at the practice to cultivate a



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The practice is working with the Georgian authorities on a ‘mini city’ plan in Tbilisi

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transparent and fruitful working relationship with each client. That said, de Gale chooses to only work with clients when she feels comfortable and capable of servicing the agreement, so that the project is as much of a fulfilling experience – “both creatively and intellectually” – as possible.

When asked to what extent clients’ briefs should be challenged by architects, de Gale responds: “I believe it is fundamental.” For her, the architectural profession is one of stewardship; a client will engage an architect’s services because they already have a vision and expectation of what they want to achieve. The architect’s role is to impart knowledge and bring the latest innovations, trends, and developments on sustainability to each project.

De Gale has invested significant effort in developing the practice’s own signature style, which she says goes beyond rigid theoretical and mathematical principles. Rhythm, pattern and repetition of form and material are staples of each project however, de Gale explains: “Our use of classical rules of architecture informs direction, distance, timing and use of space.”

According to the architect, the practice’s most salient translation of these tenets is a masterplan in Tbilisi, Georgia, where it is working with Georgian politicians and the country’s largest manufacturing and distribution firm, the Omega Group. A 30 m² module was designed and replicated regularly in plan across the site, creating a distinct pattern. Then, differing heights were used to mass the different structures, and openings for squares were placed up and down the site to create new vistas.

The use of simple geometry in its designs is also key to the practice’s approach, easing the definition of modular specifications where possible within a project – which comes with ecological and resource-saving benefits.

Design envoy

“We are planning for expansion,” says de Gale, “and to this end, we are securing more international projects.” The practice has made its mark in Georgia, having already completed a number of schemes, with another 10 in the pipeline. In addition, a new plan for twin towers in Rijeka, Croatia, comprising 200 luxury apartments overlooking the Adriatic Sea, talks on development opportunities in Ukraine, and a trade mission to Hong Kong are additional evidence of organic international growth.

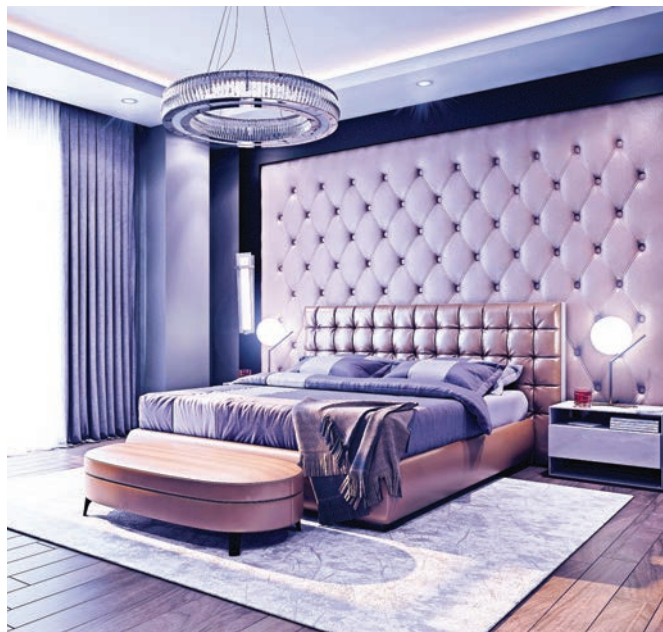
International affairs have not always been in the practice’s favour, however: “The main challenge we were facing,” says de Gale, “was in 2016 when Britain decided to leave the EU. A large portion of our then-current UK based projects were shelved.” Sourcing new revenue streams with international work and diversification of the project portfolio was one way of overcoming this challenge.

The practice’s founder expresses keenness to continue developing work in the hotel and high-end commercial office sectors, including “more luxury hotels abroad and in London, and to explore the company ethos and signature approach towards design.” She continues: “I would love to design an airport, so next year we will start to strategise for the transportation sector.”

Recruiting the right workforce for these changes, de Gale says, shouldn’t be a challenge: “We receive CVs every day from designers and engineers.”

A diverse portfolio

Beyond the design of buildings and masterplans, a spherical art gallery design concept by the practice has precipitated a project developing material processing technology to create a light, strong material which led to a Ministry of Defence commission. Simone de



LUXURY

One of the practice’s specialities is luxury interiors for high end developments

“The main challenge we were facing as a practice was in 2016, when Britain decided to leave the EU”

Gale explains: “We applied to the Ministry for funding, and won a number of grants to prove the concept. We then tested prototypes on the MoD’s blast test range.”

The architect, who is the named inventor of the technology, has patented the process and is licensing it to specific partners across a range of industries, such as civilian vehicle armour, and blast-proof structures for buildings.

Diversity in the architectural profession is also a key concern for de Gale, who, along with her colleagues, curated a series of exhibitions in London in 2017, under the banner ‘Celebrating Excellent Black Architects.’ In collaboration with RIBA, New London Architecture, Stephen Lawrence Charitable Trust and Arup, the event gave a platform for promoting the work of some of the most inspiring black architects from around the world, such as Phil Freelon and Elsie Owusu OBE.

Since the exhibitions, de Gale noted an increase in diversity in the industry and greater promotion and acknowledgement of black architects: “Before our exhibitions, there was nothing like this taking place in industry, providing inspiration for young aspiring architects. But we took a measured risk driven by passion, and the successes of our four events set the perfect exemplar of what the profession should be doing.”

The architect says that in 2018, RIBA followed the format the practice had pioneered, with its ‘Celebrating the Next Generation of Black Architects’ initiative for Black History Month – and again in 2019, this time ‘Celebrating BAME Award Winners.’ Concludes de Gale, “Our approach set a new standard for our profession, and our legacy continues, but one can always do more.” ■

ASK THE ARCHITECT

Jo Cowen, founder of Jo Cowen Architects, explains her ethos for managing a practice and what drives her as a designer



MOORE PARK ROAD

A renovation of a five-storey Georgian house in Chelsea with a “radical” series of extensions

WHY DID YOU DECIDE TO FOUND YOUR OWN PRACTICE IN 2012?

I have always had the ambition of starting my own practice but knew I had to develop my technical and strategic knowledge before I was able to do so. After a number of years at Foster + Partners and then Rogers Stirk Harbour + Partners, I took the plunge and established Jo Cowen Architects alongside my co-director Chris Wilkinson. Chris and I felt we had the opportunity to bring ‘big practice experience’ to a smaller studio setting and focus on projects that delivered high quality design, regeneration, and intrinsic value to our clients and end users. There was a naivety in choosing to establish the practice at that point as we were mid-recession and finding work was hard. But we navigated the market, originated opportunities and kept a small but highly efficient team going until we had a more reliable pipeline of opportunities.

WHY DID YOU BECOME AN ARCHITECT?

Architecture and the built environment in which we live has always interested me. Having grown up in South Africa where the predominant architecture is vernacular, I welcomed the opportunity to come to the UK and train with the leading architects and urban designers in the world.

WHAT IS YOUR FAVOURITE SECTOR TO WORK IN CURRENTLY?

Our practice maintains a diverse approach when it comes to the different asset classes and seeks to take a fresh approach to each sector. The practice has become thought leaders in both residential, commercial and mixed use projects, and that’s reflected in our past work and the pipeline coming through. We are thoroughly enjoying the work we are doing in the Build to Rent (BTR) sector, an exciting and rapidly growing asset class, which is underpinned by long term institutional investment aimed at curating high quality housing and regeneration. Design, robustness and longevity underpins the sector and there is generally a real desire to create the highest quality housing for the next generation.

WHAT HAS BEEN YOUR BIGGEST LESSON FROM LEADING A FAST-GROWING PRACTICE?

Whilst we do have some specialism in BTR, it’s really important not to pigeonhole yourself in terms of the sectors you work in. The real estate arena in the UK is constantly evolving and changing. ‘Specialising’ in just one sector can be prohibitive.

Most importantly though, I think it’s really important that our staff understand how to balance good design with commercial viability. We have tried to drill home the point that while clients might be impressed by your intricate and eye-catching architecture, if it’s not financially viable for them then there’s just no point. That approach is one that’s going to win you repeat business and minimise the amount of ‘paper architecture’ – projects that never get off the drawing board.

WHAT DO YOU LIKE MOST ABOUT RUNNING A STUDIO?

I walk into the studio every day and constantly feel so fortunate to have the team of architects and support staff that we do. There is a real buzz and energy and great friendships amongst the teams. As Richard Branson said, “culture trumps strategy.” The growth of the studio has also been satisfying, as it reflects the great work we’re all doing. Running your own studio means you need to be immersed in all aspects of the business, whether that is involved with running projects, strategising for the year ahead or out securing new business. Chris and I love the intensity of it all, and think it’s important that everyone in the studio mirrors this enthusiasm.



WHAT DO YOU LEAST ENJOY?

There is not much I don't enjoy, although the geo-political climate in the UK at the moment is causing sleepless nights. And I'd be lying if I said a little more down time wouldn't go amiss!

WHAT IS YOUR APPROACH TO TACKLING THE FUTURE POSSIBLE IMPACTS OF BREXIT BOTH IN TERMS OF STAFFING AND WORK?

We're thinking all the time about how we can add value to our projects, bring in efficiency and certainty and trimming out excess spend in anticipation of the rising cost of labour and general Brexit uncertainty. We are trying to support our staff and also understand the likely implications of an independent and isolated UK. We are extremely proud of our work culture, so what's really important to us is that our European employees feel as welcome and valued as they always have done.

HOW WOULD YOU DESCRIBE YOUR APPROACH AS A LEADER?

I try to ensure that the team are given the freedom to express themselves and that work is delegated with trust and support. We need to grow their experience and their architectural progression. Chris and I have never sought to micro-manage our team so that our architects remain creative, try new things all the time and be given the trust to do so, even if that means picking up the pieces from time to time. We're really lucky to have an extremely talented and hard-working team here at the studio, so it's fairly easy for me to put my trust in them to deliver.

DESIGN COMPETITIONS – BANE OR BOON?

Boon! It's always great to be recognised for your work and be the best in class for something you all work so hard for. We've won a few and we're really proud of that.

WHAT PROJECT ARE YOU PROUDEST OF?

We're currently working on a number of really exciting projects for industry-leading developers and that's a testament to how far we've come since our birth in 2012. They're going to be right up there once they are finished, each of them being really unique and complex in their own way.

In terms of past work, Bakery Place with the developer West Eleven proved to be the elevator that really kicked us off. West Eleven purchased a bakery dating back to 1898 and



THE VIEW, BATTERSEA

Planning has been granted for a new 15-storey residential tower with commercial space at lower levels

we converted the three buildings into a number of unique residential units.

WHAT INNOVATIVE MATERIALS HAVE YOU COME ACROSS RECENTLY?

We haven't used them ourselves but I read recently about an Australian University, which started developing bricks from cigarette butts. It's that kind of innovation which makes the construction world such an interesting and forward thinking space to operate in.

HAVE YOU MADE INCREASING DIVERSITY A KEY POLICY WITHIN THE PRACTICE?

We are extremely conscious of diversity and the benefits that brings to the success of the practice both in design and dynamic. We are doing well in our male/female ratios, and are over 50 per cent female and flexible to all of our staff. The profession has a long way to go in terms of overall social diversity, and we are looking to promote ethnic diversity, and bring forward architects from a range of

Our practice maintains a diverse approach when it comes to the different asset classes and seeks to take a fresh approach to each sector

socio-economic backgrounds – a major failing in the industry as a whole.

WHAT'S YOUR NEXT BIG CHALLENGE?

We are just starting work on some exciting new hotel projects in the hospitality sector.

WHAT DO YOU DO TO RELAX?

I love travelling and get about as much as I can, although that's not so easy given how busy we are at the moment. But in all honesty, I love being with my children and find lazy days with them the most relaxing time away from the office. ■

NEW ARRIVALS

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



Allan Stringer



John Lynch

ALLAN STRINGER & JOHN LYNCH ASSAEL ARCHITECTURE

Assael Architecture have promoted Allan Stringer and John Lynch to associate directors. Both Allan and John joined Assael back in 2011 as Part 2 architectural assistants and qualified as architects together in 2012. They have quickly become integral members of the Assael team, working on a range of the practice's notable projects. Allan has played an instrumental role in Assael's build-to-rent work around London, leading on all stages of the 236-home Pontoon Dock, due for completion imminently, and the implementation of 'Imperial Two' that provides 500 Build to Rent homes for Danescroft Land. He is leading the team on two projects; Connected Living London for TfL and Grainger, as well as the private for sale development, 101 on Cleveland for Dukelease and Art Invest.

John has similarly played a pivotal role in Assael's projects, designing the aforementioned 101 on Cleveland, the mixed-use Queens Wharf and Riverside Studios, alongside Hammersmith Bridge, for Mount Anvil. John is now leading the team on many more large, residentially-led schemes, including Manor Road in Richmond for Avanton, Boston Road in Hanwell and Clayton Road along the canal in Hayes, both for A2Dominion. They have both taken projects from the feasibility stages through to planning, design and delivery. These promotions have come at a time of significant expansion for Assael Architecture, as the practice has reached over 100 staff for the first time.



SU DOGGETT HKS

Leading hospitality interior designer Su Doggett has joined the London studio of global architectural practice HKS as director of hospitality interiors. This marks a "significant step for HKS," said the firm, introducing interiors into the London office alongside existing architectural, urban design, master planning and landscape design capabilities. Su has "vast experience," having worked extensively throughout Europe, the Middle East, Asia and Indonesia as Principal in charge of a variety of luxury hospitality projects. Recent key projects include the Four Seasons Bodrum, the Waldorf Astoria Amsterdam, the Langham Sydney and the St Regis Osaka.



GEMMA PONT CPMG ARCHITECTS

National architecture firm CPMG Architects is continuing its growth with the recent appointment of Gemma Pont as its new London associate. Gemma joins the team with several years of international architectural experience across Europe and within the London market. She studied at the Barcelona School of Architecture and built up her wealth of experience at several studios in Barcelona and Switzerland, before spending the last five years at a practice in the UK capital. Gemma will be responsible for the day-to-day running of the London studio and will manage the team in growing its work across the education, health, residential and commercial sectors.



ANTHONY PAGE MORRISON DESIGN

Derby's oldest architectural practice, Morrison Design has promoted Anthony Page to associate director. Anthony joined the firm in February 2004 and has 15 years' experience working in the commercial, science and technology, blue light, public and hotel sectors. He has managed teams and project managed several high profile architectural projects which have included redevelopment of the Doubletree by Hilton – London, West End hotel. In his new role, Anthony will continue to lead high profile projects, ensure the firm's internal IT and quality assurance protocols are maintained, and support the team to grow and develop the firm.

INTERNATIONAL FOCUS

Showcasing the latest projects from around the world – visit www.architectsdatafile.co.uk for full information



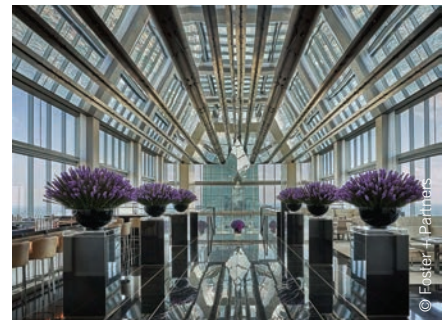
WESTERN SYDNEY AIRPORT (WSA), AUSTRALIA ZAHA HADID ARCHITECTS & COX ARCHITECTURE

Zaha Hadid Architects and Cox Architecture have won the international design competition for the new Western Sydney Airport (WSA) and been appointed as master architect for the project. The ZHA/Cox team was selected from a field of 40 national and international applicants. The project is a new greenfield airport in Sydney's new western Parkland City region. It will be built in four stages of expansion, beginning with the initial stage of 10 million annual passengers (MAP) by 2026, with further increments up to 82 MAP, making it the largest international gateway to Australia by 2060. The design incorporates sustainable design principles across the building's architecture as well as its construction principles. Cox's project director David Holm said: "Our design takes inspiration from the unique local flora of Western Sydney and its unique natural qualities, such as the Great Australian Light."



WEBSTER GREEN, NEW YORK MAP

Magnusson Architecture and Planning (MAP) recently announced the completion of Webster Green, a \$30m affordable and supportive housing development in the Bedford Park neighbourhood of the Bronx. The mixed-use housing development provides apartments and supportive homes for formerly homeless individuals and families. The project is part of Governor Cuomo's \$20bn commitment to delivering affordable housing and community renewal in the State of New York. Located on a 'greyfield' site, the 77,000 square feet building consists of 82 apartments and 41 supportive homes. The project was designed for nonprofit developer and service provider The Doe Fund and partner Robert Sanborn Development.



COMCAST TECH CENTRE, PHILADELPHIA FOSTER + PARTNERS

The opening ceremony of the new Four Seasons Hotel in Philadelphia marked the completion of the Comcast Technology Centre, which includes new workspaces for Comcast alongside "active" public spaces. Located next to the existing Comcast Centre, the Comcast Technology Centre rises 1,121 feet as the city's tallest building. The building is vertically stepped, with loft-like work spaces and television studios for NBC10 and Telemundo62, with a 12-story Four Seasons Hotel above with reception on level 60. The building's circulation follows a defined pattern on every floorplate – an internal 'street' runs along the centre from the elevators to the eastern edge, where the suites of the hotel are located.



RED SEA AIRPORT, SAUDI ARABIA FOSTER + PARTNERS

Plans for the new Red Sea Airport by Foster + Partners have been revealed. The airport is set to welcome an expected one million visitors by 2030 and to be a transit hub for visitors coming via both land and air. The airport has been designed to remove the hassle associated with travel by providing a “tranquil and memorable experience for passengers from the moment they arrive,” said the architects. The design of the terminal aims to “bring the experience of a private aircraft terminal to every traveller, with smaller spaces that feel luxurious and personalised.” The form of the roof shells is inspired by the desert dunes, while cantilevers on the landside and airside provide shade for the passengers. The airport has also been designed to run on 100 per cent renewable energy.



PACIFIC PLAZA PARK, DALLAS SWA GROUP

SWA Group has designed Pacific Plaza, a new 3.74-acre public park in the middle of downtown Dallas that aims to transform a former industrial site into a welcoming urban environment for the 21st century. Surrounded by high-rise buildings, the park replaces a barren surface-level parking lot that was previously a site of railroad, auto and other industries. SWA's design includes a grade change that elevates the park, lifting it from the surrounding city streets and orienting visitors to a one-acre+ central lawn that accommodates a range of activities from concerts to soccer games. Other design features include a multigenerational play environment featuring custom swings, seesaws and other play equipment.



WERK12, GERMANY MVRDV

MVRDV celebrated the completion and opening of WERK12, a 7,700 m² mixed-used development located close to Munich's East Station. The design of WERK12 “combines a simple form with honest materials,” said the architects, with a “bold art facade” featuring five metre high verbal expressions found in German comics. The five floors of the building are occupied by restaurants and bars on the ground floor, the offices of Audi Business Innovations on the top floor, and a three-storey gym in between that includes one storey dedicated to a swimming pool. WERK12's floor-to-ceiling glass walls, combined with its location near to the train station, provide the upper levels with views towards central Munich, punctuated by the lettering on the building's terraces.



KIARA BAY, MALAYSIA LEAD8

Lead8 has celebrated the launch of Kiara Bay, a 73-acre masterplan development located next to the Kepong Metropolitan Park in Kuala Lumpur. The project “is poised as one of the city's earliest townships into an inspiring eco-living destination,” said the architects, and offers a “first-of-its-kind living experience in Malaysia's capital.” Kiara Bay seeks to “emulate the balance of city, nature and leisure” and is comprised of three main districts – ‘The Waters,’ ‘The Walk’ and ‘The Village.’ Embracing the 140-acre lake at the heart of the site, ‘The Waters’ is defined by the landmark towers which provide the visual reference points for the development and views of the landscape.

CPD FOCUS

The latest CPD courses, seminars and documents for architects

WATERPROOFING BELOW GROUND STRUCTURES TO BS 8102:2009



Delta Membranes RIBA-approved Double Point CPD

'Waterproofing Below Ground Structures to BS 8102:2009' seminar considers the various challenges faced in structural waterproofing and how to overcome them with the guidance of current Standard, BS 8102:2009. Topics include Waterproofing options (the forms or types of waterproofing and their placement), correct selection of materials formulated for various applications, understanding the importance of using a waterproofing design specialist, and focuses particularly on reducing risk.

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MARLEY LAUNCHES NEW ACOUSTIC DRAINAGE CPD



Marley Plumbing & Drainage is pleased to announce a new CPD, designed to help educate specifiers, contractors and MEP engineers on the benefits of an acoustic drainage system. Marley Plumbing & Drainage's latest CPD, entitled 'The Benefits of Using an Acoustic Drainage System', explores the issue of noise within a building's soil and waste system and discusses how specifiers can work to reduce these sound levels by first considering the design of all pipes, stacks and brackets. Industry professionals who are interested should email their details.

cpd@alixaxis.co.uk

www.marleycpd.co.uk

KINGSPAN CPD OFFERS EDUCATION IN BB101



Kingspan Insulation has released a new, RIBA accredited CPD providing advice on how designers can use insulation specification to meet the thermal comfort requirements within Building Bulletin 101 (BB101) – Guidelines on ventilation, thermal comfort and indoor air quality in schools. The CPD provides a comprehensive overview of the document, which was extensively revised in 2018 and aims to achieve healthier learning environments. Amongst the key changes are stricter requirements for indoor air quality and a new adaptive approach to how thermal comfort is assessed.

01544 387 384

www.kingspaninsulation.co.uk/cpd

WETROOM DESIGN & SPECIFICATION CPD FROM CCL



The popular 'Wetroom Design & Specification' CPD from CCL Wetrooms, guides Architects through the process of designing and specifying a watertight wetroom. Run free of charge at a time to suit your practice, the 45 minute technical presentation comprehensively covers all aspects of wetroom design and specification. This includes wetroom design & layout, waterproofing, drainage, floor build up and installation. An informative section on how wetrooms can help meet the Lifetime Homes Standard is also covered within the session

0844 327 6002

www.ccl-wetrooms.co.uk

TWO NEW RIBA ASSESSED CPD SEMINARS FROM COMAR



In two RIBA assessed seminars, Comar outlines: 'Stand & Deliver: a Study of Curtain Walling' – the design of curtain walling, its properties and how it is used by specifiers. This seminar aims to offer an understanding of the points of Hll in the NBS specification system, and how best to make use of it. 'Designing Functions & Reliability into Entrances' – the issues that influence the function of main entrance design and technology. This seminar aims to offer an understanding of how user expectation influences door design and links this with hardware selection, entrance configuration and floor finishes.

020 685 9685

www.comar-alu.co.uk

FREE FIRE AND SMOKE CURTAIN CPD SEMINARS FROM COOPERS FIRE



Coopers Fire offers a range of free CPD seminars. Approved by RIBA, the seminars aim to educate the fire protection industry and wider building industry about application of fire and smoke curtains in buildings. Aimed at construction industry professionals such as Architects, Building Control Officers, Building Engineers, Specifiers and the Fire and Rescue Service, the seminars provide an excellent overview of the benefits of specifying such products. Coopers Fire cover the following subjects as part of the RIBA Core Curriculum; Design, construction and technology, Health, safety and wellbeing, Legal, regulatory and statutory compliance.

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SPECIFYING HARDWOOD TIMBER EXTERNAL DOORSETS



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

01494778787

www.urbanfront.com



© Andy Stagg

**BUILDING
PROJECTS**

PITZHANGER MANOR & GALLERY LONDON

New order

Combining a refined masterplan with a three-year conservation project and state-of-the-art gallery additions has restored a former 18th century west London party residence to its former glory. Sébastien Reed talks to lead consultant Jude Harris of Jestico + Whiles

Pitzhanger Manor-house, as its late owner Sir John Soane referred to it, had passed through several hands until 1800 when the accomplished designer, whose practice held the post of architect to the Bank of England at the time, purchased it for a £4,500 sum. Working tirelessly on plans to renovate the manor in Ealing,

Soane produced over 100 known drawings – attempting to realise the visions for his ‘dream villa.’ Incorporating his own idiosyncratic, but still classically influenced architectural style, renovation works were completed in 1803.

Soane left soon after, in 1810, the building then hosting various subsequent



IDIOSYNCRATIC INTERIORS

The restored late 18th century interiors of the building display Sir John Soane's mix of his own idiosyncratic design style, and classical influences



owners and occupants in ensuing years – among them, the Walpole family (relations of Spencer Perceval, the only British Prime Minister to have been assassinated). Then, in 1900 the property fell into the hands of Ealing Urban District Council to serve as a public library, and later a small gallery and exhibition space.

Jestico + Whiles were first approached by Ealing Council in 2009 who, along with Pitzhanger Manor & Gallery Trust, had put the heritage asset's masterplan and refurbishment out to competitive tender. "It was fully operating, with people visiting, and the park was in heavy public use. The gallery was also operating with minor exhibitions, but it was all quite dilapidated," says project architect Jude Harris. Responding to the building's gradual decay, the council wanted to improve the public benefit of the asset by developing a masterplan which would better integrate the centre into its surroundings, while rehabilitating it with the addition of vital facilities.

A leading theme throughout the design process for the architects was the manor's "demunicipalisation" which, for Jestico + Whiles, required bold changes to the building. These posed a high risk of planning conflicts; preservationism being the standard for Grade 1 Listed buildings like Pitzhanger. In addition to their respect for Soane's original design, Harris cites the

practice's solid previous experience renovating historic buildings as the factors that carried them through the OJEU process to be selected as managing architects on the scheme.

Masterplan

As the focus of the masterplan, the manor sits at the north-eastern extremity of Ealing's 12-hectare Walpole Park. The building itself is an amalgam of two designs: The original house, now named the Dance Wing, designed and built in 1768 by George Younger – to whom Soane was an apprentice, and Soane's rebuild.

"We took the view very early on that the house should be restored to how Soane left it in 1810 – modest domestic spaces," explains Harris. With the expectation of an influx of visitors post-refurbishment, the architects had to install the right facilities to cater for that, "which we chose to locate outside of the manor building," adds Harris.

In addition to housing the new gallery spaces, the 1939 library building situated adjacently north to the manor was chosen to contain much of the accommodation necessary to make a cultural centre function; toilets, relocated reception and entrance areas, a shop, and plant facilities for the entire estate such as heating and air conditioning. "This meant that the manor house could be what it was intended to be –



© Angelo Hornak / Pitzhanger Manor & Gallery Trust



© Andy Stagg

a domestic building,” says Harris.

Neither the manor nor the library building offered sufficient space for any catering facilities to provide refreshments to visitors, so a new cafe building was erected in a walled garden some 12 metres south of the manor – now known as Soane’s Kitchen. Given its position and context, the architects wanted to keep the building as discreet as possible: “It’s a single storey building with a garden roof,” says Harris.

In terms of materiality, the 571 m² cafe is a contemporary reiteration of the original villa building, subtly referencing elements of Soane’s style. The use of reclaimed portland stone, red brick and flint nod to the manor’s entrance archway, being composed of the same materials and referencing elements of style. The frameless rooflight refer to the manor’s restored skylight and coloured glass on the windows echo the conservatory and Soane’s use of amber glass.

Relocation & restoration

Since Soane’s departure, the manor had become “compromised by Victorian accretions and internal alterations,” say the architects. So, in a set of swift manoeuvres, they sought to renew Soane’s original vision.

Firstly, a Victorian infill accommodating a dining room that had been attached to the northern elevation of the building in 1901, plus a mid-19th century extension

providing extra bedrooms for members of the Walpole family, were demolished.

In the place of the infill, the architects revealed the original northern facade and rebuilt a colonnade to Soane’s original drawings, creating a covered connection, an open courtyard, and views between the two volumes. This provides more definition to the architectural heritage of the buildings which exhibit “two very different neo-classical styles.” Removing the bedroom extension enabled both a west-facing conservatory overlooking the park and a rooflight on top of the manor to be reinstated as Soane had originally intended them.

Harris stresses Soane’s pioneering use of glass as a construction material, saying: “He had this great glass conservatory on the side of his house 50 years before anyone had even heard about Crystal Palace.”

The client was “understandably nervous” in the earlier phases of the project, so the architects acknowledged that engagement with stakeholders was key: “Talking about our proposals and hopefully getting them to support us.” Harris continues: “The main challenge was that it was Grade 1 Listed. Only 4 per cent of buildings have that status, so in terms of quality it’s right up there.”

Portland stone for the refurbishment of some of the manor’s stone columns, reclaimed brick matching the original

A leading theme throughout the design process was the manor’s “demunicipalisation”



LIGHT TOUCH

The architects took the view early on in the project that the house should be restored to how Soane left it in 1810 – “modest domestic spaces”

Spectrometry technology allowed the architects to almost peel back every layer of paint from the last 250 years right down to the base layers, and find actual examples of paint that Soane had used

yellow of the facades, and new lead sheeting for the roof were all sourced to address smaller scuffs and issues related to external wear, while reclaimed floorboards were placed internally.

When it came to the interiors, before Jestico + Whiles started work, “It was all painted magnolia. It could’ve been any local authority building,” commented the architects. They took advantage of the tremendous archive of work held in the Sir John Soane museum, which consisted of 250 drawings and watercolours he completed of the exterior and interior of the Manor. “We used these as a references to restore the interior to exactly how he had left it.”

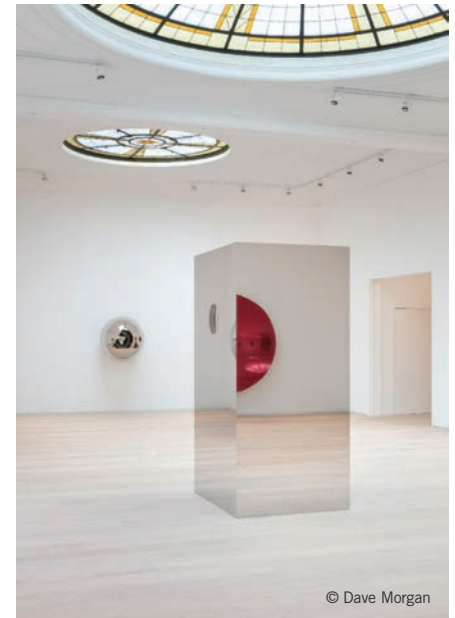
Soane’s original intricate paint schemes, which were overpainted in the 1830s, have been meticulously recreated throughout the Manor following detailed historic paint analysis by interior decoration specialists Hare & Humphreys. Supported by their research, spectrometry technology allowed the architects to “peel back every layer of paint from the last 250 years right down to

the base layers, and find actual examples of the paint that Soane had used.” From here, the architects could gauge precisely what colours had to be used to bring Soane’s original work back to life and, realise the brief.

“Some of the rooms are stunning by virtue of their spatial arrangement, but also by virtue of their decoration,” says Harris. Relatively cost effective techniques like marbling and other decorative paint effects (combined with hand-painted Chinese wallpaper in the drawing room – which took six months to create) all imbue the manor with a vivid sense of grandeur.

Look, think, feel

Before commencing work on the master plan, Jestico + Whiles worked closely with landscape architects J & L Gibbons to demolish certain elements of the gardens and salvage views over the park. “There was an old toilet block, an old cafe shed, and certain trees that we felt obstructed the historic vista,” says Harris, “so we removed those and restored the registry



landscaping.” Entering the house’s gardens and immediate surroundings, the design team continued the regency themed planting, and reinstated the vehicle suite in the forecourt area using period-style gravel to replace the municipal tarmac that had been applied over the years.

Within the 1939 Public Library building which almost doubles the original manor’s footprint, the scheme now houses 225 square metres of gallery space. Three bays of ornamental glass lay-lights flood light into the main gallery, and clerestory windows serve as a reminder of the building’s former use.

The gallery will present three exhibitions a year of work by artists, designers and architects, each offering a new perspective on Soane’s ideas and architecture. In the first of these exhibitions, Anish Kapoor presented a series of sculptures echoing Soane’s sophisticated use of mirrors and light to amplify as well as dissolve space. Harris comments on Soane’s use of translucent and reflective materials: “He wasn’t afraid to use large expanses of glass. There were things he did at Pitzhanger that he did on other projects; mirrors, for example.”

The architect notes how the client was keen to have a small space for nationally renowned pieces of art, so it was crucial that the ambient and security qualities of the gallery areas matched these intentions in design terms. As part of the Government indemnity scheme for such key cultural projects, the right environmental conditions, such as humidity, UV and

temperature are preconditions to borrowing and exhibiting the most treasured pieces.

As well as a large, flexible naturally-ventilated gallery space, there’s a smaller controlled ‘Grade-A’ gallery space with track lighting installed; all of the walls are lined with a construction that makes it easier to hang artwork and fix other installations to the wall. The entrance to the gallery connects, via a new staircase and lift, to visitor toilets, an exhibition preparation room and plant room on the lower-ground floor. From here leads the accessible route into the manor, via a covered colonnade link through the recreated Soane courtyard.

Up & running

“We completed in summer 2018 and the building opened this spring, which gave us a useful period of familiarisation and preparation for the opening,” says Harris. “A few niggles had to be worked out with the contractors, but nothing serious.”

As a measure of success for the client, Pitzhanger now attracts world-renowned artists and is welcoming numbers of visitors in excess of what it had anticipated prior to restoration. Based on current rates, some 70,000-100,000 visitors will visit the new Pitzhanger Manor and Gallery per year, a hefty increase on the 35,000 preceding the restoration. This is just part of why Jestico + Whiles, and the rest of the design team, can rightly consider this a success. ■

EXHIBITIONS

In the first show in the extended gallery spaces, Anish Kapoor presented a series of sculptures echoing Soane’s sophisticated use of mirrors and light
Artwork © Anish Kapoor, courtesy Lisson Gallery

PROJECT FACTFILE

Architect and lead consultant: Jestico + Whiles (cafe, gallery and lodge)

Conservation architect:

Julian Harrap Associates (Manor)

Client: Pitzhanger Manor & Gallery Trust and Ealing Council

Landscape architects: J & L Gibbons

Exhibition designer:

Ralph Appelbaum Associates

Structural engineers: Ellis & Moore

Environmental and M&E engineers:

King Shaw Associates

Build cost: manor £12m; park £5m

Yeoman Rainguard plays a part in bringing listed mansion house back to former glory



A grade II listed Mansion on the outskirts of Ulverston, Cumbria, has respectfully been restored and developed by housebuilders, Charles Church, Lancashire.

As a way of protecting the future of the mansion, planning permission was granted for it to be converted into 19 apartments and the gatehouse into a bungalow.

Charles Church ensured that the conversion work carried out was sympathetic to the Scottish baronial style whilst respecting the original features.

These qualities also needed to be reflected when it came to the replacement of the rainwater systems on both the mansion and the gatehouse.

With over 40 years' experience of providing aesthetically appropriate, yet highly functional rainwater systems for heritage and listed building projects, Yeoman Rainguard were the perfect choice to provide a suitable system for the restoration.

On the mansion house gutters that could not be refurbished were replaced with Yeoman Rainguard MOG 25 x 100 mm cast iron gutters finished in Light Aircraft Grey colour along with complementing rectangular rainwater pipes.

The use of Yeoman Rainguard ornamental ear bands and corner ear bands for the cast



iron pipes played a part in maintaining the authenticity of the facade of the building.

In areas where replacement gutters were required to match up seamlessly to the original gutters, Yeoman Rainguard were able to replicate exact size and profiles with their manufacturing capabilities using GRP material.

Cast iron soil pipes were provided from the Rainguard TX range providing a highly durable, easy to install waste water drainage solution.

The gatehouse, tastefully converted into a bungalow, was fully fitted with brand-new Yeoman Rainguard cast iron MOG gutters and round down pipes. Finished in a classy gloss black paint the rainwater system was befitting of the buildings design and heritage.

All Yeoman Rainguard products were fitted by their own directly employed fixing team ensuring a quality installation and end result.

0113 279 5854 www.rainguard.co.uk

Church gets new Aluminium Rainwater System from ARP

St Mary's Church based in Kettering is a Victorian church built in 1893 and required some much-needed care and attention. As part of the roof refurbishment, the original cast iron rainwater system had to be replaced, although it had lasted for more than 120 years.

When considering a rainwater system for an historic building, there are several factors that need to be taken into consideration. Namely, which profiles would retain the aesthetics of the Church and its surroundings,



the choice of materials to be used, budget available and importantly if the predicted rainfall intensity would mean a change in gutter sizing.

Warkton Roofing were the appointed contractor and ARP's local Account Manager, Nigel Hancock, met with Bob Lockley, Managing Director, on site to discuss the requirements of the new rainwater system and carry out a full site measure.

With rainfall intensity and budget being key factors and due to the roof pitch and effective roof area, the chosen option was ARP's Legacy No. 46 ogee gutter on the high-level roofs and Legacy plain half round gutter on the lower roofs with additional downpipes to aid the flow of rainwater from the roof. The Legacy gutters, Colonnade cast eared rainwater pipes and Carinus hoppers all imitate the Victorian style of the profiles being replaced.

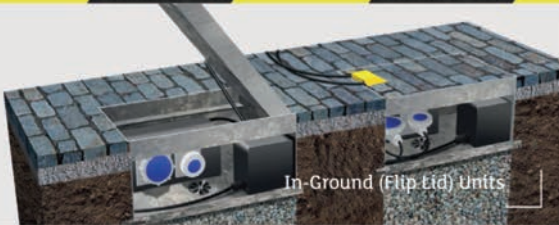
Aluminium was chosen instead of cast iron on this project for its low maintenance,



lightweight, yet durable properties. By polyester powder coating the rainwater system in a heritage type RAL 9005 Black Leatherette finish, it mimics the cast iron aesthetics and will not need repainting for at least 30 years.

Aluminium is a more cost-effective option than cast iron, and especially when upgrading the number of downpipes to provide a quick and effective rain flow from the roof. Aluminium is much lighter and easier to install, meaning less fitting time on site.

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Render for restoration: superior solutions from Fassa Bortolo

Dale Telling, commercial manager at Fassa Bortolo, shares insight on how a lime-based render can offer the best solution when restoring the external facade of a period building.

A building material that has evolved over the centuries to make it stronger and more versatile, lime can be found in architecture all over the world, and was originally used by the Ancient Greeks and Romans. Due to its hardwearing nature and porous properties, lime render is one of the most effective surface coverings to use in the preservation of heritage buildings, making it a go to choice today.

Put an end to rising damp

One of the most permeable materials, vapour can easily pass through lime renders, making the building breathable. Perfect for regulating humidity, excess moisture can be held within the surface without it becoming wet. The moisture will then evaporate slowly as the temperature drops. Many buildings, old and new, have problems with ventilation which can cause damp spots, but by finishing external walls with a lime render and breathable top coat, precautions are put in place to prevent damp rising.

Superior versatility against movement and weather

Lime-based renders are designed to withstand light changes in settlement to accommodate for the ground moving over time. Mesh reinforcements can be added to give the system extra flexibility to withstand movement, however unmeshed render can crack if the coat is too thick, so it's worth considering mesh to absorb tensions and counteract any movement early on.

For areas where weathering is a problem, lime-based renders protect the external surface of the building without sealing it, making it weather-proof. Not only is this kind of render resistant to harsh climates including ice, frost and heat, it is also resistant to the salts in sulphate resistant binders.

If you are rendering over an existing substrate, including brickwork, stonework or medium-dense blockwork, check the substrate is structurally sound, dry, has no hollows or gaps and is free of any existing plaster. It's important you consult a



professional to be made aware of the load bearing capacity of the surface and vital to remember the render should always be weaker than the substrate.

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With a number of products within the Fassalime portfolio, whether it's lime render for restoration or a breathable lime render for environmentally friendly solutions, there is a lime-based solution to suit your requirements. Fassa has been producing lime renders for over 300 years and is one of the leading companies in external rendering and integrated building solutions. Founded in 1710 in Spresiano, Italy, the family-owned business continues to prides itself on superior product quality, its commitment to ethical quarrying and discovering new innovations.

With 18 production facilities spanning Europe, employing more than 1,000 members of staff in countries including the UK, Italy, France, Spain, Portugal and Switzerland, Fassa holds a concrete set of values. The company continues to extend its legacy in the same way it always has, through respect, care and quality for its people, products and the environment.

Research is essential to improve and develop Fassa's portfolio of products, which is why the company operates its own



dedicated research facility in Italy. An advanced laboratory with cutting-edge equipment, researchers study the raw materials to create formulations which guarantee superior quality and excel in the field.

After centuries of product development, Fassa offers a vast range of systems and products to meet the needs of the UK building industry with a solution for every project. Since the start of UK trading in 2014, a number of Fassa systems have been accredited by the British Board of Agrément (BBA), to extend the offering of Italian manufactured systems to the British market. For more information on how Fassa Bortolo can help you with your rendering projects, visit the website or call direct.

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Fassa Bortolo is a historic name in the world of building. Attention to quality raw materials, research, innovation and the environment have always been at the basis of the company's vision, expressed through the continuous development of state-of-the-art solutions for the evolution of building.

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Highcliffe Castle security heightened ahead of returning exhibits

Nestling on the border of Dorset and Hampshire, sitting atop the cliffs at Highcliffe; is the Grade I Listed Highcliffe castle. It stayed a family home until the early 1950s when it was sold to become a children's convalescent home, but was closed in 1952. In 1966, prior to the Castle being sold for redevelopment, a fire damaged much of the exterior. Another fire a year after the sale left it to ruin. It was not until 1994, that the phased scheme (which is still ongoing) to repair and conserve the building began.

As part of the 18-month building project, Greendale Construction contacted Selectaglade, the leading specialist in the design, manufacture and installation of secondary glazing for thermal and security solutions for the castle's new exhibition spaces. This first required an overhaul of previously repaired windows as well as the conservation of existing exposed brickwork.

Working closely with Greendale and architects Rodney Melville and Partners;



Selectaglade provided the Castle with a bespoke solution to compliment the restoration of the rooms meeting acceptable museum standards and levels of; humidity, light and security. This will allow the return of most of the Marshal Ney furniture which is currently in the V&A Museum where Selectaglade previously installed secondary glazing units in the Henry Cole Wing. As the castle is Listed, any security measures taken had to be sympathetic to the building's elegance and historical significance. As

secondary glazing is a discreet and reversible adaptation, it is ideal for Listed properties and can provide an unseen level of security to any property.

Selectaglade installed 3 high security Series 85 two-pane horizontal slider units, glazed with a 12mm Tecdur anti-bandit glass, which were certified to LPS 1175 SR2.

"We enjoyed working with Selectaglade on the Highcliffe project and are impressed with their service and security products." Chris Cave, Contracts Manager, Greendale Construction Limited.

Founded in 1966, Royal Warrant Holder Selectaglade has grown its reputation as a leading secondary glazing specialist offering high performance noise insulation, improved building energy performance, environmental control and certified security.

For further information, please contact Selectaglade or visit the website.

01727 837271 www.selectaglade.co.uk

Ecclesiastical access solution



TORMAX recently completed the installation of an elegant automatic glass entrance system at Gloucester Cathedral, ensuring all visitors receive a warm welcome to come and enjoy this magnificent building. Creating a light and airy lobby area, two sets of glass sliding doors provide access into the Norman Nave, the main visitor entrance. Powered by unique TORMAX iMotion 2202 operators, the doors silently slide open as people approach thanks to advanced engineering and design that ensures a level of reliability that is unsurpassed in the marketplace. The new entrance has been completed as part of Project Pilgrim, an ambitious ten-year programme of capital development, regeneration and community engagement at Gloucester Cathedral. Aiming to improve accessibility throughout the Cathedral, Project Pilgrim has included the installation of ramps and two platform lifts, as well as making the Lady Chapel wheelchair accessible and introducing a multi-sensory layered interpretation scheme that enhances the visitor experience for people of all learning abilities. TORMAX was engaged to replace the existing wooden Edwardian doors with automatic glass doors that perfectly blend with the ecclesiastical aesthetics of the Cathedral.

sales@tormax.co.uk

Nittan helps protect iconic church from fire



Nittan Europe, UK manufacturer of conventional and addressable fire detection products and systems, has had its Evolution analogue addressable fire detection system installed into St Nicholas Church in Bristol.

The system was supplied and commissioned by Coomber Fire and Security Systems who are a Nittan Elite Partner and BAFE SP203-1 & SP101 accredited. Evolution uses ASIC technology in the sensors and sophisticated detection algorithms, combining extremely reliable fire detection together with a very high degree of protection against unwanted false alarms.

www.nittan.co.uk

Ahead of the curve garage design



A stunning 'roundhouse', built as part of a project to renovate and extend a Grade II listed property, provides a new perspective on the design, purpose and visual appeal of an exceptional British garage. The garage's purpose, usage and desired appearance meant fusing traditional design with contemporary solutions, and it was Rundum Meir tailor made garage doors that held the key to delivering on the architects' vision. On this project, the doors were solid oak Rundum Original top hung automated garage doors. All Rundum Meir garage doors are custom designed in the UK.

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Sika Sarnafil explosive success for Royal Gunpowder Mills roof refurbishment

A historic and archaeological treasure, the Royal Gunpowder Mills heritage site in Waltham Abbey, Essex, has been given a new lease of life with a stunning and sympathetic roof refurbishment.

Consisting of listed buildings, ancient monuments and natural aspect features, the site is a well-loved attraction. A busy hub of activity, it attracts thousands of visitors every year, with exhibitions and a programme of hands-on activities for school groups.

With previous roof coverings across the site's buildings close to derelict, a new roofing system was needed that would both guarantee a durable solution and fit with the aesthetic of the heritage buildings. To meet those needs, Sika Sarnafil G410-15EL FSA Lead Grey was specified alongside Sarnavap 1000E air and vapour control layer.

The high-quality roofing system was chosen after the project's main contractors Courtenay Builders Limited were impressed with the results from similar Sika Sarnafil



projects. They also entrusted Contour Roofing with the specification and installation after seeing its award-winning track record with Sika Sarnafil.

As a site once home to tonnes of explosives and with visitors in throughout the refurbishment, the project proved challenging, requiring extensive attention to health and safety. A strict ban on naked flames and hot works meant that the plywood boards had to be primed immediately after installation and before

exposure to any wet weather. The specification therefore considered this and the original system, which would have needed a completely dry substrate, was switched to a loose laid polyethylene air and vapour control layer that was more equipped for a faster installation in the expected conditions.

Further challenges were met due to the 45-degree pitch of the roof. Roof ladders had to be used to allow workers access to the complex angles and achieve a seamless finish, using Sarnafil membrane and bespoke Sarnametal flashings at abutments, changes of angle and ridge angles.

Securing a 20-year Sarnafil guarantee, the newly refurbished roofs have not only met the client's need for a stunning aesthetic, but have also provided a durable weatherproof roofing system – upholding the heritage charity's mission to conserve the site for the benefit of the general public.

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A vertical STEM

A new science and maths building at Charterhouse school in Surrey provides an appropriately 'vertical' form of chimneys and roofs to tie in with the historic architecture on the site, but also one with key functional benefits, as James Parker reports



Towards the end of 2009, Design Engine Architects were approached by Charterhouse, one of the UK's pre-eminent independent schools, to create what would be a landmark building in a prominent part of the school's site in Godalming, Surrey.

While the project would evolve significantly beyond its initial remit of providing a new chemistry facility into being the first phase of a wider STEM (Science, Technology, Engineering and Maths) project, somewhat unusually the new building's striking design would remain largely unaffected, as project architect, Matthew Vowels, explains to *ADF*. The completed project, with its three distinctive chimneys, "is very close to those original sketches, which is fantastic," he says.

"The client's been very supportive of the architecture, taking a best value approach to design and specification."

This was especially comforting, because creating a contemporary design appropriate for its technical academic speciality, nestled in a prestigious and historic campus of the buildings, was inevitably going to be a challenge. The site includes a variety of Gothic Revival and neo-Gothic buildings designed by architect Philip Charles Hardwick, many with tall chimneys and steeply pitched roofs, which the new building references without pastiche.

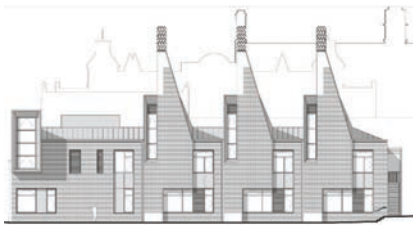
The practice won the original competition to design the new facility in 2009, beating strong competition including Hopkins, Belsize Architects, Panter Hudspith, and Pringle Richards Sharratt.

COMPLEMENTARY CHALLENGE

Creating a contemporary design appropriate for the building's technical academic speciality, in a historic campus of buildings, was inevitably a challenge



The two-storey brick-clad composition features three steeply pitched roofs and chimneys expressing the six chemistry labs below



PROJECT FACTFILE

Client: Charterhouse School
Architect: Design Engine Architects
Main contractor: Total Construction
Structural engineer: Heyne Tillett Steel
Contract value: £6.1m
Floor area: 1800 m²
CLT supplier: Stora Enso
Zinc supplier: VMZinc

The project was put on hold however before being restarted in earnest in 2015 as a more all-encompassing STEM centre, says Vowels. In the intervening years, Design Engine delivered two other buildings on the site – an extension to dining facilities and a student accommodation block.

In addition to chemistry labs, the new expanded brief included maths classrooms (co-located with science for the first time at the school but flexibly designed for later conversion into biology classrooms), plus a refurbishment of the school's existing STEM accommodation – to be carried out in a future phase.

Brief & site

Founded in 1611, Charterhouse had a goal to ensure it remains at the forefront of educational progress, and this project plus later phases are a major part of realising that goal. Design Engine Architects commented: "The school's aim was to revolutionise the way science and mathematics subjects are taught at Charterhouse by fostering inter- and intra-departmental collaboration."

The building, which doubles space for STEM provision at the school, lies near the north eastern perimeter of the site, backing on to the sports field, and is therefore very prominent – putting an even bigger focus on getting the design right. The site is "surprisingly tough," said Vowels, being a focal point of the vista from the school's main entrance on Prince's Drive, but the designers grasped the opportunity to "repair" that vista. Over the years the view

had deteriorated somewhat, the grand historic buildings sitting adjacent to a "collection of lower quality buildings."

The project architect explains how the approach of enhancing rather than creating a strident contrast with existing buildings helped ensure the design remained a viable option from the start, to the project's subsequent reanimation. "One of the initial competition sketches we did was the view from the main entrance. It was very much about complementing what was there."

Forms & materials

The two-storey brick-clad composition features three steeply pitched roofs and chimneys, expressing the six chemistry labs below – creating a subtle but important architectural link to the original campus, and in so doing creates a striking, but contextual addition. As well as being appropriate to its context, the resulting form also provides the appropriate volumes to deal with the internal and functional requirements of the educational facilities housed within.

Part of the client's brief was the avoidance of flat roof products, which led to the entire roof being finished in zinc standing seam. "They wanted something that was of high quality, and also had longevity," said Vowels. In addition, he explains that the whole structure being of one material, down to gutters and downpipes, minimised the interfaces of trades, and "kept it simple from an installation and maintenance perspective."

The subtle brown tone of the zinc roof (supplied by VMZinc) also tied in well with other buildings on the site: “It’s particularly similar to the adjacent ‘New Block’ and ‘Museum Building,’ but is also representative generally of the tile roofs throughout this part of the estate.”

The project’s evolved brief saw the building grow to be its final ‘L’-shape. It has a simple organisation of teaching spaces arranged around a generous central stair, and a further wing of teaching spaces linking to the existing school. The ‘L’ forms two sides of a new quad on the campus, which the project architect proudly says has proved an “enormously successful space.”

Most ground floor teaching spaces are accessed directly off a colonnade which runs around the inner facades overlooking the quad, and reflects the pre-existing design language of the school, says Matthew: “The school’s characterised by colonnades and quads elsewhere.” The circulation leading off the quad also creates a new route to art, DT and modern foreign languages – “it’s created a lovely urban space within the centre of the school estate.”

The building is clad in a handmade brick from Haywards Heath (Michelmersh Freshfield Lane), “which tonally is a fantastic match for Charterhouse’s Bargate rubble stone,” and glass fibre reinforced concrete cladding to other facade elements references the stone quoins of the existing historic buildings.

Along the south- and west-facing colonnade, the curtain wall glazing and louvres have Siberian larch frames, “which brings warmth, softness and tactility to the facade,” adds Vowels. The designers carefully avoided overdoing the surface area when it came to glazing, in order to optimise light uniformity within for lab tasks, “We didn’t want to create too much contrast – a laboratory requires even, uniform lighting for experiments.” However, there is floor to ceiling glazing to the first floor circulation space and glazing (above 1000 mm) between it and the laboratories, borrowing light from both of the sides.

Servicing concealment

The steeper volumes of the roof have practical benefits too, aiding passive ventilation – an important facet of this project – and helping bring light deep into the plan thanks to high level opening windows next to the chimneys on the north facade. The forms also provide space to



conceal the significant plant required for science labs.

“The chimneys work extremely hard,” says Vowels, “delivering all of the service requirements to the laboratories, while contributing to the architecture of the wider estate.” He adds that far from being a wilful design indulgence, “they are absolutely crammed full of services.”

This being a well-equipped tertiary level teaching facility, each of the seven chemistry labs have two fume cupboards for controlled experiments, which require air containing various chemicals to be extracted, at around 10 metres per second, and industrial-scale services. The ducts are roughly around 300 mm in diameter, and fans are approximately 700 mm x 500 mm x 500 mm.

Due to the bulky nature of this plant (it also includes ‘wet services’ distribution for the labs – natural gas, hydrogen, oxygen, Cat 1 and Cat 5 water), and the chemicals it’s extracting, it is normally placed outside the building envelope. However, here the architects achieved something that they believe is unique in such facilities, by enclosing it all within the chimneys, benefiting both aesthetics and ongoing function, but still maintaining safety.

“Normally the strategy for fume cupboard fans is to place them on the roof; if there is ever a problem, they are best placed when they are outside the building envelope,” says Vowels. “Given the context, that wasn’t going to be suitable on this project from both a maintenance and aesthetic standpoint.”





© Jim Stephenson



© Jim Stephenson



© Jim Stephenson

The fans are placed within the chimneys, but outside of the thermal and air-tight line, shielded by the brickwork, within a large cavity. As a result, annual maintenance inspections can be done from inside. “It was our instinct, and as we did further research we realised the normal approach needed changing,” says Vowels.

Also as part of the maintenance strategy, within the laboratories, services are distributed in a high-level acoustic pelmet detail and behind insulated removable panels, providing continuous access to services runs rather than through intermittent access hatches.

Teaching spaces

On the ground floor are four chemistry laboratories, three of which are identical, plus three maths classrooms designed to be turned into two biology labs in future phases. The first floor houses a further three chemistry labs, the main staff prep room and workspace, and a project room which enables long-running experiments to be mounted – “they can lock the door, and leave an experiment running, it gives them greater facility to try a wider range of experiments,” says Vowels.

There are two more maths classrooms on the first floor, which are however designed to be converted to biology in future phases, with services and drainage plumbed in to create future island benches for laboratories. There has been “a lot of dialogue with the school about how these spaces are going to be used in phase 2.”

The chemistry laboratories are unusually large, at around 110 m², combining a standard ‘chalk and talk’ teaching space with an adjacent practical ‘wet’ space. “It’s one continuous volume, facilitating a very fluid movement from theory back to practical and vice versa, allowing a lot more crossover,” says the architect. The hope is it will allow for a more interactive as well as efficient way of teaching science, where theory can be taught while technicians are setting up the technical demonstration.

CLT & sustainability

Like the chemistry rooms, the well-insulated fabric is a hybrid, constructed from brick and block with a concrete frame offering thermal mass on the ground floor, but an exposed CLT frame on the first floor, supplied by Stora Enso. Vowels comments: “As a practice we enjoy using CLT, and we left it exposed in numerous locations as we felt the honesty that brought with it just felt appropriate

for a teaching building – and a science building.” He adds that sustainability is the major driver for Design Engine’s love of CLT: “They’re essentially 200 mm thick timber sheets, so you’re sequestering a lot of carbon; it’s a very environmentally friendly way of constructing, which we are very keen to push.” In addition, due to the precise, offsite factory construction, the frame went together “very quickly.”

Running down the centre of each laboratory is an approximately 8 metre glulam beam spanning from the roof ridge to the chimneys, supporting the unusual roof form. In other locations, the material is used to make the openings for doorways and fenestration. In order to keep the CLT “visually consistent with the rest of the job,” says Vowels, “we worked with the engineers to keep the beams’ ‘grain’ in the same direction as everywhere else (i.e. vertical) – this created a slightly deeper beam, but was more visually appropriate.”

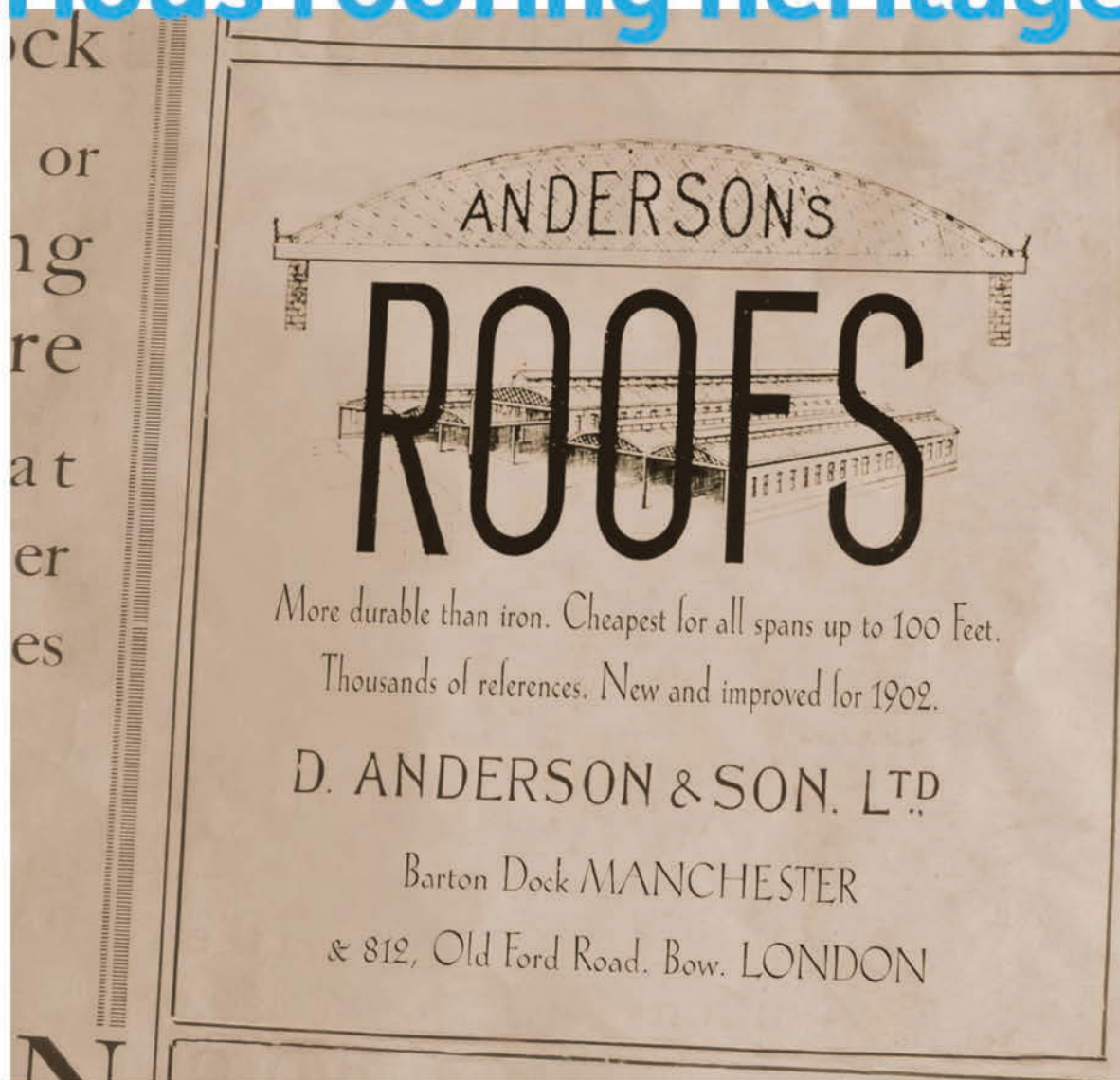
The building’s sustainability strategy is predicated on a “very simple method of operation and a ‘use less’ mantra,” says Vowels, with high insulation levels, natural daylight levels through high performance glazing, and passive ventilation. The client’s brief was to avoid a complex Building Management System; instead there are horizontal brise soleil on the south elevation (and vertical on the west), to provide the appropriate shading relative to the position of the sun.

Conclusion

The project’s architect reports that Design Engine Architects has had “very good feedback” from the head of science on the building now it’s in use, “both as a piece of architecture and more importantly, what it’s like to teach in.” Having gone from rooms in 19th century buildings “which are a little tired,” the larger, hybrid labs in this building were “more of an evolution than a revolution,” but exactly what the school required to further its science education.

As a project which went on the back burner for several years, it’s a strong testimony to the relationship between architect and client that the new STEM centre stands as a design that’s faithful to its creators’ original intent. It’s also a refreshing counterpoint to historic architecture which complements but elevates its surroundings, without being ostentatious, and creates a great new circulation space for a famous school, and its scientists of the future. ■

New name, serious roofing heritage



BMI

This 1902 advert in Architecture is a testimony to BMI Icopal's flat roofing heritage, and we're proud that we can look back even further to 1849 when we manufactured our first tarred flax felt. Ever since we've been delivering innovative roofing and waterproofing systems. Now as BMI we continue this work by providing shelter, protection and peace of mind for architects, roofers, building and homeowners alike - through roofs that are designed to transform the way people live and work.

bmigroup.com/uk

Providing total roofing solutions

BMI Decra

BMI Icopal

BMI Monarplan

BMI Redland

BMI Sealoflex

BMI Sureplan

BMI WOLFEN

Hauraton channels used as perimeter drainage at Brooke Church of England School

Located in Brooke village about six miles South of Norwich, The Brooke Church of England Primary School is a brick building surrounded by an asphalted playground which tended to flood when there was heavy rain. As part of a number of measures designed to reduce future flood risk it was decided that the existing drainage needed to be upgraded.



The Hauraton RECYFIX® PRO 100 channel system, fitted with FIBRETEC® C250, HEELSAFE 9mm slot grating was specified by NPS Group of Norwich, and used to provide perimeter drainage right around the school building. This continues 104 metre channel run not only drained the asphalt playground it prevented standing water reaching the walls and acted as a drain for roof downpipes. The FIBRETEC® grating design helps eliminate any cross-flow over the

grating and important consideration for the Brooke project. The RECYFIX® channel component is made from 100 per cent recycled PE-PP. The channel for the Brooke project has an intake cross section of 92 cm².

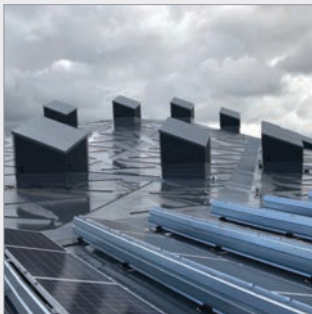
For full Case Study go to the website.

01582 501380

www.drainage-projects.co.uk



Gilberts' bespoke capability helps minimise impact of green belt development



The environmental impact of a £15m, 4000m², three-storey Centre in the heart of the Surrey green belt, within a Grade II listed park, is being controlled by optimisation of natural resources. Working on the design & build project for contractor Blenheim House Construction (BHC), Gilberts Blackpool has produced a natural ventilation strategy to a bespoke design, to ensure the architecturally-dramatic new Activity Centre at St George's School Weybridge will be appropriately aired, irrespective of occupancy and activity levels within, and with minimal impact on its external surroundings. "The project was a challenge that we were confident Gilberts could meet," explained BHC project surveyor Joe Anderson. "The site geography provided challenges: the building has been sunk into the surrounding landscape to give level approaches at ground and second floor- there's a height difference of at least 8m, which impacts on airflow around the building." Gilberts was able to engineer a tailor-made rooftop ventilation terminal (penthouse) design to deliver the required air flow and a weathertight fit onto and through the omni-directional curves of the roof.

01253 766911 www.gilbertsblackpool.com

Benefits of carpet within education



Creating an environment that is stimulating, inspiring and welcoming is essential for schools and flooring is an important element to consider. Good design can positively effect student learning and teacher satisfaction and there are many ways in which carpet can

benefit such environments including: improved indoor air quality; reduction of noise; comfort under foot and; lifecycle cost savings. To find out how a danfloor carpet can improve your learning and living environments visit the website.

www.danfloor.co.uk

Forbo carpet tiles transform busy university



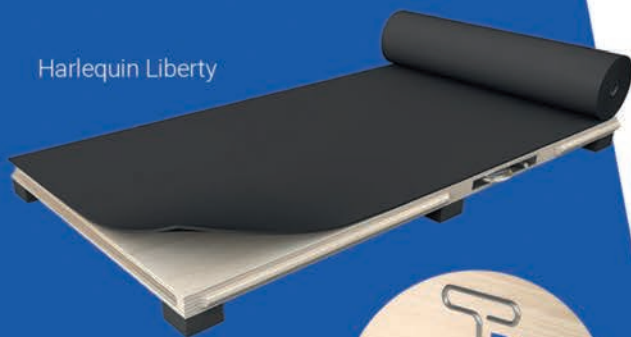
The soft and atmospheric patterns and outstanding performance of Forbo Flooring Systems' Tessera Cloudscape carpet tiles has helped to refresh a high traffic foyer area that leads to one of the main lecture theatres at the University of Cumbria. The

collection consists of 16 naturally inspired tonal colourways, which allows the creation of light, fresh and airy spaces. Tessera Cloudscape can also be installed alongside Forbo's other popular carpet tile ranges, meaning clients can easily create an integrated flooring scheme to cater for different demands within every environment.

forbo-flooring.co.uk/tesseracloudscape forbo-flooring.co.uk/flyforbo



Harlequin Liberty



Harlequin
Latch & Lock
System



Harlequin Liberty is a versatile, flexible and durable sprung floor. Its elastomer pads provide comfort and safety to the dancer. Harlequin Liberty is finished by choosing an appropriate Harlequin vinyl performance floor with accompanying ramps and edge trims where required.

Experts in Performance Floors for Education

Trinity Laban

Harlequin Floors are renowned manufacturers and installers of sprung and vinyl dance floors, ballet barres and mirrors for all dance studios and performance spaces.

Harlequin Liberty is a sprung floor system chosen by Trinity Laban Conservatoire of Music and Dance. With over 40 years experience, Harlequin has an enviable reputation having worked with some of the world's most prestigious dance and performing arts schools, leading architects and building contractors within the education industry.

Our products are easy to specify from the NBS product selector on RIBA or via the architects page on our website.



Ask our team about our RIBA approved CPD and book a seminar

Contact us now for our free Guide for
Architects and for free samples

0800 28 99 32

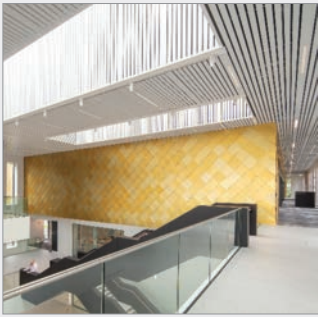
enquiries@harlequinfloors.com

cpd@harlequinfloors.com



HARLEQUIN
www.harlequinfloors.com

Howe Green supplies floor access covers for inspirational university building



Over 50 Howe Green 5000 Series Light Duty Aluminium and 7500 Series Medium Duty Aluminium Floor Access Covers were supplied for the award winning Collaborative Teaching Laboratory (CTL) at the University of Birmingham's Edgbaston Campus. The Howe Green aluminium floor access covers were supplied to main contractor Morgan Sindall Construction and were specified by Sheppard Robson. The covers were installed by the team from Morgan Sindall Construction and infilled with ceramic floor tiles. The 5000 Series is suitable for use in areas with pedestrian traffic and the load performance of the 7500 Series is for cars and light delivery vehicles up to five tonnes pneumatic tyre load. The access covers can be removed, safely and easily, for maintenance purposes, with the use of lifting keys or Howe Green Access Cover Skates. The covers fit perfectly flush with their surround to avoid the risk of hazard from slips or trips. Available as a single cover, a duct run or as a multipart unit the 5000 and 7500 Series can be supplied in standard sizes from stock. If a custom size is required it can be manufactured to order at the manufacturing facility in Hertfordshire.

01920 463230 www.howegreen.com

Luceco lights The Khalsa Academy Wolverhampton



The Khalsa Academies Trust supports local communities to help establish and run Sikh Schools. The Khalsa Academy in Wolverhampton (TKAW) has just built a new secondary school and Electrical Contractors Air Cool Engineering Midlands Ltd, installed a host of LED energy efficient luminaires from Luceco. The Catering Block was lit with Leren offering both upward and downward light distribution providing an enhanced overall lit environment, particularly where there are high or open ceiling voids to illuminate. Suitable for many commercial applications such as board rooms and offices, Leren provides a 60 per cent down and 40 per cent up light distribution. High efficiency LuxPanels from Luceco provide the ideal solution and have a completely frameless appearance in the ceiling plane and a market leading efficacy of 152 Llm/cW. Circular LuxPanels were installed in corridors and toilets. Featuring slim framed panels, Circular LuxPanels offer excellent luminous uniformity and can be supplied as standard, with emergency packs or with dimmable remote drivers, further demonstrating the diversity of the LuxPanel range.

01952 238100 www.luceco.com



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THE MODERN 'ENVIRONMENTALLY FRIENDLY' ALTERNATIVE
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BURNHAM-ON-SEA, SOMERSET TA8 2HW

TEL: 01278 786104 EMAIL: SALES@BIODIGESTER.COM

WEBSITE: WWW.BIODIGESTER.COM

The key to school refurbishment



Drainage engineers from Lanes Group plc have rehabilitated the drainage system at a primary school as part of a major refurbishment programme. The Lanes Bristol depot was commissioned to install 33 local structural repairs (LSRs), known as patch drain liners, and five full liners in foul and surface water drains at Brentry Primary School in North Bristol. Matt Banks, Area Development Manager for the Lanes Bristol depot, said: "We were very pleased to support a project that's going to make such a huge and positive difference to the local community".

0800 526 488 www.lanesfordrains.co.uk

Top-class low-energy ventilation solution



Breathing Buildings, the UK's leading provider of natural and hybrid ventilation systems, has designed and delivered a low-energy ventilation system to a RIBA award-winning school in Southwark, London. The £8m project at Ivydale Primary School involved the construction of a new two-storey building to double the school's capacity. As part of the ventilation strategy at the Ivydale Primary School project, a pair of Breathing Buildings' e-stack A-500 units were installed in each of the ground-floor class rooms, while 13 actuated louvre-damper units were installed at a high-level in the atrium.

01223 450 060 www.breathingbuildings.com



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



Staging of Christmas markets can be made much simpler with fewer safety risks by having access points hidden away in the ground until they are needed. That's the principle behind the retractable, Pop Up service units and In-Ground service units available from **Pop Up Power Supplies®**. With In-Ground or Pop Up units, safety is optimised as the power source is discreet to minimise the potential for accidental contact.



BalconyLife cantilever balconies can be manufactured to suit the building or application required with a range of flooring systems. This particular project (pictured) for The Mill @ Loughborough needed a balcony that mirrored the age of the 150 year old building. Two types of balconies were used including glass Julietts with minimal fixings to provide uninterrupted views as well maintaining the look of the overall building and design.



The Cinderella Incinerator Eco Toilet from **Pump Technology** is elegant, clean and odour free! It fits perfectly into any off-grid bathroom and looks remarkably like a domestic unit. The only difference is that it doesn't need water or any connection to a sewerage system to work. It's luxurious, easy-to-use and extremely "green". The end product of a week's regular use is just half a cup of clean, dry, harmless ash which can be tipped onto the garden.

Bring the outdoors inside...



BalconyLife

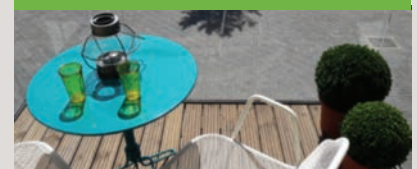


BalconyLife are specialists in cantilever and Juliet balconies be standard for apartment blocks or bespoke for housing developers. We offer a range of solution and options for all balconies be with handrail or frameless plus various steel options if desired.

All balconies are designed and manufactured to be maintenance free and carry a 10 year guarantee. We also offer other products including Glass Balustrades, Glass Canopies, and Staircases. BalconyLife also provide a full installation service if required. Please contact us for further information.

Contact: 01509 844233

Email: enquiries@balconylife.co



AxiAL – Made in Britain, for Britain

In a time when energy conservation is becoming more of a priority in many aspects of our world, the design of buildings comes under the spotlight. There is an array of possibilities to enable buildings to be more energy efficient, without compromising the quality of the occupant's environment. AxiAL is a key solution to decreasing the heating energy lost through a building's walls, benefiting the environment and reducing energy costs.

AxiAL is the new generation of spacer system, combining the principles of its predecessor AshGrid™ with those of a ventilated facade. It creates a structural cavity which allows the incorporation of insulation to the external walls, thus enabling the building fabric to breathe, preventing interstitial condensation and structural decay.

Whilst considering the necessity for the building envelope to provide lower U-Values, Ash & Lacy developed the stainless-steel AxiAL System (AXR). Having just 10 per cent of the thermal conductivity value of Aluminium, AXR immediately highlights energy loss reduction benefits. In comparison

to other systems available on the market, the AxiAL systems are far simpler, with no requirement to assemble any additional components such as supporting plates and thermal pads on site – accelerating the construction process.

Ash & Lacy are currently working on a large scheme with one of Britain's major house builders on a new development in London; Linton Fuels for Taylor Wimpey. AXR was specified due to its thermal benefits, structural performance and certified non-combustibility. AXR Systems allow for a reduction in the depth of the external wall cavity, allowing designers to maximise the internal footprint of a building, which is vital in built up areas with restricted land availability and tower blocks.

With Brexit uncertainty looming over us, questions lie around the extent to which the secondary sector of manufacturing processes will be outsourced from Britain. We are proud that our AxiAL system is designed and manufactured in the UK. For those wishing to be early adopters of Hackitt's recommendation, AxiAL is the product of



choice – quality, traceability, certified and non-combustible, all from a reliable supplier.

0121 525 1444

www.ashandlacy.com/construction/products/axial

Form, function and fire

It would be fair to say that Vicaima are renowned for the manufacture of on-trend and innovative interior door designs, however it is sometimes overlooked, that this prowess extends beyond simply form and function. Vicaima also stretch the perceived boundaries and market norms when it comes to the performance of risk critical products, most notably fire doors and door assemblies.

Vicaima FD30 (30 minute) timber fire doors recently tested by the Ministry of Housing and Local Government (MHCLG), achieved an astonishing 54 minutes. Tested on the most onerous side of the door, this result was exemplary and once again illustrated Vicaima's superior fire door and doorset capabilities, at a time when well-being and personal safety has never been more closely scrutinised.

Stake-holders throughout the refurb and development market will no doubt be well aware of the vital role they play in the decisions which ultimately lead to the supply of safe products. As important specifiers in the build process, they have a duty of care and therefore it is essential to have a clear

understanding, that should products fail to perform as intended, they may also share responsibility for any consequences that may arise.

Budget of course cannot be ignored, but cost considerations often focus on the product in isolation; often overlooking the contemporary labour saving benefits and cost saving whole costs afforded by fully finished doors. The Vicaima range of own manufactured, factory finished products presents everything from real veneer, through laminates and lacquered paint to finished foil; meaning that it is able to match vision to budget. This design flexibility does not stop there, with easy customisation such as decorative grooves, creating a simple added extra within the grasp of every specifier.

A fire performance range such as that offered by Vicaima removes doubt. Rigorously tested, third party accredited and fully traceable products that meet FD30 and FD60 rating, assures that those with a duty of care are taking appropriate steps. Additionally, formal test evidence which includes more exacting requirements such as



integral face grooves, over height/width dimensions, integrated eye viewers in two positions, concealed door closers and testing to both sides of a door, illustrate a comprehensive approach. Products, which offer additional Secure by Design (SBD) compliance and meet exacting mobility and acoustic criteria ensures products are fit for purpose. Lastly, but by no means least, real design choice that is truly innovative and delivers forward thinking and on-trend answers for today's housing, means that doors are in step and reflect modern lifestyles.

Vicaima designs for refurb, new build and commercial use, offer specifiers the safe choice when it really matters and in the knowledge that innovative design and functionality really can go hand in hand.

01793 532333 www.vicaima.com

Newton Waterproofing – Leading the Way



When a company has been leading the way for more than 170 years, you know it's got pedigree.

And that's just what Newton Waterproofing have done.

The family run business, based in Tonbridge, is the UK's leading independent designers and suppliers of guaranteed waterproofing and damp proofing systems for all structures, from large-scale commercial developments to new-build and existing domestic properties.

Newton supply an advanced range of waterproofing materials which allow them to design and guarantee effective, robust and third-party accredited waterproofing systems in accordance with current legislation and best practice.

A Rich History

Established in South London in 1848 by John Newton as a specialist supplier of products for the construction industry, John Newton and Company soon became the largest supplier of plasterers' hair in England. In 1937, John Newton also pioneered the first unique ventilated waterproofing membrane, Newtonite.

After the business was put on hold during World War II, between 1945 and 1983 more than five million metres of Newtonite was sold before its modernisation into a polyethylene product in 1984.

In 1986, Newton developed their flagship System 500 internal cavity drain membrane system for all below ground structures

requiring waterproofing, which has since been installed in thousands of UK properties.

Today, Newton continues to expand its product range for complete structural waterproofing and damp-proof solutions.

The Bigger the Project, the Better

Newton Waterproofing products have provided the perfect solution for several huge and complex waterproofing projects for commercial and residential properties.

Most recently they provided structural waterproofing on Lillie Square in Earls Court, one of the most prestigious developments in London featuring over 800 multi-million-pound luxury residences stretching from Chelsea FC's Stamford Bridge to Kensington Olympia.

Newton were required to provide a watertight basement to house the luxury private residents club which boasts a lounge, library, private dining room, cinema, gym, spa facilities and a 20-metre swimming pool with jacuzzi.

Newton Waterproofing's MD Warren Muschialli said: "While we have historically been associated with one-off domestic basement projects, we have also completed many big, complex commercial and civil projects.

"Whether you are an architect, specifier, contractor, developer or homeowner, and whatever the size of your project, our fully guaranteed installation and maintenance service will provide the perfect solution."

Specialist Installation Guaranteed

Newton created its unique Newton Specialist Basement Contractors (NSBCs) network at the start of the 21st Century, who work in partnership with Newton to provide the highest quality products, design and installation in all aspects of domestic and commercial basement waterproofing.

NSBCs can also provide a substantial insured guarantee and take full design liability on the project, fulfilling the role of 'waterproofing specialist' as recommended by British Standard 8102:2009, the 'Code of Practice for Protection of Below Ground Structures Against Water from the Ground.'

"As a responsible supplier it's important to provide peace of mind to all companies we work with that our waterproofing systems are only installed by knowledgeable and responsible operatives, so they are installed correctly at all times," explained Warren.

An Eye on the Environment

In partnership with its NSBC network, Newton operates the multi-award-winning Newton Membrane Recycling Service.

Since the scheme's launch in 2017, Newton have successfully prevented 12,675 tonnes of plastic from going to landfill and 14,264 tonnes of CO2 emissions from entering the atmosphere. This also saves enough energy to make over 1.9 million mugs of tea!

01732 360 095

www.newtonwaterproofing.co.uk

Reaping the Rewards of Offsite Manufacture



The offsite sector is underpinned by precision designed and manufactured components and systems. Heath Hindmarch, Chairman of PSP Group describes how façade and rainscreen cladding solutions produced in a factory environment are increasingly being sought after for their aesthetics and reliability.

Offsite methods continue to dominate the construction headlines. Its cost, reliability and speed benefits are better understood than ever before and this is quickly filtering down to construction clients and specifiers of facade systems and those requiring a building envelope solution that can be delivered efficiently and effectively. It is now so critically important to provide a more quality-driven and sustainable built environment.

There have been huge technical developments in cladding solutions in recent years and with architects and building designers demanding a more aesthetic element to the building envelope, an architectural approach is now an essential part of the mix, as well as a quality product that can be used across a complex array of building typologies.

We have made large investments in recent years and have positioned ourselves as a single point of procurement for bespoke full envelope solutions. As a leading manufacturer in our field, we understand the importance of working closely with architects, clients, customers and suppliers to build long-lasting working relationships that allow us to provide the very best engineered solutions. Over the last 20 years we have developed vast knowledge and deep understanding of what the right solutions are for each building. Experience is everything and we feel that maintaining practical capability throughout the whole design and manufacturing processes enhances the complete client experience.

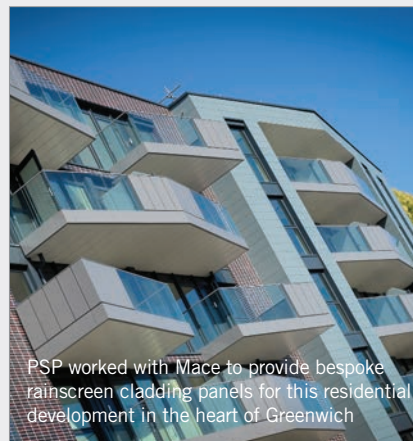
To reap the full rewards of offsite manufacture it is essential that early supply chain engagement takes place. We are increasingly being asked to get involved with projects following an offsite approach and it is at this stage that the advice and guidance given to the project partners is invaluable. From the early design stages and advanced manufacturing processes, to the



Large scale bespoke fabrications for Pump House, a residential tower at the Royal Victoria Docks in London

final delivery, using a highly experienced team that can truly appreciate how to bring a new dimension to your building and turn an architectural concept into an engineering reality is so important.

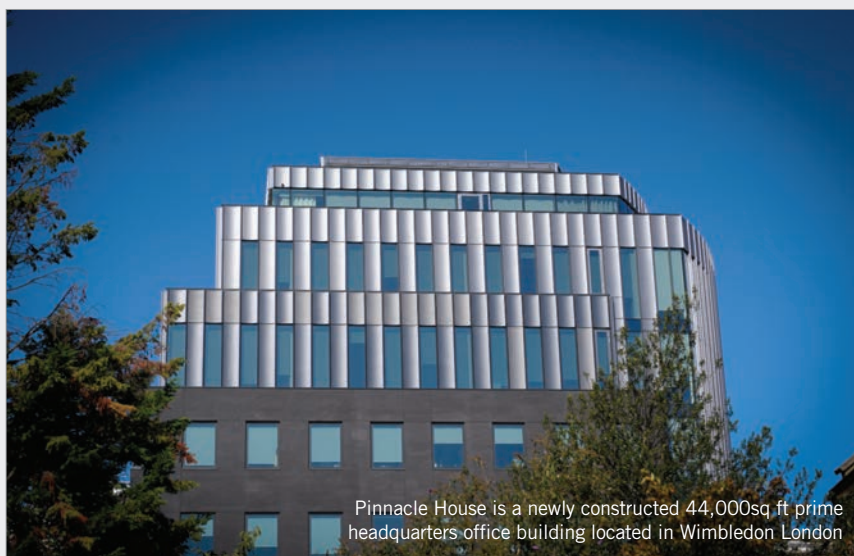
Engaging with an expert supplier means that any problems can be overcome very easily within the factory and before site work begins – site problems can cost time and money. Detailing and potential interface issues can be avoided so there is a cohesive approach towards thermal and acoustic insulation and address important issues surrounding fire and combustibility. Working in collaboration with the supply chain at the early design stages assists in achieving a truly outstanding facade solution that meets all



PSP worked with Mace to provide bespoke rainscreen cladding panels for this residential development in the heart of Greenwich



Daniel Defoe Hall University of Greenwich Halls of Residence



Pinnacle House is a newly constructed 44,000sq ft prime headquarters office building located in Wimbledon London

aesthetic and technical requirements.

A design driven strategy is at the forefront of all our operations, ensuring that innovation and quality are at the core of our systems. We design, manufacture and supply a massive range of products including rainscreen cladding, specialist fabrications, solar shading and facade support systems using a range of different metals to meet our customers' bespoke requirements. Because of this, for the best results it is imperative to choose a specialist manufacturer.

Our 45,000 ft² advanced manufacturing facility in County Durham, which neighbours our 25,000 ft² aluminium facility, has capacity to handle large schemes with the latest manufacturing and fabrication technology and incorporates state-of-the-art machinery and processing equipment. Supporting our production facilities, we also have a design office that utilises computer-aided design and drafting software such as Inventor and AutoCAD to ensure we are fully BIM-ready, deliver better productivity, faster performance and expanded interoperability to the whole project team. By utilising our technical skills and ability, along with a forward-thinking approach, we are confident that we bring a quality, cost-effective solution, that is considerate of the time-sensitive nature of the construction industry and the increasingly challenging design and engineering landscape.

Every client and project require specific façade solutions that are tailored to their individual needs, which is why each of our products is designed with the client in mind. As an aid to this we design and manufacture a comprehensive range of integrated metal rainscreen facade systems that can be



PSP pushed the boundaries of manufacturing and supplied bespoke fabrications on the Victoria Gate Project in Leeds

adapted to suit specific client needs to provide a visually stylish solution for almost any building. Achieving rapid installation times, material choices include aluminium, composite, zinc, COR-TEN®, stainless steel and many others. Our systems have been CWCT tested ensuring they meet rigorous industry standards and are resilient to extreme weather conditions.

We recognise that the external envelope can carry a number of different systems incorporating various renders, brick or acrylic brick slips, but we specialise and have the ability to achieve exacting tolerances on custom-made items such as steel support structures and curved profiles and have previously developed the

manufacture of solid steel bars utilising a five-axis CNC solution.

At PSP Group we value the process of becoming a trusted member of the supply chain, and our high-quality product designs focus on sustainability and cost-effectiveness. As we begin to get more involved in offsite specification our embedded design for manufacture and assembly (DfMA) techniques also guarantee a premium product, reliability and ease of installation across many different construction sectors and building footprints.

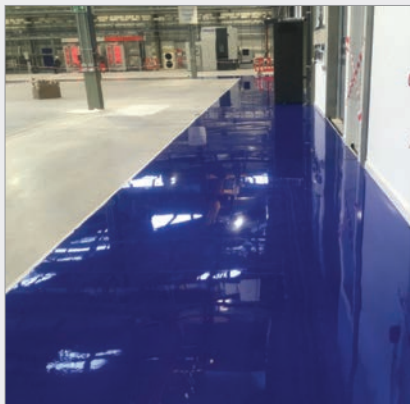
For more information visit the website.

01388 770490
www.pspuk.com

Mapei Shortlisted for FeRFA Award with Boeing Sheffield Project

Mapei UK has been shortlisted for the Small Industrial Project of the Year award, sponsored by Stallard Kane Associates, at the 2019 FeRFA Awards. The winners will be announced at the FeRFA Awards Dinner on Friday 29 November at the De Vere East Midlands Conference Centre & Orchard Hotel by the host Reverend Richard Coles.

FeRFA identifies excellence in resin flooring through its annual awards which celebrates workmanship, innovation, diversity and commitment to quality and training shown by its members. Mapei is being recognised for its comprehensive flooring specification provided for Boeing's Sheffield production facility, whereby Mapefloor I 302 SL was used, ensuring a durable and seamless system for walkways and production areas in Boeing's specified colour. Merging a matchless design with high quality installation, the project provided a distinct and superior finish.



Providing a smooth surface appearance, Mapefloor I 302 SL is solvent and nonylphenol-free. Abrasion and chemical resistant, it is suitable for use as a paint or a high-build coating, with quartz added to provide a low-slip surface. Mapefloor I 302 SL is a FeRFA Type 3 floor

coating, ideal for use in chemical and pharmaceutical industries, the food industry, automated laboratories and warehouses, and aseptic areas.

The awards ceremony will feature a total of five prizes; along with the award for Small Industrial Project of the Year, the remaining four awards will be presented for Small Commercial Project of the Year, Large Industrial Project of the Year, Large Commercial Project of the Year, and Outstanding Contribution to FeRFA, where there is no shortlist for the latter.

This year also marks FeRFA's 50th year as the voice of the resin flooring industry, with the event promising to be a glittering affair. FeRFA Awards Dinner & AGM 2019 will allow time for open networking and refreshments, its Annual General Meeting, a drinks reception and dinner, and entertainment for attendees.

0121 508 6970 www.mapei.co.uk

Consort Claudgen launches new brochure



The latest Heat brochure includes a host of new heating controls and heaters including motion-activated and waterproof run-back time controllers, new heater models in the electronic seven-day timer range and advanced wireless controllers which are now compatible with Consort's RX and SL heaters. These are detailed in the brochure along with the established panel and fan heaters, convectors, LST heaters, air curtains, downflows and towel rails. Download

a copy from the website, or request by phone.

01646 692172 www.consortepl.com/downloads

Waterloo announces new sales director



UK air distribution manufacturer Waterloo Air Products has announced the promotion of Andy Wardle to the position of sales director, with a seat on the Company Board. Andy joined Waterloo in 2005 as area sales manager, having previously gained valuable sales and industry experience at both TROX and GDL. As his career within Waterloo developed,

he progressed to regional sales manager for the North before taking on his most recent role as head of national sales. As sales director, Andy will be tasked with developing Waterloo's continued growth strategy while leading the national sales team.

01622 711500 www.waterloo.co.uk

Lessons of Grenfell could help cut bin blazes



The safety framework recommendations laid down by Dame Judith Hackitt following the Grenfell tower block disaster centred on the safety of high-rise residential properties, but the lessons learned and her recommendations can be applied right across the whole housing sector. There is a call for a new

regulatory framework, and a specific concern to bin store provider metroSTOR over the absence of suitable standards governing separation distances for waste storage within the Building Regulations or other statutory guidance. Read the full story at the website below.

01227 200404 www.metrostor.net

Mosaic "cowch" raises £3,600 for charity



A mosaic decorated life-sized Highland cow bench has raised £3,600 for the Scottish Charity Air Ambulance. "Sweetie Annie" – designed by mosaic artist Katy Galbraith – was part of a Highland Cow art trail in the Perthshire town of Crieff. The mosaic was

fixed with PU adhesive and grouted in BAL Micromax2 Pecan and Jade mixed with BAL Admix GT1 donated by Topps Tiles in Perth. Alex Underwood at BAL, said: "This is a fantastic project which took phenomenal skill and patience to complete. We are delighted that our versatile grout was a key part of this installation."

01782 591100 www.bal-adhesives.com

Advanced protects Longest Sea Crossing

A network of 31 ExGo gas extinguishant control panels have been installed as part of the active fire protection for one of South East Asia's most ambitious infrastructure projects to date.

The Advanced network protects the artificial island gateway in Hong Kong that serves as an entry and exit point to the new 34-mile bridge-tunnel system, used by over a 10 million passengers in its first eight months.

The ExGo panels were selected to protect critical server rooms in more than 10 different buildings on the purpose-built island, including police and fire stations as well as customs and different administrative buildings. Each gas extinguishant control panel is connected to at least one remote status indicator unit located at the protected area entryway. Each extinguishing system was designed, configured and commissioned by Peak Trade International Limited.

Constructed using around 420,000 tonnes of steel - enough to build 60 Eiffel Towers - the Hong Kong-Zhuhai-Macau Bridge has been designed to last for the next 120 years, and is set to deliver significant economic



advantages to the region.

ExGo has been developed specifically for sensitive and strategic assets such as server rooms and data centres, control rooms, as well as historic and cultural attractions. It is suitable for almost all single-flooding area applications and includes a range of control options and devices. It is approved to EN54 parts 2, 4 and 13 as well as EN12094-1 and is among the first systems to combine these with EN12094 in a single solution. (EN12094-3 relates to the integrated manual

release on the front of the panel). ExGo can be integrated into Advanced's Axis EN fire system or any third-party alarm system.

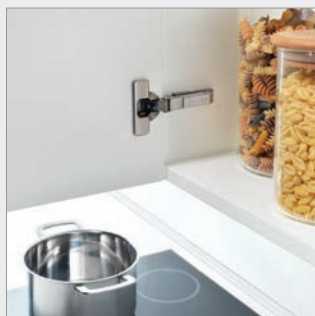
Advanced, owned by FTSE 100 PLC Halma, has an impressive history of protecting critical transport and infrastructure sites across the globe, including the London Underground and the Istanbul Metro.

Halma is a global group of life-saving technology companies with a clear purpose to grow a safer, cleaner, healthier future for everyone, every day.

Advanced is a world leader in the development and manufacture of intelligent fire systems. The legendary performance, quality and ease of use of its products sees Advanced specified in locations all over the world, from single-panel installations to large multi-site networks. Advanced's products include complete fire detection systems, multi-protocol fire panels, extinguishing control, fire paging and false alarm management systems.

0345 894 7000 www.advancedco.com

Second FIRA Gold Certification for Salice



Furniture hardware manufacturers, Salice, have achieved a second FIRA Gold Certification, this time for their Silentia+ soft-close hinges. This new certification is in addition to the one held for their Salice series 200 hinges, which was attained in 1990. As part of the FIRA Gold Certification process the hinges were tested to 'Level H' of BS 6222-2:2009+A1:2017 Domestic kitchen equipment - Fitted kitchen units, peninsular units, island units and breakfast bars - Performance requirements and test methods. Level H is the most severe test under the standard and is used to assess performance and durability when heavy use is expected or where the users are not expected to exercise care. As such, the testing process subjected the hinges to 60,000 opening and closing cycles on a constant loop to gauge long-term performance. Walter Gosling, branch director at Salice said: "We're delighted to have achieved a second FIRA Gold as it demonstrates the quality of the Silentia+ hinges. The range has an adjustable integrated soft-close mechanism which is operated by twin silicone-oil dampers housed in the hinge cup, which allows a perfect and constant closing of the door in any condition."

www.saliceuk.co.uk

Langley collaborates with NBS



Langley Waterproofing Systems Ltd has partnered with NBS to deliver 10 of its roofing systems as structured data available for architects, specifiers, designers and engineers to use. It is providing construction industry professionals with BIM objects hosted on the NBS National BIM Library and product information embedded in NBS Chorus, the newly launched cloud based specification platform. Working together, Langley and NBS have been able to share Langley's knowledge and expertise along with its BIM objects and specifications, offering increased support for architects, specifiers and contractors, as well as building owners.

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Fire Retardant Coatings our speciality



Irurena through dedicated research to develop the best wood coating, whatever the customer requirement, is always at the forefront of exciting new technological advances.

One such product recently developed by the highly experienced research and development team is the new IRUFIRE B-s1,d0 fire retardant coating system based on two component Pu acrylic-aliphatic coatings.

This system has been developed to coat wooden surfaces which need to comply with the UNE-EN 13823: 2012 Standard of reaction to fire SBI (Single Burning Item) test and be classified according to UNE-EN 13501-2007 + A1:2010 (Euroclasses).

The system comprises of a combination of two main products, IRUFIRE PRIMER IP-1 and IRUFIRE TOPCOAT IT-1 which can be used to create coating systems that either maintain or upgrade to Euroclass B-s1,d0 classification.

For use as a maintain system, for coating walls and ceilings of wooden substrates that are flame retardant and are already certified as B-s1,d0 then only one coat of IRUFIRE PRIMER IP-1 at 80-100g/m² is required followed by one coat of IRUFIRE TOPCOAT IT-1 at the same film weight. The only variance for the upgrading coating system is the application of 2-3 coats of IRUFIRE PRIMER IP-1 is required to achieve a film weight of between 400-480g/m².

In either system following application and drying of the clear IRUFIRE PRIMER IP-1 it is lightly sanded with 240-320g abrasive and the sanding dust is removed prior to application of the chosen version of IRUFIRE TOPCOAT IT-1.

The upgrade system has been tested on the standard substrate as defined by EN13238: Reaction to fire tests for building products, conditioning procedures and general rules for selection of substrates. As such the B-s1,d0

classification obtained by this process can be extrapolated to any substrate of wood or wood derivative with a density equal or higher than 510kg/m³.

The IRUFIRE B-s1,d0 system has been certified for application in both clear coatings of any gloss level and pigmented coatings in any gloss level and any colour giving the user ultimate flexibility to ensure that the client requirements are able to be fulfilled.

To further assist customers Movac has developed an easy to use calculator which works out the quantity of coating that is required of both the primer and topcoat based upon the area of square metres that require coating.

For more information on these exciting technology products or for a copy of the IRUFIRE calculator contact Movac Group Ltd.

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Design Flexibility & Performance from Scotframe



Val-U-Therm PLUS® wall panels achieve $0.08 \text{ W/m}^2\text{K}$ – probably the best U-value wall in the world. Couple this with Scotframe's expertise & track record and the sky really is the limit when it comes to design of buildings that tick all the boxes on your clients' wish lists.

Key to achieving this extraordinary performance is that the insulation is injected in off-site, quality-controlled factory conditions. The foam expands into every nook and cranny, providing a best-in-class BR443 U-value correction factor of zero. As well as excellent thermal insulation performance, details are available to minimise thermal bridging and give excellent airtight fabric levels.

The Scotframe Val-U-Therm® building system was originally launched in 2011 and has been used in over 8,500 homes with an excellent track record. A UK market leader in full timber frame packages for new housing and commercial projects, Scotframe exclusively offers the Val-U-Therm PLUS® closed panel building system. This is accepted by financial institutions, NHBC, Premier Guarantee and Checkmate – the panels have a 60-year minimum service life.

Because it's a hybrid of the best aspects of SIPs and timber frame technology, coupled with the latest advances in material science, it offers much flexibility and innovation in the design and build process. The unique combination of design opportunities includes:

- Can be used for walls, roofs and floors
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Couple this with its exceptional thermal



performance and sustainability, Val-U-Therm PLUS® provides a straightforward and cost-effective way for architects to hit energy efficiency, air permeability and other environmental targets. It offers a fit-and-forget, future-proof solution, whatever level of environmental specifications are required – for example, 'A' rated Energy Performance Certificates, PassivHaus or the highest levels of energy saving and carbon neutrality.

The patented Val-U-Therm PLUS® is also inherently sustainable due to careful sourcing of raw materials with a minimal environmental impact. Scotframe's timber is sourced from FSC and PEFC sustainably managed forests and the insulation in Val-U-Therm PLUS® panels is based on renewable vegetable oil, has zero ozone depletion potential and is CFC, HFC and HCFC-free with a Global Warming Potential of less than 5. This means it has a BRE Green Guide A/A+ Rating – the same as straw bales or sheep wool yet is hydrophobic offering flood mitigation.

From the UK's first PassivHaus for rent (which won a Green Apple Award) to examples that significantly exceed the PassivHaus standard, Scotframe has been leading the way using Val-U-Therm® technology in energy efficient building for many years.

The Maryville PassivHaus delivered a total primary energy demand of $69 \text{ kWh/m}^2\text{a}$ (exceeding the PassivHaus requirement of $120 \text{ kWh/m}^2\text{a}$). This 'Fabric First' approach

is also suitable for commercial buildings – the Rocking Horse Nursery at the University of Aberdeen, which caters for 78 pre-school children, achieved an air tightness of 0.475 ACH.

Hence Scotframe homes and buildings are warm and draught-proof in winter, cool and well ventilated in summer, healthy for all the family and enjoy remarkably low energy bills. Scotframe Val-U-Therm PLUS® allows the construction of typical family homes that can cost less than £95 a year to heat.

The great news is that building to these high standards is not necessarily more expensive or time consuming using Scotframe Val-U-Therm PLUS®. Edinburgh Napier University compared the cost per square metre of superstructure using 10 different building systems.

Scotframe Val-U-Therm® cost £1092 when built to PassivHaus standards, while the other nine systems ranged from £711 to £1138 when built only to existing Building Regulations. It took 65 days to build a Scotframe home to PassivHaus standards; the other 26 homes ranged from 49 to 126 days to build, again only to Building Regulations.

So, if you are looking to design a dream home or superlative building – think Scotframe Val-U-Therm PLUS®.

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The devil is in the detail: fire protection processes for timber

Howard Morris at Trade Fabrication Systems explores the relative performance benefits of fire-retardant surface coatings and pressure treatments for timber, and explains the merits of an alternative process

Admired for its rustic appearance, strength and cost, timber is an attractive material for use within construction, but it has a major flaw – it burns. As fire protection drives design, it is integral for architects to utilise products and solutions that meet the needs of the market, while guaranteeing adherence to Building Regulations.

The Euro Class system determines a product's fire performance by measuring it against a comprehensive set of characteristics. As wood is an organic combustible material, it will never achieve Euro Class A1 or A2 non-combustibility. With this in mind, the highest fire-retardant classification wood can receive is Euro Class B which can be successfully achieved by embracing timber technologies and enhancing the substrate. There are two main types of fire-retardant timber treatment that can be used to achieve compliance; pressurised treatment and surface coating.

Scratching the surface of FR coatings

One of the most common forms of fire protection for timber substrates is the application of fire retardant coatings. Cost effective and compliant, the coating can be applied to any wood-based product through a traditional onsite coating process. Protecting the appearance of the substrate, while also guaranteeing its structural integrity remains intact, surface coating is an ideal way to ensure timber complies with Euro Class specification.

However, true compliance is entirely dependent on the coating applied and the timber substrate originally tested. For example, if the type of timber used differs to the one that was tested, this solution will be non compliant – as the fire retardant coating may not perform as expected in



practice. The same is also true if the coating is not applied to the exact specification and consistency of that tested. So, while fire retardant coatings represent a cost effective route to delivering fire protection performance, there remains room for error onsite, particularly in relation to the quality control of workmanship.

Under pressure to perform

Pressure treatment is an alternative method to Building Regulations compliance. A time consuming process, the timber substrate is impregnated with chemical preservatives to enhance its durability and withstand damage and exposure to the elements. The pressure treatment method should



Both methods of enhancing a timber substrate to be fire retardant are achievable, but it is important to recognise the market challenge of these traditional methods

guarantee compliance to Euro Class B as it is completed under factory-controlled conditions. However, due to the extensive impregnation process, the structural integrity of the board is compromised, leading to the quality of the board in installation deteriorating. While the substrate will be fire retardant, the structural integrity is brought into question.

The devil is in the detail

Both methods of enhancing a timber substrate to achieve fire retardance are achievable, but it is important to recognise the market challenge of these traditional methods. Coating onsite and pressure treatments are not without risk of compromise or challenge. As the devil is in the detail, without factory assured processes it is impossible to guarantee the fire retardant performance as well as structural integrity of the board.

Advances in offsite processing potential and timber technologies have addressed

these issues head on. Factory applying fire retardant coating instils confidence in the performance of the coating, ensuring that it has been applied correctly and to the right specification consistently – without impacting its structure. This additionally ensures the specification will be protected, as the product will be delivered to site fully finished and ready for installation, which reduces the risk of the substrate being changed onsite.

In order to achieve full compliance to Euro Class B, embracing offsite processes that guarantee performance is the safest way to adhere to Building Regulations. Working with a partner who has achieved ISO 9001 quality assurance accreditation, independent certification and receives regular factory audits is the only way to guarantee overall compliance and safeguard the internal environment.

Howard Morris is managing director at Trade Fabrication Systems



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JTPumps, has released a new Packaged Sewage Macerator pumping stations for the Domestic and Commercial markets to complement other packaged pumping station. If a property doesn't have gravity flow it will need a pumping station, and these can come in all sorts of sizes from very small for an outbuilding or garden room to very large which are ideal for houses and office. If you are not sure of the size of the pumping station required, that's not a problem just call JTPumps and they be happy to help you get the right station for the job.

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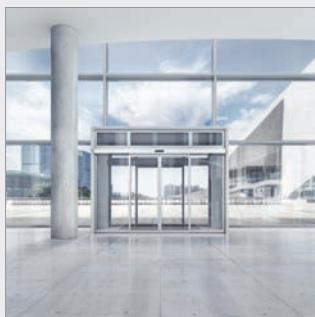
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An evolution in GEZE design



A popular GEZE product is now available in a new and improved design as part of an eco-friendly, heat-saving solution. The latest ECdrive T2 has all advantages of the previous ECdrive but with enhanced features and is offered as a complete package with the new thermally separated profile system – the GCprofile Therm. Slimmer than its predecessor, the ECdrive T2 has a reduced cover height of 100 mm compared to 120mm. Its sleek design is aesthetically pleasing, less obtrusive, provides smoother running and can be installed in a wide range of buildings. It also has capacity for moving increased leaf weights of up to 140 kg, is suitable for high traffic areas for standard, or escape and rescue route doors, in all types of buildings. Like all GEZE sliding door systems, the ECdrive T2 is capable of networking and can be integrated via the GEZE DCU103 CAN bus interface and the GEZE IO 420 interface module via BACnet™ into networking solutions such as the GEZE Cockpit. The profile system accommodates up to 32 mm glass thickness in either two-pane insulation glass with 2x ESG 6 mm, UG value 1.0, or three-pane insulation glass with 3x ESG 4 mm, UG value 0.8.

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Security and insulation with Garador's front doors



Garador's FrontGuard front doors have been precision engineered for exceptional security and thermal insulation. The FrontGuard door collection comes in three stylish ranges: Modern, Classic and Contemporary. All of which are filled with 46mm dense polyurethane foam and have thermal breaks built into the frame to enhance thermal performance. Further protection comes from watertight rubber seals on all four sides of the door panel, plus a 20mm aluminium and plastic threshold to stop water ingress at the bottom of the door. Overall, Garador's FrontGuard range offers a very high level of thermal insulation with U-values of as low as 1.1 W/m²K. The FrontGuard range also offers excellent security, with secure five point locking; two conical swing bolts, two security bolts and an additional lock bolt. The doors also have RC2 certified security equipment. For those wanting even greater thermal insulation, Garador have launched a FrontGuard Plus doors which offers even more protection including an outstanding thermal performance with U valued down to 0.93 W/m²K.

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Adding value to fenestration design

Ian Osborne of Kestrel Aluminium Systems explains how the aluminium industry has evolved to reduce waste and optimise production, enabling the material to compete with PVCu in a range of sectors

The increasing preference for aluminium in window and doorframe construction owes much to its versatility and design life value. Widespread specification is resulting in increasingly diverse projects across the client spectrum, from prominent commercial clients in the public and private sectors to 'high end' self-builds.

Despite the competitive nature of the sector, a few manufacturers are achieving clear differentiation through their technical and service capabilities. This has been prompted by increasing demand for a high level of flexibility in product performance and assistance required by specifiers throughout the design process.

Widespread specification is resulting in increasingly diverse projects across the client spectrum

Tight building schedules have also put added pressure on lead times, making the 'just in time' approach to manufacturing impractical. Maintaining stock of the extensive range of standard profiles used in window and door fabrication has, therefore, become essential. Typically, this requires ongoing availability of profile lengths from 1.1 to 6.1 metres. It enables fabricators to keep wastage levels to a minimum and provides lasting assurance that costs can be kept at a consistently competitive level. The knock-on effect has been a clear trend in the proportion of commercial and residential work accounted for by aluminium rather than PVCu.

For orders in which bespoke features such as RAL colours are involved, production methods and equipment need to guarantee a quick turnaround. Where once the norm for site delivery was several



weeks, the demand now is for just a few days. This requires use of the very latest fully automated production techniques and the necessary confidence to invest in them. The need for sustainable manufacturing in addition has led to the highest levels of powder recovery ever achieved.

In terms of aesthetics, window and door design has not only kept pace with requirements of contemporary architecture, but is positively influencing it. Use of sleek profiles which maximise the glazing area while remaining secure, strong and energy-efficient has become commonplace. However, there is cause for concern that



VARIETY

As well as sliding door applications in residential settings, sectors taking advantage of their benefits include leisure facilities and zoos (ZSL Whipsnade shown below)



some manufacturers are compromising the required aluminium thickness. For effective long-term performance, a specifier should make clear the minimum requirement in accordance with standards such as BS 6375 Part Two - Specification for operation and strength and BS 4873 - Specification for aluminium alloy windows and door sets.

To put the value of technical input from a manufacturer into perspective, fenestration accounts for up to 40 credits of the 119 available in a BREEAM assessment. Consequent demand for lower U-values and collaboration with specifiers therefore prompted Kestrel Aluminium Systems to develop a 70 mm casement window. Scheduled to be available early in 2020, it will provide the highest standard of acoustic performance and weather tightness – a clear illustration of innovation driven by design needs.

Projects that have benefitted from such collaboration include the newly refurbished and renamed 'Ellen Terry Building', part of Coventry University. The Grade two listed, art deco, former Gaumont Palace Theatre's design required an elegant run of modern, thermally broken commercial doors that matched the original facade. In addition to the

minimum requirement of PAS 24 the specification included incorporation of card scanners and perfect replication of the original doors' slim sight lines. This has been achieved through use of 'lay bars,' leading the University FM team to comment: "These new doors have recaptured the original design purpose while the increase in natural light has resulted in consistently positive feedback."

A limited refurbishment schedule also placed pressure on HTL Windows and Doors to undertake a frontage upgrade on the entrance to ZSL Whipsnade, the UK's largest zoo. A five-week period prior to Easter gave little time for manufacturing, fabrication and installation of automated doors, which considerably exceed Building Regulation requirements, a 60 mm window system and 125 mm curtain walling. Consequent enhancement of natural light allows visitors immediate views into the main zoo areas but just as importantly for the client the end result makes a clear statement about ZSL's standards for Whipsnade's facilities management in the 21st century.

Ian Osborne is technical manager at Kestrel Aluminium Systems



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Self-adhesive vapour control layer delivers time saving benefits

Protect Membranes, UK producer of roofing and construction membranes, has introduced Protect VB200, a reflective air and vapour control layer with an integral self-sealing adhesive backing, designed for use in either flat warm roof construction or on walls, floors and ceilings where bonding the membrane to the substrate would be beneficial. Suited to offsite and modular construction, Protect VB200 features a high purity foil surface on both front and back of the membrane, to provide thermal enhancement if used with an unventilated airspace.

As a bitumen-free product, Protect VB200 features a reinforcement grid for added stability yet is lightweight for ease of installation and can be walked upon straight after installation on a flat roof. Cold applied without the requirement for heat, Protect VB200 does not need an additional primer in many instances, thereby providing time saving and efficiency benefits.



John Mellor, Protect product manager comments, "Protect VB200 delivers many advantages over traditional bitumen based membranes. With wide appeal across multiple applications, the high-tack self-adhesive used

ensures an airtight system is achieved with excellent vapour resistance. This not only provides energy saving performance but helps avoid condensation risk."

CE marked and available in 1.5 m wide and 50 m lengths for ease of handling, Protect VB200 is suitable to be used in high humidity and vapour loaded areas such as swimming pools, kitchens and bathrooms. For roof applications, the product can be installed unrestricted throughout the UK and Ireland in wind uplift zones 1-5 to BS 5534.

To request U-value calculations and for details of how Protect products can be incorporated into flat roof, wall, floor or ceiling applications within new build commercial, residential or public sector builds, please visit the website, email technical@protectmembranes.com or call direct, quoting 'Protect VB200.'

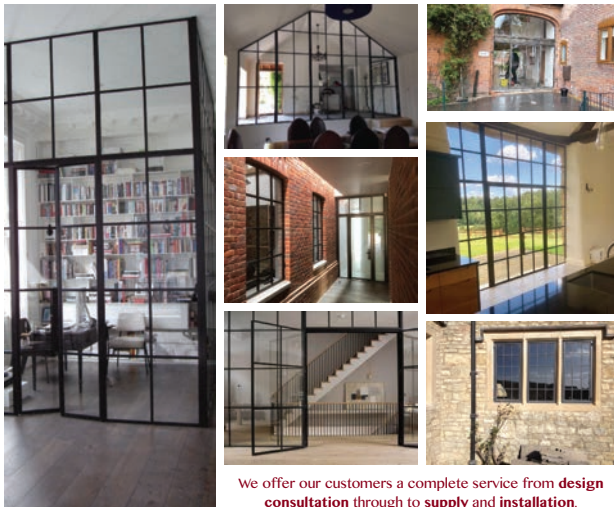
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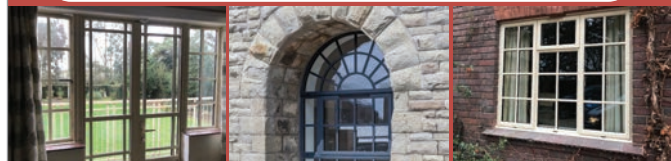
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GEZE doors hit the right note



GEZE's automatic doors have hit just the right note in the development of a London building which is the new home of Universal Music.

Two automatic circular sliding doors create a chart-topping entrance to 4 Pancras Square - one of a cluster of new buildings that have led to the emergence of Kings Cross as a creative hub.

They are a statement piece to the 11-storey angular building which reflects the area's lineage as a former goods yard to King's Cross railway. With an exposed weathered steel frame, Eric Parry Architects' building echoes the industrial revolution which enabled the expansion of London.

Positioned side by side, the two Slimdrive SCRs provide a 360° drive solution combining high performance with unobtrusive operation - the drives are just 7 cm in height and very discreet - and as pass doors are not needed, they maintain the clean aesthetics of the glazed facade.

Focchi undertook the installation of the façade: glazing, entrance and building envelop and worked with GEZE UK to

identify the right solution - moving away from an original design featuring revolving doors which would have prompted requirements for pass doors.

There are also environmental benefits to the Slimdrive SCR selection - having only one set of doors open at a time, reduces heat loss and air pollution. Emergency buttons on reception were also added to immediately close the doors and prohibit the building being surged by fans in the wake of a visiting celebrity!

There is also bespoke lettering in the canopy of the Slimdrive SCR which was laser cut by GEZE UK and bespoke bronze lettering was added.

Other GEZE products used around the building include a Slimdrive SL NT automatic sliding door with access control. This allows workers to access a cycle ramp, meaning that they can ride straight up to a cycle store - an ideal solution for city commutes.

The Slimdrive SL NT is a good solution for buildings with high levels of footfall and a continuous flow of people moving in various directions. Almost invisible, it is virtually silent in operation and can move leaf weights

of up to 125 kg.

In addition, there are eight pairs of TS 550 floor springs fitted to retail units within the building. This provides an option to automate the entrances in the future - effectively 'future proofing' them.

Extensive rooftop gardens were added to the office block, which were intended to evoke a 'windswept moorland' and provide a peaceful oasis in the midst of the city with panoramic views across London.

Said GEZE UK sales and marketing director Andy Howland: "Music is so important to our cultural landscape, so we are delighted to be opening doors for Universal Music which will no doubt benefit from its move to such an exhilarating part of the capital and present an inspiring environment from which to work."

The relocation puts Universal amongst a vibrant set of neighbours, including Google, global media company Havas, Louis Vuitton and PRS, as well as Central Saint Martins, the world's leading fashion college.

01543 443000
www.geze.co.uk

Birmingham city centre project provided with perfect cladding solution thanks to Aquarian

Leading external cladding supplier Aquarian Cladding Systems has provided the perfect solution for a £17m project in Birmingham.

Main contractor Colmore Tang selected the experienced ALD Group from the Aquarian Approved Installer Network to install Aquarian's unique insulating brick cladding system Gebrik on the Granville Lofts development. Chosen for its exemplary aesthetics, reliability and speed of installation, Gebrik was also vital in overcoming several challenges.

With the site situated between the railway and canal, deep foundations were restricted therefore the building was piled which meant the overall construction needed to be relatively light.

Further restrictions were imposed by Birmingham City Council's Planning Department, who insisted on a masonry facade due to its historic city location.

ALD Group Contracts Manager Andy

Wood explained: "With over 3,700 m² of brickwork to install, Gebrik provided a quick and efficient cladding solution.

"Most of the cladding was installed during the autumn and winter, and because Gebrik is not affected by weather, we were able to continuously install come rain or shine.

"Logistically, the city centre site was a real challenge, but with Gebrik arriving in up to 600m² single loads, vehicle movement and site storage was reduced to a bare minimum, meaning less impact on our neighbours and a safer environment for all."

The 3,727 m² of Gebrik cladding, plus the fully insulated Fusion structural SFS system, contributed to the completion of the entire scheme in less than 40 weeks.

Aquarian were on hand with their technical expertise, ensuring that insurers and Birmingham City Council's Building Control were satisfied that the construction complied with the system's BBA certificate and current fire regulations.



"We're extremely proud of our robust, intelligent and innovative brick cladding system and its ability to adapt and thrive in challenging environments," said Aquarian's Managing Director Paul Richards.

0808 223 9080
info@aquariancladding.co.uk

RENOLIT EXOFOL PX Claystone



RENOLIT EXOFOL PX Claystone is an exciting new development for exterior grade films. The soft clay colour is inherently sophisticated and a particularly versatile neutral shade for new build, period renovations or commercial applications. Importantly, Claystone is enhanced by the addition of TruGrain – a new fine detailed wood style emboss which adds a dynamic nuance of realism to finished fenestration products.

Claystone is an original pale sandy fawn colour with a greyish undertone. The full beauty of the finished product results from the exceptionally detailed TruGrain emboss. TruGrain contains fine linear woodgrain pores cleverly interspersed by none planking cathedrals giving movement and variety which accumulate in to a low gloss soft touch surface finish.

Produced in the RENOLIT EXOFOL PX grade of exterior films this product is launched with a warranty of up to 15 years depending on global geographic climatic region.

marketing.rcl@renolit.com renolit-exterior/renolit-exterior-sample-ordering

New StoBrick launch extends options



The launch of a new cladding product for externally insulated building facades has expanded the wide range of design options available from Sto UK, a leading external wall insulation system designer. Developed in response to a demand for a brick cladding solution for use with mineral-fibre based insulation systems, StoBrick gives

architects a far greater opportunity to incorporate genuine clay brick finishes into their facade designs, achieving the required A2-s1, d0 fire rating, with a wide range of textures, colours and sizes available.

0141 892 8000 www.sto.co.uk

Senior adds strength to its range



Senior Architectural Systems has developed a new aluminium curtain wall system that allows architects to create sleek and expansive fenestration designs, all with the added reassurance of accommodating greater structural movement.

The new SF62 aluminium curtain wall system has been specifically developed for use on projects where structural movement may be a challenge. Similar in design to Senior's popular SF52 aluminium curtain wall system, the new SF62 also boasts exceptional thermal performance that not only meets but exceeds current building regulations, and has been fully weather tested.

www.seniorarchitecturalsystems.co.uk



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Online BIM models

Secure By Design

metaltechnology.com



Space saving A2 insulation



The A. Proctor Group's Spacetherm® SLENTEX® A2 Aerogel Blanket has been chosen for its superior thermal performance, flexibility and suitability for space-critical applications in the refurbishment of 146 high-rise apartments in Poplar, East London. Alisan Dockerty, project

architect at Egret West explains, "We chose to apply Spacetherm SLENTEX® A2 Aerogel Blanket from the A. Proctor Group, a high-performance insulation blanket with A2 fire rating, capable of achieving the BRE's surface condensation analysis target temperatures of 16°C, whilst providing us with a minimum loss of space."

01250 872261 www.proctorgroup.com

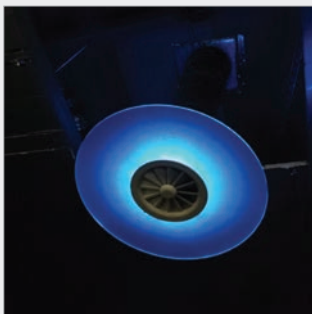
Kingspan introduces QuadCore Roofboard



Kingspan Insulation is raising roof performance to new heights with Kingspan QuadCore 426 Roofboard, an innovative flat roof insulation board delivering excellent thermal and fire performance, enhanced environmental credentials, and backed by an extended warranty. Kingspan QuadCore 426 is the first insulation board to feature Kingspan's advanced Quadcore technology. The high-performance, fibre-free, rigid neo-thermoset insulant delivers a thermal conductivity of 0.021 W/mK. This can allow roof U-values to be met with slim, light constructions.

01544 387 384 www.kingspaninsulation.co.uk/SpeedMatters

Gilberts throws light on exposed ceiling design



New light is being shed on exposed ceiling design- literally- through innovations by leading air movement specialist Gilberts Blackpool. The company is already one of the leaders in solutions enabling designers to optimise the trend towards open ceilings and exposed building services in commercial interiors. Now it has pioneered an acrylic version of its coanda plate, inset with LED lighting, for use with its range of GS swirl diffusers. Specifies can choose either a single colour for the LEDs, or an option whereby the colour changes through a preset range. "In exposed ceiling ductwork, the coanda plate is key to ensure efficient horizontal dispersal of fresh, incoming air, without 'dumping'. As the exposed ductwork is an architectural feature, we decided to give designers optimum opportunity to add a new dimension to their plans," explains Gilberts sales director Ian Rogers. The backlit coanda can be specified with Gilberts' range of GSF and GSJ swirl diffusers for exposed ceilings. Both versions feature a patented design of radial vanes to optimise omnidirectional discharge airflow with natural or mechanical air distribution strategies.

01253 766911 www.gilbertsblackpool.com

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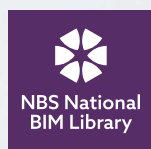
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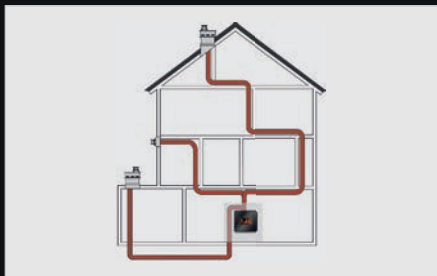
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Overcoming urban space and time challenges

Apartment living is on the rise, posing challenges for construction professionals when it comes to delivering residential units on time in compact footprints; Richard Bateman from RWC discusses solutions that can help architects



Due to the rapid economic, demographic and social changes ongoing in urban environments across the UK, city centres have become residential hubs for working professionals and families. 'Megacities' and high-rise buildings are transforming the cities and urban areas across the globe; 55 per cent of the world's population lives in urban areas – the UN predicts this will increase to 68 per cent by 2050.

Urban consolidation may offer a potential answer to the UK's current housing crisis, as apartment living offers

multi-occupancy and reduces urban sprawl onto green belt land. However, it also poses a number of challenges for professionals in the construction industry.

Time and space – the most valuable assets

As the trend for more apartments in smaller footprints continues, architects and specifiers developing these buildings should embrace new technology that can help navigate these increasingly compact spaces. It's in the developer's best interest to complete the construction in quicker time

As the trend for more apartments in smaller footprints continues, architects and specifiers developing such buildings should embrace new technology that can help navigate these increasingly compact spaces

frames, so they can start realising the return on their investment sooner. Not only this, but disruption is minimised to the local environment, especially when these buildings are likely to be constructed in busy city centres.

Specifiers must also consider how installations in smaller spaces can impact project build times. With more components needing to be fitted in tighter, more confined spaces that don't offer much room for manoeuvre, installation time naturally goes up, and thus maintaining efficiency and quality can be difficult. Specifiers must do what they can to alleviate these challenges however.

One way to make all of this possible is by simplifying the specification, logistics, products and installation processes.

A chain of issues for plumbers

One clear example of where smaller spaces is impacting installers, and construction overall, is in residential buildings' riser cupboards. This space is where chains of valves are stored and installed to control the flow of water through a multi-unit block.

Every individual apartment in a block of flats needs its own chain of valves, consisting of a pressure reducing valve (PRV), isolating valve, water metre, a double check and a stop valve. Assembling a single chain can take experienced plumbers up to 10 minutes per piece. Once they have been assembled, each chain needs to be fixed on the pipes, flushed through and tested – in blocks consisting of tens if not hundreds of apartments, this can take hours. Alongside this, the installation process may take longer if there's a leak point or issue with assembly, consequently pushing the construction timeline back.

A time-consuming specification process

Specifiers and architects have their own set of challenges when it comes to designing and building blocks of flats in tight urban locations. Consultants need to specify a chain of valves for the units and then source good quality, compatible pipes, valves and fittings.

Finding quality, compatible valves, fittings and fixtures takes time and has its own set of risks. To get the most cost-effective parts, it's common for contractors to order different parts from different manufacturers. However, this may jeopardise timescales and cause further delays if there's an issue with delivery or stock levels.

Future servicing and maintenance are other challenges associated with specifying a chain of valves, as installers need to deal with a range of products if there is an issue or leak.

Tenant valves – overcoming space and time challenges

One way to overcome these space and time issues is by opting for an all-in-one valve that's been developed specifically for multi-unit buildings. These valves serve multiple functions within one self-contained unit while controlling and monitoring the building's water supply.

The Tenant Valve Plus by Reliance Valves is one such solution, a single 311 mm unit cartridge design developed to ensure a simple, quick and easy installation for plumbers. It is designed to take up much less space in comparison to available alternatives.

A pre-insulated all-in-one valve solution also means that consultants don't need to spend time sourcing multiple parts from manufacturers, including features such as a ball-type isolating valve, an approved stop valve, a pressure reducing valve, and a double check valve, as well as a dual reading pressure gauge/test point plus a connection point for an optional water meter.

All-in-one valves are also available that are designed to be easily serviceable. If one of the apartments has a leak, there's no need to shut off water and drain the pipework in the whole building (which can take hours). The plumber just needs access to the valve, which is easily serviceable from the front.

Richard Bateman is UK technical training manager at RWC



New meaning to Smart Pump technology



The Wilo-Stratos MAXO offers greater efficiency, connectivity and comfort than ever before. It is the first pump which has an intuitive user interface – that makes installation and operation easier than ever before. The Wilo-Stratos MAXO also redefines system efficiency. By featuring innovative energy-saving functions and new control modes it attains maximum system

efficiency and the highest level of compatibility with existing systems. For more information, please visit the [Wilo](http://Wilo.com) website.

01283 523000 www.wilo.co.uk

Panasonic for maximum comfort



Panasonic Heating and Cooling has announced an update to its G1 Type Floor Console for VRF air conditioning solutions. The range will now be available with nanoe™ X as standard, the advanced technology that purifies air for a healthier, cleaner environment. Together with the revolutionary

nanoe X technology, the G1 Floor Console design offers major benefits for the end-user in both residential and commercial applications. The nanoe X innovative technology helps to reduce the growth of certain allergens, mould, bacteria and some viruses by up to 99.9 per cent, providing enhanced air purification for an even healthier environment.

www.aircon.panasonic.eu

Flexible underfloor air conditioning



The One Benjamin development in Farringdon, London has recently installed AET's flexible underfloor air conditioning system throughout three floors of premium office space. AET's system makes use of the raised floor void as a plenum for the distribution of supply air,

whilst receiving return air back at ceiling or high level. Overall, AET was able to provide One Benjamin with a high-performing and flexible air conditioning system which was more suited to its needs than the originally proposed downflow system.

01342 310400 www.flexiblespace.com

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New Transition Profiles: Dementia Strips

The specification of dementia friendly flooring transition profiles has become an integral part of interior design considerations in care homes, and places where people living with dementia may reside or visit. Light Reflectance Values (LRVs) of flooring materials are used to measure the colour contrast differences between different products. It is recommended that junctions and adjacent floorcoverings in dementia friendly environments should have an LRV difference of between 0 and 10 at most. The three products – the two floorcoverings and a transition profile – should ideally have the lowest LRV difference possible. **Quantum Flooring Solutions** has developed a new uPVC transition profile which comes in a choice of 14 different calming colours with a range of LRVs for 6 to 86. These give specifiers and flooring contractors the options they need to select a safe and suitable transition profile between floorcovering joints and achieve very low LRV differences at the same time.

0161 627 4222 www.quantumprofilesystems.com

The latest tile trends



From cultural influences to environmental considerations, the surface industry has become an exciting creative arena for trend developments. The desire for creating spaces that stand out, delivering on both aesthetic and practical qualities, has driven the demand for tiles that make unique and memorable design statements. From botanical-inspired patterns to modern terrazzo finishes, **CTD Architectural's** extensive product portfolio provides architects and designers with more choice than ever when it comes to specifying ceramic and porcelain tiles for residential, commercial and hospitality projects.

0800 021 4835 www.ctdarchitecturaltiles.co.uk

A new generation of sensors



Sontay, a leading manufacturer of field control devices, has launched a new generation of devices for Air Quality, CO₂, CO, Relative Humidity and Temperature sensing and measurement. Built on the company's proven technology, this innovative range is the most advanced, accurate and easiest to install sensor platform available on the building controls market. Sandy Damm, managing director at Sontay commented, "Our sensors have an unrivalled reputation for reliability and high quality and now we have taken them a step further, adding greater functionality and benefits for integrators".

www.sontay.com

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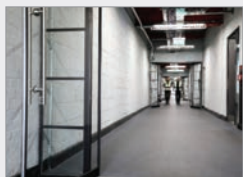
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Attraction® provides fast track flooring



When the Formica Group North Shields factory had some serious issues with an existing corridor flooring, the company turned to a local flooring supplier to suggest a suitable solution, which ultimately saw Formica Group specifying 300m² of Attraction® fast track vinyl floor tiles from international

flooring specialist Gerflor. Gerflor's Attraction® range is a perfect solution for renovations as its interlocking tile edge design delivers a fast track, loose lay flooring installation or replacement.

01926 622600 www.gerflor.co.uk

Rochcare wow residents with care home

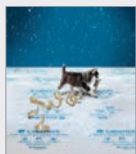


Pendle Brook Care Home based in Oswaldtwistle is a purpose-built facility developed to create a safe yet stimulating environment for the residents and their families. Confident in Polyflor's ability to meet the high demands of the environment, an array of their LVT and Vinyl products were specified throughout. Polyflor's Expona Commercial LVT

range was selected for areas such as the cafe, dining room and onsite hairdressers which were sure to see heavy footfall and spillages. The slip resistant benefits of Polysafe Wood FX made it the obvious choice for the 1st and 2nd floor to support those living with dementia.

0161 767 1111 www.polyflor.com

Using CaberFix X-Treme Tape in winter



What is CaberFix X-Treme Tape from Norbord? CaberFix X-Treme is a tape designed for use with CaberDek chipboard flooring in cold and wintry conditions. X-Treme tape can be applied in the same way as CaberFix Tape – applying it over the joints of CaberDek film and over the boards' exposed edges on the perimeter to create a waterproof chipboard floor deck. And what makes CaberFix X-Treme Tape so good for cold conditions? It contains a super strong acrylic adhesive that has a high initial tack and will not crack in extreme weather conditions, keeping the board waterproof.

www.norbord.co.uk

Crittall screens at the heart of new centre



An ambitious project to boost the creative industries sector in the north-east of England has used Crittall Innervision steel screens and doors as a key design element. The two parts of the building are linked by a covered courtyard, described as a

multi-function open social space which is where Innervision steel screens and doors, based on Crittall's Corporate W20 profiles, have been used. Acting as glass walls for individual workspaces, they also look out onto the social space to encourage collaborative partnership working and interaction between the new occupants of The BIS.

01376 530800 www.crittall-windows.co.uk

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www.simonswerk.co.uk



Mapecoat ACT



Mapei's Mapecoat Act range offers advanced coating technology, and is comprised of semi-gloss enamels for interior walls suitable in healthcare facilities or food environments. Mapecoat Act 021 and Mapecoat Act 196 contain BioBlock® technologies which actively

block the formation and spread of mould, making them suitable to areas prone to bacterial attack. Reduce maintenance costs with low dirt pick-up and excellent resistance to cleaning cycles. Available in over 1,000 shades from the Mapei Master collection, Mapecoat ACT provides a smooth and uniform finish.

0121 508 6970 www.mapei.co.uk

New Fastflow Quickdry eggshell



Crown Trade has extended its popular water-based Fastflow Quick Dry range of trim products to offer even greater design flexibility and provide specifiers with a classic low-sheen eggshell finish. Benefitting from Crown's advanced innovative Breatheasy® technology that has been used throughout the Fastflow range, the new water-based eggshell option's

low-odour formulation lends itself perfectly for work on projects where disruption needs to be kept to a minimum such as education and healthcare facilities. The product's quick drying properties can also help reduce time and labour on site, allowing rooms to be reoccupied sooner.

info@crowntrade.co.uk

Acoustic doors – the key to hotel peace



Ordinary fin or brush seals simply will not do the job of blocking sound from passing through the gaps around the door so Norseal supplies a range of acoustic seals solutions including its feature-packed Complete Sealing System which provides smoke and draft

protection as well as acoustic insulation around the full perimeter of most hotel doors. The Norseal NOR810 Automatic Drop Seal is fitted to the bottom of the door providing the most durable acoustic sealing profile to stand up to the wear and tear that hotel doors receive.

01661 830088 support@norseal.co.uk

Steel doors complement design aesthetic



Saving space while providing a contemporary industrial aesthetic, internal steel sliding doors from Steel Window Association members provide solidity without being visually overpowering. The W20 single glazed profiles ensure good sight

lines from one area to another, compared to potentially chunky proportions required with timber or aluminium, while allowing maximum light transmission. The slender and robust steel frames are often divided into small panes for aesthetic reasons and are ideally suited to high-end, design-led residential and commercial schemes.

www.steel-window-association.co.uk

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Aqualay is a high performance pipe carrier panel designed for use with water based underfloor heating systems. Aqualay panels are produced with pre-set pipe channels set 100mm, and 150mm centres and comprise of 3 different panel options; Aqualay Master Panel, Aqualay Universal Panel and Aqualay Multiflow Panel.

For more information visit www.pcsboard.com

All wrapped up



Washroom and joinery manufacturers, Washroom Washroom and Cre8 Joinery Solutions, are proud to launch WeIntegr8 – a brand-new division specialising in packaged contractor solutions. WeIntegr8 will offer contractors a full turnkey fit-out service ideally suited to commercial, residential, leisure or education projects. By bringing together the wealth of expertise of both Washroom and Cre8, WeIntegr8 has been created to provide a full package of services from design to installation to provide contractors with a single point of contact on each project undertaken.

www.weintegr8.co.uk

Saniflo improves scope of boat house



Saniflo UK has helped to increase the versatility of a Norfolk boat house. The Saniflo 110 has enabled the installation of a drainage system allowing the creation of a room above the boat storage complete with kitchen and bathroom. Sitting approximately 4m below and 65m from the drainage level of the on-site sewage treatment plant, discharging black and grey water waste requires a pump capable of lifting waste up and along soil pipes to meet the waste treatment plant. The Saniflo 110 is the ideal size to lift the grey and black waste and discharge the waste via 40mm pipework up to the treatment plant.

020 8842 0033 www.saniflo.co.uk

Design and quality at an attractive price



Kaldewei presents a flexible solution suitable for both small bathrooms and spacious family bathrooms. Kaldewei's Cayono bath comes in five different sizes – 150 x 70 cm, 160 x 70 cm, 170 x 70 cm, 170 x 75 cm and 180 x 80 cm. Thanks to its spacious interior, the Cayono provides ample room for a relaxing

bath in any size. Its smooth base can optionally be provided with an anti-slip enamel finish for comfortable and safe showering.

01480 498053 www.kaldewei.co.uk

Crown reveals its new seasonal colours



Crown Paints has launched its new collection of colour trends for the 2019 autumn and winter season, helping to inspire new ideas in interior design. Each of the individual schemes has been given a distinct and inspirational identity, with hero shades, complementary tones and style suggestions included so they can be easily adapted to suit a variety of projects and different personal tastes. The three new trends that are set

to take the rest of 2019 and beyond by storm are 'Botanical Noir', 'Unprocessed' and 'Pigment'.

www.crowntrade.co.uk

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b.link/CareShower

Housing with care – think outside the box to design in cost & health benefits



The use of assistive technology in housing is receiving additional relevance with the publication of new research and strategies. According to Housing LIN, housing developers and providers can deliver enhanced benefits for residents by constructing more housing with care type properties. Toilet assistive technology manufacturer Closomat is urging that helpful fixtures are utilised to simultaneously deliver that independent living with care and reduce demand on healthcare services. Robin Tuffley, Closomat marketing manager said: "Provision of equipment such as toilet lifters and/or wash & dry (smart) toilets reduces reliance on care intervention, enabling people to undertake intimate tasks with little – or no – help. It improves hygiene and thus health. It reduces risk of falls. All are factors that would otherwise require healthcare intervention." Closomat wash & dry toilets feature integrated douching and drying triggered by user preference: when the user remains seated and triggers the flush mechanism, the Closomat flushes and simultaneously washes the user's bottom, followed by warm air drying. Closomat is already the 'go to' provider for accessible toilet provision in housing environments.

0161 969 1199 www.closomat.co.uk

Stertil FlexiEdge door supports 24/7 production of dairy products



Stertil Dock Products has installed a FlexiEdge fast-action door to support round the clock operations for a global leader in the production of milk and dairy products.

Measuring 2000mm wide x 3500mm high, the Stertil FlexiEdge fast-action door, type Power M2, was specified to provide ready access to a refrigerated area within the site's butter loading dock. The new Stertil door replaced an existing solid sliding door that was heavy and difficult to open and close. By contrast, the new Stertil FlexiEdge door, which incorporates an insulated curtain, is lightweight, durable and easy to operate.

Stertil's FlexiEdge range comprises 16 models of many different types and styles including internal and external doors, all-weather doors, cleanroom and freezer/coldroom doors plus emergency exit doors incorporating breakthrough curtains. Standard models are available in widths up to 11 metres and heights of 5.5 metres while bespoke and special sizes may be specified. Also, the range provides standard travel speeds up to 2.7 metres per second (opening) and 1.2 metres per second (closing) to shorten work cycles and increase productivity.

0870 770 0471 www.stertil-dockproducts.co.uk



Beautiful spaces made beautifully accessible

The stunning Autograph and Heritage Collections by Lyfthaus. Bespoke disabled access platform lifts, designed and crafted in Cambridge, England. Architecturally inspired, beautifully engineered.

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Lyfthaus

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01440 731111 www.lyfthaus.com

Lifting architectural barriers

Sean O'Sullivan explores how platform lifts can overcome architectural barriers and help create inclusive design solutions within workspaces



Achieving the Government's target to get one million more disabled people into work by 2027 is largely dependent on the number of companies that are making reasonable adjustments and also the availability of accessible offices.

The challenge begins with having clear access into office buildings from street level as many have steps, which is true of most period style properties. Installing a stair riser is one answer but perhaps not the most dignified way of entry. A ramp or an open style platform lift that gives a better user experience isn't always possible due to space restrictions.

As an alternative, there are now different types of platform lifts to reach heights of

two metres, which can be used for internal and external applications. For example, we recently installed a cantilever platform lift to overcome steps from the forecourt to the main entrance door of a multi-let commercial five-storey Regency style property. When not in use, this type of lift remains flush with the surrounding floor surface until it is activated. With a touch of a button, the cantilever platform lift will rise out of the floor and over the steps until it reaches the next level. It can then be lowered back into the pit using the control panel.

The other option is a two in one platform lift that can be configured as a flight of steps and transformed into a platform lift. This type of lift is particularly effective in tighter spaces and it can be easily integrated



Inside an office building, physical barriers like steps and differences in level can be overcome with a variety of different types of platform lifts – without affecting the integrity of the building

industrial-style working spaces which are DDA compliant.

We also worked with ThirdWay Interiors to provide a bespoke access solution that would blend in with the appearance of Schueco London's new multi-purpose premises including offices, meeting rooms, conference facilities and a showroom. With a multitude of functions being spread out over the different levels, a universal design was required to create an accessible environment. The chosen design needed to reflect the quality of the brand. It was important that the materials used for the platform lift matched the monochromatic colour palette, which had been selected as a simple backdrop to showcase Schueco's own products. Using a black finish with a silver trim for the platform lift and creating two metre high steel shaft panels, for a seamless effect, achieved this goal.

"The new lift has perfectly fitted within the sleek monochrome look of the showroom. The matt black finish allows it to blend into its environment and the glass fronted entrance looks clean and modern – a great match for this scheme," concludes Martyna Skoczek, technical design manager of ThirdWay Interiors.

Bespoke installations offer complete design flexibility and provide an opportunity for companies to personalise platform lifts with brand colours and integrate them with an existing or new office interior. While this may be easier in a new build or modern building, giving careful consideration to the right design will allow the clean lines of a modern platform lift to blend sympathetically into a historic building. In this way, creating access to overcome architectural barriers within an older style building without disturbing the fabric, integrity or aesthetic appeal of that building should be totally achievable.

Sean O'Sullivan is managing director of The Platform Lift Company

with existing steps by using the same material for the tread and handrails.

Inside an office building, physical barriers such as steps and difference in level can be overcome with a variety of different types of platform lifts – without affecting the integrity of the building. There is also a huge range of materials available that can blend in with both modern and traditional interiors, making it easier to integrate a platform lift to create an inclusive environment. When it comes to a complete office fit-out, there are a large number of possibilities and the results can be highly impressive.

ThirdWay Interiors appointed the Platform Lift Company to come up with an unobtrusive design solution that would fit in with the modern office interior, and mirror the sophisticated upmarket appearance of Wharf Studios commercial units in London. The scissor lifts – featuring a black and stainless steel finish with glass panels – have remained in keeping with the balustrading at the entrance of the office building. Equally, the platform lifts finished in black with stainless steel match the ultra-modern interior design of the office units, and the glass shafts create a seamless finish. The self-contained office units are now complete and boast modern,

Resiblock impresses in Preston



With Block Paving beginning to fail, and two major roundabouts now considered a risk to road users, Preston City Council turned to the expertise of Resiblock to find a sealing solution to ensure the longevity and safety of the councils' roads. The presence of weed growth between the mortar jointing had caused the destabilisation of the pavers which were falling into the road, but with refurbished paving installed with new jointing, Resiblock were able to specify the use of Resiblock Resiecco to ensure long-term stabilisation and protection.

mail@resiblock.com

A guide to reducing ligature risks



A new guide on anti-ligature solutions in mental health and secure sectors is now available to download. A need has arisen for psychiatric wards, high-security units, and prisons to reduce ligature risks, which is currently accounting for 77 per cent of suicide cases in the UK. Despite this alarming statistic, there is a lack of information on regulations and best practices.

Contour have aimed to address this in their free guide, which covers: key definitions; statistics; official guidance and risk control. Download your free copy today.

01952 290 498 www.contourheating.co.uk



#10 tips to give customers a useable, accessible toilet

The potential risk of flushing £0000s down the toilet can now be avoided for venues wanting to open their doors to disabled customers. Closomat, one of the country's leading supplier and installers of Changing Places assisted accessible toilets, has produced a quick reference checklist to help all involved in the design and provision of the facilities get it right. The guide is available for free download from the company's website via the resources/ away from home tabs. "Working as closely with those that need Changing Places toilets as we do, we get to hear about the spectrum of problems they encounter, even though a venue has tried to open its doors to them," explains Kelvin Grimes, Closomat away from home project manager. "Hopefully our guide will help get it right going forward."

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New car park for Vale of Rheidol Railway is just the ticket

Green-tech has supplied the materials for a new car park at the Vale of Rheidol Railway in Aberystwyth, Ceredigion.

The new car park was funded through the Welsh Government Rural Communities – Rural Development Programme 2014 – 2020, which is funded by the European Agricultural Fund for Rural Development and the Welsh Government (EAFRD).

Local company Tregaron Trading Services (TTS) completed the construction of a new

car park for the Vale of Rheidol Railway at Devil's Bridge which boasts space for 78 vehicles including disabled parking with an accessible path to the station and four coach bays.

Green-tech supplied 1927sqm of BodPave® 40 porous pavers which were used to form the new carpark. This is a cost-effective ground reinforcement solution - paving grids that simply connect together and can be filled with either sand, gravel or topsoil and seeded for use as grass pavers which provides a visually pleasant and stable surface structure through which grass can be grown, or filled with an angular gravel for use as a gravel retention reinforcement surface. Bodpave® 40 offers a load bearing capacity of up to 150t/m².

Alun Hughes, Engineer for contractor Tregaron Trading Services Ltd said, "The existing railway car park no longer met the needs for the number of tourists who were visiting Rheidol railway and visiting Devil's



Bridge. We found Green-tech really easy to deal with and found their BodPave® 40 to be a great product. It was easy to handle, simple to install and incredibly effective. Our client was delighted with the finished car park, as were we. I would definitely recommend Green-tech and this product."

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Energy Efficiency

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The **'wrong' office temperature** ranks as the No.1 employee complaint – and costs UK workers **16 minutes** in **lost productivity** per day! The Radiana zone control system allows you to **maintain different temperatures** in different areas of the room.



Thermal Comfort

No cold draughts, **no** excessive air movement, **no** noise or the **dehumidifying effect** of traditional systems.



Health Benefits

Radiana has developed a complete range of Air Treatment Units (ATU) **specifically designed for radiant cooling** to ensure **increased** indoor air quality and **reduce** the spread of dust, allergens, and germs.



Carbon Footprint

Radiana uses **reduced** amounts of refrigerant gas because it's only used in the heat pump and **does not** circulate it within the building. Less gas means **lower leakage** volumes and therefore reduced contribution to **climate change**.



Heat Island Reduction

Our cities are getting **hotter**; all air systems heat up the external environment by removing the heat from inside and pumping it outside. Because Radiana requires a **smaller heat pump** and operates it **more efficiently**, **less heat** is emitted for the **same amount of cooling**.



Building Aesthetics

With the Radiana system, ceilings don't need to accommodate fan coils or cassettes, allowing an architect to **expand floor-to-ceiling height** and **utilize the additional space**.



Fast and Easy to Install

The installation of Radiana climate control is **quicker and easier**. Radiana has developed a prefabricated sandwich panel that can be **installed directly into a ceiling gridwork**.



Low Maintenance

The Radiana system uses significantly **less moving parts** meaning **less cleaning**, **less maintenance** and ultimately **lower** operating costs.

WELLv2™

Credits with Radiana

WELL™ is the leading tool for advancing **health and well-being** in buildings globally. The WELL v2 standard gives specific **credits to radiant cooling** and Radiana can give you these credits.