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NATIONAL AUTOMOTIVE INNOVATION CENTRE, WARWICK

Cullinan Studio's design for the University of Warwick's cutting-edge research facility for future vehicles combines collaboration with privacy

KING'S COLLEGE SCHOOL SPORTS CENTRE, WIMBLEDON

A new sports complex that features an award-winning timber roof

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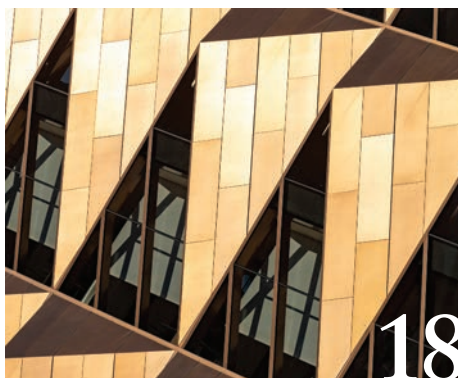
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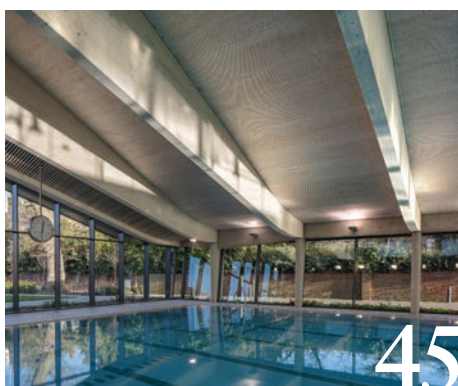
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architectsdatafile.co.uk and @architectsDF

Managing Editor

James Parker
jparker@netmagmedia.co.uk

Publisher

Anthony Parker
aparker@netmagmedia.co.uk

Editorial Co-ordinator
Shelley Collyer

Editorial Assistants
Tom Boddy

Editorial Contributor
Roseanne Field
Jack Wooler

Studio Manager
Mikey Pooley

Production Assistants
Georgia Musson
Kim Musson

Account Manager
Sheehan Edmonds

Sales Executive
Steve Smith

PR Executives
Suzanne Easter
Kim Friend

Audience Development Manager
Jane Spice

Managing Director
Simon Reed

Advertising & Administration
t 01435 863500
info@netmagmedia.co.uk
www.architectsdatafile.co.uk

Press Releases
editorial@netmagmedia.co.uk

Subscription Circulation Enquiries
info@netmagmedia.co.uk

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



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FROM THE EDITOR



Now that life is beginning to return to normal (although you may be employing a very ‘mixed’ strategy in terms of your work location), it’s time to once again confront another, bigger picture. The climate change agenda, unlike hopefully Covid, is not going to retreat to a dormant threat – it’s going to slowly intensify as we approach the seemingly mythical zero deadline in 2050.

We may all be feeling ‘crisis fatigue,’ because we have been in a state of crisis of some kind for so long, meaning that dynamic action may seem hard to generate, on a consistent basis. But that is what is needed – in terms of the numbers of interventions to our building stock old and new in order to make the difference.

And Passivhaus may well be the answer, or at least the standard which pulls up the rest of the industry behind it. It’s a ‘no-brainer’ for the converts but also an increasing cohort of agnostic professionals, and clients, who know that buildings’ energy use, in a fossil-fuel-free future, is the elephant in the room that must be at least, sedated, if not altogether captured.

Passivhaus’ higher insulation and generally more robust construction approach means a cost uplift of between 1.1 and 4.3 per cent. This is a difficult pill to swallow for some clients in the current situation, particularly in areas like retail, although arguably as ‘open’ buildings they’ll never really be a true fit for Passivhaus. But with a focus on reducing whole life costs such as bills for owners, and addressing the Future Homes Standard, not to mention the Government’s new interim 78 per cent carbon reduction target in 2035, it seems a cost we should bear. The point is, will the Government underwrite projects, perhaps in volume housebuilding or precarious sectors like retail, to back up its goals?

Air quality is another issue that is increasingly in focus, and Passivhaus requires you to recover not only heat but to ventilate with fresh air, so unlike other low energy measures, air quality is ‘baked in.’ Plus there’s also the scope to export green energy to the national grid, which many Passivhaus owners are already enjoying.

Take-up is still disappointingly low in the UK however, compared with other countries, despite the established benefits and the capital wealth we possess. Our White Paper report on page 25 looks at the reasons for this, according to the architects we surveyed, but also at a range of other factors which make Passivhaus a wise, but sometimes challenging choice for future construction. Our survey also shows that it could help restore architects’ roles to a more central voice in projects, because every aspect of the design is taken into account as crucial to the overall performance, and this needs professional scrutiny and control throughout.

The map to zero carbon – Passivhaus – exists, whether or not you choose to follow it all the way to the destination.

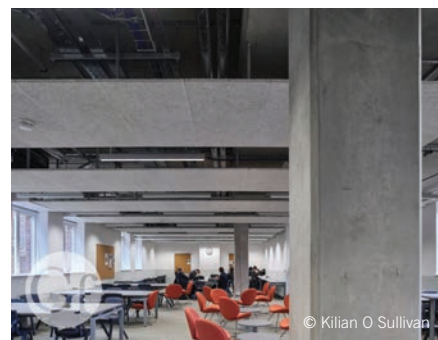
James Parker
Editor

**ON THE COVER...**

Designed by Cullinan Studio, the National Automotive Innovation Centre at the University of Warwick has one of the world’s largest engineered timber roofs, and has picked up several awards since its completion.

Cover image © Hufton+Crow

For the full report on this project, go to page 37



EDUCATION

Bell Phillips completes contemporary grammar school extension in Kent

Bell Phillips Architects have completed a major new extension to The Skinners' School in Tunbridge Wells, Kent – the practice's first completed education building.

Arranged over three floors, the 1,187 m² new building responds to expanding pupil numbers, housing a sixth form centre, English department and library. The design has been developed from a "careful analysis of adjacent Gothic revival buildings to produce an architecture that is both highly contemporary and respectful of its historic context at this prestigious school," said the architects.

Established in 1887, the site evolved over time into a campus made up of a series of individual, un-linked buildings. A number of the later additions "failed to match the striking composition of the original pair," said the architects. To reintroduce architectural integrity across the site and form a legible whole, Bell Phillips have added an element that "deftly responds to the existing context alongside

broader improvements to the site's landscaping strategy."

The ground floor layout helps to "tie the new building into the existing spatial arrangement and most importantly the school's Upper Yard," which is an "important social and recreational space." An essential part of the brief was to ensure the Yard continued to function as a social hub, as such Bell Phillips' new addition "reimagines it as both a point of arrival and place of transition."

The ground floor is occupied by a sixth form centre which provides "variety and flexibility": quieter, more intimate study spaces are kept separated from more informal study spaces – directly linked to a breakout area. The first floor contains the English department, and the library is located within the tall pitched roof volume on the top floor, lined with timber and forming a light and spacious learning environment.

At all scales the facades "draw on motifs and architectural conventions

from the existing Victorian buildings to forge a contemporary architectural language and create a clear visual interdependence," said the architects. The "dominance of vertical proportions and strongly articulated gable ends" reflects the approach on the Main School building. Details such as window jambs and soldier courses respond to the existing features.

The new building includes a "high-specification built envelope," including solar control measures and good daylight infiltration to reduce reliance on artificial lighting. A high efficiency HVAC plant system exceeds Part L requirements and works in tandem with an array of roof mounted photovoltaics.

Headmaster, Edward Wesson said: "The learning spaces create through their design an atmosphere, visual impact and sound quality that encourages calm academic purpose. In that sense, in a boys' grammar school, it has the potential to be transformative."



HEALTHCARE

HLM 'ecosystem' for London Institute for Healthcare Engineering gets green light

Lambeth Council has granted planning permission for the HLM Architects-designed London Institute for Healthcare Engineering (LIHE), a collaborative initiative led by King's School of Biomedical Engineering & Imaging Sciences with the Guy's and St Thomas' NHS Foundation Trust.

Embedded within the St Thomas' Hospital campus, the building will bring together research excellence and the trust's clinical practice, together with the 'medtech' sector's "commercial innovation, power, and talent, engaging multinationals, SMEs, and start-ups simultaneously," said the architects.

The project aims to create a "seamless pipeline to develop novel medical technologies from conception to commercialisation, and in turn transform patient care by accelerating the translational

pathway and enabling early NHS adoption of technology."

The Institute's initial focus will be on key clinical challenges in cancer, neurological, cardiovascular, ophthalmology, oral health and prenatal conditions, due to their "high disease burden and potential for transformation through healthcare engineering."

The site is situated at the southern end of the St Thomas' campus, elevated above the Albert Embankment, overlooking the River Thames and many of London's cultural landmarks.

HLM Architects has led on all aspects of the design, which includes research, office and meeting space; teaching and learning space; LAB and testing sites; and shared public space as well as areas for events and socialising.

The proposal also incorporates a landscaped roof terrace accessible via an event space and, at ground level, provides a "high-quality public space and links into the wider campus."

Philip Watson, director and head of design at HLM, said: "The Institute will be located in a carefully crafted piece of contemporary architecture blended within an historic area. The design will allow research and learning to thrive." The layout features open floor plans connected by a "giant" staircase to visually and physically integrate levels and "encourage an interactive environment." "Externally," said Watson, "every last detail has been meticulously considered to ensure appropriateness in scale, massing, and materials in order to complement the local setting with the adjacent listed buildings."

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SUSTAINABILITY

Perkins&Will offers “transparency” on zero carbon goals shortfall

Six months since the launch of its pledge to deliver all internal fit-outs of offices and commercial buildings at net-zero embodied carbon, the London studio of architecture and design firm Perkins&Will has admitted more work is needed to achieve its 2021 targets.

The firm said it recognised the need for “full transparency on our progress, something we feel is often missing on some sustainability pledges. We know some targets set out within the Net-Zero Now manifesto will require more work to stay on plan.”

Adam Strudwick, principal at the firm, said: “We are already a quarter through 2021, and there is still a long way to go for us to be confident that we will meet the target that half of our projects will be designed to be 100 per cent circular by the end of this year.” He added: “We estimate we are ten per cent to the target. We are

also working harder on what we mean and can achieve through embedded circular design in interiors.”

He also confirmed that the firm hasn’t been able to complete a detailed Stage 2 report on every project started from October last year as pledged in its manifesto. “This was mainly down to the technical requirement being in place at the right time through the project flow,” said Strudwick, “and it’s something we need to improve on in Q2.” Since October 2020, 25 per cent of projects have had a full report produced.

The firm has launched a database of products to enable designers at its London and Dublin studios to specify products that support its net-zero interior pledge. It has been developed collaboratively with suppliers to “capture products from suppliers of all sizes, and to ensure we measure contributions in a fair and

equitable way,” said the practice. Products and materials are scored across metrics ranging from circular principles, to workers rights and the diversity of the supplier’s organisations.

Perkins&Will wants the database to be the “go-to site for sustainable and circular designed products and materials.” Asif Din, sustainability director at the practice, commented: “There is a need to provide clear definitions of circular materials processes within a carbon analysis, which is why we are working with the supply chain to learn what is possible in suggesting initial metrics and definitions. We aim to eventually make this database accessible to all.”

The practice said it’s “on track” to meet its goal of all projects being net-zero embodied carbon by 2030. The firm said it “realised it needed to go deeper than focusing on Environmental Product Declarations alone. While EPDs are vital, it is equally essential that small manufacturers with newer solutions who may not yet develop an EPD for their project are also supported.”



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VIEW POINT



Architect Richard Harrison (of the Association of Consultant Architects) reviews the scrutiny the industry has been under since Grenfell on accountability and decision-making on high rise projects, and whether architects' roles could be strengthened

Three and a half years after the Grenfell fire, questions are still being asked about the safety of our larger residential buildings. Remediation liability issues are ongoing, affected residents remain fearful in their homes and the buildings insurance industry and mortgage lenders have restricted the residential market.

Part 2 of the Grenfell Inquiry into how the tower was covered in combustible materials during a refurbishment, breaching Building Regulations, commenced in January 2020. It was paused by the Covid-19 crisis, but re-started on 12 February 2021 and is ongoing.

In parallel with the Public Inquiry, Dame Judith Hackitt delivered her independent report 'Building a Safer Future' in May 2018. It contained 109 recommendations, 56 for government action and 53 for the industry to respond to. The Construction Industry Council galvanised around this, and hosted the responses for the industry.

A key failing highlighted by Hackitt was the lack of adequate competence across the entire industry. In 2018, Hackitt was appointed to chair the Building Safety: Industry Safety Steering Group (ISSG). This reported, in July 2019, on necessary cultural changes to the industry covering competence, leadership, procurement and products. Its final report, 'Setting the Bar,' was published in October 2020.

The MHCLG published the Draft Building Safety Bill in July 2020 and consultation on the proposed changes was completed in January 2021 and the Minister is now considering the next stage.

Architect or 'Master Draughtsperson'?

Was it not always the architect's role to certify a completed project's compliance with Building Regulations? Have we more

recently been re-designated as the 'master draughtsperson' and shunted off site while something else gets built?

Under the proposed Building Safety Bill, the building regulator may permit/require the proposed appointment of "prescribed persons," including designers for building projects, as well as the principal designer.

Local Authority Building Control will manage prescribed persons, under an amendment to the Building Regulations in the Draft Building Safety Bill Section 3, Clauses 38 and 39. Under Part 5, Clauses 111 and 112, powers to ensure that architects are competent will be delegated to the Architects Registration Board (by amendment to the Architects Act 1997).

While initially intended for higher risk projects, this prescription could in time apply to all persons appointed under all building projects. Architects may in future be registering under a Competent Persons Scheme in the same way as electricians and heating engineers, and self-certifying. Is this an opportunity for architects to resume their role as the lead designer from inception to completion and beyond, either should they wish, or be required to do so?

Competence as principal designer

Can a single person be competent as the principal designer to sign off a complex building? The short answer is yes, under Clauses 38 and 39, if the proposed legislation is passed.

A key dutyholder role of the principal designer is to certify that the completed project complies with Building Regulations, and to do so the principal designer has an implied responsibility to ensure that all aspects (building design, structure, fabric and services) comply.

It has been argued that no designer can have all the skills necessary to certify

It has been argued that no designer can have all the skills necessary to certify an entire design... and this discounts an individual for the role

an entire design unless they are a multi-disciplinary practice, and therefore this discounts an individual for the role.

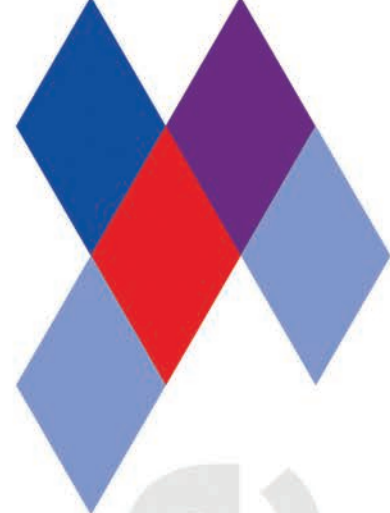
I suspect this is not what is intended by the proposed legislation. The dutyholder roles are intended to be 'high level' and 'managerial' – ensuring the frameworks have been complied with, not to absolve other designers from their individual roles, duties and responsibilities. The dutyholder may have a responsibility to ensure that those working on the design teams are competent to do so but not necessarily for their output.

Remember that the principal contractor would certify that the completed building project complies with and has been built in accordance with the design. This role is also intended to be 'high level' and 'managerial' – ensuring their frameworks have been complied with, not to relieve other contractors from being competent to fulfil their respective contracts and specialist certification.

Higher risk projects

A higher risk project is likely to be a significant project. It is highly unlikely that this will result in the appointment of a sole practitioner, simply because of the quantity of work necessary to fulfil the project design.

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The client will have options to appoint an adequately resourced small, medium or large practice or firm as the lead designer. An individual owner, partner or employed individual within those organisations may be authorised by the building safety regulator to carry out the role of principal designer.

If that is not the case, the client may elect to commission a separate individual or organisation to act as principal designer. Ideally, the lead design team appointed on a project will also assume the role of 'principal designer' under a dual appointment and the principal designer/lead designer will be:

- appointed from inception to completion and also post completion
- a suitably qualified and experienced designer
- registered by the building safety regulator to fulfil the role.

This dual appointment would:

1. Focus clients on their key role in procurement at project inception, including selection of the principal designer, design team & procurement strategy
2. Reduce fragmentation on the design control of a higher risk project, i.e. where multiple lead designers are appointed

in subsequent work stages to partial services, any changeover increases risk of discontinuity

3. Keep those appointed to lead the design from inception to the completion of the construction stage
4. Reduce risk during site operations in managing change in design or specification during construction
5. Ensure the lead designer is involved in site operations and inspections
6. Ensure that the 'Golden Thread of Information' is managed by the lead designer and handed over in appropriate detail to the building safety manager and tenants/occupants
7. Improve the likelihood that a designer is consulted during occupation on maintenance, repair, or refurbishment of the building during its lifetime. This, I have argued, should be mandatory.

Could an individual be principal designer under a separate appointment?

Yes, but ideally the principal designer is embedded into the lead design team throughout the project in order to ensure that the key concepts in the project design are

sustained in detail, with integrity, and duly certified at the relevant project gateways.

Without this, there are dangers of having two designers appointed with parallel roles with potential conflicts, to the detriment of the project and its progress.

Insurance

As the principal designer role will be mandatory, insurers will have to respond accordingly. I believe that clients, their designers, their inspection and construction teams will place an onus on collaboration, which will drive the insurance industry towards project insurance and collaborative contracts. It is a potentially new income stream for insurance, but has to be counterbalanced by more realistic levels of PPI – for designers and construction insurance alike.

The reality is that the whole team shares the risks on construction projects. If we are to successfully emerge from a litigious and blame-ridden industry, we may soon be seeing insurance representatives becoming more involved at all stages of a project.

Richard Harrison is a council member of the Association of Consultant Architects

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SITE LINES

Finding the perfect blend

Co-located developments, an emerging trend, could help solve industry challenges by satisfying demand for both industrial and residential developments at a stroke. Peter Watkins of HDR | Bradbrook Consulting looks at the inherent design challenges

A co-location can best be described as a mixed-development model, where new homes lie in close proximity to other classes of use, such as light industrial, retail or offices.

There are certain design and engineering challenges around the integration of the different typologies, particularly in London. Firstly, there is the issue of the demand for housing and industrial space. With limited land availability in London and the growth of e-commerce over the past five years, industrial developers are competing with residential developers for land.

As the need for housing and industrial space in cities grows,

we're starting to see the two sectors come together to explore opportunities to co-exist and operate harmoniously. The boom in demand for industrial floor space is being fuelled primarily by evolving consumer behaviour. There is also an increasing demand for last-mile logistics, with retail being driven by e-commerce.

Landowners in London are considering the consolidation of assets to maximise land value, exploring the viability of co-located developments with multiple uses, either by refurbishment to free up lettable area, or demolition in part or whole to accommodate other uses. The population in London has grown by 7.5 per cent in the





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When these uses are combined, the most efficient structure is not that obvious. The result in theory might be a hybrid steel and concrete-framed structure, creating added complexity in the design

past five years to an estimated 9.3 million, and it is predicted to grow by a further 5 per cent in the next five years.

Structural considerations

Over the last few years of my career, I have been involved with assessing the structural viability of building high-rise residential apartments over a multitude of different uses, from supermarkets and batching plants to bus garages, railways and industrial warehouse units. Each site is different and has its own unique set of design challenges and constraints.

Based on my experience, there are a number of key technical challenges when designing and assessing the viability of an industrial/residential co-located development. These include working out how you blend, integrate or separate the facades between each use, how you maximise the operational efficiency, without compromising other parts of the development, and how you incorporate amenity space and landscaping, while keeping weights to a minimum.

Then there is the issue of providing separation for pedestrian safety without compromising the operational use as well as providing adequate fire protection, ensuring safe evacuation measures are in place for the residents and operators. Noise and potential vibrational effects generated by the industrial use need to be considered in order to keep the impact on residential apartments within acceptable limits.

Increases in traffic flows also need to be considered to provide separation between the residential and industrial uses. Government and local authority targets in terms of reducing greenhouse gas emissions and net-zero carbon targets are further key considerations.

The challenge for structural engineers is to seamlessly blend differing structural solutions. Industrial-type buildings are typically steel frame, due to the need for clear internal spaces resulting in long-span structural elements. Lateral stability is usually provided by a combination of cross-braced bays and portal frames.

In contrast to industrial buildings, multi-storey residential buildings are typically constructed with a reinforced concrete

frame, with flat slabs and blade columns. The spans between columns are relatively modest and columns can be hidden within party walls. Lateral stability for this type of development is usually provided by reinforced concrete lift/stair core walls. When these uses are combined, the most efficient structure is not that obvious. The result in theory might be a hybrid steel and concrete-framed structure. This creates additional complexity in the design, in particular at the interfaces between materials.

The interface between two materials is likely to occur at a transfer structure over the industrial space. Structural elements supporting multi-storey residential apartments over long-span industrial spaces can be significant in terms of size and cost.

It is important when assessing the possible solutions to consider all viable forms of construction. Not just material cost, but also buildability, material weight, programme and the distribution of services. Collaboration with the architect is essential to maximise flexibility of the industrial floor space and to reduce structural complexity by aligning cores and reducing transfer elements. Consideration should be given to the use of high-strength and lightweight materials and facades, as the magnitude of loading on structural elements can be significant. Other engineering challenges include structure-borne vibration generated by the industrial operations, which is a potential risk to the residential occupants.

There is also the sustainability impact to consider. Co-location developments, due to their complex and heavy structural elements, will result in increased levels of embodied energy and carbon, if not efficiently designed. Structural engineers can influence the design to improve the efficiency of a building. The use of lightweight forms of construction, such as timber or light-gauge steel where viable, will minimise the building weight to reduce the extent of concrete foundations or transfer elements. Optimising structural column grids to achieve thinner slabs, using post-tensioned slabs, and specifying high-strength materials and recycled aggregates, will all result in less concrete being used and a greener, leaner structure.

As for the future of colocation, our industry is currently facing huge challenges in tackling a global pandemic, the climate emergency and – in the UK – Brexit. The uncertainty has slowed the construction industry. I'm optimistic that, as a resilient profession, the wheels will keep turning, the future for the mixed-development model is bright, and this will continue to be driven over the next few years by the demand for housing and the growth of e-commerce. As technology and e-commerce continue to grow, the next big challenge for structural engineers could be 'multi-storey beds over multi-storey sheds.'

Peter Watkins is a director at HDR | Bradbrook Consulting

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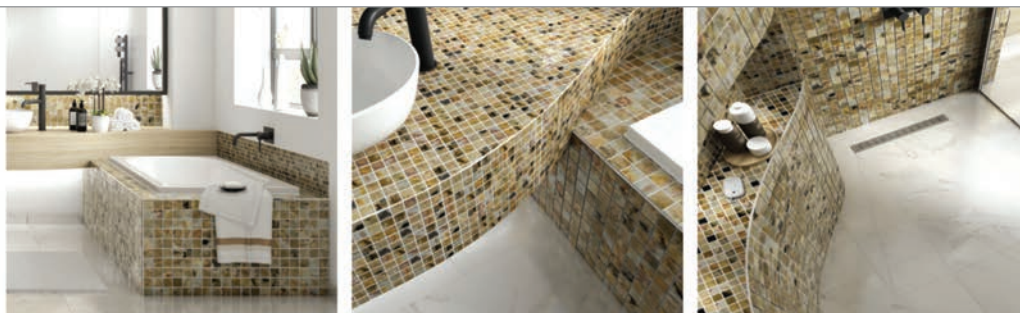
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INTERNATIONAL FOCUS

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



JETBRAINS ST PETERSBURG OFFICE, RUSSIA UNSTUDIO

UNStudio has designed Czech software developer JetBrains' new St. Petersburg office, transforming their current premises into a "modern, immersive campus environment." The design "focuses on comfort and wellbeing," said the architects. The campus has been designed in full detail, following the client's specific approach to work culture, which led to custom-made "healthy" workstations for all employees. Central to the design is the large, vertically stepped, indoor atrium. This generous open space, which connects to an outdoor courtyard and outdoor terraces provides expansive views of the Gulf of Finland. The atrium forms the core of the new 'JetBrains community,' contrasting with the office floors, which are based on team and individual focus, rather than an open-plan approach. Central meeting rooms, breakout spaces, auditoriums and the central restaurant are all organised along the stepped atrium. Bridges span the open areas, while carefully designed and intertwined biophilia form the natural backdrop for all activities. Acting as a vestibule, the imposing lobby creates the first views towards the atrium, while providing cloakroom facilities, showers and exercise spaces. The facade design embraces a sustainable approach, blocking heat gain while providing daylight. For the large atrium, a highly transparent stable zigzag glazed facade was chosen, at times spanning five floors. In addition to soft acoustic shading on the inside of the glazed, cantilevers shade the unitised facade. Protruding glazed ceramic elements provide shading, reflect light, and create a "tactility and reflection that will play with the constantly changing light of the sky," said the architects.



RUSSIAN COPPER COMPANY HQ, YEKATERINBURG FOSTER+PARTNERS

Foster+Partners' first office building in Russia – for the Russian Copper Company – reimagines the conventional cellular office to set new standards in quality, comfort and flexibility. The 15-storey building's innovative modular office units are enveloped in an "energy efficient enclosure," said the architects. The building's triangulated elements draw inspiration from the "crystal lattice of copper." The crown of the building integrates RCC's new logo, which itself has been inspired by the architecture. "The starting point for the office floors was to reinvent the headquarters as a 'house for staff,'" said Foster+Partners – instead of the conventional large, communal workspaces, the rooms are of a more intimate, domestic scale. The practice's workplace consultancy group analysed the client's operations and helped to devise the modular system for these rooms. Each two-storey module comprises a stacked pair of offices – this is expressed externally through the double-storey cladding module.



SHENZHEN TRANSPORT HUB, CHINA **GRIMSHAW**

Grimshaw, alongside Mott MacDonald, have been selected as the winner of an international competition for Shenzhen Airport East Integrated Transport Hub, following an assessment by a bid evaluation committee of 13 experts in urban planning and design, architectural design, aviation, railway, urban rail, and integrated transportation. The architects commented: "The masterplan has been designed to promote active travel through provision of intuitive routes, active frontages and enriching landscape features." The flowing architectural forms and naturally daylight spaces within the hub will "help to guide people on their journeys through the interchange." The project will be an exemplar of environmental sustainability and will achieve LEED Platinum and Chinese 3 Star rating, through a "highly economic architectural solution that uses materials efficiently and maximises repetition of components."



BOSTON FLOATING PIER, USA **BACA ARCHITECTS/WATERSTUDIO**

Two of the world's leading experts on water placemaking and floating architecture have collaborated on a masterplan for Charlestown Navy Yard in Boston which will deliver a new residential neighbourhood on the water as well as a waterside public amenity. The intention is that the development will provide a template for "climate adaptive and resilient affordable homes" across the Hudson Harbour and along the entire US coastline, and to any other coastal city where land costs are high," said the architects. The homes will be built on top of large floating pontoons tethered to the islands by flexible moorings, allowing the homes to rise and fall with the tide. The pier development will work with the dynamic tidal range of Boston's Inner Harbour, "while also achieving a canal experience reminiscent of Amsterdam." Sustainability will be key to the scheme which is aiming for 138 LEED Certified Gold and will include a water heat exchange, acting as a renewable "blue battery," to provide heating and cooling. Solar pergolas on the rooftops will generate sustainable energy.

CPD FOCUS

The latest CPD courses, seminars and documents for architects

GLAZING SYSTEMS SEMINAR FROM TWINFIX



The new seminar from **Twinfix** will be of particular use for those who specify glazed canopies and walkways, as well as general overhead glazing, including roof lights, across a number of sectors, education, industrial retail and rail. The seminar will enable specifiers to make more informed decisions about the products used in overhead glazing situations. The presentation in particular focuses on the benefits of non-fragile roof glazing and includes details on the recommended test for polycarbonate roofing assemblies, ACR[M]001:2014. 01925 811311 enquiries@twinfix.co.uk

EXPERTISE IN THE CONSTRUCTION OF LOW ENERGY BUILDINGS



JACKON offers two RIBA-approved CPDs relating to the design and construction of low energy buildings. *'Insulated Concrete Raft Systems'* covers the subject of EPS insulated concrete raft foundation systems, while *'Insulated Concrete Formwork Systems'* discusses the use of XPS technology in formwork construction and the achievement of ultra low u-values. JACKON has over 60 years' experience in EPS and XPS manufacturing, and it offers two separate building systems – JACKODUR ATLAS Extruded Polystyrene (XPS) and THERMOMUR insulating concrete formwork system (ICF). 01204 221089 www.jackon.co.uk

PYROGUARD INTRODUCES NEW RIBA CPD ON FIRE SAFETY GLASS



Pyroguard, the global provider of fire safety glass solutions and part of the Technical Fire Safety Group, is pleased to introduce its latest RIBA approved CPD for the fire safety sector: *'Fire safety glazing – a system not a product!'* Pyroguard's new CPD has been developed to help raise awareness of the role of and types of fire safety glass available, while educating the industry on the various factors to consider when specifying a suitable fire safety glass system. The CPD will be delivered as part of RIBA's 2021 Digital CPD Roadshow. www.pyroguard.eu www.ribacpd.com/cpdroadshow

CUPA PIZARRAS LAUNCHES ONLINE CPDS FOR ARCHITECTS & SPECIFIERS



CUPA PIZARRAS, a world leader in natural slate, is now hosting two online CPDs. The first of the CPDs will discuss the technical and design criteria for specifying slate, while the second will cover the benefits of using a natural slate rainscreen cladding system. Both are free to attend with tickets available via eventbrite. Terry Collins, specification manager at CUPA PIZARRAS commented: "We have developed the online CPDs to ensure specifiers can still access key information during the pandemic and for when they are working from home." www.eventbrite.co.uk/o/cupa-pizarras-world-leader-in-natural-slate-29672279119

SPIRAL AND HELICAL STAIRCASE CPD WEBINARS



Staircase experts, **Spiral UK**, offer architects a live bespoke staircase CPD presentation on Microsoft Teams or Zoom free of charge at a time that suits them. The session covers: staircase design, stair regulations ADK, ADB, ADM and specifically BS5395 Part II (which relates to spiral and helical staircases), the design, manufacture and install process, materials and finishes and case study examples. The session is 30-40 minutes depending on questions and can be tailored to the interests of the practice. Certificates of attendance can also be issued. 0330 123 2447 www.spiral.uk.com

STELRAD LAUNCHES NEW CPD COVERING TOWEL RAIL RADIATORS



Stelrad Radiators has announced the launch of its latest CIBSE and RIBA approved CPD courses covering the subject matter of towel rail radiators. It can be found at www.stelrad.com. This new CPD course will help attendees understand the history and background behind the evolution of the central heating system and the use of tubular radiators. The UK market for tubular radiators is around the one million mark, so a not an unsubstantial slice of the marketplace – it's certainly more than simply a niche market nowadays. 01709 572279 www.stelrad.com

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 8685 9685 www.comar-alu.co.uk

BUILDINGS AS THEATRE



'Buildings as Theatre' is the brand-new curtain walling CPD from aluminium systems house **AluK**, available to book now via the company's dedicated learning portal. Exploring how innovation in framing and glazing technology have helped to create what it is calling a 'transparent stage of human life' in cities across the world, the CPD aims to inform and inspire with what is possible in the design and construction of curtain walling. It includes a whistle-stop guide to the history of curtain walling as well as an overview for specifiers of the different curtain walling system types available. 01291 639739 www.alukgb.com/learning/home

Improve your understanding of BS 8629 with Advanced

Fire protection solutions manufacturer Advanced, has launched two new courses to aid understanding of the BS 8629 Code of Practice recommendations and the EvacGo system designed to meet them.

'A Guide to Meeting BS 8629' is a continuing professional development course, approved by the FIA and the CPD Certification Service, suitable for all those responsible for fire safety in tall residential buildings. Delivered online by the Advanced evacuation alert team – Ken Bullock, Advanced's business development manager and Shaun Scott, applications engineer for Evacuation Alert Systems – the one-hour session covers a range of essential BS 8629 facts, from key clauses, evacuation alert zones and siting of devices, to evacuation alert control and indicating equipment, its commissioning and handover.

As well as the accredited CPD course, Advanced has also launched a new training programme for its EvacGo evacuation

alert system. Aimed primarily at installers and engineers, the training course covers practical content including panel and software configuration guidance.

Ken Bullock, business development manager – Evacuation Alert Systems said: "Over the past year we've witnessed increasing demand from our customers and end users for online education and training opportunities. This has led to the introduction of our webinar programme, online training modules and our video tutorial series."

"At a time when many fire industry professionals are viewing lockdown as an opportunity to upskill, our new CPD presentation is a great way to improve understanding of the BS 8629 Code of Practice, the relevant evacuation alert system equipment, and your responsibilities as a consultant, fire risk assessor or fire protection specialist."

"As an added bonus to participants, all content is approved by the CPD Certification



Service and the FIA, who have both recognised it as a robust training offering that helps to boost competency and knowledge of the latest standards."

Alongside its CPD, Advanced's EvacGo training programme offers partners free workshops which not only cover theory, but also applied exercises and tests, ensuring good working knowledge of all aspects of the EvacGo equipment and software.

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www.advancedco.com



New colours to sectional garage door range

Garador are launching four exciting new colours for their sectional garage doors range. These new colours will be available, as part of the standard colour range, across their Georgian and Linear door models. There are currently 16 colours to choose from in the standard colour range, including four new colours which have now been added: Basalt Grey (RAL 7012), Quartz Grey (RAL 7039), Slate Grey (RAL 7015) and Titan Metallic (CH 703). These new shades of grey are ideal for contemporary residential architecture and designs. The Titan Metallic (CH 703) colour has minute pearlescent looking flecks which are blended into the paint, adding another dimension to the look and feel of the door. On top of these four new colours, Anthracite Metallic (Noir 2100 Sable) has also been added as non-standard colour on sectional garage doors too. If you would like a colour not in the standard range, then the door can be painted in almost any RAL colour, giving customers plenty of options.

01935 443700 www.garador.co.uk/garador-range/sectional-doors.aspx

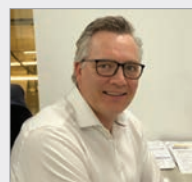
Net zero carbon manufacturing by 2030



Kingspan has published its inaugural "Planet Passionate" Sustainability Report, reviewing the first year of progress in the 10-year strategy it launched in December 2019. The report outlines Kingspan's industry-leading decarbonisation programme, which targets a reduction in manufacturing carbon (CO₂e) emissions to as close to zero as technically possible, together with halving carbon intensity in its primary supply chain. Kingspan has also committed by 2030 to reduce the carbon intensity of its primary raw materials by 50 per cent.

01544 388 601
viewer.ipaper.io/kingspan/planet-planet-passionate-annual-report

New president of SWA announced



Stuart Judge, managing director of the West Leigh Group is the new president of The Steel Window Association. He has been handed the reins after Darren Lloyd of Govette Windows completed a six-year tenure at the helm of the progressive association. Stuart looks forward to embracing the role and comments: "The SWA has, for many years, been a great source of information for architects and consumers alike and my hope is to build on this for the future to ensure that access and enquirer engagement is as seamless and beneficial as possible."

www.steel-window-association.co.uk

Decorative column casings – Encasement's perfect finish

Column casings are an important and widely used feature of contemporary building design. In addition to providing a practical method of concealing interior and exterior structural steelwork, concrete columns and building services, they also contribute to a building's aesthetics and style.



The combination of aesthetics, practicality and decorative design are common features within the wide range of projects undertaken by Peterborough based casing solutions specialist, Encasement Ltd.

Encasement's column casings range includes 'Circa' and 'Quadra', manufactured from pre-formed plywood, together with the metal 'Forma' range, as well as the 'Polyma'

and 'Gypira' casings, which are moulded from glass reinforced plastic (GRP) and glass reinforced gypsum (GRG) respectively. The range is completed by 'Metza', a specialised solution for mezzanine support columns that can provide up to two hours fire protection.

Although all Encasement's column casings are suitable for interior use, its 'Forma' and 'Polyma' ranges are also widely used for exterior applications due to their inherent weather resistance and durability. Both ranges can also be stacked to reach extended heights.

Available in aluminium or stainless steel, 'Forma' offers a diverse range of options and can be specified as circles from 250 mm to 1000 mm diameter, or in square, rectangular or hexagonal forms, as well as unique bespoke manufactured profiles. The choice of finishes is also wide and includes PPC coatings in any RAL colour, as well as brushed, anodised, embossed and textured options, including Rimex.

Strength, durability and colour choice also feature in the moulded 'Polyma' GRP range. This manufacturing method allows a high degree of design flexibility with the shape; size and colour all open to specification to meet both standard profile options or bespoke project requirements.

Projects, such as Winchester College, Tetrosyl's head office and Cardiff Bay's



Premier Inn, perfectly illustrate the versatility of Forma and Polyma casings.

However, where casings are needed for interior use only, Encasement's pre-formed plywood 'Circa' and 'Quadra' casings allow circular, square and rectangular profiles to be specified while also providing a wide range of finish options with the most popular being decorative laminated finishes.

In addition to resisting damage, scuffs and scratches, they also provide the specifier with a diverse palette of finishes including plain colours, wood grains and metallics, as well as textured and real wood veneers. As a result of this versatility, Circa and Quadra are used in almost every building type, including retail, offices, hotel, sports and leisure, as well as the health and education, sectors.

The Dame Kelly Holmes Sports Centre and Farnborough's Sixth Form College are ideal examples of Quadra projects, whilst among the many Circa installations, Gateshead International Stadium, Liverpool University and Gatwick Airport's South Terminal are major installations.

Encasement's managing director, Martin Taylor, commented: "Our entire range is configured to provide the widest possible choice and versatility. This allows specifiers to source different specialised casing solutions from a single company, backed by our high levels of expertise and experience. We also have our own contracting arm, which enables us to offer a full supply and install service to support contractors."

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INDUSTRY SURVEY

Exploring Current Thinking on Passivhaus

Officially launched in 1990 in Darmstadt, Germany, Passivhaus is now well-established among the UK design community, and many architects have embraced the low-energy design concept. The question is, with our looming UK climate targets, are clients and the wider construction industry ready and willing to deliver this ‘gold standard’ of low carbon buildings across the board?

Passivhaus buildings achieve around a 90 per cent reduction in space heating needs thanks to a combination of high insulation and air-tightness levels, and ‘passive’ design – compact buildings orientated to maximise solar gain. As we face the Government’s statutory goal of ‘net zero carbon’ (against 1990 levels), clients and contractors are increasingly more focused on employing recognised, effective strategies to reduce buildings’ carbon emissions. Buildings (including their operational phase) are

thought to produce 45 per cent of the country’s total carbon emissions (27 per cent from domestic buildings).

The Government has recently committed to an earlier target of 2035 for a reduction of 78 per cent (against 1990 carbon emissions), to help move us along the road to zero in 2050. It is claiming to have gone the furthest of any Government in terms of the legal requirement for such a target.

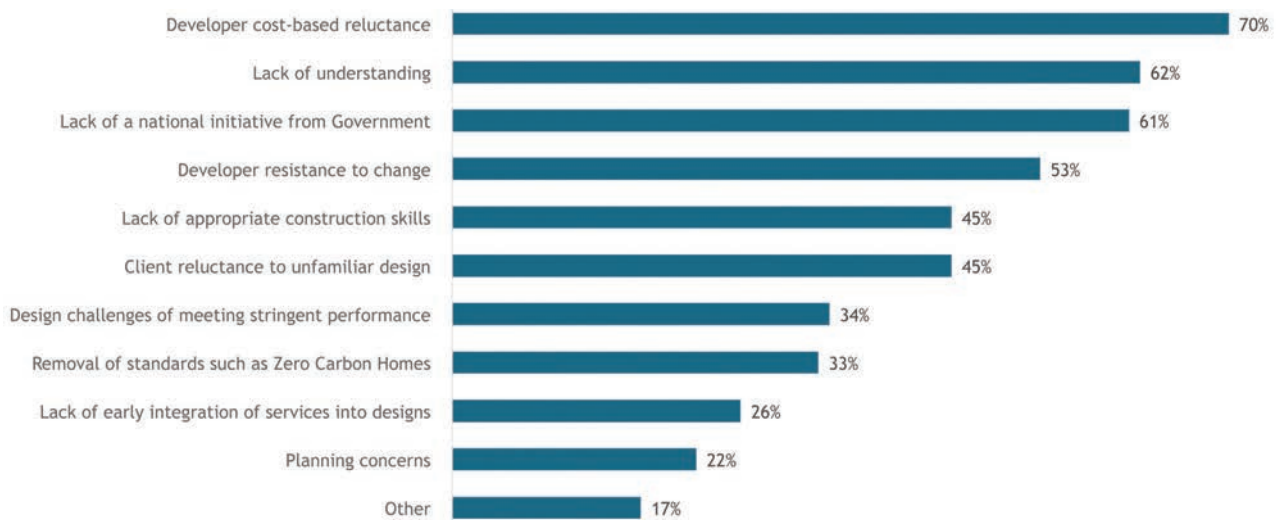
However, what are the ‘deliverables’ for achieving these goals? Despite its large claims, Government is hesitant to propose solutions. However the industry has begun to provide the answers, including by showing that Passivhaus is certainly one of most important demonstrable – and widely applicable – ways forward, as the results of our new survey, conducted with Edge Insight, show.

Clients and contractors still drive procurement, but are they embracing the

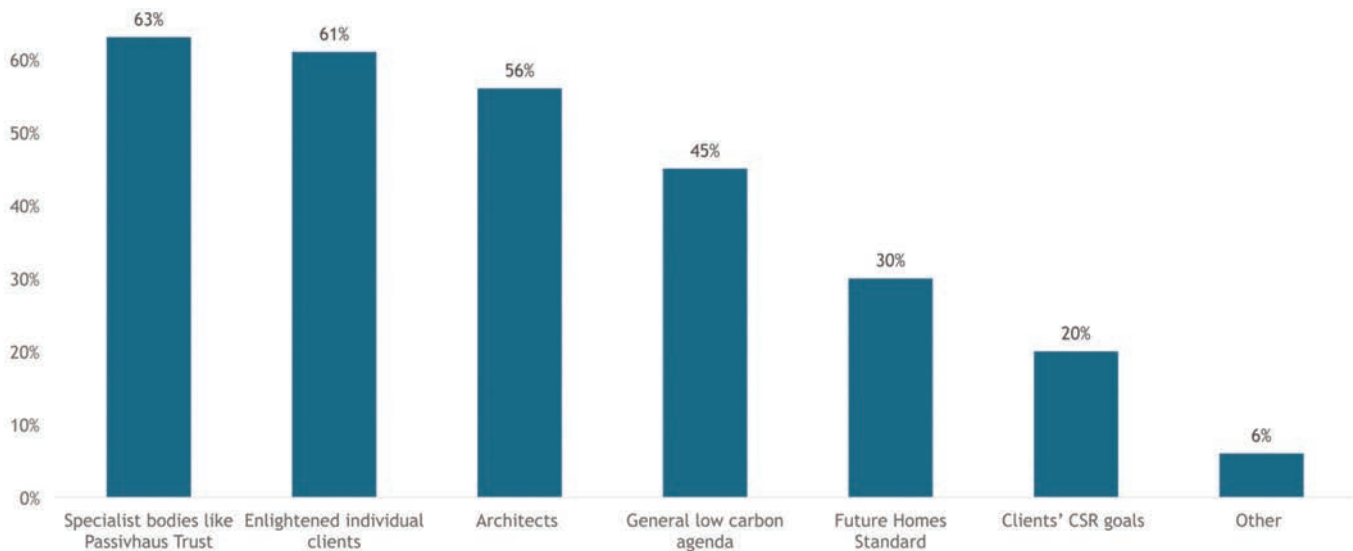
comprehensive approach offered by Passivhaus to make the reductions that will help make the difference on climate change?

We asked architects about their experience of Passivhaus, and the results highlight a range of barriers to take-up. Some of these are about misconceptions as to what Passivhaus does, and does not require, and the resulting changes it means for building design. Conversely, the survey reveals benefits that engaging in Passivhaus can bring about in terms of architects’ professional standing.

Having expanded into a refurbishment version, (EnerPhit), and Passivhaus Plus, for projects exporting energy to the grid, and the ultimate efficiency standard, Passivhaus Premium, Passivhaus covers the bases on sustainable certification. The Future Homes Standard 2025, which admittedly raises the bar considerably, doesn’t approach such levels.



“What do you see as the main reasons for slow Passivhaus adoption in the UK?”



“Who/what is driving Passivhaus uptake in the UK?”

Our survey reveals that Passivhaus could be a more realistic solution than many might assume however, enabling various sectors to drastically reduce carbon in buildings. It also shows why it's a powerful weapon for designers to take the lead on tackling this daunting agenda.

Introduction

By 2008, there were estimated to be up to 20,000 completed Passivhaus-designed buildings worldwide. The first UK Passivhaus wasn't completed until 2009 however; a timber-framed self-build in Wales.

According to the Passivhaus Trust, part of the challenge is that architects in the UK need to adapt their approach to deliver Passivhaus, including use of the The Passivhaus Planning Package for calculating energy specs and specific design modelling. In addition to upping insulation and the spec of windows massively from 'normal' levels, the building fabric will need to be free of thermal bridges, air-tight, and have efficient MVHR.

This extra investment of effort, time and money has put architects as well as clients off, with only the most evangelistic eco-warriors being early adopters. Our survey of architects captured some of the reasons for the UK's slow take-up, but also that some of the objections may be based on incorrect assumptions.

Client objections

The research study looked at whether architects had detected a problematic perception among clients that Passivhaus buildings will look very different. Another common stigma is that windows cannot be opened in Passivhaus buildings, for air-tightness, with 21 per cent of architects saying that their clients believed this. One commenter said that they had been disappointed to find there was 'zero demand' in their local area for Passivhaus.

Our survey also confirmed that there remain other stubborn design stigmas around Passivhaus for clients. The most common was the 'generally much more uncompromising design rules,' according to 50 per cent of respondents. Not too far behind were 'boxy appearance' (42 per cent), unusual positioning or sizing of windows (41 per cent), and the need to maintain MVHR equipment (37 per cent). Other common client concerns included lack of heating, greater restriction on lifestyle, darker interiors, and apertures needing to be closed.

Cost was a further prohibitive factor for clients – and one commenter pinpointed “unknown cost, and lack of incentive,” alluding to a lack of central support which was touched on elsewhere in the responses. Other factors were a perceived lack of floor space, and large windows potentially

leading to overheating, but a “lack of understanding” was possibly a key ‘macro’ factor, as pointed out by one commenter.

Acceptance

A reassuring 85 per cent of respondents thought that resistance to the look of Passivhaus buildings will moderate as we approach the net zero deadline of 2050. Also, 28 per cent “strongly agreed” that clients had already accepted those changes in appearance. Also, according to 29 per cent of our respondents, the belief that Passivhaus buildings have to look “dramatically” different is mistaken. Only 11 per cent strongly agreed that developers had accepted the necessary changes to construction practice to achieve such high levels of efficiency, however.

Architects' roles in projects across the board have arguably been diminished in recent decades, sometimes to a function of 'decoration.' However, the commissioning of more Passivhaus schemes could lead to a consolidation and extension of architects' remit – due to designs aligning form closely with function – bolstering the profession. Passivhaus requires close integration of the services design with overall structural aspects and therefore the aesthetics, and 83 per cent of survey respondents agreed it “has restored the importance of integrated design, and will therefore help boost the professional role of architects.”



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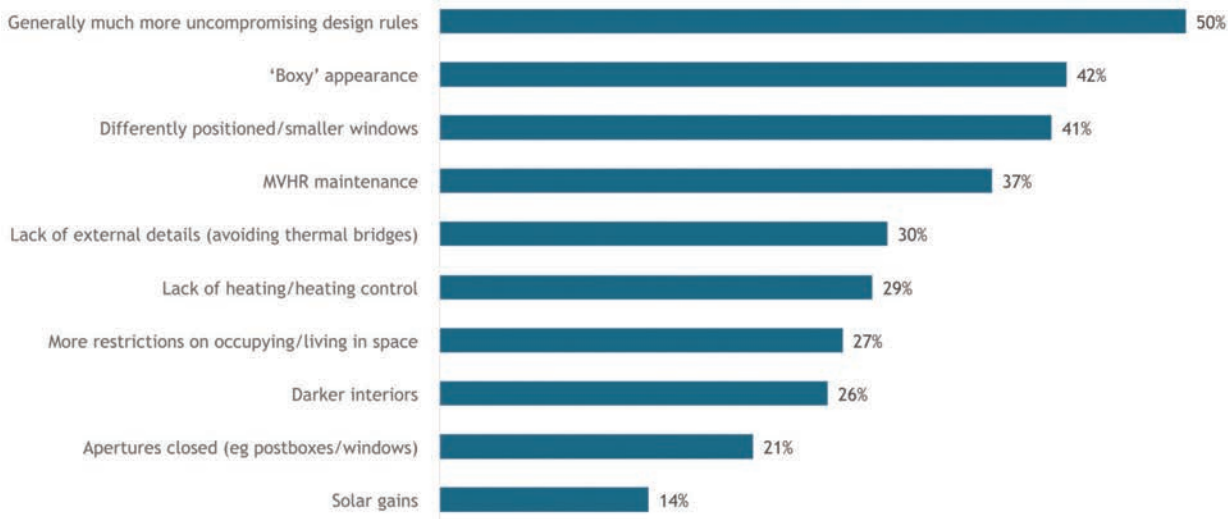
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Contact us to book our virtual CPD seminar which provides a clear overview of considerations when specifying rooflights for your projects.



"What are the biggest design stigmas for clients currently?"

The Future Homes Standard 2025

Some of those surveyed believed the Future Homes Standard, which ups the ante considerably on domestic new build energy efficiency (by 31 per cent via a combination of fabric improvements and bolt-on renewables), could take the place of Passivhaus in the UK.

However, we asked our audience whether they believed that there was room in the market for both the FSH and Passivhaus, and a 90 per cent of respondents believed there was, some adding that we need to wait for further clarity on the standard.

Only 9 per cent believe that the FSH would render Passivhaus obsolete, with 33 per cent "disagreeing strongly." Some commenters criticised the FSH, e.g. for being "not as comprehensive, and relying too heavily on tech that can fail." One commenter was vehemently pro-Passivhaus, saying "just make Passivhaus the standard – it demonstrably delivers!"

Sector applicability

In total, 19 per cent of our survey respondents were currently working on a Passivhaus project, and 16 per cent had previously completed one, the vast majority in private housing. They believed this was the most appropriate sector for Passivhaus currently, with 74 per cent saying it was 'very appropriate.' Social housing received 65 per cent of votes, and only half of the respondents (51 per cent) thought that

education projects were 'very appropriate,' although overall a total of 86 per cent believed that Passivhaus was suited to the sector.

The other sectors, in descending order, were offices, (47 per cent 'very appropriate'), healthcare (44 per cent 'very appropriate' – how appropriate? Same for rest of para), mixed use (40 per cent), hospitality (35 per cent), cultural and leisure (33 per cent). The slightly anomalous category of 'adaptive reuse' (which goes across many potential sectors) only had a 32 per cent score on the 'very appropriate' metric, and bringing up the rear was retail with 28 per cent saying it was 'very appropriate,' (reflecting the necessary 'openness' of such facilities).

One survey respondent said that Passivhaus was "not very appropriate" for all building or occupation types, its suitability depending more on "exact structure, and details." In addition, there were challenges with existing buildings such as multi-occupancies, "especially where the onus is on leaseholders of apartment blocks, offices etc." Budgets were a concern in retail and hospitality, given recent Covid challenges, and they doubted whether government grants would "adequately cover the gaps between desire and realism."

One commenter said that Passivhaus was "a little confusing as to its overall effectiveness." One respondent said Passivhaus "should be a legal requirement,"

while another believed that it was "a waste of resource." Other comments included that Passivhaus buildings were hampered by a lack of adaptability, and one view that users need to have a substantial amount of "control on the building envelope," adding "Passivhaus works best when the users are invested in the technology."

Progress & take up

While respondents were generally in favour of Passivhaus, they agreed that take up had been slow in the UK. The most common reason given for this was "cost-based resistance from developers" at 70 per cent, followed by "lack of understanding" (62 per cent) and "lack of a national initiative from Government" just behind it at 61 per cent. Other reasons given were:

- Developers' resistance to change (53 per cent)
- Lack of appropriate construction skills (45 per cent)
- Client reluctance to unfamiliar design (45 per cent)
- Design challenges of meeting stringent performance (34 per cent)
- Removal of standards such as Zero Carbon Homes (33 per cent)
- Lack of early integration of services into designs (26 per cent).

In terms of who's driving uptake, the top answer was specialist bodies in the field, such as the Passivhaus Trust (63 per cent). Close behind were "enlightened individual

90
YEARS

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clients” (61 per cent), and architects themselves (56 per cent). The overall low carbon agenda was also a big driver, according to 45 per cent of respondents, and The Future Homes Standard was perhaps surprisingly a key factor for 30 per cent of respondents. Lastly, clients’ Corporate Social Responsibility goals accounted for 20 per cent of responses.

Government, builders merchants and the wider supply chain, “marketing to enthusiasts,” and simply the available skills in a certain area, were other factors.

Methods

Timber frame was way out in front, with 37 per cent of respondents saying it was their preferred route for Passivhaus, compared with 4 per cent for both concrete and steel alternatives. SiPS frames were popular with 19 per cent of respondents. One commenter however suggested that traditional timber frame “is unsuited to Passivhaus,” with better approaches being “balloon frame and hybrid balloon frame construction.”

For achieving air-tightness, respondents favoured a hybrid approach (18 per cent), with solely membrane-based gaining 10 per cent of votes, taping joints 7 per cent, and sprayed membranes just 1 per cent from our survey sample.

Renewables were ranked in order of importance for Passivhaus, with MVHR some way clear of the pack. This was followed by, in descending order, solar PV, air source and ground source heat pumps, solar thermal, wind turbines, rainwater harvesting, green roofs, biomass, microhydropower, and finally water boreholes.

Questions for industry

The survey also asked whether architects had seen an increased demand for Passivhaus over the past five years, with 83 per cent said they had noticed this happening. Reasons given for this included awareness of indoor air quality and other health benefits, and reduction in the cost of achieving Passivhaus, but also quality concerns around volume housebuilding.

There were also issues around achieving an increase in take-up according to respondents, such as there “not being enough information, or enough Government incentive.” On the positive side, private and public sector clients were

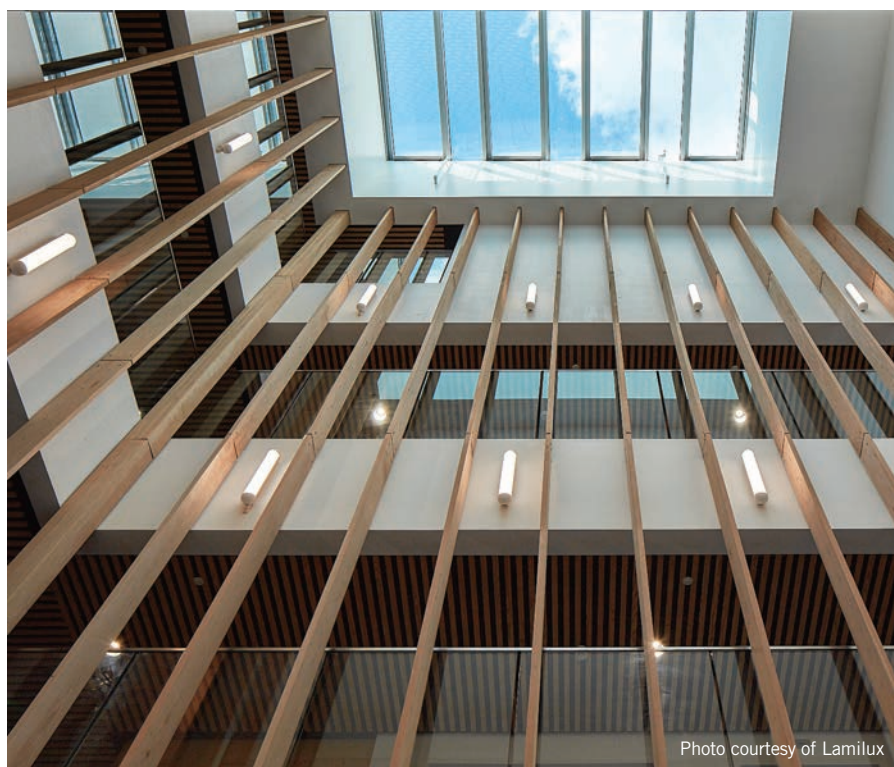


Photo courtesy of Lamilux

becoming more aware of the potential benefits of Passivhaus, and there was now a good amount of experience and knowledge within the industry, according to respondents.

Alongside an urge to ‘go green’ among clients, some commenters said that developer clients were “aware of the cost of getting a fully certified Passivhaus scheme.” This could mean they will “only do one or two schemes so they can tick the box” however. In addition, there was a perception that a lack of Building Regulations covering Passivhaus was holding some specifiers back, and that greater publicity, such as more ‘show homes,’ was required.

In terms of what contractors needed to do, “Willingness to collaborate, learn and do a great job,” aligned with “attention to detail, and a meticulous and regular review of build quality” were clear messages from survey respondents.

Conclusion

The UK may have been relatively slow to embrace Passivhaus, but it is making up ground fast. However, we are some way off the level of ambition of true leaders, for

example the 333,000 m² Passivhaus city development in Gaobeidian, China, or Bahnstadt, a district of Heidelberg entirely constructed to Passivhaus standards.

These are the kind of quantum leaps which will be needed across the world for us to really use Passivhaus as a major plank towards mitigating climate change. Our survey shows that architects, the wider industry and clients have a long way to go.

To download a full version of the White Paper report on this survey, please visit ADF at www.architectsdatafile.co.uk

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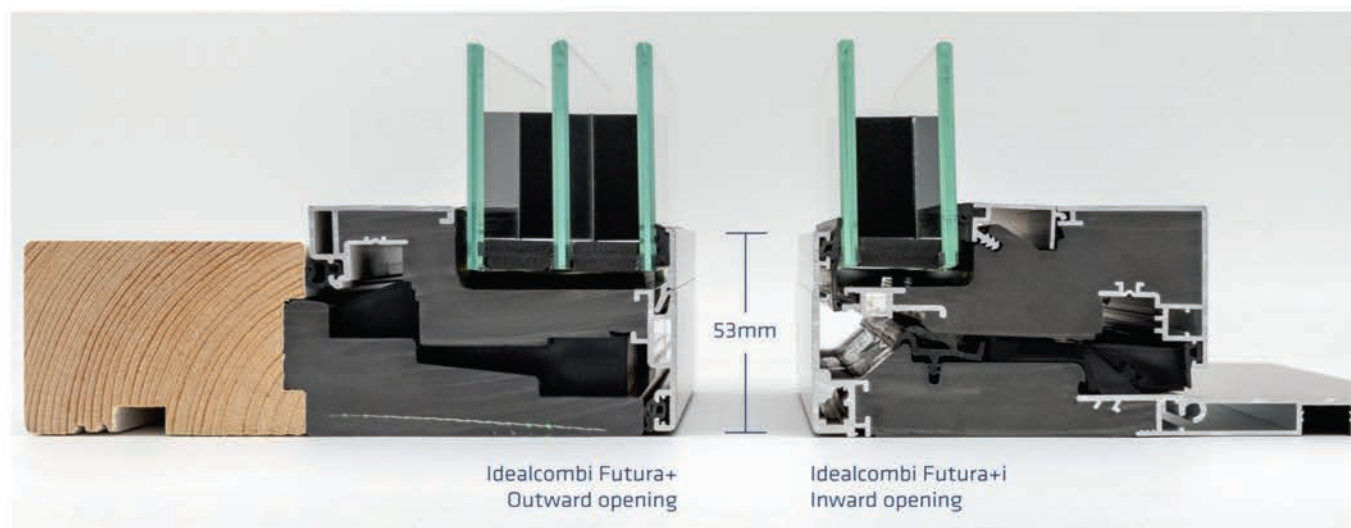
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TEMPOMATIC technology supports sustainable washrooms at St. Peter's

Electronic technology is not the first thing that springs to mind when refurbishing a place of worship, but at St Peter's church in Burnley, it proved the ideal solution.

St Peter's normally hosts a wide range of community groups, including a well-attended Sunday School, a local music society and various choirs, plus an over 55s lunch club. The design brief for refurbishing their washrooms therefore had to cater for this broad spectrum of users, reflecting all age groups and differing mobility levels. Sustainability was another key element of the specification, to minimise environmental impact and future-proof the facilities. The Parochial Parish Council of St. Peter's opted for DELABIE's sensor controls for the taps

and urinals as they met, and surpassed, the design brief.

Waste prevention

As Treasurer of St Peter's, David Smith was very aware of the sizeable utility bills. When presented with a solution to reduce water consumption, he immediately recognised the benefits of self-closing taps. Unlike the original cross-head taps, TEMPOMATIC 4 electronic taps are sensor activated, meaning water flows only when movement is detected. The water delivery (pre-set at 3 litres/minute) is split into wetting, soaping and rinsing, so while the user is soaping their hands, there is no flow. This fractional delivery will also pay dividends post-lockdown, as hand hygiene continues its vital role in public health.

Improved efficiency

The intelligent technology of the TEMPOMATIC 4 urinal valve also appealed to St Peter's specification team, given the usage patterns i.e., periods of intense activity followed by lulls. The electronic unit detects busy periods and adapts its rinse accordingly to ensure the most hygienic flush whilst optimising water consumption. During busy periods, the bowl is rinsed between users and at the end of the busy period, a complementary rinse occurs, cleaning the bowl and preventing crystallisation of uric acid in the pipes.

Future-proofing

Originally, Overton architects of Ilkley – specialists in heritage projects – specified a

“We all at Burnley St Peter are very happy to have been transported into the 21st century. The toilets will be appreciated by all users.”

David Smith, Treasurer of St Peter's

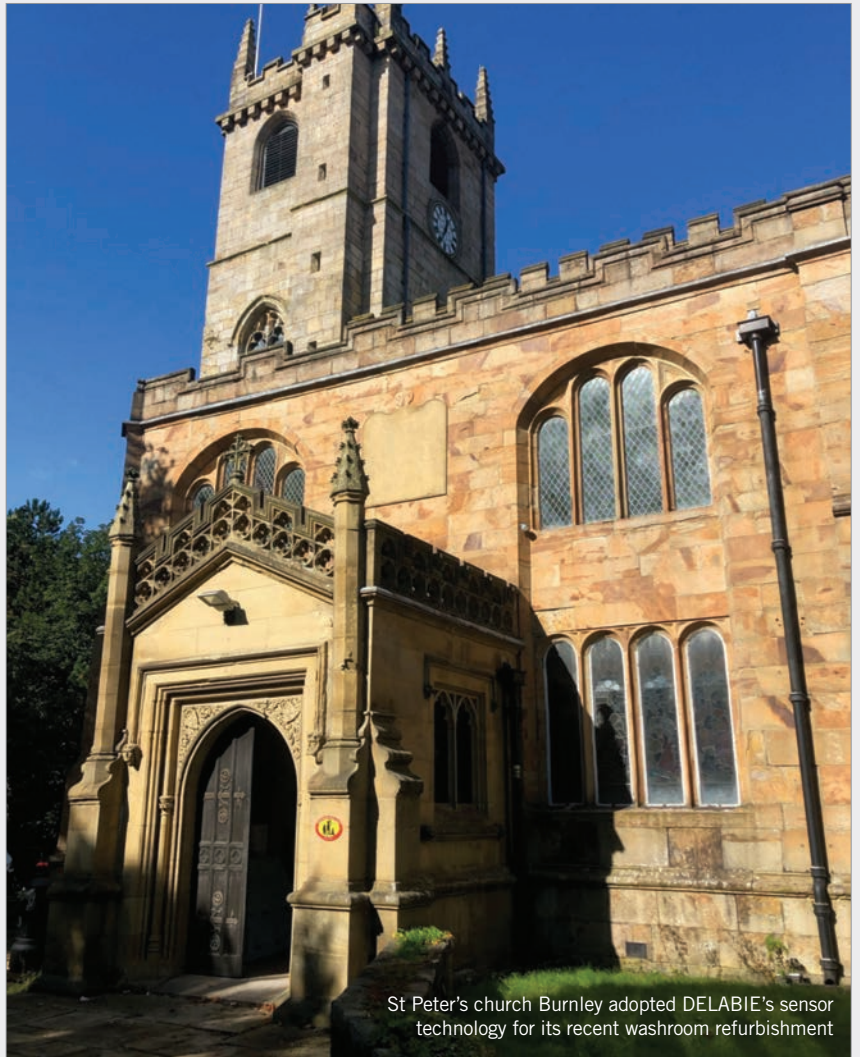
non-concussive push-button tap. However, as the pandemic took hold, the hygiene aspects of the TEMPOMATIC 4 technology proved very persuasive. The non-touch sensor controls require no physical contact, providing a significant barrier to the spread of germs. They are also easy to operate regardless of age or mobility levels. Part of their appeal is a hygienic duty flush (on both taps and urinals) which occurs every 24 hours after the last use to prevent stagnation and urine crystallisation in the pipework, avoiding conditions where bacteria can develop. This has practical benefits in a church facing varying activity levels; and even more so for washrooms that are temporarily moth-balled. Benefits that no specifier could have foreseen even 12 months ago.

Minimal maintenance

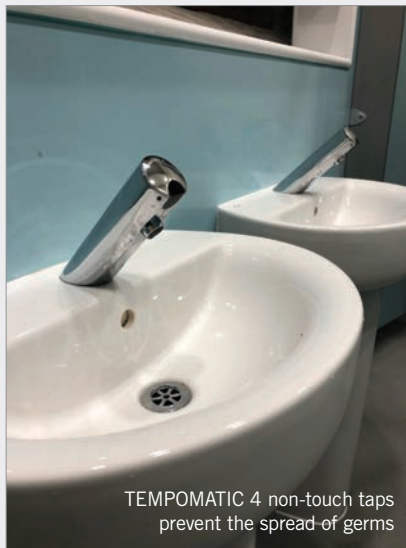
The final aspect of the design brief was to reduce an onerous maintenance regime. The previous domestic style taps were not designed for intensive use over long periods and required frequent repairs to keep them in service. With no full-time maintenance staff, David was keen to install hard-wearing taps. Again, TEMPOMATIC controls proved ideal, with solid brass bodies, durable mechanisms and standardised components, all designed for commercial applications. Both the urinals and taps are battery-operated, with the electronic unit integrated within the body, making them easy to install and easy to access if maintenance is required. The battery life of three to six years (350,000) operations also appealed.

Refurbishing the washroom facilities at St Peter's was a major undertaking, especially during a national pandemic. TEMPOMATIC 4 technology offered the ideal solution for the complex needs of a community-based facility that demands reliable, hygienic and sustainable washrooms for its users.

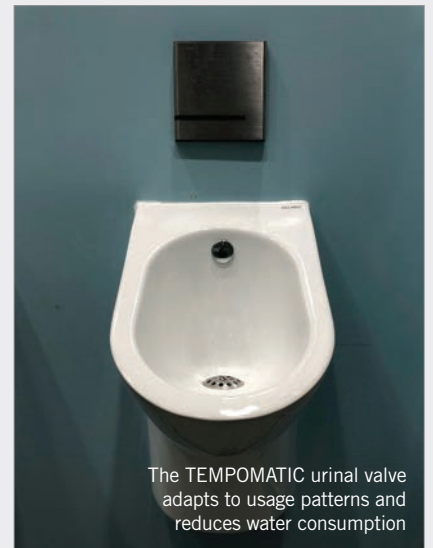
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St Peter's church Burnley adopted DELABIE's sensor technology for its recent washroom refurbishment



TEMPOMATIC 4 non-touch taps prevent the spread of germs



The TEMPOMATIC urinal valve adapts to usage patterns and reduces water consumption

Preventative steps to ensure tragedies don't happen

UK leading Manufacturer of Type C Cavity Drainage Systems, Delta Membrane Systems are revolutionising the waterproofing sector with MS 500 Fire.

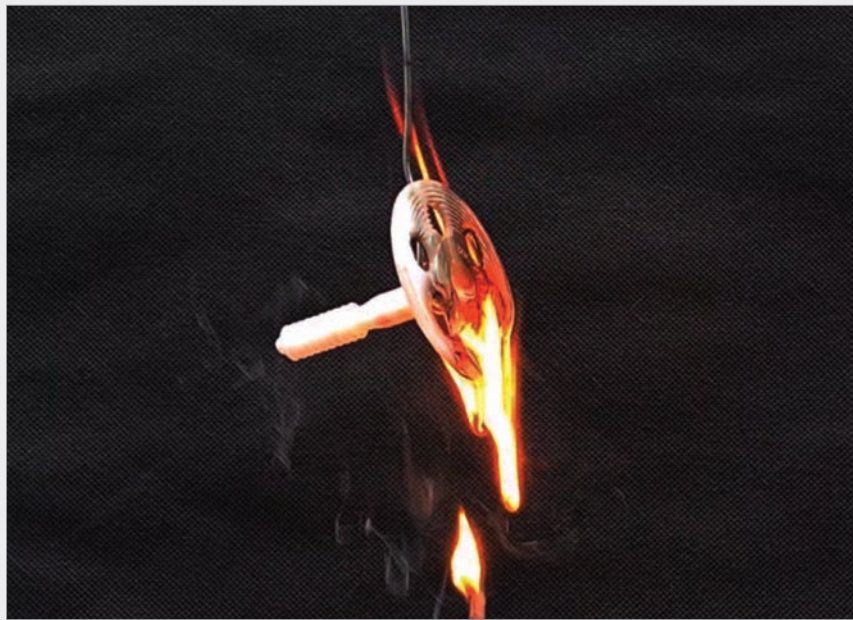
Taking steps to ensure tragedies like the Grenfell Tower don't occur again, is top of most construction material manufacturer's agendas. In response to initial Inquiry findings, all construction materials should be developed to offer disaster-resistant buildings.

Delta propels the waterproofing sector with Delta MS 500 Fire Retardant Membrane.

This hybrid membrane is the first on the market offering the same quality for structural waterproofing whilst also offering protection in event of fire. The first and most important element of a Type C membrane is keeping structures dry. Water ingress will potentially result in a corrosive environment, with structures having a reduced life service.

Utilising the highest grade of High-Density Polyethylene (HDPE) Delta MS 500 Fire, has a fire classification of B-s2, d0 to ensure safe use in buildings. Delta MS 500 Fire offers the same design flexibility as MS 500, While maintaining the brands 100-year life cycle expectancy.

Delta's managing director and key player in product development, Kevin Dodds explains:



"Fire safety should be top of everyone's list. With the Grenfell Tower disaster still fresh in everyone's mind along with reports of wildfires raging the world, threatening homes and livelihoods, it's vital for any construction material manufacturer to look at how

they can do better. Taking building materials as a first instance; some are more vulnerable to fire than others. Using fire retardant alternatives is a great first lines of defence in protecting a property against a potentially serious tragedy."

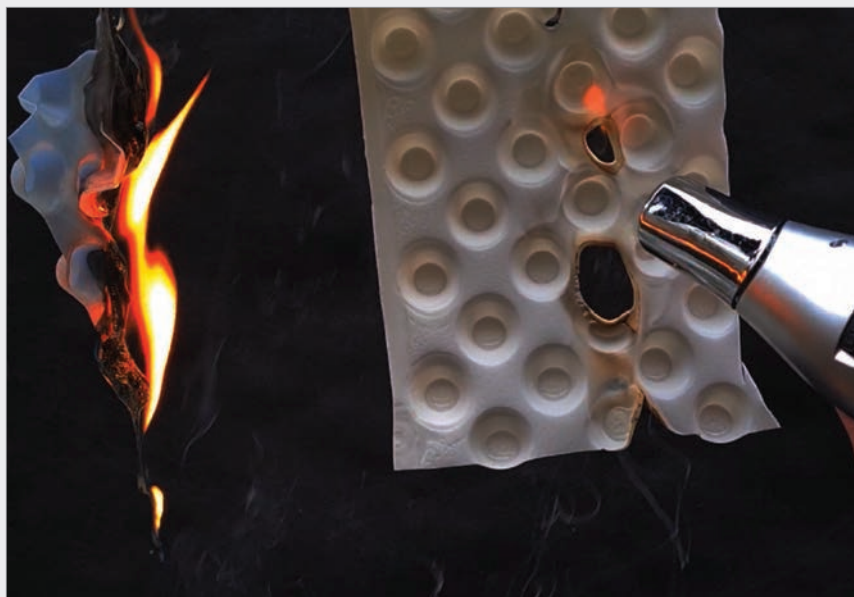
"Our new MS 500 membrane, just does that."

"The UK building materials industry is a healthy and competitive one, with plenty of big named brands vying for a customer's attention," commented Kevin. "Invariably all will have differences and it's vitally important to ensure you're not comparing Apples with Oranges."

"We have invested heavily in quality control. Through extensive testing of our MS 500 Fire membrane to varying British/European standards with recognised independent third parties, it shows our serious approach to delivering high quality products that we're not afraid to put it to the test."

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Kemper System welcomes new technical sales manager



Kemper System has welcomed a new face to its sales team. The cold-applied liquid and built-up roofing system specialist has appointed Peter Barber (pictured) as technical sales manager. With more than 30 years' experience of the building materials and flat roofing industry, Peter will be responsible for building client relationships across the south of England. Working with specifiers and contractors, he will focus on developing opportunities for specification both in the new build and refurbishment sectors. Throughout his career, Peter has held technical sales roles for some of the UK's most well-known manufacturers of construction products. Speaking about his appointment, Peter said: "This role is a great opportunity for me to use both my technical and relationship building skills. I'm looking forward to working with our established customer base as well as my own network of contacts to help advise contractors and specifiers on the benefits of using cold-applied liquid systems and the diverse products Kemper System offers. With a new managing director and sales manager in post, it's an exciting time to join Kemper System and share ideas that will help grow the business and our product range."

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Gilberts kits out "world class" research facility



How do you balance the ventilation requirements of a four-storey, 7500+ m² "winged" research facility, where internal spaces range from a three-storey high atrium to wet and dry teaching spaces accommodating 60-280 students? You utilise the flexibility of louvre screens from Gilberts Blackpool. Integrating seamlessly with the facade, the louvres ensure a continuous fresh airflow for the building and its plant, with the flexibility to address future needs internally. Now, the University of Reading's new £55m Health & Life Sciences Building incorporates Gilberts WKG75 standard kitform and WHC75 high performance louvres, creating screens up to 49.8 m x 2.4 m. As appropriate, acoustic attenuation and ventilation dampers and access doors have been added to provide the appropriate balancing of external factors that could influence the internal environment. The building forms part of the University's £200m capital investment programme. It replaces several buildings across the campus into one, future-proof Centre that the University claims will be a "world class" research facility comprising wet and dry research laboratories, teaching spaces, offices, a cafes and central atrium.

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**BUILDING
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**THE NATIONAL AUTOMOTIVE INNOVATION CENTRE (NAIC)
UNIVERSITY OF WARWICK**

Driving green collaboration

A cutting-edge facility designed to keep future vehicle innovation firmly on the map, with the emphasis on sustainability, has completed at the University of Warwick. Roddy Langmuir from Cullinan Studio tells Jack Wooler how it combines collaboration with privacy

The National Automotive Innovation Centre (NAIC) at the University of Warwick brings together some of the brightest minds from industry and academia, in a facility intended to be a 'beacon' for innovation in future mobility and sustainability R&D.

The vision of the late Professor Lord Bhattacharyya, founder of Warwick

Manufacturing Group (WMG), the £150m NAIC is one of the largest research centres of its kind in Europe, with £15m funding from the UK Government's Research Partnership Investment Fund through Research England to bolster its cutting-edge offerings.

Designed by Cullinan Studio, the collaborative design process has produced a



The dramatic statement timber roof appears to float above a ribbon of glazing beneath, creating an impression of lightness



facility that allows the project's partners Jaguar Land Rover (JLR), WMG, Tata Motors, and the University of Warwick to work together under one roof successfully, efficiently, and where necessary, discreetly.

The aim was to create future vehicles and personal mobility solutions with the benefits a shared facility brings, as well as to deliver the skills required to keep the UK globally competitive. This collaboration between manufacturers and the university sat at the heart of Cullinan Studio's concept for the project, creating an environment for the research groups that would halve the time from idea to production.

Featuring a vast engineered timber roof, one of the largest in the world, and precision engineered by Arup, an innovative 'village' plan, and a wide range of flexible and functional spaces, it is unsurprising the project has received the array of awards it has since its completion in 2020.

Despite a challenging brief, the completed building has picked up the Structural Award at the 2020 Wood Awards, as well as the American Institute of Architects Design Award for Sustainability, and the BCO Regional Award for innovation, among others.

Form

"Most science buildings get tucked out of the way and surrounded by car parks, with

landscape used to defend their privacy," says Roddy Langmuir, a practice leader at Cullinan Studio.

"NAIC was different; we wanted to open up the research building and bring industry into the heart of academia, and make it a centrepiece of people's arrival on campus."

As Roddy explains, on approach into the main entrance onto the university campus, the dramatic statement timber roof appears to float above a ribbon of glazing, creating an impression of lightness – which is no mean feat for a building with a gross internal area of 33,000 m².

The imposing scale of the building is softened however by gently undulating aluminium mesh cladding that complements the landscape maturing around it. Designed by Grant Associates, the landscaping includes a water course, mixed beds of wild native plants, and spaces designed for students and researchers to gather, rest, work or simply pass through.

Everyone enters the building through this space and into the single shared porch beneath the coffered timber canopy, which creates a natural gathering space at a key junction of routes across campus.

The entrance then opens up a view into the main engineering hall, which leads building users into the collaborative hub. This is a layered landscape of internal terraces, designed with the concept

of a 'Greek hill village', all flooded with natural daylight through the diagrid of the timber roof.

Inside the 'village,' the central space contains the more private, technical laboratories and engineering areas. Surrounding these technical areas are a network of meeting spaces, breakout areas and individual booths and exhibition space, "maximising the opportunity for cross-disciplinary meetings and chance encounters that often spark the best ideas," said the architects.

The placing of internal terraces around this 'inner sanctum' ensures that every space feels open and maintains a direct contact with the exterior and nature. The unifying umbrella of the timber roof stretches the full length and breadth of the building, making the building feel more intimate.

Project beginnings

Cullinan Studio has worked with WMG since 1992, and from the start of the project eight years ago the architects built on the trust they had fostered over the years. "This level of engagement – from feasibility right through to delivery – proved essential to the development of the brief and to the eventual success of the building," said the architects.

The proposed project was to bring together three facilities in a shared building – one for TMETC, one for Jaguar Land Rover, and one for the Warwick Manufacturing Group, with a combination of shared and private spaces.

"Through discussing this, at first separately," explains Langmuir, "we were able to convince them that the economies of sharing space would mean they could have more as a shared member of the group facility than they could otherwise achieve."

To achieve these ideas, the architects and client visited a number of relevant projects to help in identifying the best solutions possible. Two of the main inspirations proved to be the BBC Broadcasting House in Portland Place, and the One Angel Square office building in Manchester.

The former, at first not an obvious connection to this project, impressed the team. The recording studios are in the heart of the building, surrounded by glass walls, so the journalists around the studio can see their work being broadcast. This has reportedly "transformed BBC staff's connection to the production," and worker satisfaction as a result. The latter building influenced the architects with its huge



atrium and offices located around the space; the architects took notes on how the project had achieved a "unified vision that connected people from all sorts of different buildings around the country and pulled them into one centre."

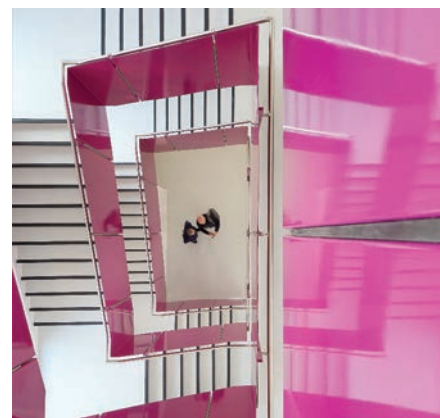
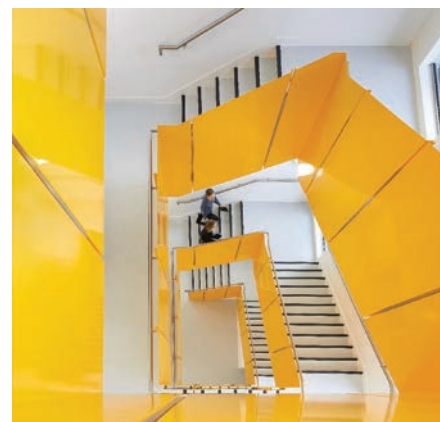
Langmuir comments: "The main thing we learned in this early process was that you have to work hard on consultation if you're going to place people close together." He adds: "If you're going to take people from cellular offices to an open building, you have to work on it, take feedback, and bring people along in the process."

Consultation

Having identified the challenges, Cullinan Studio led an in-depth consultation process to explore and develop a shared working culture. This helped prepare building users for the significant change to their workplace settings and gave the architects a "unique insight into how people wanted to work in their new building and how best to support them."

Langmuir explains "It was important that we undertook vision exercises at the beginning, talking ideas through with the clients and listening to their visions for the project."

Using various methods such as town hall-style presentations with visualisation





PROJECT FACTFILE

Location: University Road, University of Warwick

Site area: 17,800 m²

Internal floor area: 33,330 m²

Value: c. £85m

Construction programme: 2015-2019

Client: University of Warwick; Tata Motors; Jaguar Land Rover; WMG (Warwick Manufacturing Group)

Architect: Cullinan Studio

Interior designer: Cullinan Studio

Structural engineer: Arup

Services engineer: Arup

Civil engineer: Arup

Fire engineer: Buro Happold and Fire Guidance

Acoustician: Buro Happold

QS: Rider Levett Bucknall

Project manager: Rider Levett Bucknall

Planning consultant: Turley

Contractor: Balfour Beatty

Interiors fit-out: Penson

Carpets: Chroma Global Flooring

Specialist lighting: Arup

Signage/wayfinding: Maynard

Landscape architect: Grant Associates

software, building users were able to easily envision new ways of working. Individual research groups and academics previously working in 'silos' on different sites would be brought together under one roof with an unusually high percentage of shared and open spaces, designed with future flexibility in mind.

With many of the NAIC client body being used to a high level of 3D modelling, the architects reportedly had to "up their game" when it came to BIM models. "They do everything in 3D, so right from scratch we had to create digital designs and update them by next week, which was quite a rapid learning curve."

"They were very good at reviewing our designs," he adds. "They would go into our models on a regular basis and leave, in effect, post-it notes inside the model for us to pick up on."

Privacy

There were a few big obstacles that had to be overcome through the design process, largely concerned with allowing the various companies to work privately when they wish. Defending intellectual property is vital in the automotive industry, explains the architect: "If a car design is seen, it can be copied, produced, and out into the market faster in Korea or China than they can here."

As such, beyond the discreet placing of more sensitive aspects of the building's

functions, the architects approached privacy from multiple perspectives: "You have to interrogate the need for privacy; is it visual privacy, audible privacy, if you see it at a distance does it matter, or is it just up close that it has to be hidden?"

In this context, one of the hurdles that needed to be cleared was "getting everyone to agree to put a big window into the engineering hall," he continues. "To assuage the legitimate fears of industrial espionage, we put giant hospital type curtains around the bay so you could close them off if you need to."

Privacy was complicated further by the integration of students into the building – some who are involved in the automotive projects to at least some degree, and others who simply come for the cafe and a place to study.

As such, there is a clear split between private zones and shared facilities, with a barrier between the public cafe and study areas and the rest of the ground floor. These areas also host the student spaces, exhibitions zones and meeting zones, with the more sensitive areas distributed on floors above.

Working spaces

Another challenge was to enable all the differing work spaces to be shared and to work effectively for a variety of teams, necessitating future-proofed and flexible rooms with reconfigurable walls and



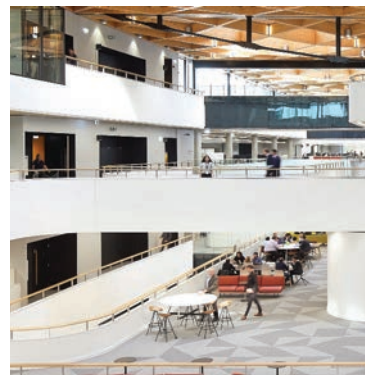
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Achieving this high degree of technical precision in timber was challenging, but the architect was grateful for the client's expertise



writable projection-friendly surfaces.

However, this would be a major improvement on the current situation. "Their existing facilities included cramped office style spaces and cubicles with experiments tucked under desks – it was a mess," explains Langmuir.

"To tackle this while retaining all the previous functionalities, we put together all the adjacencies of their differing work, and made connections between their desired principles of 'smart, connected, clean and capable.'"

The research spaces include benches for experiments close to hand, connecting different aspects of the engineers' work more directly, as well as areas for individuals, and small and large groups. With the exception of the most sensitive areas in the central space, all work is carried out "in plain sight" to encourage interaction.

Materiality & sustainability

Befitting the nature of the automotive industry itself, the materials and construction methods chosen combined precision engineering with craft and creativity. The building structure is exposed "wherever possible," and support services have been carefully integrated to create a "deceptively simple, calm environment." A light colour palette allows the research to take centre stage, and naturally finished timber lends a warmth and human scale to what is a very large space.

Cullinan Studio have a "natural design" philosophy, and were early adopters of cross-laminated timber (CLT). The architects believe the glulam and CLT roof – not perhaps the obvious choice for this typology – "embodies the spirit of a forward-looking industry that prioritises environmental considerations."

The elements were CNC machined off site, then assembled and dropped into the steel primary grid structure. The walls comprise a system of pre-fabricated, self-spanning CLT 'megapanel' cassettes for quick erection. They are overlaid by a lightweight curving aluminium mesh veil externally, controlling solar gain and modulating daylight.

The building's goal is BREEAM Excellent, befitting the project's aim to develop sustainable transport for the future: "Wherever practically possible we've used renewable materials; we've minimised the use of concrete and steel, and made the most out of timber." There's a significant array of solar PVs on the roof: "Where we

weren't letting in daylight or bringing services up, we covered it in PVs," said Langmuir.

Technical issues

As with realising the roof design, precision was key in other areas of the design – aided by the focus on 3D modelling every single aspect of the building. One of the biggest drivers for this was accommodating the high precision instruments in the design studios and workshops – some of these (hydraulics based) machines can measure changes down to micron level. "It was vital that, being placed upon long span beams, that the accuracy was down to less than a millimetre," says Langmuir.

Delivering these machines to their location was another key task. "We needed to carry three tonne vehicles across tiles on a raised floor – it wasn't easy," says the architect. Every pedestal underneath had to be modelled to provide just the right amount of strength, while allowing the space around them for the significant amount of servicing needed.

Achieving this high degree of technical precision in timber was challenging, but the architect was grateful for the client's expertise: "It's not like we were building a building for a subject that our clients didn't know much about; the firms' research divisions all had leads who were consulted in the relevant areas of the project, allowing us to make the best decisions for each area."

Overcoming constraints

Looking back, Langmuir's only misgiving was the "big shame" of the project being hit by Covid, "right when it was opening up." This meant the building was manned by a skeleton crew for much of its early existence.

The building has received recognition for how the architects took on and overcame the project's complexities – integrating multiple bodies under one roof, allowing a public space to interface with a sector that is notoriously private, and providing a cutting edge building that allows its workers to achieve tasks in the most effective way possible.

Langmuir puts success down to the high level of collaboration and consultation between everyone in the project team. "It was a complex project, but our work as designers was to make a legible environment that allowed the clients to do their jobs better together, and I believe we have achieved this." ■

The importance of specifying the correct floor for dance and dance education

Whether you are specifying a dance floor for the world's leading dance companies or for classes in schools, colleges or universities, the same fundamental criteria apply. Wherever a student chooses to study dance, it is important to make sure that the learning environment is equipped to professional standards with sprung floors, mirrors and barres.

Sprung floors

Choosing the correct dance surface is vital for dancers' health, safety and artistic performance. All sprung floors are not the same and understanding the differences between various types of floors available is important.

Experts in biomechanics have established a clear link between the quality of a dance floor and the likelihood of injury, demonstrating that a floor with a consistent response and the correct degree of 'traction' is vital.

Dance creates impact energy. If the energy generated is returned to the body it can result in an array of joint problems, sprains, fractures, knee problems and tendonitis. Lower limb problems such as tendonitis, 'shin splints,' knee pain and ankle strain can all be attributed to incorrectly specified sprung floors and can take several weeks of physical therapy and recovery time to correct. A dance floor that is impact absorbent and provides lateral foot support is essential.



The Performance Surface

One of the main attributes that dancers look for in a floor is slip resistance or 'traction'. Although athletes share the risk of slipping and falling, they are generally protected by their footwear from floors that might be considered a slip hazard for dancers.

When specifying a floor for dance, using general flooring or sports floor standards will not ensure the right floor is installed - only a floor developed specifically for dance will do. There have been some high-profile examples where floors have had to be replaced by a dance company after the building is complete because the floor was not considered fit for purpose by the dancers using it.

Harlequin floors are the performance floor of choice for the world's most prestigious dance and performing arts companies, theatres, venues and schools. Harlequin's reputation is founded upon the design, manufacture and supply of a range of high quality sprung and vinyl performance floors specified by the world's leading venues.

Case Study. Kingston University – The Town House

A recent Harlequin project was the new Town House building at Kingston University.

Designed by RIBA 2020 Royal Gold Medal winner and Stirling Prize nominated Grafton Architects and constructed by Wilmott Dixon Construction, work on the £260m project started in 2017 and was completed in January 2020.

The new facilities transformed the entire estate including a performance auditorium and performance teaching space and three specialist dance studios. For the three studios Harlequin supplied and installed a fully floating Harlequin Activity sprung floor with Harlequin Cascade and Harlequin Standfast vinyl performance surfaces totalling over 330 m². Harlequin Ballet Barres and Harlequin Mirrors completed the dance studio facilities.

In the Performance Teaching Space, a Harlequin WoodSpring sprung floor system with a Harlequin Standfast vinyl top surface was supplied and installed to an area of over 180 m².

Jason Piper, associate professor of performing arts at Kingston University said: "I'm always reassured by the quality and



consistency of Harlequin floors. All the floors are of the highest quality and allow teachers and students to move with confidence, happy in the knowledge that resistance and shock absorption is consistent across the entire floor and safe across all expected levels of humidity. The mirrors are huge and provide distortion free reflection and virtually seamless joins".

Ensure correct specification

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School uses time wisely to protect interiors with Yeoman Shield

Cardinal Wiseman Catholic School based in Kingstanding, just outside Birmingham, took advantage of a quieter time, with the majority of pupils home schooling, to undertake interior wall protection work with Yeoman Shield.

Catering for 700 pupils aged 11-16 the school has corridors and break-out areas throughout the school where walls and corners especially are exposed to marking and impact damage caused by the everyday movement of pupils, staff and equipment.



With the aim to reduce such damage and expenditure, after research and receiving samples, Head Teacher, Robert Swanwick, contacted Yeoman Shield to supply and carry out the installation of a complete wall protection system.

Following strict Covid guidelines throughout the process, Yeoman Shield's directly employed fixing operatives installed Yeoman Shield FalmouthEx Wall Protection Panels, (after boarding-out some of the brickwork to provide an even finish), at 1250 mm high to corridor and dining areas in a Dusty Grey colour to complement artwork decoration applied to the upper walls.

Staircase walls were also fitted with the wall protection panels with the addition of Yeoman Shield 50 mm Dia. Guardian Handrail in Timber with attractive Stainless Steel accessories.

Vulnerable wall corners were protected with 75 x 75 mm corner protection in a matching colour and Yeoman Shield 110 mm



White PVCu cover over a solid timber core skirting was added.

Mr Swanwick commented: "The quality of the product is exceptional. It has been installed for six months in some places and shows no signs of wear or tear yet. I also cannot speak highly enough of the professionalism of the installation teams, who understand the challenges of working in a school environment and get on with things quietly and efficiently. I am a very happy customer."

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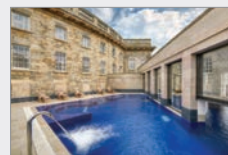


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One of Europe's largest spa operators has opened its doors in the UK, with air quality delivered by Gilberts. Main contractor Vinci UK began serious work on site in 2016, restoring the building envelope, merging two buildings into one, and adding a roof top swimming

pool extension to the Georgian property. Imtech mechanical engineer Peter Charles commented: "Gilberts is a trusted supplier, so why change, particularly on such a complex project? We knew Gilberts could and would deliver the high levels of service we needed."

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**BUILDING
PROJECTS**

**KING'S COLLEGE SCHOOL SPORTS CENTRE
WIMBLEDON**

Physical connections

A new sports and swimming pool addition at King's College School in south west London was designed around visual connections between old and new, and marked the culmination of the school's masterplan. Roseanne Field reports



Designing a modern, state-of-the-art sports complex to sit alongside Grade II and Grade II* listed buildings in a conservation area is normally a challenge to say the least – but in this case it was one that long-established practice David Morley Architects (DMA) relished.

The sports complex was the final stage in a 10 year infrastructure masterplan – produced by Tim Ronalds Architects – that has seen various improvements and additions made to the popular and growing 192-year-old independent day school.

“Education and sports projects are the backbone of our practice,” says Mark Davies, associate at DMA, explaining how their expertise in the sector gave them confidence to pursue this scheme with vigour, despite its seemingly daunting nature. The practice were invited to a limited competition before being awarded the contract. “Our ‘dream’ projects are those which pose a challenge, e.g. which are in a sensitive or heritage setting,” Davies explains.

The practice’s vast experience in the sports sector stood them in good stead for the briefing phase of this complex scheme. “It allowed us to interrogate what was right for this client,” he says. “We know what different sports need – the standards, the benefits of natural light in those

environments for encouraging participation in a gentle way.”

Brief

The school already had a variety of sports facilities, but they were spread out around the site and in need of renewal and bringing up to modern standards, says Davies. The school’s estate had seen various additions and changes over the years, so the functions were distributed in an ad hoc way. “A key element of the brief was to bring it all together cohesively,” explains Davies.

The new £21m facilities were the third and final element of the 10 year masterplan, which presented an “ambitious regeneration” comprising a new reception, pavilion and quadrangle, plus a refurbished dining hall, new classroom block, state-of-the-art music school (complete with 200 seat concert hall), and finally the sports centre itself.

As well as the pressure from siting the development alongside listed buildings and in a conservation area, the ante was raised further by the prestigious school having been named the *Sunday Times* Independent School of the Year multiple times. Nevertheless the school were reportedly happy to entrust the practice with the design. “The masterplan was flexible and open,” says Davies. “They were model



clients – they came to us with an aspiration and trusted us to develop the vision.”

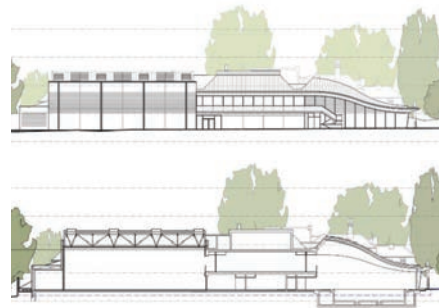
They had multiple meetings throughout the design process – which Davies says proved incredibly useful. “There were rigorous development meetings where we would come to the client with key briefing questions, which helped us know what they were thinking and what direction we were headed in,” he says. “Thorough and engaged meetings helped us address critical issues at each step to ensure key decisions were made within RIBA workstages.” It’s a process that the school also appreciated: “The planning result is testament to the excellent team and client working relationships we created,” says Owen Carlstrand, governor at the school.

With the existing facilities having evolved over a long period, in an uncoordinated manner, many were in an unusable state. The swimming pool was “outdated,” says Davies, its dimensions unsuited to modern standards, and the gym facilities were also in need of updating – dedicated studio space was needed and the facilities were on the whole no longer adequate for the number of pupils. The masterplan therefore sought to “consolidate the sports buildings to a single location,” which pupils, staff and sports participants and swimming members of the ‘King’s Club’ can easily access. It also

proposed removing some of the outdated buildings to allow for more outdoor space to house playing fields, tennis courts, and cricket nets.

The practice came up with a design that would replace the existing swimming pool, tennis courts and cricket nets, and “absorb” the existing 1980s-built sports hall, and the squash courts, built in the 1990s. The new design comprises three linked pavilions – one housing a six lane, 25 metre swimming pool, and another the six-court sports hall – which can also accommodate assemblies and exams. Lastly, a central two storey pavilion is home to the reception, changing rooms, viewing galleries, a gym, exercise suite, and offices. Also added were six new outdoor tennis courts along with three cricket nets.

The “real challenge,” says Davies, was integrating the new and existing facilities – “physically, practically and visually.” They wanted to ensure their concept would instantly look like it belonged alongside the other buildings on the site, “absorbing the courts and blending with the existing sports hall.” He continues: “The vision was to create not only excellent visual connections between indoors and outdoors to encourage physical activity among pupils, but also to connect the old facilities with the new.”



The new design comprises three linked pavilions – one housing a six lane, 25 metre swimming pool, and another a six-court sports hall



“Increasing the visibility of the sports in the complex means people are more likely to participate”

Form & design

One of the first challenges for the practice to address was the level changes across the site – both in terms of what was appropriate for the new elements, and also how to fix the problems in the current buildings. The existing layout was “awkward,” says Davies, with facilities accessed via “a series of complicated level changes,” with some below ground level. It was a design priority to make all areas easily accessible and create a better flow, which included deciding which level was the ideal one to use as a baseline.

The new entrance path to the main reception is now the point of access for the members of the King’s Club, while school students can access the facilities from the other side of the pavilion. A double-sided lift was also installed alongside a new staircase to allow easy access to the various levels internally.

As well as access for the public and students, they also needed to consider access for fire tenders and pool maintenance – both of which needed to navigate away from the main road, through constrained spaces. “We had to find a resolution that would suit all the different requirements,” Davies says.

Another key focus for the practice was to achieve the balance between ensuring the buildings blended into the existing

site, while also making sure each had its own distinct character. The listed buildings were “an important consideration,” Davies says, which “informed the strategic layout of the site.” The extensively-glazed single-storey swimming pool hall was designed with a green roof that slopes down to meet the orchard of the Grade II* listed Southside House.

On the other side, the sports hall also sits alongside the garden of the Grade II listed Gothic Lodge, and the practice were therefore “determined to mitigate the large mass of the sports hall and potential overshadowing,” Davies explains. There’s also an underground stream running through the site – essential for the various gardens, so they were also careful not to disturb that by setting the building too low in the ground. “It was a balancing act,” Davies says. “We treated each facility as a separate mass.”

The existing squash courts and sports hall – which remained mostly untouched – were absorbed within the colonnaded lobby. There was some minor modification to the building frontage in order to accommodate new access, but largely “it was about connecting them,” Davies explains. Absorbing them within the new elements “put a new facade on the existing buildings” without a huge overhaul being required. The colonnades were added to “allow daylight into the spaces that were retained,” says Davies. “The staff rooms and flexible spaces benefit from this.”

Externally, the pitches and playing fields are located to the south of the pavilions and are the “primary outdoor space,” says Davies. Previously, the old swimming pool, a rifle range and garden wall were dividing and cluttering the existing playing fields, but what Davies says was the masterplan’s “core strategy” was to make the largest playing field more open, and consolidate the buildings into one area. To the north is the school’s Lodge Garden. Overall, the composition of the pavilions “frames the Lodge Garden, allowing it to become part of a hierarchy of outdoor spaces enriching the school grounds.” The garden was created in the space between the new buildings and existing Lodge, strengthening the relationship between the two volumes. “The garden space works with the colonnade,” says Davies. “The setting and nature helps knit everything together.”

Interiors

One of the more challenging aspects to design was the swimming pool, Davies



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“They were model clients – they came to us with a vision and trusted us to develop it”

explains. The school required the pool for both swimming and water polo lessons. “The two functions have different requirements,” says Davies. “There was a great deal of discussion about the profile and depth of the pool, it was about balancing the needs of both.”

Internally, the facilities were designed with a “see it, do it” principle in mind. “Increasing the visibility of the sports means people are more likely to participate,” Davies says. This idea influenced the extensive use of glass on the swimming pool hall, large windows looking into the sports hall, and the upstairs access galleries which overlook the halls and pool and can also be used for spectators during events. The studios and gym upstairs also feature extensive glazing which overlooks the pitches and playing fields outside. “It was about creating views both inside and out, connecting to the sport all around,” explains Davies.

Materials

A key part of ensuring the buildings didn’t overpower their surroundings was the use of brick, explains Davies. The sports hall is a particular example, featuring a large external brick facade. “There was a great deal of dialogue with the school about the brick selection,” he says. “Getting the right brick mix and mortar combination, and breaking the large mass of the sports hall down by how we layered them, and the texture.” The bricks chosen were carefully selected to be in keeping with the variety present in the nearby garden walls and building facades.

Internally, the materials were carefully

chosen based on what was appropriate for the setting, says Davies. The sports hall was constructed with a steel frame and concrete panel wall system to create “robust surfaces that were impact resistant,” explains Davies. “We wanted to avoid the usual concrete blockwork.”

The practice used a concrete frame for the central pavilion, which contained the changing rooms, gym, and strength and conditioning suite. Glulam and CLT were chosen as the primary structural materials in the pool hall due to their properties in this corrosive environment, bearing onto concrete columns.

Despite timber’s resilience to moisture, the architects avoided its use in “splash zones.” The timber roof – white-washed to complement the concrete columns – sweeps down in a wave-like motion from the viewing galleries within the central pavilion to the single storey end of the hall.

The shape of the roof, as well as being practical to allow for the change in storey height, was also influenced by the incorporation of a continuous rooflight to create a good and even light distribution over the pool and reduce glare for swimmers. The glulam beams therefore have a dynamic shape and varied depth to support this.

Glulam was also used in the concert hall – part of one of the earlier phases of the masterplan – which both won and was shortlisted for several architectural awards. Recently, and thanks to its timber roof design, the swimming pool hall was named the Education & Public Sector winner at the 2020 Wood Awards. ■

Guiding the future of swimming pools

Across Europe there has been a surge in the swimming pool sector. With many more people staying at home and foreign travel restricted both domestic and commercial pool manufacturers have seen a rise in new builds and renovation of existing pools. Trends indicate that 2021 will see a further rise in local markets as more people cocoon and less people travel abroad.

In a new feature on their website, acoustic panel manufacturer Troldekt summarises the knowledge, trends and examples which will help influence the design of swimming centres today and in the future.

The feature includes 16 trends compiled by the International Association for Sports and Leisure Facilities. These cover everything from economics and digital features to new uses and products which influence the architecture of pools and their construction.

Pools can be used for different purposes and by quite different groups of people. This places demand on designers and developers to provide perfect layout and solutions to create the best atmosphere.

One interesting aspect is how modern



swimming centres need to satisfy many expectations from different types of user. For example one pool needs to accommodate the needs of elite swimmers with those people wanting to exercise, young families and wellness enthusiasts. Each group is looking for a different type of experience and unless planned, there is a risk of friction between them. Architects such as GPP Arkitekter and Bay Arch have succeeded in this balancing act as shown in the newly built Frederikssund Swimming Centre.

One of the most important aspects and one universally agreed across all types of user is the control of noise. For example, absorption of the loud sounds from splashing, shouting and playing is essential. This is why Troldekt's acoustic wood wool panels are often specified because of their durability,

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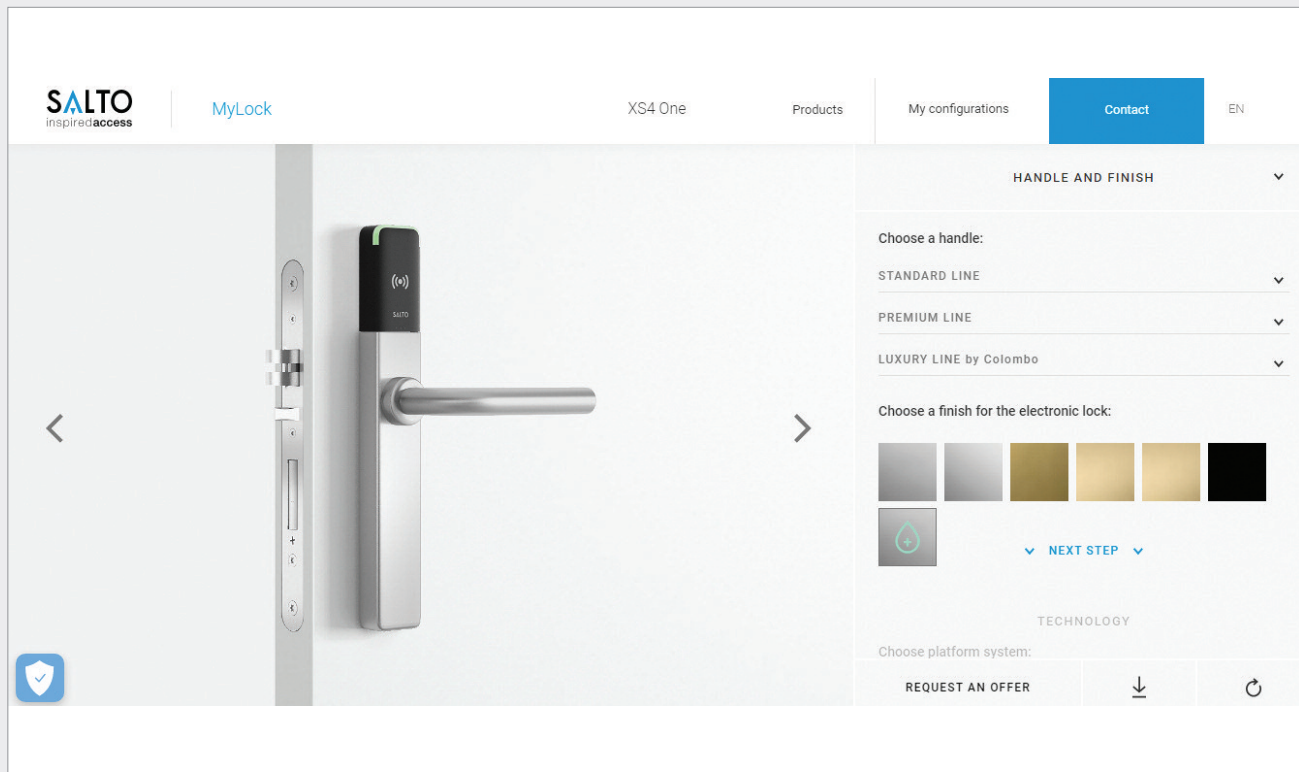
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**CONSTRUCTION
PRODUCTS**

How modern masonry works with modern methods

Scott Denham from IG Masonry Support looks at how offsite solutions are delivering the architectural masonry details specifiers want, ensuring quality alongside a safer and faster way to create masonry facades

Brick has long been the specifier's choice when it comes to creating stunning facades, and its popularity shows no sign of diminishing. However, there is a requirement to deliver buildings more quickly, and offsite assembly and construction is one solution. But can modular procedures be compatible with traditional masonry?

For an architect, modern methods of construction in the form of offsite manufacturing may initially be perceived as something that puts a constraint on their creativity. This perception hardly comes as a surprise, as for most the term still conjures images of post-war, homogeneous prefabs; a building approach that served an essential economic purpose, but harmed the reputation of offsite manufacturing.

In fact, this couldn't be further from the truth. In recent years, offsite manufacturing has liberated itself from this perception and is undergoing a resurgence. The construction method has progressed significantly since the 1940s and 50s, with the development of new technologies facilitating greater freedom of design for architects. 'Aspirational' aesthetics can be achieved by utilising the latest techniques in offsite manufacturing, particularly in terms of complex brick features.

Construction processes and regulations are continually in states of flux. For this reason, product manufacturers have to adapt too, to assure their products conform to the latest trends and standards. The specification of offsite manufactured brick solutions in particular has accelerated in recent years, no doubt as a result of the quality systems available that enable architects to achieve architecturally striking brick facades.

Brickwork is a cornerstone of

construction and has been used for thousands of years, mainly because of its consistent shape, compressive strength and ability to absorb water. Steeped in history, it is no surprise that brick has been paired with offsite manufacturing, a method which drives quality, intricacy and long-term value. For architects in particular, this method of construction guarantees the same quality finish is executed every time, enabling architects' designs to be translated perfectly onsite.

A match made in heaven

Another factor which makes brick so popular is its ability to enable intricate detailing, which gives a bespoke 'feel' to a building. Brick detail in the form of brick soffits, deep reveals and flying beams continually make for stunning exteriors, enabling unique detailing to be created. In this way, offsite solutions can be utilised to ensure brick features and brick-based buildings sit beautifully within their surrounding environments, hitting the mark on both intricacy and quality simultaneously.

The partnership between brick and prefabrication has been needed for a long time, and the appetite is growing day by day. With these designs in high demand, offsite manufactured brick units fill a huge gap in the market. These units can be manufactured in a quality-controlled factory environment without the need for time consuming fabrication or skilled crafts people on site.

Tradition & modernity combined

One recent case study demonstrated how a bespoke solution could provide all the aesthetic possibility of traditional brickwork in a modern offsite manufactured alternative.



For an architect, modern methods of construction in the form of offsite manufacturing may initially be perceived as something that constrains creativity





IG Masonry Support designed and manufactured the B.O.S.S. (Brick on Soffit System) for projects at 57 Broadwick Street, and Stonebridge Park, London. This tailor-made bespoke solution was designed and manufactured to meet the client's exacting specification. Being highly adjustable, it enables architects to design various shapes and depths of brick soffits while accommodating a wide range of bond patterns.

On the mixed use Broadwick Street project designed by Rolfe Judd Architecture, and built by main contractor Blenheim House Construction and brickwork contractor Grangewood Brickwork, curved and straight units and deep soffit panels were created to achieve a range of deep-tiled soffits, slender brick piers, and tile and brick banding on the building's facades.

At the residential Stonebridge Park scheme, built by main contractor Durkan and designed by architect Cullinan Studio – units were designed and manufactured for the intricate corbelled brick feature at the building's entrance. This design was delivered in separate components that facilitated optimum adjustability so the intricacy of the design could be achieved

without compromising the speed and quality of construction.

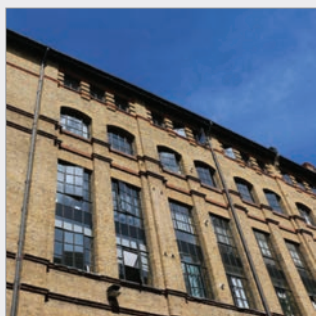
On both projects, the utilisation of an offsite manufactured solution ensured the architect's designs could be executed onsite, assuring the same quality finish was met every time. However, with modular construction this replication of quality simply isn't an issue. Taking the construction of complex brick features offsite into factory-controlled conditions drives the level of quality and consistency that is needed to achieve architectural excellence. Where barriers to creativity are not ideal, offsite construction is a worthy solution.

The allure of brickwork to architects across the UK will remain a constant in the industry. Now the impressive technology is available on the market to create stunning prefabricated facades from traditional brick. With this set to be an ongoing trend as offsite manufacturing expands to a wider range of projects in the future, the ever-elusive 'grade A' finish can be translated onsite, assuring architects' design intent is encapsulated in 'real life.'

Scott Denham is sales director at IG Masonry Support



Crittall meet exacting steel window replication specification



Originally built as a factory, Springfield House in Hackney, East London, now provides spacious accommodation in the form of some 90 apartments. A complete refurbishment of the building has been completed with Crittall steel windows helping to reinforce its character appeal. Locally listed, the seven-storey brick building had been built, in 1902, with Crittall fenestration. Hackney Council planners insisted that like-for-like window profiles must be used for the refurbishment and that the external putty on the windows should be replicated. Crittall Corporate W20 windows & doors were installed, powder coated black, featuring a mix of opening styles and configurations. The entire refurbishment project was undertaken with residents in-situ with Crittall's installers working closely with them to keep disruption to a minimum by ensuring the windows and doors for each flat were replaced in a single day. The converted building retains many original features inside and out, including exposed brickwork. The flats benefit from high ceilings and good daylight throughout, the latter enhanced by the slim profile of Crittall steel windows.

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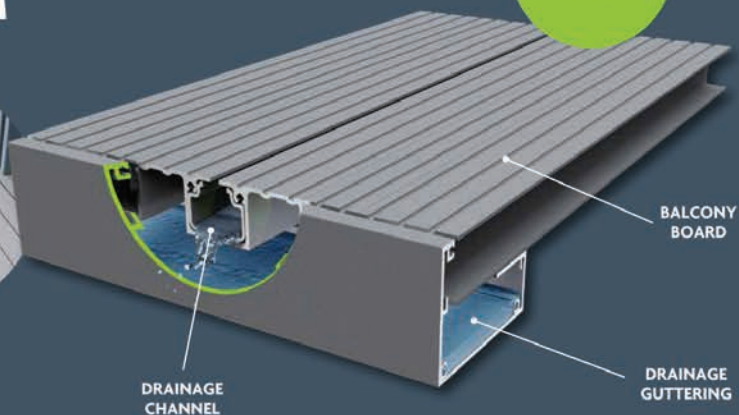
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The Passivhaus balancing act

Iain Fairnington of the A. Proctor Group highlights some of the key technical factors relating to performance in Passivhaus design, and best practice for managing the balance of movement of heat, air and moisture within the building envelope

Since time immemorial, basic protection from the environmental climate, rain, heat and cold have been key to the design of buildings we occupy. Add in fire and security, and we can see the range of factors affecting how building methods have evolved, and will hopefully continue to as new materials come to market.

Basic construction methods have evolved progressively throughout the centuries, leading up to the introduction of cavity walls in the late Victorian period, to protect from rain penetration. This has progressed further into the modern day, where Passivhaus is used by many as a yardstick for the balance of moisture issues, coupled with sustainable temperature control and a healthy building envelope.

In all this evolution, the key principles still need to be addressed, and the basic instincts of protection remain key.

We are living in unprecedented times and due to a pandemic, most are spending more time at home not just for leisure and relaxation, but for work too. The vaccination programme gives us all hope, but there is no doubt that these challenging times have increased people's appreciation of the important things in life, including spending time with friends and family, perhaps over materialistic possessions.

Added to this, from the energy crisis in the early to mid-1970s to the current global climate crisis, there is a context which means we cannot rely on the earth's existing resources for basic comfort goals.

In the design and construction of our buildings, it is crucial to take account of the HAMM (Heat Air Moisture Movement) principles, which consider the effect of insulation type and placement along with the vapour permeability of the various layers. This leads to a balance of key factors producing a healthy building envelope that protects the occupants.



Calculations & VCLs

One of the features of balancing these principles can involve calculations to assess condensation and/or moisture risks. Glaser calculations can do this, but these can have limitations. A WUFI calculation can help overcome these, e.g., rain and drying out of residual moisture in the construction. A WUFI (BS EN 15026) calculation can show the effect different vapour control layers (VCLs) – with different performance levels – can have on the structure, and whether such a solution is critical.

It is difficult to argue that a VCL is not a good thing, but similar to a first Covid-19 injection, a VCL should be used to reduce the moisture risks to acceptable levels but not be relied upon as the sole method of protection. Remember a VCL is a vapour control layer – not as previously referred to in the antiquated terminology of a 'vapour barrier,' which led to over-reliance.

Generally, where the insulation is placed externally a VCL is less critical – compared with insulation solely between framing behind the sheathing board. This has led to the introduction of externally applied self-adhered vapour permeable yet airtight membranes.

It is the properties of these membranes in creating a self-adhered, airtight, yet vapour permeable layer, that allows it to be placed on the external face of the

In the design and construction of our buildings, it is crucial to take account of the HAMM (Heat Air Moisture Movement) principle, which considers the effect of insulation type and placement along with the vapour permeability of the various layers





sheathing board. This allows for temporary water protection, airtightness and long-term vapour permeability. Along with the correct balance of insulation, this means a VCL may be less critical – yet it is important to assess this fully on a project by project basis.

There is little doubt that a VCL (especially variable resistance membranes) can be advantageous in several applications to reduce the moisture flow through a building envelope, but less critical in some areas, depending on the insulation placement.

For example, when placing insulation purely in between the frame of a timber frame building, the moisture risk may be too high to omit the VCL and therefore should be used to reduce vapour progressing through the structural frame. However, if this is balanced with insulation placed external to the structural frame, the dew point potential is reduced due to the warm frame and the VCL becomes less critical yet still good practice.

A good appreciation of the key balancing of heat, air and moisture movement can work together for the benefit of architects and contractors in continuing to improve the way that we

design and construct buildings.

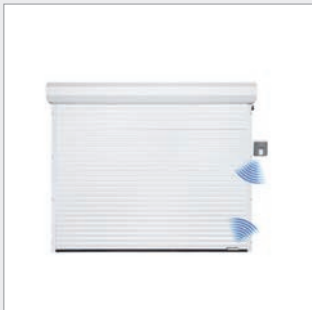
From an industry and design perspective, it is important to understand that VCLs should not be relied upon solely to reduce moisture build-up but can have benefits when balanced with other factors. The Passive House Institute (PHI) component database helps specifiers to identify certified components, which have been tested and passed the required standards. Innovative products offer solutions that can help to achieve the fine balance between heat, air and moisture movement.

Manufacturers are on hand to provide high-quality technical back up service around Passivhaus, including:

- A Glaser and/or WUFI calculation service where appropriate to show the robustness of the proposed construction
- Tool Box talks, virtual if required
- Specification guidance
- Site visits (dependant on Covid restrictions) that can give a compliance report showing areas that are well installed and areas needing improvement in the installation.

Iain Fairnington is technical director of the A. Proctor Group

Garador introduces wireless optical sensor for GaraGlide



Garador's new electrically operated roller garage door, the GaraGlide, is now available with a wireless optical sensor as an option. You can therefore now choose between a wired or wireless optical sensor for this roller door. The wireless optical sensor is built into the floor seal and utilises light beam technology, so if there is an obstruction in the way of the door curtain's downward path, when the light beam is broken the door curtain will stop. The new wireless optical sensor means there is no spiral cable required to connect the safety edge to the separate control panel housing. Batteries are required for this new device. This new feature provides the same reliable level of protection as the wired version and recognises when there is an obstacle in the door's path. The GaraGlide is powered by a tubular drive motor and is supplied with two remote hand transmitters as standard, with either a standard (433 MHz) or bisecur (868 MHz) hand transmitter design. It has been designed so that it is quick to fit and easy to transport to site; the entire garage door fits neatly into just two double-wall cardboard boxes. Choose from 16 colours and two timber-effect finishes.

01935 443700 www.garador.co.uk/garador-range/roller-garage-doors.aspx

New features for popular revolving door



Supplier of security and entrance systems solutions, **dormakaba**, has upgraded its KTV Revolving Door system, which now offers improved installation times and a new automatic Night Shield. With the dormakaba Direct Drive, the KTV Revolving Doors

now feature an impressive shallow ceiling assembly of just 100 mm, with an integrated LED light ring, allowing for the seamless integration with existing architecture. Thanks to the brushless motor, the doors benefit from enhanced life cycles – tested to 2 million cycles.

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Making it possible to introduce full-height glazing into spaces, MasterPatio from Reynaers leads on contemporary design while providing superior performance and functionality. Accommodating glazing up to 3.6 meters in height, the system is

suitable for a variety of applications, with slim sightlines ensuring a glass-to-frame ratio of around 90 per cent, maximising the presence of natural light. Delivering dependable performance, the system has been tested to BS EN 6375-1 and EN 10140-2 and meets to the Passivhaus standards where thermal performance is concerned.

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ALUCOLUX® A1 from 3A Composites GmbH launched in the UK!



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Richard Geater, Sales Manager
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Compact automatic entrance for hospice

Nightingale House, a charitably run palliative care facility in Wrexham, has undertaken a significant programme of upgrade. Improving accessibility into the facility, the main entrance now benefits from a double set of automatic folding doors from TORMAX, helping maintain the ambient temperature of the reception area by creating an internal lobby. With limited available space, the TORMAX folding door was the ideal solution with the four-leaf folding principle reducing the swivel range to just half that of a conventional two-leaf swing door. The doors still offer a generous opening width that is suitable for all pedestrians and wheelchair users visiting Nightingale House.

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A. Proctor expands systems offering



A new tape for use with fire-rated internal vapour control layers is now available from the A. Proctor Group. Procheck® FR Tape, a B-s2,d0 aluminium-faced, air and vapour tight product, is designed to be used with Procheck A2 and Procheck FR200 vapour control layers (VCLs) which are part of the fire-rated system solutions available from the A. Proctor Group. The tape is used to seal the horizontal and vertical overlaps of these VCLs, as well as over the fixings, around penetrations and junctions, to ensure the internal air and vapour barrier is one continuous, seamless layer.

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Magply for new-build thatched property

Widely specified for its fire resistance and all round stability in the cladding build-up to apartment blocks as well as a render backer and sheathing board, IPP's highly versatile **Magply** boards have been employed by a regional developer as a fireproof sarking board beneath traditional thatched roofing for a development in a Dorset village. The 12mm thick version of the high performance MgO material was selected by Poole based Charlew Developments, to comply with the project architect's performance specification for the solitary thatched roof building. The site agent for Charlew Developments, Jules Peach, commented: "We have found the boards very straightforward to cut and fix before covering them with the breather membrane and battens." Magply MgO boards present a fire-safe and environmentally friendly alternative to conventional plywood or OSB products.

01621 776252 www.magply.co.uk

STO insulation and render specified



StoTherm Mineral insulation and StoSilco render were used to provide outstanding thermal performance on the recently completed Peveril Securities King's Stables Road mixed-use development Edinburgh's city-centre. This project illustrates Sto's ability to work closely with specifiers, contractors and clients to ensure that the most appropriate solution was chosen for this project. Sto successfully worked in partnership with project architects, Fletcher Joseph Associates, and facade specialists AFS (Scotland) who installed the StoTherm Mineral system. The result was a fully bespoke insulation system which satisfied all the project requirements.

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UfAC used to boost sustainability



An underfloor air conditioning (UfAC) system supplied by AET Flexible Space has contributed to the top sustainability credentials of the redevelopment of a 1930s warehouse and former clothing factory in Clerkenwell. Reducing the building's energy consumption and carbon emissions were key considerations, and AET Flexible Space's UfAC was selected for its low environmental impact and high efficiency. Harella House has received a BREEAM 'Excellent' rating, and it is estimated that the refurbished building achieves a 47 per cent reduction in carbon emissions.

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A generational challenge

Paul Smith of F.H. Brundle explains how the Government's changes to Part M of the Building Regulations could meet the challenge posed by Britain's ageing population

Between September and December 2020, the Government held a consultation on how they could improve accessibility standards across the UK. The fact such an exercise went ahead despite the huge disruptions caused by the pandemic was telling – ageing is a huge issue for the UK, and Ministers know it.

In 2019, there were nearly 12 million people aged over 65 in the UK, 1.6 million over 85, and more than 14,000 aged 100 or above. In terms of the built environment, people who are more likely to need public and private buildings to be accessible are already a significant part of the population.

But thanks to massive advances in modern medicine, people are living longer than ever – and in the decades ahead, Britain's elderly population is set to substantially increase. By 2030, we expect one in five people to be 65 or over. The 85 and above bracket is the fastest growing demographic of all – on course to double in size by mid-2041, and triple by 2066. What's more, 45 per cent of people over 65 are disabled, compared to just 15 per cent of the younger population.

Over the next 50 years, that means that public spaces and private homes will need to be comprehensively adapted if they're going to remain accessible to millions of people around the country.

Improving accessibility standards

As it stands at the moment, Part M of the Building Regulations sets minimum access standards for all new buildings.

Category 1 sets out basic standards for accessibility for all new homes. Category 2 is more stringent – laying out higher standards that planning authorities can decide need to be followed in certain circumstances. And Category 3 specifically deals with adjustments that have to be made to buildings and outdoor spaces to make them accessible for wheelchair users.

Again, it comes into force at the discretion of the local government, who may decide that a certain proportion of homes in the area have to meet the heightened standards.



In its recent consultation, the Government sought to gain opinions on five different options for strengthening accessibility standards in the UK.

The first was simply 'wait and see' – in 2019, the Government implemented a number of changes in its revised National Planning Policy Framework, and one potential course of action is to wait to see what impact that has on the delivery of accessible buildings.

The second would take the increased accessibility standards that are already part of Category 2 of Part M – but currently optional – and make them the new minimum for all new builds, except where it's impractical.

Option 3 would go further, removing Part M Category 1 altogether, and requiring all new builds to at least have the accessible and adaptable features of a Category 2 property.

Public spaces and private homes will need to be comprehensively adapted if they're going to remain accessible to millions of people around the country



In its recent consultation, the Government sought to gain opinions on five different options for strengthening accessibility standards in the UK



Option 4 would make Category 2 the new base standard, but also set a fixed percentage of homes that would have to meet Category 3, and therefore be adapted for wheelchair users.

Finally, Option 5 would seek to keep Part M Category 1, but make it more stringent.

Change is coming

So whatever option Ministers eventually choose (the consultation closed in December, and the government is currently considering the responses it received), change is coming.

There has been some speculation about what the high-tech, accessible buildings of the future might look like. Companies already provide voice-activated doors and cupboards, kitchens and bathrooms with appliances that rise and fall to suit the user, and a whole range of other futuristic accessibility tech.

But while I think the accessible buildings of the future are likely to include these sorts of advances, on the whole I think we'll just see a much broader application of the basics – ramps, handrails, anti-slip flooring, and other products that have been in use throughout the public and

private sector for decades.

Many manufacturers are continuing to see very healthy demand from specifiers for handrails designed to meet the requirements of Part M.

For example, products are available that conform to DDA requirements for a smooth continuous handrail by using 42.4 mm galvanised tube, and include a warm to the touch hand railing and component system that meets Part M. High quality PVC coating ensures minimum heat conductivity away from the hand, and removes the need for thermal painting or powder coating.

With a mix of high-tech innovation, and quality traditional accessibility products like these, we can make Britain's built environment safe and welcoming for everyone to enjoy.

For the full details of current Part M standards and the proposals for enhancing them, please see the 'Raising accessibility standards for new homes' consultation paper, available on the Government's website www.gov.uk

Paul Smith is head of marketing at F.H. Brundle



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Getting the perfect finish with Schlüter-TRENDLINE profiles



There are plenty of ways to create the desired aesthetic in your bathroom or wetroom at the design stage, whether the project is big or small. This could mean incorporating mood lighting, adding statement sanitaryware or simply letting the tiles speak for themselves. Whatever you settle on, it is important that both style and substance are taken care of.



When it comes to tile edge protection, these boxes can be ticked easily with the help of Schlüter-Systems' range of profile trims for floors and walls. They are made from quality materials and can offer the perfect look that will stand the test of time.

Inspired by modern interior design trends, Schlüter-TRENDLINE is a range of textured coatings for wall profiles offering a variety of different options to give you full creative control. Colour possibilities include stone grey, matt brilliant white, rustic brown, and dark anthracite. All finishes within the range are available across JOLLY, RONDEC, QUADDEC and FINEC profiles and selected finishes can also be applied to the internal wall corner profile, Schlüter-DILEX-AHK.

You may wish to go for an understated finish, a more striking variant or anything in between. Below are just a few ideas on how to get the most out of your profiles and to hopefully provide some inspiration for your next bathroom project:

Match tile and trim

If using one tone or colour of tile throughout the installation, it can be very visually pleasing to match the profile trim colour to that of the tile. This creates a stylish and minimalistic effect, whilst also giving the illusion of a bigger space which is ideal for



smaller bathrooms.

Enhance patterned tiles

When working with a patterned tile, it can be easy to make the mistake of creating a busy or fussy design which can date the look of the tiles. Often standard stainless steel or aluminium profiles will be distracting. To avoid this, try choosing a TRENDLINE finish which matches one colour from the tile pattern. This can really draw the eye and create a statement for the right reason.

Create useable space within your tiled area

A great way to give your bathroom the wow factor is by adding a fabricated niche which is then tiled over. Not only does this make the space functional, but it can also create a focal point within the room. By using Schlüter's hard-wearing profiles, you can be safe in the knowledge that the tiles will be protected even in heavy use areas.

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Specify Smarter



Digital bathrooms

Tom Farrant of Lecico Bathrooms looks at how the ongoing pandemic has accelerated changes in the industry's working patterns, including the move to a greater acceptance of 3D BIM, and how this has improved bathroom specification

Digital transformation continues to change working practices across the construction industry. The pandemic has seen an acceleration in cloud computing, virtual reality and other technologies that are being adopted by construction professionals. Through applications such as Microsoft teams and Zoom, project stakeholders have been coming together through digital means – to a point where it is now the norm. A key aspect to note as a result of this is the ease in which these digital technologies have been adopted.

The pandemic has demonstrated how collaboration can still be achieved remotely, with reduced overheads, and in a more sustainable manner. Like many, specifiers in the construction industry have proved that working remotely has had a limited impact on their role and output. It is highly likely that specifiers will continue to blend remote working with working in the office.

Being able to access product data at any time, and importantly in a clear structured and digital manner is now paramount. For manufacturers who have adopted BIM (Building Information Modelling) processes to a good standard, the journey to access data in a structured way for specifiers has already begun. It is easy to get side-tracked by the visual 3D aspect of BIM, but undeniably the greatest benefit comes through the power of how BIM utilises digital product data. The UK BIM mandate in 2016 was driven by the need for better asset management of government buildings through improved data delivered by BIM.

Since the mandate, BIM has effectively become the norm in our industry. Survey responses in the 2020 Annual BIM Report produced by NBS suggest that over 70 per cent of our industry has now adopted BIM and these trends are expected to continue. This is a clear requirement to transform the industry and the way we all work when focusing on improved safety and sustainability. The report shows that the



same benefits of using BIM are consistently being recognised by specifiers, it offers improved coordination of information, better productivity, reduced risk, and importantly increased profitability.

Unsurprisingly, BIM adoption has grown substantially over the last decade. In 2011, 43 per cent of survey respondents had not heard of BIM. Today, awareness is almost



BIM provides a high level of data, not just on products, and allows for consideration of operational aspects of the build process including water use, materials use, and operational energy

universal, with 73 per cent using BIM. The BIM standards are becoming embedded, and fewer people see BIM as simply '3D modelling'. BIM is used across all sectors including commercial and residential. Though initial adoption resulted from public sector projects and the need for BIM Level 2 in 2016, the wide use and benefits are applicable to any project.

Specifiers are using BIM to meet numerous industry standards, and many are familiar with, and using standard documents such as BS EN ISO 19650 and tasks outlined within those standards. New standards such as ISO 23386 and 23387 focus on delivery of product data in a machine readable (digital) format. NBS Source provides a uniform solution for all manufacturers to do this. With the forthcoming Code for Construction Product Information (CCPI) from the Construction Products Association, more and more focus on how data can be accessed digitally will become increasingly important.

In a broader context, BIM offers a simple solution for specifiers to adhere to best practices and to meet industry standards, and most importantly to understand and improve sustainability in construction.

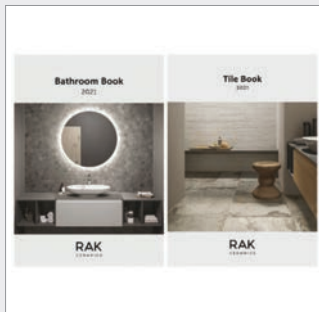
BIM provides a high level of data, not just on products, and allows for consideration of operational aspects of the build process including water use, materials use, and operational energy, which all go towards whole life carbon calculations. Water usage is a less publicised sustainable factor than carbon but is a fundamentally important sustainability issue.

Statistically the specification of bathrooms (sanitaryware), doors, windows, and furniture products are ahead of the curve in BIM usage. Data on flow rates, materials, recycled content, usage and duration (embodied carbon), is available for bathroom products in BIM and is proving to support the drive to improve sustainability in construction.

Other reasons for increased use of BIM for the specification of bathrooms are due to increased complexity in modelling bathrooms products, and because of the benefits of being able to create visualisations of areas of aesthetic importance. BIM brings visualisation and planning benefits as well as data.

Tom Farrant is business development director at Lecico Bathrooms

Bathroom and tiles books get an update for 2021



With new product launches coming on board in 2021, **RAK Ceramics** is publishing new editions of its Bathroom and Tiles Books, providing retailers with up-to-date marketing material at what is a busy and exciting time for the bathroom brand.

A much-used sales and reference tool for RAK Ceramics' customers that they can pass on for free to their clients, the new brochures feature the latest ranges of sanitaryware, brassware, furniture and mirrors, including the design-led RAK-Petit range launched with compact bathrooms in mind. The Tile Book for 2021 features stunning new large format slabs and ceramic wall tiles, among the latest additions to the range.

A4 and full colour in format, both brochures feature inspiring room set photography to help bring the products to life, as well as full specification details to help make ordering simple. Available to download in PDF versions from the RAK Ceramics website, printed copies of both brochures are available from regional sales teams.

01730 237850 www.rakceramics.com/uk

Clean hands save lives

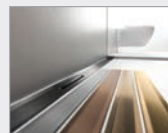


Regular handwashing with soap and water remains the most effective means to reduce transmission of Sars-Cov-2 and many other pathogens that pose a risk to human health. As social-distancing measures are eased, hand decontamination should continue to play a crucial role in reducing the spread of infections. Optimising the handwash process,

Horne Engineering Ltd's award-winning Optitherm thermostatic clinical tap delivers safe, comfortable and accurate temperature controlled warm water with minimal splashing. Superior ergonomic lever-actuation ensures reliable and clean, hands-free operation.

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Viega launches new colour options



Viega has expanded its Advantix Cleviva range of shower channels with four new on trend colours. The award-winning shower channels for floor level installations are now available in anthracite, gold, copper-gold and champagne alongside the classic stainless steel finish. The colours provide bold new design options, from high contrast effects to introducing warm, luxury tones into any bathroom. The innovative Advantix Cleviva offers true design freedom and excellent drainage performance. It is available in four sleek versions: with single or double slot inlets and the choice of rectangular or rounded openings.

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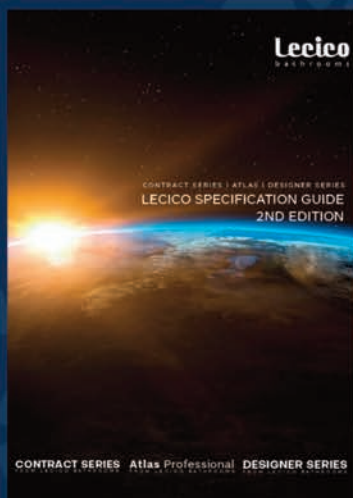
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Together World Tour kicks off in Milan



Ideal Standard has announced a unique series of events, the Together World Tour, blending an innovative digital format with the attraction of a physical event. What do Milan, Berlin, London, Paris, Dubai and Shanghai have in common? These cities are renowned cultural capitals of the world, and also the locations for Ideal Standard's innovative event designed for the international Architecture & Design community. The Together World Tour will address a global audience through an innovative fusion of digital content and physical interactions. It begins in Milan and will then continue throughout 2021 and into 2022.

01482 346461 www.togetherworldtour.com

Fibo reaffirms commitment to environment



Fibo, supplier of waterproof wall panels, is now providing customers with easier access to its environmental data, with its wall panel EPD now available to download online. The EPD provides quality-assured, quantifiable environmental data on Fibo's waterproof

wall panels. Available in a range of colours and aesthetic finishes, Fibo's waterproof wall panels are manufactured from PEFC-certified birch plywood, a renewable and carbon-friendly material. Fibo's wall panels offer an ideal alternative to tiles, being easy to handle and install and requiring minimal maintenance, with a 25-year warranty.

01494 771242 www.fibo.co.uk/product-information



Earthborn's Classic range of 72 shades

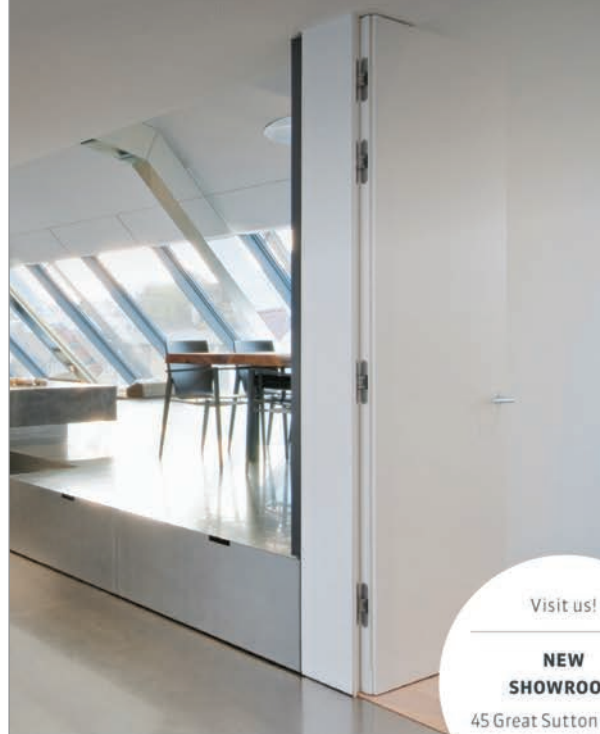
Why use a breathable paint?

Using paint with a high level of breathability, with breathable building materials, avoids moisture being 'trapped' beneath the surface of the paint. Trapped moisture can lead to damp walls, causing the paint to bubble, peel and eventually blow completely. It can also contribute to a harmful living environment. Earthborn Claypaint is a highly breathable paint, perfect for walls and ceilings where breathability is key. It's thick and creamy with a high clay content, offering excellent coverage, no nasty paint smells and a number of eco properties. Ease of use, high covering power and lack of harmful emissions make Claypaint an ideal option to optimise breathability for any building. Earthborn's new colour card showing all 72 colours in the classic range is now available and 100 per cent recyclable, including the adhesive and the paint chips that use real Claypaint.

01928 734 171 www.earthbornpaints.co.uk

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Custom service or choose from a collection of images and patterns – the options are limitless. Altro Custom floors and walls allow you to design for areas where looks not only count, but can positively affect the views and even the wellbeing of the people who live, work or visit.

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With the introduction of HeartFelt® Origami, architects and interior designers can add a highly exclusive ceiling finish to their buildings. This new Hunter Douglas Architectural felt ceiling system not only delivers a unique aesthetic appearance, it also boasts a high acoustic performance. Based on ancient origami techniques, the panels are folded to provide additional rigidity as well as create an attractive finish. It is quick and easy to install and it can be used as a room-filling ceiling system or as a stand-alone solution.

01604 648 229 origami.hunterdouglasarchitectural.eu/en-gb

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Making an impact on noise

Recent research links unwanted noise levels with a heightened risk of mental and physical health problems. Karen Wilding of Forbo Flooring Systems says this shows that architects must adopt tools and materials that mitigate these effects

Without effective management, unwanted levels of noise can pose a serious challenge across a wide range of common buildings. From enhancing the likelihood of developing cardiovascular conditions and limiting speech intelligibility, to increasing the chances of hearing loss, there is now a body of evidence to highlight how problematic excess sound can be on occupant health and wellbeing. In turn, there is now an expectation for building designs to incorporate noise reducing measures.

Understanding sound

Sound can take one of two forms: airborne noise, or impact noise. It is important for architects to understand the specific properties of each, as this will help to make more informed decisions when designing in acoustic systems. Impact noise occurs following a physical impact on a building, or solid material, such as footfall, or a banging door. Airborne noise applies to things like TV noise, people talking or dogs barking, and travels through the air, reflecting off or being absorbed into various building elements.

Each individual project will have its own unique challenges, and the level of acoustic performance required will vary for different types of buildings and rooms.

For example, with an increasing number of people in the UK now renting homes, the demand for private and social housing buildings is on the rise. The main issue is that multi-occupancy buildings often struggle to prevent excess noise transferring from room to room and floor to floor, affecting an individual's ability to sleep. Similarly, in healthcare, hospitals should be optimised for rest and recovery, and efforts should be made to mitigate sound transmission between wards and floors. For England and Wales, Health Technical Memorandum HTM 08-01 sets out the acoustic criteria for the design and management of new healthcare facilities.



Meanwhile, classrooms up and down the country struggle with indoor environments that create excess reverberation and noise transference between levels, and limit speech intelligibility. This can adversely affect students' health, concentration levels and performance. It is clear that acoustic performance needs to be addressed.

From the floor up

With all of these challenges in mind, the good news is that advances in sound insulation solutions mean that acoustic performance within all types of buildings can be improved. Most notably, acoustic flooring is an effective measure for reducing noise transmission through the floor and into the spaces below. Acoustic floor coverings are specifically manufactured with a high-performance foam backing to enhance impact sound reduction and





Architects are now increasingly able to approach noise control issues with more flexibility and are able to create harmonious and pleasing environments, no matter the challenge

solutions typically range from 14 dB to 30 dB to suit a variety of project requirements, where the higher the number is, the better the performance. Not only can acoustic flooring be installed as part of a new build, it also offers a good retrofit solution for older buildings.

There are a number of effective acoustically-engineered flooring solutions available in different materials, styles and installation formats. Acoustic vinyl is one of the most popular choices across a variety of sectors thanks to its ability to deliver superior impact sound reduction, as well as fresh and striking designs. These solutions will commonly be in 15 dB and 19 dB variants. As well as contributing to sound control, acoustic vinyl is also heralded for its exceptional indentation performance, providing an ideal solution for heavy traffic commercial areas and environments where rolling loads will be used.

In addition, the latest developments in acoustic vinyl now means that there are rapid and reusable options available that offer easy installation, as these can be installed without the need for adhesives, or compromising on aesthetics. Due to the nature of healthcare and education facilities

in particular, looking to reduce downtime in such environments is vital, and these 'fast fit' solutions can avoid disruption and impact on the daily activities of occupants. Not only can these floor coverings be installed quickly, but floors can also be walked on immediately after installation.

For areas that require a softer finish, flocked floor coverings and carpet tiles combine warmth, comfort and impact sound reduction properties with outstanding durability performance, even in the most demanding environments. With products available on the market that can reduce impact noise by up to 30 dB, the flooring can minimise the sound of footsteps, voices and ambient noise.

Finally, acoustic luxury vinyl tiles are a good choice for buildings where beautiful design, noise pollution and the wellbeing of occupants are vital considerations. Offering the perfect balance between high impact sound reduction properties and dimensional stability, it is a resilient option that has proven popular particularly within high-rise private rental accommodation.

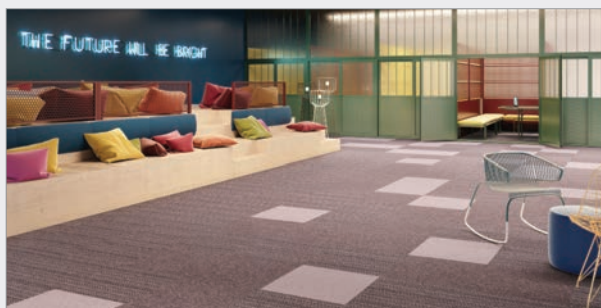
Karen Wilding is senior marketing executive at Forbo Flooring Systems



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Carpet tiles for adaptable spaces

IVC Commercial has updated its Art Intervention carpet tile collection, introducing new colours and designs that bring flexibility and agility to commercial interiors. Art Intervention focuses on a palette of 32 colours that give the depth to approach all kinds of interior. From bold hues that support activity and rich organics which connect to nature, through to mature and sophisticated pastels, Art Intervention provides a firm base to build a stylish and adaptable floor layout. All 32 colours are available in the solid carpet tile of Creative Spark with the duo-tone pinstripe of Expansion Point available in 12 coordinated colourways. Then rounding out the collection, Blurred Edge brings a sophisticated duo-tone linear effect in 10 combinations rooted in earthy organics. By combining Creative Spark, Expansion Point and Blurred Edge, designers can create dynamic floor layouts that respond to zoning and route finding, while benefitting from a carpet tile that provides excellent value.

01332 851 500 www.ivc-commercial.com

Perfectly matched

A pedestrian traffic control system that complements automatic doors has been introduced by GEZE UK providing both safety and security.

PACE, Pedestrian Access Control Equipment is a range of speed lanes and turnstiles that offer an efficient control of pedestrians in and out of buildings. More cost effective than manual checks and providing round the clock control in buildings that are operational 24 hours a day, they are ideal for controlling access to any part of a building that requires it, as well as the entrance.

From the simplest, easy to install tripod system for buildings such as leisure centres to the most stylish, highly sophisticated security with anti-tailgating sensors designed for the most demanding government buildings or banking institutes.

The PACE range can be tailored to the needs of any specification, there is a choice of control devices – push button, card reader – or single or bi-directional use, and different lane widths. To complement the design or match automatic doors different finishes

can be specified – brushed stainless steel, polished stainless steel, or RAL powder coating.

Where security is a high priority, options include high panels, anti-tailgating functions, IRIS reader, finger-print or face recognition. But whatever the demand for security, the visual aspect of the building is never compromised.

Controlling large numbers of people entering or leaving a building ensures their safety but in an emergency, the power is turned off and all motorised systems can be used freely in both directions.

GEZE UK offers a complete package of pedestrian control that includes access control and automatic doors.

Andy Howland, sales & marketing director for GEZE UK said: “Together GEZE automatic doors and the PACE range of access control enables specifiers to specify the complete package to control the flow of people in and around a building ensuring safety and security at all times for those using the building”.

To find out more or for a brochure on



PACE email or for more information about GEZE UK's comprehensive range of automatic and manual door closers visit the website.

info.uk@geze.com
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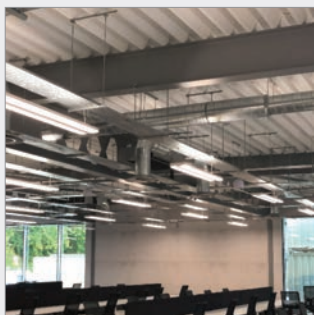
Dementia transitions

Dementia transitions are quickly becoming essential when designing for public projects. They are especially important when specifying for healthcare environments such as hospitals and nursing homes.

Quantum Flooring Solutions has two product ranges which are ideal for dementia-friendly flooring: Dementia Friendly Transitions, and TopClip Transition Profiles. Dementia transitions are recommended to have less than a 10 point Light Reflectance Value (LRV) difference from both sets of adjoining floorcovering. This aids navigation for people who can be confused by abrupt colour changes. Quantum's Dementia Friendly transitions have a choice of 14 colours, with the tread attached after the base. This allows for secret fixing with no visible screw holes. TopClip has a choice of 23 colours. This range provides a safe, dementia-friendly transition between floorcoverings of differing thickness. All these profiles can also be used as doorway transitions. To request a sample of Quantum's LVT or TopClip ranges, please email.

0161 627 4222 info@quantumflooring.co.uk

Leren before the Storm



Luceco has supplied LED lighting to Storm Technologies based in Watford. As a focused IT company, Storm wanted to be at the cutting-edge of lighting technology too, and selected Leren from Luceco due to its stylish appearance and technical performance. With its sleek modern design and integral sensors with Dali dimmable drivers, the Leren fitted the brief and was approved by the client. Offering both upward and downward light distribution, Leren was suspended on 3 metre drops in order to meet the lighting requirements of Storm. Supplied complete with adjustable wire suspensions, Leren benefits from through-wiring, including electrical connectors as standard, to assist with both standalone and continuous run installations. Available as fixed output, DALI dimmable and emergency back-up variants, Leren offers 100,000 hours of maintenance free, operational life with an efficacy of 120 Llm/cW. To integrate with a SAS architectural ceiling area, Luceco also helped to design and supply a modified 1200 x 300 mm special recessed luminaire to complete the lighting programme.

01952 238 100 www.luceco.uk



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Driving security forward with the complete package

If you were selecting a car for security reasons, would you be looking for one that just had four wheels, an engine and a door you could lock? No, of course not! You would rightly be interested in its overall performance, verified roadworthy tests, the quality of its components, not to mention other safety features and naturally its appearance and stylish kerb appeal.

Selecting the right Secured By Design (SBD) Doorkit is not dissimilar. After all there is so much more to consider in the modern build environment, from fire rating to life cycle expectations and installation to design flexibility. Portaro SBD Interior timber Entrance Doorkits from Vicaima provides just that scope, with ease of assembly, quality materials, outstanding performance and design appeal as standard, all encased in one of the most comprehensively certificated products on the market.

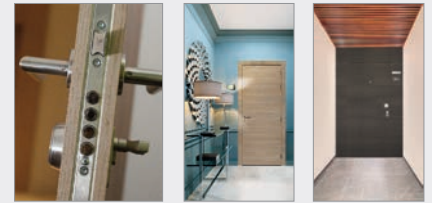
Of course, one of the first considerations for any project or development is how will it look and will it fit in with the project design theme.

Here the Portaro SBD system provides a rarity in today's somewhat limited market. With matching door, frame and architrave in a myriad of veneered, foil, laminate, paint lacquered and even special finishes, the Portaro system offers complete design freedom, so that performance does not equate to compromising aesthetics.

Beyond the finish itself, design configuration also offers flexibility, with a choice of either a conventional architrave or for a seamless face the Inverse system, where door sits flush with its surroundings. All door systems incorporate a 3-Point locking system, handle and security escutcheon, together with an automatic dropseal.

The doors themselves are constructed with heavy duty and high-density cores, surrounded by double timber rails on all sides, complete with hardwood lippings. Furthermore, the frames are made from hardwood and come pre-fitted with fire, smoke and acoustic seals.

From the installers perspective, the Portaro SBD System really is the complete package.



Supplied as doorkits for ease of fitting on site, the carefully and separately wrapped doors come pre-machined with all primary components, alongside the boxed and matching frame/architrave sections with simply connecting parts and screws.

There are so many reasons why Portaro SBD Doorkits offer the ideal entrance security solution, of which these are just a few:

- Certified Secured by Design with dual scope Fire and Security certification
- Sound reduction performance with Acoustic AC35 and AC36 options
- Completely matching door and frame surround
- Ease and speed of assembly on site
- Quality components and construction
- FD30 to FD60 Fire Rating
- SBD Inverse Model

01793 532333 www.vicaima.com

Resiblock is the perfect fix for Nexus Park



Resiblock has teamed up with Nexus Infrastructure to provide a joint stabilisation solution for Nexus Park, the new Head Office of Nexus Infrastructure plc. With the use Porcelain slabs, and an array of insufficient sealers in the marketplace (although not for much longer say Resiblock), Resiblock recommended the use of Resiblock Resifix to ensure stabilisation of the jointing medium and prevention of paving failure. Resiblock Resifix is a proprietary self-binding jointing sand, that when activated with water forms an impermeable polymeric adhesive and was most famously used at The FA Headquarters at St Georges Park.

custserv@resiblock.com

Outdoor lighting on the up – and down



Knightsbridge is expanding its comprehensive range of decorative outdoor lighting with the introduction of its latest wall light range. The stylish, contemporary looking line-up provides options for both down- and up-lighting from a sleek cylindrical, stainless steel body that is configured to provide a choice of either single

or dual source lighting. Available in a choice of popular finishes – black, anthracite, brushed chrome or white – the IP54-rated OWALL can take a standard sized GU10 lamp and is dimmable dependent on lamp type, further increasing the range of lighting effects.

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