

Brian Berry says SMEs need to be placed at the heart of the Government's green building agenda



Energy consultant Harry Hinchcliffe on the ins and outs of the new Standard Assessment Procedure



Pelham Homes' waterside scheme in Nottingham is shortlisted for national award

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PASSIVHAUS FOR THE PEOPLE

Housing association Hanover (Scotland) launches its first Passivhaus scheme for social housing near Loch Lomond, offering 15 households a way to avoid fuel poverty





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CASE STUDY



Jack Wooler

FROM THE EDITOR

From rising unaffordability to a low supply of homes and skilled workers, housing is in crisis in the UK, and has been for some time.

This year, house prices rose to eight times the average salary from four times in the 90s; over half of UK construction firms are struggling to hire tradesmen; more recently the cost of building work on UK homes is set to rise as the price of materials has soared; and finally, the climate crisis is now well underway.

Meanwhile, the number of new homes built is still under the Government's (arguably insufficient) target of 300,000 a year, and this is without the looming environmental goals that mean homes will not only need to be built faster, but better – with the aim of bringing UK emissions to net zero by 2050.

The upcoming Future Homes Standard for example is set to bring stringent – and absolutely necessary – changes to our built environment to help deliver on our carbon aims, focusing on a 'fabric-first' approach. It will however bring a host of challenges to builders, especially those who are not accustomed to the implementation of low-carbon heating or such high levels of air tightness – as well as pricing these features in.

Though controversial, the sweeping planning changes announced in the recent Queen's Speech have the potential to help sustain the pace of building in spite of these challenges – the reforms being described as "the biggest overhaul of England's planning system in 70 years."

Splitting the country into Growth, Protection and Regeneration zones, the intention is to allow more new homes to be built on the right kind of land. The planning system has arguably been the most prominent complaint among housebuilders and developers in England in recent years, so any easing will be welcome to many. Some however believe planning has become something of a scapegoat for wider industry issues, and the Government's heavy-handedness in its introduction of the new zones has also proved controversial.

Besides planning, one potential route to maintaining the pace towards tackling the above issues – and one that has been argued for by many in the industry for over 100 years now – puts Modern Methods of Construction (MMC) front and centre.

We have recently undertaken a survey, working with research consultants Edge Insight, on industry perceptions of offsite methods. It revealed that housebuilders and developers believe offsite technologies could positively impact many of the issues listed above – particularly speed, cost and skills.

Despite the technologies' long history of success, the understanding of its benefits, and its relevance to these issues shown in our data, there were still some 40 per cent of respondents who as yet haven't engaged directly with MMC, and 37 per cent of these don't intend to.

Covered in-depth on page 23 of this issue, our *Exploring Current thinking On Modern Methods of Construction* report highlights the biggest benefits of MMC for builders and developers, as well as its long gestation in the industry. It also poses the question to our readers: if they believe MMC can address the industry's issues, what's stopping its adoption across the board?

Jack Wooler, deputy editor

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Publisher Anthony Parker

Managing Editor James Parker Deputy Editor Jack Wooler

Jack Wooler Editorial Assistant Roseanne Field

Studio Manager Mikey Pooley

Production Assistants Georgia Musson Kimberley Musson

Account Manager Sheehan Edmonds

Sales Executive Steve Smith

PR Executives Suzanne Easter Kim Friend

Audience Development Manager Jane Spice

Managing Director Simon Reed



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

Advertising & administration Tel: 01435 863500 info@netmagmedia.co.uk www.hbdonline.co.uk

Editorial features Tel: 01435 863500 jparker@netmagmedia.co.uk

Press releases editorial@netmagmedia.co.uk

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PASSIVHAUS FOR THE PEOPLE

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COVER

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Industry welcomes planning overhaul in Queen's Speech

Confirmation of the Planning Bill, which includes a raft of changes to the system, has been announced in the Queen's Speech, as well as a new Building Safety Regulator in the wake of Grenfell.

The Queen announced that the Planning Bill will "modernise the planning system, so that more homes can be built."

Following the publication of the Housing White Paper in August 2020, the Bill is intended to ease planning controls to increase housebuilding rates in England. It splits the country into Growth, Protection and Regeneration zones, with developments in 'Growth' areas being harder for local opponents to block.

The speech also referenced the changes to Building Regulations in the UK, with a Building Safety Bill – pending approval by Parliament – set to implement the recommendations of the Hackitt Review of Building Regulations and Fire Safety.

The Queen said that, as part of the new Bill, the new Building Safety Regulation will "ensure that the tragedies of the past are never repeated."

INDUSTRY REACTIONS

The industry has so far reacted positively to the focus on planning reform, though many had individual qualms and worries around its implementation.

Dominick Veasey, director at Nexus Planning, welcomed the news, given delays caused by anticipation of the announcement: "We were finding an increasing number [of developers] were delaying plan-making to possibly avoid costly and abortive work, given a fundamental system change was on the horizon."

He said that the "devil will be in the detail," but hoped that with "an ever-worsening housing crisis, the Bill progresses swiftly through the Houses and receives timely Royal Assent."



"If not," he argued, "the reforms and the Bill could ultimately have wholly the reverse effect on what the Government is trying to achieve – effectively, planning system gridlock and housing delivery hiatus!"

Nicola Gooch, planning partner of Irwin Mitchell, commented on the conflicts which the Government were wrestling with over increasing housing numbers: "If nothing else," she said, "this seems to indicate that MHCLG has yet to figure out how to 'square the circle' between a real desire to increase housing numbers, and reduce NIMBY-ism, and its ongoing political commitment to localism."

"If the fallout from the 'Mutant Algorithm' rebellion has taught us anything, it is that there is nothing like a loss of local control over housing decisions to inspire a wide-spread revolt on the conservative back benches."

Andrew Shepherd, managing director at TopHat Solutions said the overhaul of "our dated planning system is well overdue," and argued that the proposed changes outlined "will be crucial to hitting the Government's annual housing targets."

He continued: "The inefficiencies of the current system means it takes far too long to have planning approved, and the more time that passes, the longer people go without suitable housing. It's all very well opposing new builds from a privileged, homeowning position, but these decisions have an enormous economic impact – both through low levels of affordability and the fact that the UK's workforce becomes less mobile due to a lack of suitable housing across the country."

Naveen Jaspal, COO of online estate agent Emoov, welcomed the changes,

as long as they are implemented effectively: "I fully support the idea of the zoning systems as opposed to the slow, case by case way it is done now. It will definitely be the way to move forward and a better way to invest in the infrastructure of communities."

"As long as it is administered in an effective way," she said, "it would really bring a lot of value to local communities, especially where there is space and need for housing."

Claire Fallows, Partner at Charles Russell Speechlys, however gave a warning on moving too quickly: "While concrete progress will be welcomed, it will be extremely disappointing if the Government decides to rush through legislation without detailed engagement with the industry. This cooperation is vital to make long-term, sustainable improvements to the planning system.

"The reality is it will take years to pass the necessary legislation to transition to a new system and to bring new plans into effect. Less fundamental amendments could bring about positive change more quickly. We can expect a long wait before we see if the new system will indeed clear the obstacles or simply create new ones."

When it came to the Building Safety Bill, Lord Porter, building safety spokesperson for the Local Government Association, said that it "cannot come soon enough to reform our broken building safety system and enshrine tough new legislation into law."

He continued: "People have a right to be safe and to feel safe in their own homes, and industry and duty-holders now need to step up and deliver the remediation work required."

City of London to convert vacant space into homes postpandemic

The City of London has announced that to "adapt to post-pandemic economic and social trends in order to remain a world-leading ecosystem," it will convert vacant space into "at least 1,500 new residential units by 2030," according to a new report published by the City of London Corporation.

'The Square Mile: Future City,' produced by the City Corporation's Recovery Taskforce in partnership with Oliver Wyman, sets out a "vision" for the next five years with "detailed actions to enhance the City's competitiveness and attractiveness."

The report commits the City Corporation to a number of activities to deliver this vision, including "exploration of new ways to use vacant space," and "working with providers and operators to future-proof the City's communications, energy and transport infrastructure." The corporation said it will also explore traffic-free Saturdays or Sundays in summer; and providing new and improved public spaces that include opportunities for culture and exercise.

The Recovery Taskforce said that its aim is "to ensure the Square Mile is "the world's most innovative, inclusive and sustainable business ecosystem as well as an attractive place to work, live, learn and visit."

As such, the report focuses on three key aspects: "fostering an innovative ecosystem for businesses and talent; ensuring a vibrant offer that engages workers, visitors, learners and residents; and delivering outstanding environments that support people and businesses with sustainable buildings, high quality streets and public spaces."



Over half of housebuilders concerned about land supply

Limited residential land supply is creating fierce competition among UK housebuilders, according to a recent survey by Knight Frank.

Conducted among nearly 50 volume and SME housebuilders based across England, the new report showed land supply shortages, planning delays and policy uncertainties to be at the top of the list of barriers to delivery faced by respondents.

Over 50 per cent of those surveyed said that residential land supply was 'limited,' while only 2 per cent felt land was 'abundant.' When asked about the most pressing issues for the industry over the next three months, 21 per cent selected 'availability of land', while 18 per cent said 'planning reforms and policy uncertainty,' and 15 per cent selected 'supply chain delays.'

For 19 per cent of larger housebuilders, changes to the Help to Buy scheme will be another key area of focus for Q2 of 2021, along with availability of land and planning reform.

In Q1, a third of all respondents pointed

to 'planning delays' being a challenging factor, 21 per cent selected 'availability of land', while just 7 per cent said the medium to long term outlook for the UK economy had been an issue.

Land supply shortages are leading to an expectation that prices will rise. When asked about land values, 55 per cent of Knight Frank's survey respondents said that they thought prices would increase in Q2, with 38 per cent saying they would stay the same and only 7 per cent anticipating a decrease.

Justin Gaze, head of residential development Land at Knight Frank, commented: "We are seeing a sense of normality return to the market for the first time since the pandemic struck.

"New sites are quickly going under offer at the top end of our price expectations, and there is a severe lack of land availability for both medium and larger schemes – so much so that we're seeing housebuilders being increasingly competitive in order to compete on sought-after sites of 50 units and above."



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FMB says focus on retrofit needed to reach net zero

Net zero targets are only possible with the Government providing a National Retrofit Strategy for green homes, so says the Federation of Master Builders (FMB).

The Prime Minister's announcement that the UK Government will set a target of cutting carbon emissions by 78 per cent by 2035 was welcomed by the association of SME building firms, but it believed the Government must lead a campaign towards green homes to make this possible.

Brian Berry, chief executive of the FMB, said: "Our homes use 35 per cent of the UK's total energy usage and emit 20 per cent of carbon dioxide emissions – net zero will only be possible with a longterm plan to green our homes."

He continued: "With the Green Homes Grant Scheme stopped prematurely in its tracks, it is essential that the forthcoming Heat and Building Strategy be ambitious, long-term and comprehensive in its plan to upgrade our housing stock."

With reference to this year's United Nations climate conference being held in Glasgow, Berry concluded: "This will help position the UK as a global leader in tackling climate change ahead of COP26."



Family and space top priorities for homebuyers post-lockdown

A recent poll of UK house buyers has found that moving closer to family and needing additional space are two of the top reasons to move home in the post-lockdown era.

The survey of 650 home buyers, conducted by Miller Homes, asked a number of questions about the reasons behind their desire to move home.

More than a third of respondents claimed that moving for extra space is their number one reason – while less than three per cent are planning to move to relocate for work.

Most house buyers also indicated that they are hoping their next home will be their 'forever home,' with more than 80 per cent of those who responded to the survey mentioning this as an important factor in their search.

Many respondents also said that moving closer to family was an important part of their decision making when it comes to finding a new home.

Commenting on the results of the poll, Anne Marie Britton, national sales & marketing director at Miller Homes, said: "It's no surprise that when seeing family and friends regularly was no longer something we could take for granted, being closer to family is a big consideration in many people's search for their new home. Extra space is the trend that isn't going away."





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NEW DEVELOPMENTS

Waterside Notts development shortlisted for housing award



A Pelham Waterside has been shortlisted for 'Best Urban Development Outside London' at the Inside Housing Development Awards 2021.

The 73-home scheme, which is located near the banks of Nottingham's River Trent within the Waterside Regeneration Zone, has been designed by CPMG Architects to embrace "sustainability, community and nature," and bring new residents to the riverside location.

Owned by Pelham Homes, the site is the largest residential development for the housebuilders in more than a decade, and has been shortlisted alongside some of the UK's top new-build schemes, with the award receiving more than 300 entrants.

The development sees the regeneration of a brownfield site and has sustainability integrated into the design, incorporating thermally-efficient building fabric and the use of low-energy fittings throughout. A combination of brickwork and timber cladding are intended to create a natural feel to the buildings, which also feature large windows and Juliet balconies to allow good levels of natural daylight and ventilation throughout.

The project hopes to provide an urban lifestyle close to the city centre, while offering wellbeing benefits of waterside living for individuals, couples and families. The project team for phase two of Pelham Waterside is Couch Perry Wilkes, mechanical and electrical consultants and structural engineers Curtins.

Allan Fisher, a director at Pelham Homes, commented on the shortlisting: "This is an incredible recognition for the Pelham Waterside team on a national stage.

"The interest in the development since its launch has been fantastic and over 80 per cent of the homes in phase one have already been sold or reserved, with completion expected by summer 2021."

Winners of the award will be announced at a ceremony event on Thursday 4 November 2021 at London's Intercontinental Hotel.





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61 luxury apartments for King's Cross

boutique' residence comprising 61 distinctive apartments in the heart of King's Cross has been opened by developer Argent.

Designed by architects Squire & Partners alongside interior design by Conran and Partners, the developed, named LUMA for the centrality of light to its design ethos – reportedly "responds to the building's location between two urban green spaces."

Located between Lewis Cubitt Park to the west and the Jellicoe Gardens to the east, Squire & Partners' designs are intended to "respect the surrounding natural context and connect with the emerging cultural and creative neighbourhood." In a nod to the former industrial character of King's Cross, the form is expressed as a pair of "stepped warehouse style buildings with a layered facade."

With the facade design inspired by converging railway tracks, a secondary layer emulates dappled light created by a tree canopy, to produce what the developers described as an "organic pattern." This is used on decorative lattice screens, bas-relief aluminium and concrete panels which "modulate light and views both in and out of the building." Facing the park, a series of bronze coloured splayed bays with geometric balconies undulate across the facade.

Flanked by retail and restaurant units designed to spill out into landscaped walkways bordering both parks, residents enter through a dual aspect central reception. Featuring a 'resident's lounge,' the entrance is



designed to "merge classic hotel design with the atmosphere of a welcoming members club."

High ceilings, dark-stained timber joinery, bespoke lighting and soft furnishings complement the "layered" interior architecture of Squire & Partners, with a central marble concierge desk, and light-grey terrazzo flooring with a brass inlay.

As residents move through to the apartments, the "material palette" gets lighter. Well-daylit residences include studios and one-bedroom apartments on the first three floors, with sizes increasing to provide duplex spaces as the building rises, culminating in two exclusive penthouses on the 11th floor.

What's claimed as a unique design feature is the introduction of one and a half-height apartments across the middle floors, allowing for "distinctive mezzanine living areas" and dual aspect views through the length of these apartments. The internal living spaces of the three-bed Dawn and four-bed Dusk penthouses span over 2,200 square feet across three levels.





Brian Berry, chief executive of the Federation of Master Builders

ACHIEVING BIODIVERSITY NET GAIN WILL BE MUCH MORE DIFFICULT ON SMALLER SITES, ESPECIALLY BROWNFIELD

SUPPORT NEEDED FOR SME FIRMS TO BUILD GREENER

Brian Berry of the Federation of Master Builders (FMB) explores why SMEs should be at the heart of the Government's plans for green construction to help them conquer obstacles



This year, the UK will host the United Nations Climate Change Conference, known as COP 26. It's a great opportunity for the Government to show global leadership with ambitious and impactful policies that tackle climate change and decarbonise all aspects of our economy.

We will not deliver the Government's target of a 68 per cent reduction in carbon dioxide by 2030, or net zero by 2050, if we do not reduce the energy consumption and carbon emissions from our homes. This is a challenging area, and the Committee on Climate Change used its Sixth Carbon Budget to highlight the need for a national programme to improve insulation across the UK.

SMES AT THE HEART

Small to medium-sized (SME) housebuilders should be at the heart of Government's green building plans as pioneers of low carbon, high-performance homes. According to the FMB's House Builders' Survey 2020, we know that many SME housebuilders already build to high environmental standards, sometimes driven by the demands of environmentally conscious-clients, sometimes driven by a forward-looking business model.

New regulations are accelerating the green agenda in new build, including the Future Homes Standard, which will require an uplift of 31 per cent in energy efficiency on all new build from this year. The Bill will also mandate biodiversity net gain on all housebuilding sites.

STRUCTURAL BARRIERS

However, after what has been a very difficult year for society and business, it is clear that SME housebuilders need the Government to do more to remove the structural barriers they face to building, so that there is the capacity and resource to adapt and respond positively to these changes. This includes addressing the skills shortage in construction, which continues to hamper output in the SME housing sector. Our House Builders' Survey confirmed that we will need more qualified construction managers to oversee the build process and ensure that the work was done to the revised standards. But construction managers are in short supply, with 41 per cent of my members struggling to recruit into this position pre-pandemic.

GREEN JOBS TASKFORCE

Without a plan to plug the skills gaps in construction, we will not have the people we need to deliver low carbon homes at scale. The FMB is calling on the Government to use its Green Jobs Taskforce to develop a nationwide training programme that will upskill the



existing workforce and encourage young people into the building industry through high quality apprenticeships.

Elsewhere, planning is still a problem. It is not uncommon for my members to tell me that they are waiting one year for a determination on a non-controversial site. This not only causes frustration and lost income for builders, but it will make it harder for the Government to reach its housebuilding targets. Greater investment in local authority planning departments is needed so that under-pressure councils have the resources they need to manage these inquiries, and builders can get on with delivering green homes.

BIODIVERSITY REQUIREMENTS

Achieving biodiversity net gain will be much more difficult on smaller sites, especially the brownfield sites that SMEs will typically build out, and policy makers need to understand this.

While we know there are many small-scale measures that can make a difference, like bat boxes, lifting fences and planting trees, large-scale measures like sustainable drainage systems and wildflower meadows are not viable on sites of five units. If SMEs are to play a role in fixing the housing crisis, net gain should not become just another tax on development that prices out local builders.

EXISTING HOMES

A focus on future homes shouldn't forget Britain's 28 million existing homes, many of which are energy inefficient, and 85 per cent of which will still be in use in 2050.

To set up the UK for success in achieving our net zero targets, a national retrofit strategy that tackles carbon emissions from these buildings should be brought forward.



Harry Hinchliffe is energy consultant and BREEAM assessor at C80 Solutions

THE MOST SIGNIFICANT CHANGE IS A REDUCTION IN THE CO2 EMISSION FACTOR GIVEN TO ELECTRICITY, REFLECTING A MUCH GREENER NATIONAL GRID

COUNTING DOWN TO SAP10

With a return to normality comes a realisation that a new Standard Assessement Procedure method for assessing houses' energy use is imminent. Harry Hinchliffe of C80 Solutions outlines the impact that SAP10 will have.

Aving faced unprecedented challenges over the past year, it has been easy for the construction industry to overlook other issues which were on the sector's radar before the pandemic hit.

One such issue is an expected (and many say overdue) overhaul of the Standard Assessment Procedure (SAP) for assessing dwellings on their energy efficiency credentials, with SAP 10 replacing the increasingly outdated SAP 2012 methodology.

Current estimates expect SAP 10 to come into play in June 2022. The official arrival could be delayed, but it's also entirely possible that it could be brought forward.

CHANGES

The most significant change is a reduction in the CO_2 emission factor for electricity, decreasing from 0.519 kg CO_2 /kWh to 0.233 kg CO_2 /kWh, reflecting a much greener national grid which increasingly benefits from renewable energy technologies. This will make it easier to achieve compliance using electric heating.

With plans also in place to prohibit gas boilers in new build homes by 2025, many developers are likely to turn to heat pumps, electric panel heaters and electric underfloor heating as their primary heat sources. There could also be an increase in the use of electric boilers with an indirect cylinder for hot water.

Electricity generated by photovoltaic (PV) panels is factored into SAP 2012's calculations for a flat even when there is no direct connection to the property, causing a misrepresentation in the many apartment buildings where only one connection exists, to a landlord's supply. SAP 10's formula only factors in PV supply if the apartment is directly connected, with clear implications for developments that need to meet









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carbon reduction requirements as a planning condition.

SAP 2012's representation of energy use in domestic properties is based on different standard heating patterns for weekdays and weekends, but further studies demonstrate that this distinction does not necessarily bear out in real life. The probability of any difference is even less likely now that working from home has become much more widespread. In contrast, SAP 10 applies the same standard heating pattern for every day of the week. It will also introduce a more precise estimate of hot water demand, accounting for the number of showers and baths as well as shower types and flow rates (for example, electricity use from instantaneous electric showers will

now form part of assessments).

SAP 2012's extremely basic lighting assessment only accounts for the number of low energy fittings. SAP10 will involve more detail in line with the non-domestic methodology known as SBEM and will recognise the use of new lighting types which provide higher efficiency. It will account for the contribution of natural light, bringing window design into the assessment mix. A 'reference lighting capacity' calculation will be based on floor area and solar gains. If the lighting design falls outside of this reference lighting range (either above or below), the predicted lighting energy will be increased to account for 'poor' lighting or 'surplus' lighting.

SAP 10 will remove SAP 2012's indicative options of low, medium and high to assess Thermal Mass Parameter (TMP) and instead will include a detailed calculation of a building's actual TMP based on build material, construction, and kappa values which are referenced in BS EN ISO 13786. SAP 10 will also reduce the assumed amount of ventilation gained from open windows, with factors such as outside noise and security taken into consideration.

In SAP 10's thermal bridging provisions, the Accredited Construction Details

(ACD) scheme used under SAP 2012 is no longer considered to be sufficiently accurate. Assessment will be based on other established sets of construction details, prompting a re-think of many design practices and encouraging more junction details to enable accurate calculation of psi values. Where no details of thermal bridging are provided, the default y-value used in assessments has been raised from 0.15 w/m²k to 0.2 w/m²k, entailing a stiffer penalty for developers who fail to consider heat loss through building junctions.

PRECISION

SAP 10 is a welcome update to the methodology, more accurately representing how buildings perform. Its role in encouraging more precision and detail in energy assessments will prove to be a very positive influence across residential construction.

As we tentatively approach a return to normality, SAP 10 is likely to return to the forefront of the industry's thoughts. The need to understand and embrace its principles is now a much more pressing matter.

Harry Hinchliffe is energy consultant and BREEAM assessor at C80 Solutions

VEKA is leading the way in the future of recycled PVCu

This month, VEKA plc has unveiled plans to grow usage of recycled material beyond its existing Infinity system. VEKA has been the industry leader in recycling and sustainability throughout its history with the first VEKA recycling plant opening in Germany in 1993. In 2007, VEKA Recycling opened its doors, the UK's first windows recycling plant. Last year, the company's ongoing commitment to sustainability has seen VEKA Recycling invest £150k in six new silos to increase the storage capacity at its state-of-the-art Wellingborough recycling plant, the most advanced of its kind in Europe.

VEKA plc led the way in recycling PVCu launching its Infinity profile in 2010 - a dedicated system with an environmental conscience that contains up to 80 per cent recycled material.

The coming months will see VEKA start to roll out recycled material across a number of its mainline profiles starting with cills and following with frame extensions with potential to expand further throughout the course of the year. VEKA has committed to a strong focus in driving further usage of recycled PVCu in the coming years.

Recycling has become a crucial part of VEKA's strategy and over the last five years more than 24,000 tonnes of PVCu has been diverted from landfill.

Dawn Stockell, Marketing Director of VEKA plc commented:

"Recycling and sustainability are a core focus as part of our overall CSR commitment and a key objective for both VEKA plc and the broader group. Our investment into future proofing our products has seen us increase our co-extrusion capability, replacing aging tools with co-extrusion tools allowing for greater use of recycled PVCu . Committed to driving increased usage of recycled compound, our partnership with growing sister company, VEKA Recycling, will ensure that together we continue to make best-in-class PVCu window systems that care about the environment and can continue to be recycled for years to come."

Simon Scholes, Managing Director of VEKA Recycling added:

"We've invested £15 million into the plant at Wellingborough – ensuring we can continue to lead the way in recycled PVCu. Our products are as close to virgin polymer as is possible. To get



recycled PVCu of this quality takes some work and ultimately does not result in a more costeffective material - in fact using recycled PVCu is cost neutral but carries an important ethical message. In the past, recycled products have often been seen as second best, however with today's PVCu, along with our technology and skills, we can ensure that the recycled product is a better product - one that is suited to being reused time and time again. We can now put in a frame that will last another 40 years with just one window or door frame offering up to 350 years of usage. In fact, the recycled products that are going in now will only need to be recycled by my successor's successor. Now that is a sustainable legacy to be proud of."

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The wellness case for green space

Paul Cassidy of Meadfleet explores how green space in housebuilding projects is crucial for the sake of residents' health as well as their environment, and the role open space management specialists play.



If the last year has taught us anything, it is that green spaces, fresh air and exercise are vital to our health and wellbeing. Being outside next to nature has brought a real sense of calm and perspective to our lives as well as a renewed appreciation of the great outdoors.

It is well recognised that access to nearby green space has a positive impact on mental health, as noted in 2019 report "A Spatial Analysis of Proximate Greenspace and Mental wellbeing in London." Not only that, but green space also improves air quality and mitigates flooding, helping to combat the effects of climate change.

For so long now, local authorities' ability to adopt open space on new build developments has been restricted, with management companies stepping up to take responsibility for these areas. These companies must be experts in open space and all its requirements. They must work with the developer to ensure customer satisfaction, quality service and sustainable living environments.

OPEN SPACE MANAGEMENT

An open space management specialist's aim is simply to maintain, protect and enhance open spaces, taking into account the many different functions these areas must fulfil.

Firms are accredited via BS EN ISO 9001:2015 Quality Management and BS EN ISO 14001:2015 Environmental Management, with voluntary memberships of The Property Ombudsman Scheme desirable.

It is the duty of all responsible businesses to play their part in

reducing carbon emissions. As such, along with all the above, we signed up to the One Planet Pledge, with a commitment to reduce and offset our emissions in order to achieve carbon neutral status in 2021.

BIODIVERSITY

Open space management specialists must be committed to protecting trees under their management, as they are crucial to reducing carbon emissions and important wildlife habitats. Regular Tree Hazard Assessment Surveys should be undertaken to ensure trees are safe and healthy. A mature oak tree can store over 7 tonnes of carbon and support 2300 species including birds, invertebrates, mammals and fungi, so it's important these assets are preserved.

Also important is working to facilitate the rollout of Biodiversity Net Gain, a new approach to ensure that all development projects leave the environment in a better state than before.

Managing surface water and contributing to sustainable developments, SuDS are considered environmentally beneficial. Climate change and the link to extreme weather conditions

IF THE LAST YEAR HAS TAUGHT US ANYTHING, IT'S THAT GREEN SPACES ARE VITAL TO OUR HEALTH AND WELLBEING

such as heavier precipitation demonstrates the importance of appropriate maintenance of such features. Wetland habitats can provide a host of biodiversity benefits, and through sensitive management ensures our SuDS function effectively and support wildlife.

Working practices must be regularly reviewed to ensure that specialists operate in a sustainable and environmentally friendly manner, for example using 'mulching mowers' to maintain grasslands. These reduce the amount of green waste requiring removal from sites, ensuring that the carbon and nutrients return to the soil. Storing logs and cuttings as 'habitat piles' can providing valuable shelter for wildlife while again reducing green waste and associated transportation.

NATIVE SPECIES

Supporting native species is also a key part of an open space management specialist's role, thereby enriching customers' environments. From our annual residents survey we know creating wildlife friendly areas is becoming more of a priority.

In partnership with leading insect charity Buglife, our Bee Friendly campaign aims to help support pollinating insects vital to our food chain. 75 per cent of crop species, 35 per cent of global crop production, and up to 88 per cent of flowering plant species are dependent on insect pollinators to some extent.

The initiative encompasses a range of targets, including donating and planting 1000s of metres of pollen rich hedgerow and wildflower and over 50,000 nectar producing bulbs. We're also giving away bee hotels for customers to install in gardens along with pollinator friendly seeds. Most species of bee found in the UK are solitary, and will benefit from the provision of bee hotels. Hedgerows and bulbs provide a valuable source of nectar early in the year, and wildflower meadows provide a variety of



flowers which bees will feed on throughout the summer months.

EXPERIENCE

Experienced firms will hold regular training sessions to ensure their teams are well equipped to optimise open spaces for wildlife to thrive, as well as work with residents, local community groups and schools to run educational events and initiatives such as bat walks and tree planting days.

Open space management is not simply maintaining formal striped lawns, it is about managing a development's ecosystem and features sensitively and professionally, providing, safe, welcoming open space which can be enjoyed by residents and wildlife.

Paul Cassidy is ecology and conservation manager at Meadfleet

IG Lintels brings character and thermal efficiency to Bedfordshire homes

Bespoke square bay lintels and the award-winning Hi-therm+ lintels from IG Lintels has ensured the character, thermal efficiency and build quality of an exclusive range of new build homes is second to none.

Surrounded by beautiful countryside, the Market Reach development in the historic market town of Potton consists of eighty-five luxurious three, four and five bedroom homes. Developer Mulberry Homes' philosophy is to ensure homes offer a strong character and identity whilst at the same time constructed with thermally efficient building envelopes. To achieve their fabric first approach, IG's awardwinning Hi-therm+ lintels feature across a range of plots while bespoke IG square bay lintels added character and increased natural daylight.

Ben Cheetham, National Specification Manager for IG Lintels said: "Mulberry Homes wanted to build in a way that considered the environment, taking into account the most sustainable options for the building fabric, without compromising on the interior and exterior build quality to achieve Part L SAP calculations."

IG's BBA approved Hi-therm+ lintels provided a low-cost solution to improve energy efficiency



within SAP. Incorporating a thermal break, Hi-therm lintels are up to 5 times more thermally efficient than a traditional steel lintel. Hi-therm+ lintels were installed at window and door junctions accommodating different lengths throughout the building envelope to reduce heat loss in key problematic areas. This fabric first approach helped Mulberry Homes to lower carbon emissions and minimise running costs for the homeowner. Furthermore, ongoing maintenance repairs and improvement upgrades are not required with Hi-therm+ lintels unlike other costly bolt on renewable technologies.

Shaun Aran on behalf of Mulberry Homes said: "At Market Reach, IG's Hi-therm+ lintels were used for reducing carbon emissions and running costs for homeowners by improving the energy performance of our newly built homes." To meet the developer's aesthetic

requirements, IG's technical team designed bespoke heavy-duty square bay lintels that increased the surface area of the ground floor wall allowing natural light to enter the homes. The square bays 4390mm span and the perpendicular returns added a window opening with three facets, creating a large and more spacious illuminated internal living space with a unique external appearance to the properties.

With these stunning homes now complete, IG's lintel solutions have ensured this thermally efficient and aesthetically pleasing housing development delivers on all fronts.

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Do you currently, or have you ever worked on any projects using offsite building techniques?

EXECUTIVE SUMMARY

Housing is in crisis in the UK, with both builders and buyers faced with an array of challenges.

The industry has still not met the Government's arguably insufficient target of 300,000 homes a year to meet population demands, and house prices have risen to more than eight times average earnings. All the while, construction workers are ageing and retiring, and the industry is struggling to draw the young into the profession.

Three issues here, speed, cost, and skills, can all be addressed to some degree by a technology that has been around for some time now, but which has seen a resurgence in the UK housing industry during recent decades - modular and offsite construction.

Placed under the umbrella term Modern Methods of Construction (MMC), these construction methods cover a diverse range of materials and techniques, from timber frame, to structural insulated panel systems (SIPs), precast concrete systems, and volumetric, steel framed construction, all offering different benefits and suitabilities.

While various versions of such technologies have been around since the early 20th century, and others far before this, modern iterations of these methods have been proved time and again to be faster to build, to reduce onsite construction time by an average of 50 per cent – which in

turn reduces labour and site-related costs - and the skills that are required on the factory side can be transferable from other sectors, and may prove more attractive to younger workers.

In a survey of 138 members of the housebuilding industry, conducted by Housebuilder & Developer and supported by researchers at Edge Insight, it has been found that 72 per cent agree that housebuilders can save money by building offsite, 89 per cent believe that building offsite can positively affect housing supply, 80 per cent housing cost, and 79 per cent the skills crisis.

While the use of MMC technologies appears to be increasing, with 60 per cent of our survey respondents reporting that they have worked on projects using offsite building techniques, alongside 73 per cent reporting that their perception of offsite has improved over the last five years, there are still some 40 per cent who have never worked on such a project, and 37 per cent of those never anticipate doing so.

There are many reasons for reticence here; whether it's the poor reputation of MMC created by low quality prefabs of previous generations, the initial costs required to invest in a factory (or another provider's facility), or that builders are simply used to what they are used to.

This report delves deeper into both the benefits of - and barriers to - MMC for UK housebuilders, exploring both how the technology can aid some of the industry's struggles, and what has prevented MMC's wider adoption.

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How long have been using offsite building techniques



Offsite building methods currently used



Which of the following best describes how long have you worked on the projects using offsite building techniques? Which of the following offsite building methods do you currently use?

INTRODUCTION

WHAT IS OFFSITE HOUSING?

Offsite housing means exactly what the name suggests - the construction of at least part of a home in a factory or away from the building site.

An analogy often used is the car industry; it would be more impractical, accident prone, and slow if an automotive manufacturer were to deliver each part of a vehicle to a purchaser's home, and then bring a team to put those parts together where the buyer desires. Yet, this is still how homes are largely built in the UK.

Almost all modern manufacturing processes outside housing are completed 'offsite', and as such, the benefits of doing so are well established -- products can be put together faster in controlled factory environments, fewer defects are apparent through the same processes, and it is easier to reduce energy use and waste.

Houses can be – and have successfully been for some time now - constructed in these same controlled environments. Timber frames can be built up and delivered to the site to be slotted together, and even entire volumes, rooms or 'pods' can be built in factories, to be craned onto the structure and bolted together onsite.

HOW IT GOT STARTED

Prefabricated housing is not new, with timber frame houses having been built in Britain for over 10,000 years, and examples of timber frames built in the UK and shipped across the country prevalent throughout the middle ages.

In the last few hundred years, MMC has widened from just

timber - though it is still one of the major materials - with steel, iron and concrete methods first developed in the early 20th century.

Some of the earliest iterations of these forms of MMC were seen at the 1905 Letchworth Cheap Cottages Exhibition. Responding to the shortage of cottages in rural areas, architects were commissioned to exhibit a range of innovative designs, including experimental reinforced precast concrete homes and steel frame cottages.

Other early iterations of the technologies in the UK were similarly formed in times of high demand, including galvanised corrugated iron 'Nissen' huts developed for speedy erection during the First World War, or the prefabricated homes built after the Second World War, or during the slum clearances of the 1960s - with a reported 1 million prefabricated homes built during the 20th century.

THE TECHNOLOGY AS IT STANDS TODAY

While modular construction - especially timber frame builds - are widely used in countries such as the USA or Scandinavia, and have been for many years, adoption in the UK has been relatively minimal.

Times are changing however; MMC is seeping into the UK construction industry, and the technology has been taken to new heights in the early part of the 21st century.

When it comes to timber, large format load-bearing panels of cross-laminated timber (CLT) are being utilised to construct not just individual homes, but residential towers such as Dalston Works in London which reaches up to 33 metres, reportedly the largest CLT building in the world at its inception – though continuing such innovation has arguably been hampered by the Government in recent years. 50 per

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cent of respondents who have used MMC to some degree reported that they have used timber panelised methods, 28 per cent SIPs, and 22 per cent CLT timber. Of those who haven't used MMC before, 39 per cent reported that they would be most interested in timber panelised, 24 per cent in SIPs, and 22 per cent CLT timber.

Steel has taken similar leaps, with steel frame unit buildings for example like Mapleton Crescent (also in London) consisting of 254 cutting-edge factory made units from the material, each the size of half a flat. 36 per cent of respondents who have used MMC to some degree reported that they have used steel frame methods and 28 per cent volumetric/pods. Of those who haven't used MMC before, 16 per cent reported they are most interested in using steel frame, and 8 per cent volumetric/pods.

Concrete methods have been progressing too. Although Aircrete panels for example have been around for over 50 years, they are still proving a speedy, quality technology. One of the rarer techniques among our respondents, 7 per cent of those already utilising modular currently use Aircrete, and 2 per cent of those who don't yet are most interested in the solution relative to others.

Overall, regardless of the variant used, 60 of respondents have used modular technologies to some extent, and of those who haven't, 8 per cent anticipate doing so within the next year, 28 per cent in 1-2 years, 18 per cent in 3-5 years, 4 per cent in 6-10 years, 6 per cent in over 10 years, and 37 per cent never anticipate using MMC.

PROBLEM ASSESSMENT

WHY IS THE TECHNOLOGY NECESSARY?

Adopting new technologies in construction, despite the benefits they may bring, is challenging for housebuilders – it is often easier to trust the established approaches they know

and use the supply chains already developed, than to adopt a technology simply because it may improve on its predecessors in some regards.

There are however many issues in the UK housing sector that housebuilders and developers must address, and to which MMC technologies have the potential to make headway in.

Some of the biggest benefits of modular technologies reported by respondents can directly address these issues, with 73 per cent choosing speed as one of their top three benefits and 54 per cent efficiency, though only 14 per cent listed skills in this category.

Overall, however, 79 per cent of our respondents believe modular housing could benefit the skills crisis, 80 per cent housing cost, and 89 per cent housing supply. So, it appears MMC's applicability to all these issues is fairly well understood – even if skills is not viewed as among it's most beneficial qualities.

WHAT'S STOPPING MMC'S ADOPTION?

Given this level of understanding of MMC's benefits, it is clear that there are significant barriers preventing the technologies from being as widespread in the UK as perhaps they should be.

One of the key barriers listed by our respondents was the initial costs involved in moving to offsite technologies, with 60 per cent listing it as one of its three biggest barriers. Factory purchasing or leasing is one issue here for some types of modular construction, with 71 per cent of respondents reporting that they are not considering owning or leasing a factory to build homes.

Perception also proved a common barrier – with many buyers and builders alike stuck with the image of flimsy 80s prefabs in their minds. Displaying this, buyers' lack of confidence was cited as a major barrier by 58 per cent of respondents.

A lack of Government support was another of the most









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What do you think are the biggest three barriers of building offsite?



frequently reported barriers by our respondents, with 63 per cent stating that they do not think there is enough support available from Government to take up modern methods of construction.

Other concerns included a lack of incentives (30 per cent), the insurance or warranties necessary (26 per cent), the design process (31 per cent), skills (40 per cent), supply (21 per cent), and regulation (17 per cent).

SOLUTION ADVANTAGE

In order for housebuilders and developers to overcome these barriers, and for offsite technologies to become more commonplace across UK housing, it is important to delve deeper into the advantages that MMC can offer.

Below are some of these benefits, and the ways in which each are able to address some of the many issues facing the sector at present.

SPEED AND SUPPLY

Government estimates have put the number of new homes needed in England at up to 345,000 per year. Despite this, multiple Government manifestos since 2015 have pushed the political imperative to target 300,000 new homes per year with the Government elected in 2019 pledging to do so by the "mid-2020s."

Even this seemingly inadequate target is not being achieved as yet, with the total housing stock in England increasing by around 50,000 homes short of the target - and therefore almost 100,000 under the estimated housing need. It is clear that both the Government and the housing sector must find ways to increase the pace of new homes.

When it comes to MMC, building a home offsite has often been said to reduce construction times by around 30 per cent, and total development by up to 50 per cent. This is only improving, with modular builders ilke Homes claiming that at optimum capacity a volumetric housing factory can make a home every two hours, and a single crane can install up to six houses in a day.

While not all forms of MMC offer quite this level of velocity, almost all methods reduce construction time to some degree. Somewhat more traditional timber frame builds for example delegate much of the build to offsite manufacturers, reducing the time on site by an estimated three months as compared with brick and mortar projects.

The vast majority of respondents, 73 per cent, cited speed as one of their top three benefits to building offsite – the highest rated among our respondents - and 68 per cent reported that housing supply could be positively affected by modular technologies, plus 21 per cent very positively.

COST

Rising unaffordability levels have been cited as one of the key causes of the UK's housing crisis.

According to data from the Bank of England, the average house now costs more than eight times average earnings, rising from around four times earnings in the mid 1990s, and home ownership rates have fallen by 62-64 per cent in the past five years - levels not seen since the early 80s.

As stated earlier, MMC housing is faster to build, thus reducing labour costs, and the precise nature of modular methods can reduce wastage across the board, in turn reducing costs - so modern methods of construction could be a key tool in saving costs and increasing affordability in the UK.

The statistics from the survey backed this up; when asked if they believed their company could save money building homes offsite, 72 per cent of respondents agreed, and 80 per







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cent believe that rising housing costs could be positively addressed by modular technologies.

There are some caveats, of course. Quicker construction is arguably more of a benefit for builders of apartments, because viewing often starts only once all flats are finished, and many private housebuilders sell in stages, which could mean MMC may be less suited to their business model.

When asked what forms of housing respondents thought are best suited to building homes offsite, however, this appeared to be subverted, with 53 per cent stating that social housing is most suited for modular methods, 48 per cent housing developments and 46 per cent individual homes. Bringing up the rear were student housing (41 per cent), large-scale housing projects (39 per cent), small blocks of flats (36 per cent), mixed-use (32 per cent) and high-rises (22 per cent).

It is also arguable that scale is a vital factor in extracting the best financial benefits of building offsite, especially when it comes to factories. The majority of factory overhead costs such as labour are fixed regardless of output, whereas many site-based construction costs are only incurred when building is taking place.

Despite the high number of respondents reporting that they use modular, it appears that the majority of respondents purchase modular materials from another manufacturer, rather than undertaking a full offsite operation themselves. Of those surveyed, 71 per cent stated that they are not considering owning or leasing a factory to build homes, and only 12 per cent currently own or lease a factory to build homes. 7 per cent are considering doing so in the next two years, and 9 per cent in more than two years.

QUALITY AND PRECISION

Image has in the past been one of the largest barriers to MMC. Builders and buyers alike have taken some time to shift their perception of modular houses from the stereotypical low quality, 70s and 80s style prefabs of their youth to the cutting-edge projects being produced currently.

Perception is changing, however. According to our respondents, 53 per cent believe that homeowners and buyers' perceptions of modular building have improved over the last five years and 9 per cent dramatically so, and 53 per cent of builders and developers perceptions have also improved, with 9 per cent dramatically so. Covid has reportedly had some effect here, increasing interest by 50 per cent for housebuilders and developers and 6 per cent dramatically so, with 31 per cent increased for buyers and 8 per cent dramatically.

MMC's ever-increasing quality precision is perhaps behind this. As with any other kind of product, if done correctly, building a home in factory conditions can allow for much higher levels of precision, and in recent decades the continuing growth in the use of digital technologies such as Building Information Modelling (BIM) has only increased this precision.

It appears that this modern progression is fairly well understood by respondents, with 47 per cent of respondents citing quality as one of their top three benefits to building offsite, and 26 per cent precise construction – though only 11 per cent per cent cited ensuring as-designed performance as a top benefit.

As stated earlier, while there's a perception that offsite's suitability varies for different building types, just 1 per cent of respondents stated that no forms of housing are suitable for modular construction. So, it appears that the method is seen as flexible, and its precision is not exclusive to 'cookie-cutter' style apartment blocks.

SKILLS AND SAFETY

The UK construction industry is undergoing a skills crisis, with research from The Federation of Master Builders (FMB) reporting that 64 per cent of construction firms are currently



What do you think are the biggest three benefits of building offsite?

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Ƴ in A rockwool.com/uk struggling to hire bricklayers, and 59 per cent are struggling to hire carpenters and joiners.

One of the reasons behind this is the industry's ageing workforce, and the lack of attraction for younger workers.

The Construction Industry Training Board (CITB) has reported that the overall appeal of the construction industry as a career for young people is lacking – scoring 4.2 out of 10 among 14 to 19 year olds. It is said to be perceived as "unacademic," "dangerous," as well as "outdoors and dirty."

Modular construction - particularly the elements performed in factory conditions - reduce the "outdoors and dirty" elements to virtually nothing, and BIM-based factory designs can be created from essentially anywhere - a scenario likely to be more attractive to a generation used to working with computers. It is also easy to understand how safety can be improved under factory conditions.

Only 14 per cent of respondents cited skills as one of their top three benefits to building offsite, and 21 per cent safety suggesting they are not considered among modular's defining benefits – however, 79 per cent reported that the skills crisis could be positively affected by modular technologies.

EFFICIENCY, ENVIRONMENTAL AND WASTE

The climate crisis is undoubtedly upon us, and the construction industry has a major role to play, with the Government estimating that the construction, operation and maintenance of the built environment accounts for 45 per cent of total UK carbon emissions.

Two of the largest carbon offenders in construction are the energy use of homes and the wastage involved in constructing homes.

According to the Housing, Communities and Local Government Committee, modular construction uses 20-30 per cent less energy than traditional methods, and offsite manufacturing wastage is reportedly less than 2 per cent.

In the controlled environments that modular factories offer, human error can be reduced, waste can be minimised, and precision engineering can reduce the performance gap between designs and the building in operation.

Such precision can also reduce air-leakage within the new building, and factory assembly can significantly reduce onsite air as well as noise pollution. Materials can be ordered to exact specifications, and there is a lower risk of onsite spoilage through wet weather and other environmental causes, all leading to environmental savings as there is less wastage across the board.

When it came to efficiency, these benefits were fairly well understood – with 54 per cent of respondents citing efficiency as one of their top three benefits to building offsite, and 31 per cent environmental benefits.

CONCLUDING SUMMARY

It is clear that housebuilding in the UK is suffering multiple crises at once, from rising costs, to low supply and a lack

of skilled tradesmen, and all the while prices are rising with both builders and buyers suffering.

Our research has shown that housebuilders and developers are aware that modern methods of construction have the potential to address each of these to some degree, with respondents reinforcing the message that higher speed, lower costs, and higher precision are the biggest benefits all of which are able to directly combat some of the sector's most pressing concerns.

Despite the positives, the survey results have revealed that there are still some 40 per cent of builders who have never used any form of 'modern methods' whatsoever - and 37 of those never anticipate doing so.

The data displayed many causes behind this, and the biggest barriers for our readers were the initial cost and a lack of confidence from buyers. Conversely, the majority of respondents agreed that they could save money by building offsite, and that it could help increase affordability for buyers.

The data implies that making the change to achieve greater takeup is in the Government's hands to some degree, with 63 per cent of respondents saying there is not enough support from Government to help the industry adopt modular technologies. And, in terms of perception - with MMC's image improving vastly in previous decades - it may be time that's needed for specifiers' opinions to change.

Still, while MMC is no silver bullet for the industry's problems, this report has shown that builders believe it has the potential to ease some of sector's most pressing issues, more builders than not have begun to use the technologies to some degree, and the perception of offsite building has improved across the board in the last five years.

If housebuilders and developers are looking for ways to innovate and save time and money, and the Government wants to meet its targets, perhaps those who haven't should take a fresh look on modern methods of construction.

Report text compiled by Jack Wooler, deputy editor at Housebuilder & Developer

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Scottish Passivhaus scheme gets the green light

A pioneering project by Hanover (Scotland) to provide 15 Passivhaus homes near Loch Lomond – on the site of the housing association's first ever scheme – has been given the go-ahead. Jack Wooler speaks to the people behind it.



Set to be the housing association's first social housing development certified to Passivhaus standards, Hanover (Scotland) has received planning approval from Loch Lomond & The Trossachs National Park for 15 'general need' homes in the village of Drymen.

The development will replace the original housing which was the first development that Hanover owned when it became independent in 1979 – 18 one bedroom – one and two person – cottages. The buildings have since been demolished with a goal of meeting new sustainability standards, and the existing residents will move into the new development once completed.

The new homes will feature a mixture of terraced bungalows for returning residents, and two-storey semi-detached dwellings. Their Passivhaus design features and benefits include "optimal solar orientation," as well as thermal comfort, excellent indoor air quality, but also wildflower meadow grass areas for increased biodiversity.

Among the first social housing developments in the country set to achieve the stringent environmental standard, the air-tight buildings will use "vastly less" energy for heating and cooling, complemented by MHVR technology, says the developer.

GOING GREEN

Hanover (Scotland) Housing Association is one of Scotland's largest housing providers for older people, with a portfolio of more than 5,000 properties located in over 200 developments.

Originally part of Hanover England, the company became an independent housing provider in 1979, its aim being to "promote safe, secure and above all, independent living for its customers through modern and affordable housing," says Julie McKinnon, projects manager at the housing association. According to Julie, the decision to demolish Hanover (Scotland)'s original development was based on the advent of more stringent legislation for energy efficiency: "The properties were not meeting the new Energy Efficiency Standards for Social Housing (EESSH), and further improvements to EESSH targets would have been difficult to meet. Daily running costs for the electric heating systems was also proving to be very expensive for our customers."

As such, Hanover commissioned a feasibility study and it "soon became clear" that the most sustainable option was to demolish and rebuild the development with a new, lowenergy design.

SITE

The development site lies between Conic Way and Montrose Way, to the north-west of the village centre. Its topography slopes from front to back, such that many of the previous homes had stepped access (or access ramps) and, in places, a retaining wall between themselves and the street.

The new development, designed by ECD Architects, 'regraded' the site's levels, moving the retaining wall to behind the properties to create a separation from north to south, and provide the new homes level access from the street.

On Montrose Way, a terrace of onebedroom bungalows provides 'amenity housing' which will be offered to returning tenants. At the end of Conic Way and Montrose Way, the units proposed step up to two storeys, to provide greater diversity in the housing mix. The remaining units are twobedroom (three-person) and two-bedroom (four-person) 'general needs' housing.

"The new homes have been arranged to step in and out from the street line, which is in keeping with the uneven building line of the street, and reflects the plan form of the former properties on the site," says Jennifer Rooney, project architect.

Small trees and shrubs have been proposed to the front of the units to enhance biodiversity, create 'defensible space' between the street and the housing, and generally enhance the spatial quality and visual aesthetic of the development.

PASSIVHAUS

Hanover looked at the Passivhaus design philosophy for Drymen at a very early stage in the planning process, according to Julie. "The idea was to reduce the impact on the natural environment, and most importantly to reduce the running costs as much as possible for our customers," she says.

MANY OF THE HOMES HAVE AN OPEN PLAN LAYOUT IN THE LIVING AREAS, WHICH ALLOWS FOR CROSS VENTILATION







Jennifer explains further: "Buildings built to Passivhaus standards use up to 90 per cent less energy for heating and cooling, and up to 70 per cent less energy than conventional buildings, and have therefore been identified as a key strategy for tackling fuel poverty." She adds: "They also future-proof occupants from increasing unexpected weather patterns."

To achieve the Passivhaus standard, the fabric of the new homes is highly insulated and airtight, to minimise home heat losses and reduce energy consumption. All windows have been designed to maximise capacity for natural ventilation, whilst ensuring safety and security are not compromised. Many of the homes have an open plan layout in the living areas, which allows for cross ventilation.

One of the key features of the design is the units' optimised solar orientation; the two-storey detached properties have been designed with entrance doors to the side of the property, allowing a standard plan form to be used regardless of whether the front is north- or south-facing. As such all of the homes within the development are oriented to maximise solar gains.

The new homes have also been provided with MVHR (Mechanical Ventilation with Heat Recovery) systems to ensure that high levels of internal air quality are achieved throughout the year (particularly during winter when windows are typically closed). MVHR also reduces heat losses by extracting heat from stale air to preheat fresh air.

Solar panels have been integrated onto south-facing roofs to provide domestic hot water to the properties, and air source heat pumps have been located to the rear of properties to provide heating in a sustainable way.

CONSTRUCTION

Hanover (Scotland) is working with experienced partners to achieve these high environmental goals, including Cruden Building, ECD Architects and TCS Construction Consultants.

The project will take approximately 1 year to complete from site start to final handovers and surfacing, and initial aspects will focus on site clearance and

the diversion of any existing water main.

The foundation solution planned is 'trenchfill,' with an in situ concrete ground floor slab, a highly insulated roof, wall and floor cassettes will form the timber frame, and the external walls will be a mixture of facing brick, render and cladding.

The total cost of this rebuild is expected to be £2.89m. This has partly been funded by a Housing Grant from the Scottish Government, worth £1.26m. The remaining costs are covered by a private loan from the Royal Bank of Scotland (RBS), worth £1.63m.

AGAINST FUEL POVERTY

Considering the team's approach to the new homes, Jennifer believes that by adopting the Passivhaus standard, the developers are ensuring that they are protecting residents from rising fuel costs. "In particular," she says, it's great to know that the amenity houses will be offered up to returning residents who previously lived at this address."

The residents will be returning to a brand-new house, designed specifically as amenity housing, and with very low energy bills yet excellent levels of thermal comfort. According to Julie, these aspects have led to a lot of positive feedback so far. The project team continues to work with the Drymen community, and says the reaction from its clients has been very positive.

In order to maintain this relationship, a short newsletter is published internally to keep customers and the general public informed about the progress of the project.

"Customers who were decanted at the start of the demolition programme have already expressed their enthusiasm to return to the development at the earliest opportunity," says Julie.

Looking at the future of the project, the project architect concludes: "We are optimistic about the success of the project, and we anticipate that Passivhaus will set the blueprint for future housebuilding in Scotland, so this an exciting opportunity for everyone involved." "THE NEW HOMES HAVE BEEN ARRANGED TO STEP IN AND OUT FROM THE STREET LINE, REFLECTING THE PLAN FORM OF THE FORMER PROPERTIES ON THE SITE" – JENNIFER ROONEY, PROJECT ARCHITECT

Latest of 25 new recruits in 2021



Designer Contracts has announced two further area manager appointments, bringing the total number of new recruits to join the business since January, to 25. Chris Hughes joins as the new area manager for the company's Thames Valley

region while Sol Raza has been appointed as area manager for Kent. Said Designer Contracts md Peter Kelsey: "Despite the global pandemic, our business has continued to thrive – indeed since February our year-on-year sales have been increasing – reflecting the robust state of the construction sector. As a result, we have continued to invest in our workforce with a total of 25 new people recruited into the business this year."

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Garador 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. This sensor is built into the floor seal and utilises light beam technology, so the door will automatically stop if the beam is broken by any obstruction. 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. Available with standard (433 MHz) or Bisecur (868 MHz) hand transmitters.

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Marley strengthens roof system offer through acquisition of Viridian Solar

Roof systems manufacturer, **Marley** is enhancing its roofing portfolio with the acquisition of Viridian Solar Ltd, the UK's leading supplier of roof integrated solar panels. With demand for sustainable energy solutions on the increase, this strategic acquisition ensures Marley can provide a single-source supply for a fully integrated solar roof system. Solar panels have formed an ever-expanding feature of the UK roofscape and, more recently, this has shifted to integrated solutions that offer better aesthetics, durability and ease of installation. Recent announcements on forthcoming Building Regulation changes open up these opportunities even further, with the prospect for roofs to become a mainstream element of the renewable energy economy. Viridian Solar was established in 2003 and has gone on to build a strong reputation as an innovative manufacturer of high-quality, integrated solar panel solution launched in 2020. Marley SolarTile® works seamlessly with existing roof structures to directly replace roof tile sections and is a quick and simple way to provide a greener and cost-effective energy source. Paul Reed, Chief Operating Officer for Marley, comments: "This is an exciting acquisition for Marley".

01283 722588 www.marley.co.uk



Crittall meet exacting steel window replication specification

Originally built as a factory, Springfield House, 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. Steel spandrel panels were also included to conceal floor slab and ceiling spaces, Crittall Windows Project Manager Peter Cutts explains how the local authority's putty 'requirement' was achieved. He says: "We used a high-performance low modulus silicone sealant, colour matched to the frames, that retains the glass and replicates the original appearance. It is a bespoke method that we often use to meet planning requirements, and it does look really smart." 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.

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Combat damp homes with SprayCork from Corksol

An eco friendly render and plaster solution for indoor and outdoor use, SprayCork is proven to deliver high-performance insulation and protect homes against damp and mould. Ideal for renovations and rental properties, SprayCork can be applied to internal walls where thermal bridging and cold spots are a problem, such as round windows, doors and air vents and external facing walls.

Depending on the severity of the damp, SprayCork need only be applied in one or two coats for immediate, long lasting results. The flexible, porous material regulates airflow between inside and outside, allowing the building to breathe, as moisture does not sit on the walls and the envelope is made water resistant. When applied as thin as 6mm SprayCork also avoids eating into living spaces, providing increased square footage when compared to thermal plasterboard.

Not only does SprayCork curb damp problems, thermal heat testing has proven the material can help reduce heat loss through walls by up to 30 per cent, a highly attractive value-added benefit to help strengthen the energy performance certificate (EPC) of the property. To find out more about **Corksol**, please visit the website.

01484 442420 www.corksoluk.com

PUSHING DESIGN BOUNDARIES WITH BESPOKE

Kathryn Muller of The Rooflight Company discusses how bespoke design can allow housebuilders and developers to push the boundaries of aesthetics on their schemes.

Bespoke' – designers, developers and architects love the word. It means breaking conventional rules and resetting boundaries, thereby allowing creativity to run free. It means elevating your work by creating features that are utterly unique.

In truth, however all that 'bespoke' really means is a product that is made to order, crafted especially to cater to the customer's wants and needs. Associated with that, sometimes unfairly, is longer lead times and higher costs.

The truth is though, bespoke designs can be used in every room of a home; there are no boundaries after all. From unique staircases that create a focal entryway and hub of a property, to handcrafted kitchen units that make the most of the space available, and statement custom lighting to create the perfect ambience, there is no end to the possibilities available.

Not every project will require the bespoke treatment when working with manufacturers who have a vast range of off-the-shelf options. However, for those







times when a design needs an added 'wow factor,' or when updating an older property and things are found to be not quite 'square,' or when an ambitious architect's vision is slightly more complicated than initially thought, that's when a manufacturer with bespoke offerings shines.

Bespoke allows designers to create products with added capabilities. For rooflights, this could be increased acoustic or thermal performance, or even options like obscured glass, security glass and switchable glass, which transitions from transparent to opaque at the flick of a switch. This flexibility means housebuilders can use skylights in less traditional areas of a home, such as dressing rooms and even music studios.

Bespoke also allows housebuilders and architects to bring creative and inspirational ideas to life. After all, if you are going down the bespoke route, then you have the opportunity to provide more than just ordinary, so make the most of it.

Not all bespoke designs are extreme though, it can just mean 'perfectly tailored to a property.' Designs could be drawn up for an orangery or sunroom, but a standard size skylight may not be quite

BESPOKE ALSO ALLOWS HOUSEBUILDERS AND ARCHITECTS TO BRING SOME CREATIVE AND INSPIRATIONAL IDEAS TO LIFE

big enough. Or perhaps instead of something square, the architect wants a geometric shape to add interest and personality to the property. That's when a bespoke design team can help out.

They'll be able to walk the customer through the entire process, from an initial conversation where they will go over the aim of the project, to the minute detail of the fixtures and fittings. Indeed, it may not be obvious from the outset that a project requires bespoke. It may be that you approach the sales team with an idea, looking for advice on how to deliver on the brief. At that point they may point you in the direction of their bespoke team so that the final product truly reflects the initial concept.

Sometimes the design team will work with a third-party surveyor to create a 3D model of the roof to ensure the calculations are as precise as possible before the product is made. Using CAD software allows design teams to import a 3D model of the property to a computer to ensure that the measurements are correct and any rooflights will seamlessly fit into the space available without warping or twisting the units. This is just one example of how the design process works, but it will differ depending on the product or feature being made.

Sure, the process of going down the bespoke route can be more laborious in terms of time invested. It isn't as simple as going into a shop and taking something off the shelf. However, you will be collaborating with seasoned craftspeople and ensuring that the product is the perfect fit for the job and of the highest quality. There is something in that process which is really exciting. Whether it's the thought that no other property will have the same feature, or the creative process itself. You don't get that by shopping off the shelf.

So, if you're in a position where you need to go bespoke, see it as an opportunity to take your design to the next level. Why blend into the building next door when you could stand out instead? Use bespoke to push the boundaries.

Kathryn Muller is Design Studio manager at The Rooflight Company

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RAISING THE PROFILE

Tony Hobbs of Southern Sheeting looks at how and why profiled metal sheeting is increasingly being used across a range of areas in residential projects.

Profiled metal roofing has been adopted in the commercial sector for many years but, thanks to new products and technology, housebuilders and developers are using it on 'Grand Designs'-style homes, extensions and garden offices.

Durability, quick installation, lightweight and weather tight qualities, as well as an impressive colour range, easy maintenance and energy efficiency make a profiled metal roof a viable option for a variety of projects, and not only for warehouses, factories or farm buildings.

In countries such as Canada and the USA, profiled metal roofs are a popular choice for homes because of their high strength-to-weight ratio and ability to withstand harsh weather. Yet in the UK, metal roofing is only occasionally used on domestic properties.

Profiled metal roof sheeting has come a long way in recent years, and there has been a growing trend of housebuilders and developers in the UK taking a more open look at where it can be used.

It can be a good investment, because profiled metal is significantly lighter than tiles or slate, yet just as durable. Profiled metal roofing is strong and lightweight, so it won't require such a substantial or complex substructure to support it, which will save money on building materials.

It is also very quick to install, which brings substantial financial savings on labour costs. Profiled metal roofing has far fewer joints and laps than tiles or slates, which results in a well sealed roof, reducing air and heat leakage, making the building warmer.

There are a wide variety of finishes and colours to choose from. Architects love using metal roofing because of this – it can help create buildings which portray individuality and truly stand out from the crowd.

The retro look of corrugated metal sheeting is also proving popular, while the modern finish of a standing seam system will produce an ultra-sleek property with wow factor. There are 25 different colour shades of steel sheeting, which is the trump card for domestic builds.

Metal roof sheeting is an especially popular choice because of its weatherfastness, making it able to withstand very high winds, driving rain and snow load; and being steel, it's classed as noncombustible. It is also unaffected by fungus, moss or mildew and resistant to damage from birds and pests.

In developments where there are height constraints, for example when an extension, garden room, garage or workshop, is under construction, metal sheeting comes into its own. The pitch required for steel roofing is very low, at just four degrees and can be even lower with a standing seam system. This means the development will have increased headroom.

For example, under permitted development rights, there is a maximum height of 2.5 metres for a building within two metres of a boundary of the curtilage of the dwelling house. With a much lower pitch, this provides more usable space. When an extension to a property is under construction, this lower pitch is also a clear winner, creating even more space for the owner.

The sheets require very little maintenance, last a lifetime, and provide good energy efficiency, which ticks a lot of boxes for all types of build.





CHOOSING SHEETING

Choosing the best metal sheeting for a roof depends on the purpose and geography of the building. Domestic builds may require insulated sheets to ensure the building is warm in winter and cool in summer.

Insulated panels are made of inner and outer steel sheets, separated by a core of high performance closed-cell rigid foam insulation. The distinct advantage of an insulated panel roof is the labour cost savings as the whole roof covering is laid in a single operation. Also, it's a single-fix solution.

Another product growing in popularity is the steel tile-effect sheet, which has become popular for its aesthetic appearance. Standing seam systems, meanwhile, are produced specifically for very low-pitched roofs down to 2 degrees and are ideally suited for single-storey home extensions.

Standing seam systems look very different, and we are seeing a growing trend for these on one-off houses. They cost more but their unique technical capabilities and eye-catching style has significant appeal.

BUSTING THE METAL ROOF MYTHS

The most popular buildings for a profiled metal roof are still likely to be

garages, workshops, factories, warehouses and agricultural buildings, but some myth-busting could help make metal sheeting more widely popular in the domestic sector.

The biggest myth about metal sheeting is that when it rains it produces a 'drumming' sound. If insulated correctly, with the right sound deadening acoustic underlay and insulation, a metal roof can be extremely quiet.

Other myths around profiled metal sheeting roofing include:

- Metal roofs are more susceptible to lightning strikes – they aren't, but a lightning conductor can be installed for peace of mind
- Metal roofs will make a house cold in winter – they won't. With the correct insulation and vapour barriers installed they can leave a house well insulated. With far fewer joints and seals than any other roofing type, air and heat leakage is kept to a minimum, which keeps the building warmer
- Metal roofing is heavy the elements are in fact lighter than tiles and slate roofing, and also require less timber to support them.

It's another myth that metal roofs are primarily suitable for cost-conscious builds in which the aesthetics are less IN CANADA AND THE USA, PROFILED METAL ROOFS ARE A POPULAR CHOICE FOR HOMES BECAUSE OF THEIR HIGH STRENGTH-TO-WEIGHT RATIO AND ABILITY TO WITHSTAND HARSH WEATHER

important – in fact a metal roof is good value, especially over the long term, and if you make the right choices, they look good and can even feel on-trend in a high-end statement home.

The demand for garden offices has been very high during the pandemic and including these in a new development will add significant value to a property. Homes with garden offices are also in short supply – why not consider adding them to your property development with an attractive metal roof? It's sure to attract significant interest.

Tony Hobbs is managing director at Southern Sheeting



4 new colours to sectional garage door range



Garador are launching four exciting new colours for their sectional garage doors range: Basalt Grey (RAL 7012), Quartz Grey (RAL 7039), Slate Grey (RAL 7015) and Titan Metallic (CH 703). Titan Metallic has minute pearlescent looking flecks which are blended into the paint, adding another dimension

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With risk management being one of the top priorities on the construction agenda, you can be assured of a product that is truly proven as fit for purpose by choosing a T-T Planet range Package Pumping Station.

T-T maintain Professional Indemnity Insurance to a value of £5million a key factor for consideration when choosing a supplier of a key integral product for use within your project.

For all of your pumping station needs with a focus on both quality and reliability, contact the experts...







Panasonic's quiet revolution



As many of us get used to the reality of spending more time at home, the benefits of having a quiet, yet extremely efficient heating and domestic hot water system have become more obvious. According to independent tests, the Panasonic Aquarea J Generation R32 Mini Monobloc range and 16kW Bi-Bloc

T-Cap Super Quiet air-to water heat pumps have been confirmed to have impressively low levels of noise when in operation. Aquarea A2W Heat Pumps are proving popular with developers looking to provide highly efficient heating and hot water, whilst also providing homeowners with a reliable system offering long-term energy savings.

01344 853 393 www.aircon.panasonic.eu /GB_en/

Vent-Axia Launches the Multivent MEV Family



Vent-Axia has launched the Multivent MEV family, a new range of mechanical extract ventilation (MEV) and decentralised MEV (dMEV) designed to provide a simple and effective solution to help housebuilders meet the Future Homes Standard. The new Multivent MEV family is therefore the ideal solution for new build residential projects, helping housebuilders meet DER requirements

through its market-leading energy efficiency and improving indoor air quality (IAQ) for homeowners. A reliable, highly efficient, quiet and easy to operate ventilation system is key to unlocking a healthier, greener future. The Vent-Axia Multivent MEV family offers just that.

0344 856 0590 www.vent-axia.com



Titon FireSafe® Air brick is the perfect solution for development

Titon has recently supplied the new Fire Safe Air Brick® at the new Timber Works residential development in Cambridge.The development, a project undertaken by AJ Mechanical Services Ltd (AJM) is among one of their largest contracts to date, with an order worth £3.5 million. Timber Works is part of a calibration between Cambridge City Council and Hill Investment Partnership. They both combined to form the Cambridge Investment Partnership (CIP) whose aim is to develop affordable housing in the heart of Cambridge. The Titon FireSafe® Air Brick is a specialist product developed and manufactured to offer low resistance to airflow, and high resistance to fire, as set out in Approved Document B (fire safety) volume 1: Dwellings, 2019 edition. The Titon FireSafe® Air Brick is designed and tested to BS EN13141-2:2010 specifically for mechanical ventilation systems. Made from 1.2mm electrogalvanized sheet steel, fire class A1 'no contribution to fire' and polyester powder coating meeting EN13501-1 classification A2s1,d0. The Titon FireSafe® Air Brick is ideal for fire safety applications. Commenting on the Timber Works Development, Laura French, Titon's Area Sales Manager stated: "It was a pleasure to work with AJM on this development, Titon's aim was to support them with their specific requirements and ultimately deliver the solution that was required."

0800 970 4190 www.titon.com/firesafe

BUILT FOR YOUR FUTURE STANDARD - THE NEW MULTIVENT MEV FAMILY







Give us a call today for FREE advice 0844 856 0590 www.vent-axia.com/multivent-family

Vent-Axia

Launch of invisible mini heat recovery unit



Vortice has launched a new mini heat recovery unit, the Vort Invisible Mini, specifically designed for small apartments, offices and hotel rooms with a surface area of up to 80 square metres. This is the latest in a whole family of heat recovery units offered by Vortice which make the

best use of energy efficient technology and also allow filtration of the air to ensure excellent indoor air quality. The Vort Invisible Mini is easy to install in a false ceiling, has easily accessible wiring and is simple to set up at installation, including settings for fan speed, relative humidity, time interval of sleep mode and activation temperatures of free-cooling mode.

01283 492949 www.vortice.ltd.uk

Duravit launches D-Neo



D-Neo is a complete bathroom collection of outstanding quality and sophisticated design. The range has been created to outlast short-lived trends and has been designed to suit the day-to-day living of any lifestyle. D-Neo is the first bathroom range by Belgian designer Bertrand Lejoly and is

testament to his extraordinary instinct for interior design. The ceramic elements include a lifetime guarantee and work in harmony with the highquality furniture. The wide range of bathtub options and matching faucet range make it possible to customize any bathroom in ultimate style at an attractive entry-level price. Visit the **Duravit** website for more information.

01908 286680 www.duravit.co.uk



HiB Solstice mirror now available in eye-catching brushed brass finish

Leading bathroom supplier **HiB** has introduced a new brushed brass finish to the Solstice mirror range. Offering a sleek and luxurious feel, the brushed brass finish is now available to complement the growing collection brassware and furniture released earlier this year and is perfect for those seeking to create a lavish style for their project. Customers can now choose between a black or brushed brass finish option in the 60cm and 80cm widths, ensuring there is an option to suit bathroom of all sizes and styles.

The round shape with hanging strap is complemented by a halo of ambient backlight which creates a stunning focal point in the room, while the illuminated ring of colour temperature changing LED lighting make it ideal for everyday tasks such as applying cosmetics and cleaning teeth. The Solstice mirror also benefits from internal heated pads which reduce condensation, for a flawless and functional bathroom centrepiece. For more information about the Solstice mirrors or HiB's dedicated contracts department visit hib.co.uk where you can also download the Projects and Specifications Guide.

020 8441 0352 www.hib.co.uk

FUTURE HEATING





Great Scott! There's now less than five years before the government brings in its Future Homes Standard – the strict new home sustainability rules that mean a new-build house will have to produce up to 80% less carbon than the average property does today.

Easily plastered into the ceiling or placed behind the plasterboard, Energy Carbon's state-of-the-art far infrared heating technology can help house builders hit those tough new targets, and is perfect for modular and new-build.

> 40% discount for Passivhaus projects!*

Spo Spo *we

Speak to **Energy Carbon** today: 0203 507 1659 | hello@energycarbon.co.uk *We love Passivhause and support all new projects built to the standard with a huge 40% discount!



THE SUSTAINABLE CASE FOR PIR

Simon Blackham of Recticel Insulation explores why the sustainability benefits of PIR make it a great choice for smart, energy efficient homes.

Polyisocyanurate (PIR) insulation panels satisfy two crucial factors for designing effective insulation solutions for new and existing buildings: low thermal conductivity, and durable performance.

Such properties have led to them becoming the go-to solution for housebuilders in search of a durable, higher-performance alternative to mineral or glass wool to create healthy, comfortable interiors which are cost-effective to maintain.

ENDURING BENEFITS

According to the Insulation Manufacturers Association (IMA), the average UK household spends around £1,230 on fuel bills each year, which can be up to 50 per cent more than necessary due to the lack of energy-saving measures being implemented in the home. Poorly-insulated building fabric is a major contributor to domestic energy wastage. To help combat this, the construction industry is increasingly turning to PIR.

There are numerous key benefits associated with PIR insulation. Its closed-cell structure means it doesn't absorb water, allowing the thermal performance and reliability of the product to be retained over time.





When it comes to installation, the PIR boards are lightweight, less cumbersome to transport and easy to cut. PIR helps reduce on-site labour times and in turn, overall build cost.

In addition, PIR doesn't shed fibres – which can be inhaled, leading to potential health issues – and causes less irritation whilst being handled. This results in a more comfortable application for installers, while the improved performance reduces energy use, thus benefiting the environment over the lifetime of the property.

SLIM, BUT POWERFUL

With a lambda value of up to 0.022 W/mK, PIR is designed to provided excellent performance. This, coupled with its slim composition, means it requires less space to achieve the same U-value as other insulation materials. This is of particular benefit to housebuilders looking to maximise interior living space in multi-property developments with limited plot size.

For mineral wool to attain the same level of thermal performance as a PIR panel, a much thicker insulation and overall wall width would need to be specified. Once the cavity width increases, wall-tie lengths have to be lengthened and window and door lintels expanded – in short, the whole building process becomes more complex and costly.

PIR insulation's structural strength enables a consistent performance that will last for many decades; negating costly repairs and maintaining its thermal qualities. PIR insulation is also renowned for its adaptability – it's an ideal solution for a range of applications such as floors, walls, pitched and flat roofing.

CONCLUSION

Therefore, when it comes to specifying insulation for new or refurbishment building projects, there is much to consider: What insulation thickness is required to achieve the desired U-value? Will this require the building's structure or design to be altered? How durable is the insulation, and what is its proven lifecycle? And finally, how easy is it to fit, and what will its installation requirements mean in terms of site hours and labour costs?

PIR panels offer a proven solution to each design and installation conundrum, and as such they have a key role to play in enshrining the sustainability of the UK's future built environment for generations to come.

Simon Blackham is technical manager at Recticel



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. There are two methods used to objectively measure breathability – the SD value and the MVTR value. Using either method, Claypaint is proven to have extremely high levels of breathability. 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

Fibo expands its new Urban Collection



Leading waterproof wall panel manufacturer, **Fibo**, has added two new designs to its Urban Collection. Reflecting the latest interior trends, the Herringbone and Hexagonal designs join the popular Metro Brick, which was launched last year. The versatile collection now offers greater possibilities for creating contemporary bathrooms

and kitchens, without compromising on ease of installation, maintenance and performance. Inspired by the patterns and architectural features found within cities, Fibo's Urban Collection consists of designs that are softer than traditional industrial styles, yet still embrace the urban aesthetic.

01494 771242 www.fibo.co.uk/bathroom/the-new-urban-collection

Top three causes of flooring failure



Manufacturer of high-performance floor preparation products, **Setcrete** has revealed the top three reasons for flooring installation failures when using floor levelling compounds and adhesives to install textile, resilient or wooden floorcoverings. The number one cause of floor failure is the

presence of damp, compounded by the absence of remedial action before installing the floorcovering. The other two main causes of floor failure are the absence of priming, either before installing a levelling compound or applying adhesive to a subfloor, and the incorrect selection of levelling compounds. Contact Setcrete who can advise on any flooring situation and the key steps and products needed to deliver a perfect flooring solution.

www.setcrete.co.uk



BAL Micromax2 anti-microbial grout provides the perfect finish

The COVID pandemic has fuelled a surge in appetite for antimicrobial products, particularly to keep kitchens, bathrooms, WCs and showers clean and fresh. Tiles provide a durable and aesthetically pleasing surface for dry, wet and hygiene areas. These areas can be prone to humid conditions together with soaps and food residues, which can harbour bacteria, mould and mildew and therefore regular cleaning is required – often a quick and easy process where surfaces are tiled. To ensure even greater levels of hygiene, **BAL** have developed both grout and sealant products with a world-leading, anti-microbial solution provider Microban[®]. These products ensure long-lasting protection against black mould and potentially harmful microbes and bacteria for all tile finishes.

Because the Microban technology is in-built within BAL formulation's, Microban protection provides continuous antibacterial and antifungal protection that lasts the lifetime of the products, helping to create a cleaner, fresher and more efficient building application. Microban can be found in a number of BAL products including the leading BAL Micromax2 grout range and colour co-ordinated BAL Micromax Sealants.

01782 591100 www.bal-adhesives.com



Marmox Tilebacker board used for five bathroom fit-out

'The Tilebacker' board manufactured by **Marmox Limited**, has been chosen by a specialist sub-contractor working on a very large residential property in Maidstone, to help create a total of five bathrooms and en-suite shower rooms. J. Jupp Tiling works across Kent and into the capital, mainly on domestic contracts, and has been a long time user of Marmox products including the manufacturer's widely specified Multiboards. With some $130m^2$ of wall area to address and 22mm thick structural ply already fixed in place as the substrate, it made practical and economic sense to switch to the new value-for-money alternative. Director Josh Jupp comments: "I have been using Marmox products including Multiboard, along with the tapes and fixings, for a good while and always found them very dependable for the high-end residential projects we are involved on. I like the new Tilebacker which is relatively lighter and even simpler to cut than the Multiboard and it seemed perfect for the house in Maidstone where we are working for a private developer. The Tilebacker boards will soon be covered with $1200 \times 1200 \times 6mm$ Italian tiles, which will create really striking interiors. This has been a successful first try out with the new boards and I am planning to use them again for our next job which features more than $300m^2$ of tiling, including three very large bathrooms."

01634 835290 www.marmox.co.uk

A NEW GREEN FOCUS FOR BATHROOMS

Adam Teal of Kaldewei explains why sustainability is now a key aspect for specifiers when planning bathrooms, as the industry restarts in earnest.



Delhi experienced the cleanest air quality on record, Greta Thunberg met Sir David Attenborough, and America promised to cut its emissions in half by the end of the decade. With so much discussion focusing on the environment, consumers are more aware than ever before of the damage that pollution and long term waste does to the globe. The increasing awareness of the need for sustainability and environmental understanding within the industry is becoming more and more apparent, as we once again start to work on projects and developments.

In general, people are making decisions on a daily basis that will have a positive impact on the environment. This extends to their homes, and more specifically bathrooms – whether new build or





refurbishment, they are going green.

In the 1950s, an annual total of 1.5 million tons of plastic was produced worldwide; today that figure has reached an incredible 400 million tons. Plastic products such as toothpaste tubes and shampoo bottles that are used every day in the bathroom account for a large proportion of that waste, but so to do the larger acrylic items.

Consumers are more aware of the waste they create than ever before, and are taking steps to reduce this, from the day-to-day essentials such as biodegradable toilet roll and eco-friendly cleaning products through to the larger items. In the UK, homeowners will on average replace their bathroom fittings every 15 years, so whether your project is a new build or complete refurbishment, specifiers need to take longevity and sustainability into account. Helping the environment does not mean limited choice, just as there are so many aspects to going green, there are a wide and varied range of sanitaryware products to choose from.

Saving water is one of the key elements and most leading brands have water and energy saving technologies as part of their offering. Stylish showerheads, mixers and single taps have been designed to ensure people use less water in the shower or bath. If they use a dual flush toilet they will use only 20 per cent of the water in a traditional toilet. A composting toilet means no water usage at all, however this is not for everyone.

Hygiene is currently a key topic, and is also an important aspect of a green bathroom. Rimless toilets and those whose surfaces have a specific coating designed to combat bacteria make them easier to clean, so less water is needed and harmful cleaning chemicals are not required.

For flooring, there is the option to go for the natural look using original or reclaimed floor boards; if that's not possible reclaimed tiles or biodegradable and recyclable cork are possible options. Cork floors have amazing eco credentials and are warm, soundproof and soft

underfoot, as well as also being surprisingly hard wearing.

For the larger bathroom items, the physical materials used to create the sanitaryware should be taken into account when it comes to maximising sustainability in a bathroom specification. Look for a company that offers an extensive or lifelong guarantee, and which has strong green credentials.

Adam Teal is head of Sales at Kaldewei UK

WWW.HBDONLINE.CO.UK

Launch of new ARC Wired Tile Batten Barrier

ARC Building Solutions Ltd is pleased to announce the launch of its new ARC Wired Tile Batten Barrier. It has been designed to provide a fire, thermal and acoustic break at the party wall between the roof tiles and the roof membrane. Developed to comply

with NHBC requirements for fire stopping at the party wall between domestic dwellings, ARC Wired Tile Batten Barrier replaces the former ARC Tile Batten Barrier. Providing fire stopping above the roof membrane, between tile battens to the underside of the roof tiles, the new system works in conjunction with the Party Wall System to create a complete fire break at the separating wall.

0113 252 9428 www.arcbuildingsolutions.co.uk

Königstone wins Best Surface accolade

Königstone has won Best Surface at the first-ever Ideal Home Kitchen Awards. The surface specialist was presented with this prestigious award for the KönigQuartz range. The judges loved the look of the Concrete Fossil worktop in particular, especially the look and texture which

addresses the trend for concrete in the kitchen without the hassle. Joanne Bull, Marketing Manager of Königstone comments: "We are absolutely thrilled to have won Best Surface at the Ideal Home Kitchen Awards! As a company, we are proud of the quality of every Königstone worktop. We are so happy that Ideal Home has recognised this."

info@konigstone.co.uk

Birkdale brings its brands together

As the company approaches its 40th anniversary in 2022, **Birkdale** has announced a branding refresh across its product ranges. By identifying its series of sub-brands as 'By Birkdale,' it will enable the company to clearly present its comprehensive suite of fencing solutions to the

market. Founded in 1982, Birkdale has since evolved into a manufacturer and supplier of market-leading gate and fencing accessories throughout the UK and Ireland. To complement the new branding, Birkdale is also launching a new advertising campaign featuring a number of its DuraPost[®] Trained Installers, to emphasise the company's commitment to helping its customers, and providing support on every job, just like mates should.

0345 450 9000 www.birkdalesales.com

Stretch shorts - for comfort this summer

Brand new Men's and Women's Work Shorts for the flexible working environment – designed for superior comfort and freedom of movement. Combining four-way stretch fabric that delivers working comfort all day with street-smart, slim-fit designs, **Snickers** Work Shorts are great for grafting in the warmer months. These lightweight garments feature a body-mapping design and are made from a

self-ventilating stretch fabric with CORDURA® reinforcements for durability all-round mobility when you need it most. For professional tradesmen and women who rely on their gear in demanding environments, they're a must for those who want the ultimate in cool comfort this summer.

sales@hultaforsgroup.co.uk

Beautiful from within too with new colours

Keller has added three carcass colours to the impressive portfolio of furniture colour and finish options so that designers can add that little something extra. In addition to White, the inside of the carcass now can be supplied in Mist and Graphite. And, to ensure a perfect colour match,

shelves and cover caps match the interior colour. Swing out shelves, turntables, (pan) drawers and cutlery divisions are also matched to the colour of the inside, and finished in Light Grey or Anthracite. Keller Kitchens offers complete versatility; finishes comprise veneer, melamine or lacquered; while matt, silk, high gloss and structured lacquers are available in over 1950 NCS colours; and nine stain colours can be applied on veneer or solid wood.

www.kellerkitchens.com

The smart tap terms explained by BLANCO

I would like to buy a hot tap with filtered hot and cold water? I see taps called 3-in-1 and 4-in-1. What is on the market and how do I understand the terms? They all seem to be called smart taps! A 3-in-1 kitchen tap can deliver instant boiling hot water for drinks and cooking

as well as the standard hot and cold water for general kitchen duties. It is convenient and takes up less space in the kitchen. These kitchen taps are supplied as a complete kit with tap, tank and filter. A 4-in-1 tap offers all of the above plus filtered cold water. **BLANCO's** EVOL-S Pro supplies boiling (100 degrees at outlet) whilst most models are hot (98 degrees) which will make a difference for the perfect cuppa!

www.blanco.co.uk

Sika Everbuild helps pave the way to patio success

If you're planning a patio and working with porcelain tiles, then SikaCeram[®] FlowFix bonding primer and jointing compound system can help keep you on the right path. The SikaCeram[®] FlowFix system is quick and easy to use – perfect for large areas. It has been engineered to provide excellent adhesion during the installation process and give an attractive, long-lasting finish on both porcelain and ceramic paving tiles. Available as part of **Sika Everbuild's** high-performance range of landscaping solutions, SikaCeram[®]-62 FlowFix Bonding Primer provides an exceptional bond between porcelain paving and the bedding mortar. SikaCeram[®]-62 FlowFix Bonding Primer can be applied by brush or roller to the underside of the paving during installation to increase the bond strength between the paving slab and mortar bed. It's ready to use when mixed with just water and is fully cured in 72 hours. Once installed, the porcelain paving tiles can be finished with SikaCeram[®]-621 FlowFix Jointing Compound, a controlled, cementitious flowable jointing grout. SikaCeram[®]-621 FlowFix Jointing Compound is suitable for joints between 3-10mm wide and 20mm in depth and is poured on and worked into the joints using a squeegee. Fast and effective, the jointing compound can cure in as little as 60 minutes.

0113 240 3456 www.everbuild.co.uk/FlowFix

KALDEWEI

NATURAL UNION

Glass and steel, grace and strength, connected to perfection in MING bowls

Chr,

PHOTOGRAPHER **BRYAN ADAMS**

kaldewei.com

Cornerstone Housing utilises Aico's Ei1000G SmartLINK Gateway

ornerstone Housing, Exeter's largest independent housing association, is a company that puts housing people first and focuses on quality homes and services.

Cornerstone operates a rolling programme of Electrical Inspection Condition Reporting (EICR) and an Electrical Improvement Programme. As part of these upgrades, Cornerstone are installing Aico's new technologically advanced Multi-Sensor detectors and innovative Ei1000G SmartLINK Gateway. The first properties to receive these are at Beacon Avenue, Exeter through their Improvement Programme and the new Affordable Rented houses under construction at Otterton near Budleigh Salterton.

Reaching out for assistance from Aico's Regional Specification Manager for the South West, Steve Bulley, Cornerstone are currently adopting the Grade D1 LD2 specification on all new installations and any detection upgrades. Cornerstone is utilising Aico's Ei1000G SmartLINK Gateway as well as the Multi-Sensors with Radio Frequency (RF) interconnection for ease of installation and minimal disruption to residents. Steve Bulley introduced the Ei1000G SmartLINK Gateway and associated benefits to both Cornerstone and their residents, providing training and on-site support to the housing provider.

The Ei1000G SmartLINK Gateway utilises the next generation of wireless technology to interface the SmartLINK Gateway with all Aico alarms, assuring easy installation and reliable connection. This allows full visibility of connected RF systems via an online, cloud based SmartLINK portal system. This is an essential piece of technology, meaning that appliances can be checked remotely by Cornerstone to ensure they are functioning correctly. Cornerstone are utilising the Ei1000G in conjunction with Aico's Ei3024 Multi-Sensor Fire Alarm, a technologically advanced detector, built on the same high quality, reliable and proven technology that all Aico Alarms are renowned for and contains the latest high-tech enhancements such as dust compensation technology, making it the most effective domestic fire alarm on the market.

Chris Read, Compliance Manager for Cornerstone commented "As an organisation we want to be at the forefront of technology and with Aico being the specified alarm range within our properties, it felt natural to partner with them as we introduce a range of IoT (Internet of Things) solutions into our stock, whilst at the same time achieving compliance to B55839:6 2019+A1:2020, all enabled by the Ei1000G SmartLINK Gateway. We have been supported through the whole process by Steve Bulley, Aico's local support in the South West, which has included training and in-depth technical support for our operatives."

Steve Bulley said of the project "Cornerstone are an incredible housing provider to work with that are always striving to deliver for their residents. I would like to thank both Tim Lewry and Chris Read for allowing us to share their vision with them and I look forward to many more years of collaborative working with Cornerstone."

Cornerstone Housing is a well established traditional housing association with over 1,400 homes in Exeter and the surrounding Districts of East Devon, Mid Devon and Teignbridge, providing quality affordable homes for over 3,000 tenants.

01691 664100

www.aico.co.uk/smartlink-gateway

PUT SAFETY FIRST WITH FIRE DOORS

Scott Francis of Bowater Doors explores the standards and accreditations housebuilders should consider when looking for a composite fire door.

hoosing fire doors can be a confusing and frustrating process. The internet is awash with manufacturers, installers and so called 'experts' making contradictory claims and quoting different standards. So how do you decipher this information and what should you look for when choosing a fire door, especially composite doorsets?

BS EN 1634

BS EN 1634 is the latest standard for fire resistance and smoke control, and is accepted in Approved Document B, the fire safety element of the Building Regulations in England.

EN 1634 is a far more demanding test in comparison to the old BS 476 standard. This is particularly in reference to the requirement to expose both sides of the door to the fire combined with the increased level of pressure and heat in the furnace.

When looking for composite fire doorsets, choosing a model tested to EN

1634 will ensure you are specifying the most up to date standard that complies with the current Building Regulations.

Q-MARK CERTIFICATIONS

BM TRADA is a UKAS-accredited certification body which provides independent third party certification fire services for the manufacture, installation and maintenance of fire doors.

The Q Mark scheme aims to raise the ongoing standards throughout the lifetime of a fire door to ensure quality and fire resistant performance are consistent.

Manufacturers signing up to Q Mark certifications are subjected to a rigorous testing and audit process. This is to ensure that they have documented product specifications, installation instructions and a factory production control system, all of which integrate into a Quality Management Scheme such as ISO 9001.

This initial audit is then followed by subsequent periodic checks to

ensure that standards and quality are maintained consistently throughout the manufacturing process.

For reassurance and peace of mind, specifiers and buyers should look for Q Mark accredited fire door manufacturers who have committed to improving the quality of fire doors with regular third party audits, ongoing test evidence, consistent quality, and compliance.

INSTALLATION

A poorly installed fire door will not save lives. The installation of the doorset is equally as important as the stringent testing and manufacturing process.

Manufacturers must supply fitting instructions for each fire doorset, however the housebuilder must ensure that they are fitted correctly. As such, it is recommended that the installer should be a member of the Q Mark fire door installation scheme to ensure compliance throughout the supply and installation of the product.

MAINTENANCE CERTIFICATION

Choosing the correct fire door and certified installer is only successful if the fire door is maintained correctly throughout its life.

Fire doors require periodic maintenance to ensure that they continue to offer the life-saving capabilities promised by the manufacturer.

While it's important that the person carrying out the maintenance is part of the Q Mark certified team, low maintenance composite fire doors offer the potential to reduce repair and replacement costs with minimal disruption to the occupants.

THE DOOR SLAB

Some composite fire doors feature an Agrifiber core door slab, an environmentally friendly 'green building product' made from straw and wood fibres that are bonded and sealed using MDI (Isocyanate resin).

The use of Agrifiber in construction can also deliver Leadership in Energy and Environmental Design (LEED) credits for sustainable construction methods, as well as providing a strong, stable and fire resistant core.

THE FRAME

Choose a fully finished composite frame

that has been designed specifically for use with fire doors.

There are many doors on the market that use timber filled PVC frames that may have passed EN 1634, but they have not been specifically designed for fire protection. Fire resistant composite frames are manufactured consistently to maintain uniformity and the quality of the final product.

FIRE DOOR IDENTIFICATION

As part of the Q-Mark manufacturer scheme, all fire doors leaving the factory are fitted with a physical plug fixed into the door to classify the period of fire integrity, the type of door, and a unique company number to identify the manufacturer. This will help to ensure that any maintenance or replacement can be done in line with the manufacturer's guidelines.

ENSURING QUALITY

Choose a fire door manufacturer that is part of the Q Mark scheme.

Doing this ensures consistent quality throughout the manufacturing process, and instills confidence that the product will perform to the test standards.

Scott Francis is technical manager at Bowater Doors

Driving security forward with the complete package

f 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. It's not simply a case of meeting the minimum requirement, with a piece of paper that says SBD Tested, anything will do! 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.

Returning to our choice of car for a moment, another prerequisite in any purchasing decision, would be to lift the bonnet for a peak at the engine. Obviously a little harder to do with doorkits, however it should be remembered that the important performance of any security door assembly is often not visible to the naked eye. Here again no 'cutting corners' or 'good enough' criteria are employed when manufacturing a Portaro SBD Doorkit. 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. All designed for easy and rapid assembly.

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

The Protector.

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Don't let Rusty ruin your render!

When planning an outdoor rendering project it's important to remember to choose beads made of stainless steel or PVCu. Building requirements outlined by NHBC and LABC, only advocate the use of austenitic stainless steel or PVCu beads in all external rendering applications. Galvanised steel beads are no longer accepted for external rendering in any situation. But don't worry, our extensive range of beads and mesh make plastering and rendering simple. Our SAB-S Standard Angle Bead has been designed to prevent chipping and cracking to vulnerable corners. ERS-S Render Stop Bead provides aesthetic, enhanced weathering detail, along with reinforcement to resist impact damage. The PSB-S Mesh Wing Plaster Stop Bead has numerous potential applications internally and externally including those at openings, abutment of walls and for ceiling finishes. The MVB-S Movement Bead consists of two lengths of Stop Bead linked with a white PVC extrusion. For rendering and plastering made simple, download the **Simpson Strong-Tie** catalogue at www.strongtie.co.uk/resources

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