

# building construction design

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October/November 2016

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Cover image: © Schock  
See page 26 for details



# SE Controls keep residents safe at Derby's Sunnyfield Extra Care development

**D**erby's Sunnyfield development of 70 self-contained 'Extra Care' flats for people over 60 is using a combined smoke and hybrid natural ventilations system from leading specialist, SE Controls, to help keep residents safe in the event of a fire while also providing fresh air to corridors and communal spaces.

Developed by Housing & Care 21 in partnership with Derby City Council and the Homes and Communities Agency, Sunnyfield enables older people to live independently, but with the added support of an 'Extra Care' approach which enables residents to access a range of on-site services and amenities, as well as social events.

The 70 flats are located over three stories plus a lower ground level with access provided by stairwells, lift shafts and a corridor network. SE Controls upgraded the smoke ventilation equipment with an environmental ventilation system,



which is fully automated and provides day to fresh air ventilation to the communal corridors. The system also keeps these areas clear of smoke in the event of a fire when triggered by the network of SHEVTEC controllers and temperature sensors.

While the primary function is to provide essential smoke ventilation, the system's versatile design enables it to be configured as a natural

ventilation solution to provide a supply of fresh air to corridors and communal spaces.

This not only allows comfortable temperatures to be maintained and avoid the possibility of overheating during summer months, but also removes stale air from the building to create a better environment.

Throughout the development, the extensive SE Controls system uses an array of sensors, control panels, roof vents and ventilation louvres, located in each corridor, as well as the four stairwells and glazed atrium areas, to ensure that smoke control and fire safety is maintained at all times for residents and staff, should a fire occur.

Further information on SE Controls' products, solutions and projects can be obtained by visiting the website or contacting the company directly.

01543 443060 [www.secontrols.com](http://www.secontrols.com)

## ECOBAT – The strength behind BLM



In 2017, BLM British Lead will celebrate its 85th birthday. The company has seen many significant changes within the industry, with legislation and within its own organisation during its time but none have been greater

than its acquisition by ECOBAT Technologies in 1994. ECOBAT Technologies are the world's largest producer and recycler of Lead. The combined group recycles and processes in excess of one million tonnes of lead every year, primarily through recycling spent lead acid batteries. Having the strength of ECOBAT at its core has without doubt got BLM to where it is now.

01707 324595 [www.britishlead.co.uk](http://www.britishlead.co.uk)

## Flowcrete presents on polished concrete



At this year's London Build, Flowcrete UK (stand C64) will be giving attendees a sneak peek into its new polished concrete and coloured screeds range as well as showcasing its recently unveiled Comfort Resins collection. Taking place

at the London Olympia from October 26th-27th, London Build provides the capital's construction professionals with the ideal opportunity to catch up on the latest trends, technologies and innovations in the sector. Flowcrete UK will be delivering a presentation during the event.

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## Pyroguard launches improved solution



Fire resistant glazing manufacturer **Pyroguard** has launched its improved Smokeguard solution with new stainless steel brackets. A new brochure accompanies the launch, which provides a greater depth of technical specification information than ever before. Smokeguard is a glass barrier

solution which can help to direct smoke as part of a smoke control system and keep toxic fumes at bay long enough to allow members of the public to exit the building safely, minimising the risk of smoke inhalation, injury and death.

01942 710 721 [www.pyroguard.eu](http://www.pyroguard.eu)

## Panasonic Pro Awards, open for entries

**Panasonic Heating and Cooling** is inviting entries from installers, specifiers and consultants, for a chance to win a prestigious PRO Awards 2016 Trophy. Additionally, successful applicants will gain recognition, PR exposure, plus an invitation to join a VIP trip to visit Panasonic's HQ in Japan. The Panasonic PRO Awards celebrates industry excellence in the design, specification, installation and commissioning of Panasonic systems. Panasonic is looking for projects that demonstrate flair and innovation, efficiency, cost effectiveness, aesthetics and above all; showcase sustainability in design. Visit Panasonic's Heating & Cooling Solutions website for more on how to enter.



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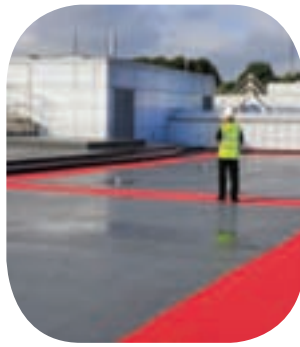
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# Thermal Bridging – Help for Designers and SAP Assessors

There are significant advantages to architects and developers if they use thermal bridging details from product manufacturers. If these details are also accompanied with psi-values (the measure of energy loss through a thermal bridge), then SAP assessors should be required by their clients to use these more accurate values, to ensure that the better thermal performance is taken into account in the SAP assessment.

Thermal bridging is important because as insulation and air tightness values have become more stringent a larger percentage of energy is lost through thermal bridges. Thermal bridges, either point or line bridges, are paths through the insulated building envelope where heat is lost.

The masonry industry has invested in defining 100's of details for which they have then commissioned independent calculation of psi-values. The purpose of this is to ensure more accurate assessment of energy performance than is possible by using the SAP default values for thermal bridging.

The detail here is just one of hundreds of details, including psi-values, available to designers. These examples show that the more accurate psi-values can be significantly lower than the default values. This can save the client the cost of other energy saving measures.

## Examples:

### Aircrete Products Association detail CD 0030: Precast concrete separating floor between dwellings – See figure 1

Detail CD 0030 provides psi-values for a range of block conductivity and wall U values. For a wall U-value of 0.17W/m<sup>2</sup>K and block conductivity of 0.16W/mK the Psi-value is 0.058 W/mK. This compares with a SAP2012 default value of 0.14 W/mK.

The Precast Flooring Federation has provided data for the same detail but amended to be for an intermediate floor. The psi-value in this case is only 0.005W/mK. This compares with a SAP2012 default value of 0.14 W/mK.

### Concrete Block Association detail 0058: suspended beam & eps block floor – See figure 2

The inner skin can be ultra-lightweight, lightweight or dense block. The range of psi-values is 0.056 to 0.151 W/mK. These compare with a SAP2012 default value of 0.32W/mK.

The advantage to designers and developers of using thermal bridging psi-values for specific details is that Part L compliance is more economically achieved because the true performance is taken into account. All SAP assessors should use thermal bridging psi-values that have been calculated for specific details. SAP Assessors should be required to do this by their commissioning architect or developer.

The example tabulated (see Table 1) shows the benefit of using psi-values calculated for specific

details (in this case by the Concrete Block Association). The Part L requirement can be met (see dark green box), which is not the case (see red boxes) if default values, or accredited construction details on the planning portal, are used by the SAP assessor. If these less precise values are used, it may result in increased cost being expended unnecessarily or changing the construction to get compliance.

## Sustainability

### Sustainable manufacture

Masonry walls can be used to deliver long lasting sustainable buildings. Importantly these products are also manufactured in a sustainable way.

All members of the Concrete Block Association and Aircrete Product Association are signatories of the British Precast Sustainability Charter. This requires annual sustainability audits, annual reporting and collective targets for achieving improved environmental and social sustainability performance. Details are published in British Precast Sustainability Matters and also in the broader Annual Concrete Industry Sustainability Performance Report. The Brick Development Association and its members have similar sustainability initiatives.

### Sustainable in use

Masonry enables projects to perform in a sustainable manner because of its inherent properties, whether it be environmental, economic or social sustainability. See Table 2.

0116 232 5170 [www.modernmasonry.co.uk](http://www.modernmasonry.co.uk)

Figure 1: Aircrete block wall detail CD 0030

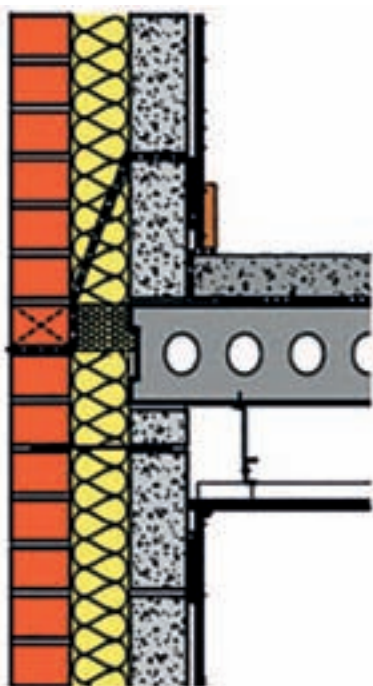


Table 1: The benefit of not relying on default values but using specific psi values

		Default value in SAP $\gamma = 0.15$ (W/m <sup>2</sup> K)	Accredited Construction Details on Planning Portal $\gamma = 0.1015$	Concrete Block Association details $\gamma = 0.0385$
Emissions (kgCO <sub>2</sub> / m <sup>2</sup> /y)	Target Emission Rate	22.1	22.1	22.1
	Dwelling Emission Rate	22.1	21.1	19.8
	% improvement	0.0%	4.7%	10.5%
Fabric Energy Efficiency (kWh/ m <sup>2</sup> /y)	Target Fabric Energy Efficiency	49.9	49.9	49.9
	Dwelling Fabric Energy Efficiency	56.8 Target not met	51.7 Target not met	44.9 Target met



Figure 2: Concrete block wall detail 0058

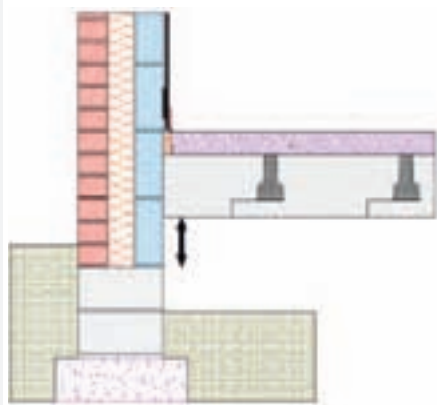


Table 2: Inherent properties of masonry results in comprehensive sustainability (see modernmasonry.co.uk)

Masonry Walls	Environmental	Economic	Social
Fire Resistance	✓	✓	✓
Durability	✓	✓	✓
Acoustic Performance	✓	✓	✓
Flood Resilience	✓	✓	✓
Robustness / Security	✓	✓	✓
Thermal Mass	✓	✓	✓

## Racking solutions revisited



Autumn 2016 sees the re-launch of **Simpson Strong-Tie's** unique racking solution for timber frame structures – new products, improved performance and increased availability. Since the launch of Strong-Portal and Strong-Wall, more than 400 timber framed homes have benefitted from increased build flexibility in terms of wider openings, yet with none of the issues surrounding racking resistance that goes with them. The updated range features the all new Steel Strong-Portal, which can be attached to adjacent timber studs with ease, the Steel Strong-Wall has been modified to give increased performance and like the Steel Strong-Portal, can be integrated into a standard timber frame design. Steel Strong-Portal comes in two sections to create a reinforced opening up to 3.6m wide – useful for garages, patio doors for example. The Steel Strong-Wall is a single panel which can be added to a structure to reinforce the structure. Both are available as kits with all of the necessary fastenings and adhesives to complete the installation. The new catalogue '*Racking Solutions for Timber Frame Buildings*' is available from Simpson Strong-Tie on request and can be downloaded from the website.

01827 155600 [www.strongtie.co.uk](http://www.strongtie.co.uk)



## Noise free housing for happy living

Good acoustics is one of the most important considerations for house builders and architects. This is because of high density living and, in particular, the popularity of sold floors. The problem is further exacerbated by the desire for large areas of glass and the absence of soft furnishings, such as curtains and carpets. The result of all this is that absorption of sound is difficult and reverberated sound can create an unpleasant environment. One increasingly popular solution is to line the ceilings with cost effective and high performance **Troldtekt** acoustic panels. Widely used throughout Europe, the panels instantly create an attractive surface, pleasant acoustics and a feeling of well-being throughout the house. The ceiling offers a flexible choice of design, including different colours, surface structures, edge profiles and suspension systems. The Troldtekt speaker is an acoustic panel with a specially developed flat unit, built in and concealed on the back of the panel. Danish manufactured Troldtekt acoustic panels are specified throughout the UK. Made with 100 per cent natural wood fibres, their benefits are high sound absorption, high durability, natural breathability, low cost life cycle performance and sustainability documented by Cradle to Cradle certification at silver level.



## More is more from Simpson Strong-Tie

The 2016/17 edition of **Simpson Strong-Tie's** flagship catalogue is here. Alongside the UK's largest range of connectors for timber and masonry construction, sit over a dozen new products and several range extensions, including: post bases; I-Joist hangers; angle brackets; structural screws and masonry ties. The catalogue is also brimming with installation advice, performance characteristics and safe working loads. Sales Director, Jon Head explains: "It's been a busy year for Simpson Strong-Tie, with all new ranges for Light Gauge Steel and CLT construction, as well as our significantly expanded nails and screws ranges. We've really pushed the boat out to increase our core range though, which, coupled with our rapid made-to-order service, we really can say that if we don't have it – you don't need it". The latest version '*Connectors for Timber and Masonry Construction*' is available from the website.

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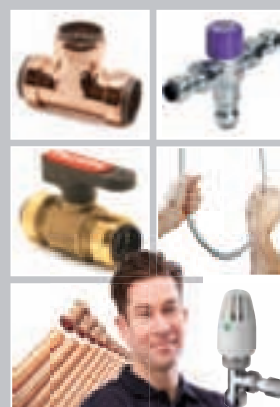
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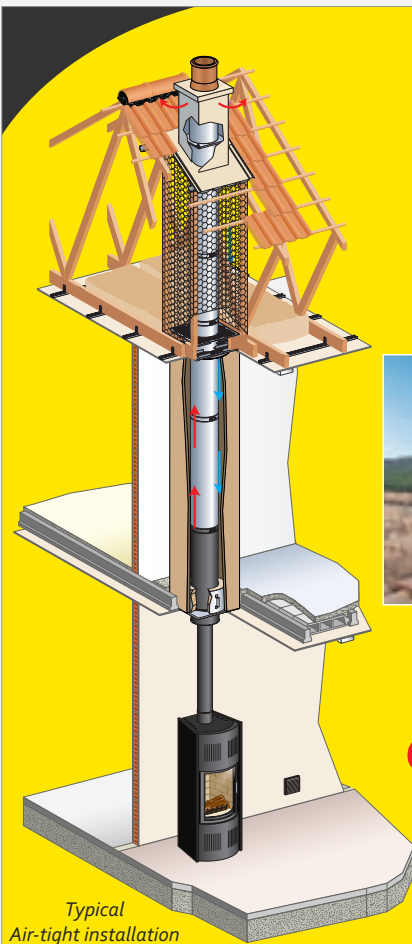
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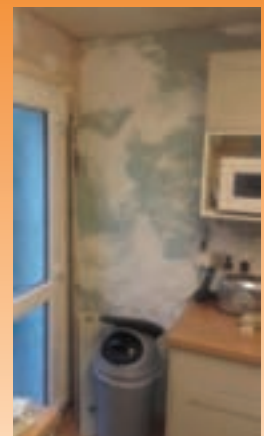
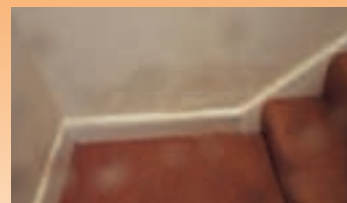
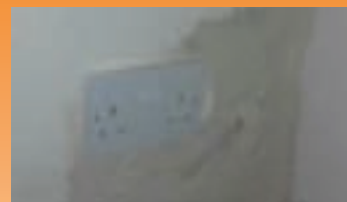
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# Blackpool Pleasure Beach is thrilled

**T**wo of the popular rides at Blackpool Pleasure Beach have been upgraded to ensure they continue to thrill families of visitors for another generation thanks to Kemper System's Kemperol V210 liquid waterproofing membrane.

Opened in 2000 at a cost of £15 million, indoor log flume 'Valhalla' is one of the 120-year-old Pleasure Beach's most popular rides, offering visitors a thrilling Viking-themed journey. The external façade features a 'waterfall' that dispenses 12,000 gallons of water per minute, splashing the covered waiting area below. It was this area of the ride that was upgraded with an overlay of Kemperol V210, a cold liquid applied waterproofing system that bonds directly to the substrate and forms a reinforced monolithic membrane that cannot delaminate and offers a BBA-accredited service life of 25 years.

Comments Blackpool Pleasure Beach's Construction Manager, Tim Currey: "The volume of water constantly pouring on the queue shelter



roof for Valhalla is far in excess of what any roof would normally have to deal with, so it needed a robust waterproofing membrane with no vulnerable seams and no risk of water penetration.

The Kemperol V210 cold liquid resin system was applied by roofing contractor, Castle Roofing,

in a single wet-on-wet process, applying resin immediately followed by a flexible reinforcement fleece and then more resin to ensure complete saturation of the fleece before the membrane was allowed to cure.

The same system was used to overlay the roof of the theme park's Alice in Wonderland family ride, which was originally constructed in the 1950s and was suffering water ingress in some areas. Here, Castle Roofing cut out sections of the existing felt roof where it had split, filling these areas with a repair mortar made of Kemper System's D Primer and quartz sand, before installing the Kemperol V210 system as an overlay.

Tim adds: "The Kemperol V210 enabled the contractor to work on small sections of roof at a time and manage the programme around the operational demands of the business, while providing a robust, durable and flexible waterproofing solution."

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## Latest U-Power workwear and footwear



U-Power's inspiring new 2016 catalogue of original, Italian-designed work-to-leisure safety clothing and footwear is newly available for download from the website. Packed with information and ideas on the complete range of U-Power's prestigious products, the new catalogue features workwear and footwear that not only protect people in the workplace from

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# Hauraton drainage channels used at Maritime Transport HQ

The Maritime Transport Limited new £5 million headquarters in Felixstowe has received the accolade of “Winner-Design (Non residential)” at the Suffolk Coastal Quality of Place awards held in October 2015. Designed by Architects, Wincer Kievenaar, the Maritime Headquarters office provides an impressive gateway to Felixstowe Port.

The Headquarters extensive car park, set with composite grey blocks is drained by 98 metres of Hauraton RECYFIX® PLUS 150 channels fitted with Class C250, HEELSAFE ductile iron gratings. A further 47 metres of RECYFIX® PLUS 100 channels were also installed in other locations on site.

The RECYFIX® PLUS channel unit is made of tough, virtually unbreakable recycled polypropylene (PP) formulated to be very resistant to daily temperature fluctuations from frost conditions to strong sunlight, including the Ultra Violet (UV) spectrum. The



channel unit also features galvanised steel top edges which house the ductile iron gratings.

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

Ken Burgess, Hauraton's Project Manager comments; “The main contractor, E.L. Construction Limited liked the product for its ease of installation, each RECYFIX® PLUS 150 one metre unit, complete with its grating only weighs 12.8 kg, so its easy to position and robust enough to withstand building site conditions”.

Technical information for all the RECYFIX® ranges, showing sizing and installation details, is available digitally on the website – LANDSCAPING tab, as is a video “Why is RECYFIX® break-proof”.

01582 501 380 [www.hauraton.co.uk](http://www.hauraton.co.uk).

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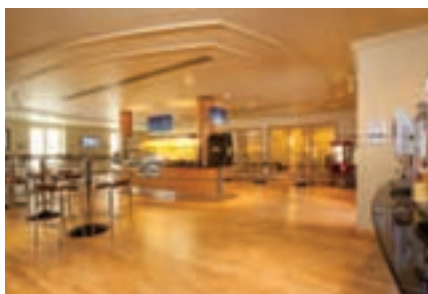




# Bona ensures slip resistance in busy food service area

A combination of a primer and non-slip, waterborne lacquer from Bona has been used to renovate the oak plank floor in a busy food service area at the Thorpe Park Hotel & Spa, Leeds. The Bona technical team wrote the specification to meet the performance criteria required by the hotel and the treatment was carried out by John Garner, a Bona certified contractor. The Bona finishes used were supplied by Taylored Flooring of Cheadle, Cheshire.

Bona Intense primer delivers a subtle grain enriching effect on medium to dark species and was chosen to replicate the look of the original floor. Slip resistance, especially when the surface is wet, was an important requirement as the floor is installed in the hotel's busy conference café where food and drink is served throughout the day. Bona Traffic HD Anti Slip was therefore the



obvious choice of finish with its combination of high durability and low level slip potential. The slip resistance of this new formulation lacquer surpasses the HSE's low level slip classification of 36+ when tested using the Pendulum (CoF) test.

Prior to the primer and lacquer treatment, John Garner used high performance Bona Ceramic

adhesives to sand the pre-finished surface back to bare wood then finished the sanding process using Bona Zirconium mix anti-static abrasives.

Floors finished with all versions of Bona Traffic HD can be put back into full use after just 12 hours – making these lacquers the perfect choice for commercial areas where avoiding downtime is a key requirement.

Gordon Jackson, General Manager at the hotel said, "Our conference café is an incredibly busy area where guests from our 21 meeting rooms congregate to enjoy our fabulous all-day offering. It's important that it looks fresh and inviting throughout the day and we're delighted with the lift that this treatment has given the area."

For more information, contact Bona directly or visit the company website.

01908 525 150 [www.bona.com](http://www.bona.com)

## Heating bills halved and property value increased thanks to Bostik Climatherm



The installation of **Bostik's** Climatherm external wall insulation (EWI) system has helped homeowners in Ystradowen, South Wales, to halve their heating bills and increase the value of their property by £10,000 in less than two weeks. EWI specialists, Greener Installation Solutions Ltd, were approached by the owners of the three bedroom property, who were looking at ways of lowering their heating bills while improving the overall aesthetics of the house. Having used the system on a number of other EWI projects in the area, the company specified the Bostik Climatherm system with grey EPS insulation and an Ashton Cream Spar dash finish. The project was funded by The Energy Company Obligation (ECO), a government scheme that aims to deliver energy efficiency measures to domestic premises throughout Britain. Fully certified by the British Board of Agrement (BBA), the Climatherm system can be tailored to individual property requirements and comprises three key components – insulation, mesh reinforced base coat and finish. These can be selected from a range of products that all meet Bostik's strict performance requirements, allowing greater flexibility in both price and performance in comparison with other EWI systems.

01785 272625 [www.bostik-climatherm.co.uk](http://www.bostik-climatherm.co.uk)

## Acoustic ceiling pops up in world famous restaurant



The design of the Noma Pop-up Restaurant at Barangaroo near Sydney in Australia was most unusual – unusual because it was designed to operate only 10 weeks, just like another temporary Japanese one which popped-up for a short time in Tokyo. The idea of the restaurant was to interpret Noma's bespoke culinary creations and gave them a unique Australian identity. References to elements of the Australian landscape, as well as Rene's in-depth investigation and sourcing of natural Australian ingredients, also provided the foundation for the underlying design theme of Land and Water. Materially, Land was interpreted by the use of rammed earth, charred/charcoal surfaces and dark colour selections, deep within the restaurant. The notion of Water was suggested in the control of natural light and shadows, glass surfaces and spatial volume expressed on the frontages of the restaurant. References to Noma Copenhagen and the Danish origins of the restaurant and its Chef were subtly incorporated in the restaurant design. In this context, the review of materials and furnishings included only a limited number of selected Danish sourced options, chosen for their outstanding quality, performance and aesthetics. For example, the dining furniture was designed by Carl Hansen while the ceilings were lined with acoustic panels from **Troldtekt**, widely specified in Denmark and worldwide to reduce noise and create a quiet and peaceful environment.



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# Keeping residents safe at Derby's Sunnyfield Extra Care development

Derby's Sunnyfield development of 70 self-contained 'Extra Care' flats for people over 60 is using a combined smoke and hybrid natural ventilations system from leading specialist, SE Controls, to help keep residents safe in the event of a fire while also providing fresh air to corridors and communal spaces.

Developed by Housing & Care 21 in partnership with Derby City Council and the Homes and Communities Agency, Sunnyfield enables older people to live independently, but with the added support of an 'Extra Care' approach which enables residents to access a range of on-site services and amenities, as well as social events.

The 70 flats are located over three stories plus a lower ground level with access provided by stairwells, lift shafts and a corridor network. SE Controls upgraded the smoke ventilation equipment with an environmental ventilation system, which is fully automated and provides day to fresh air ventilation to the communal corridors. The system also keeps these areas clear of smoke in the event of a fire when triggered by the network of SHEVTEC controllers and temperature sensors.

While the primary function is to provide essential smoke ventilation, the system's versatile design enables it to be configured as a natural ventilation solution to provide a supply of fresh air to corridors and communal spaces.

This not only allows comfortable temperatures to be maintained and avoid the possibility of overheating during summer months, but also removes stale air from the building to create a better environment.

Throughout the development, the extensive SE Controls system uses an array of sensors, control panels, roof vents and ventilation louvres, located in each corridor, as well as the four stairwells and glazed atrium areas, to ensure that smoke control and fire safety is maintained at all times for residents and staff, should a fire occur.

SE Controls' Commercial Director, Martin Oates, explained "Sunnyfield is a perfect example of how our hybrid smoke and natural ventilation solutions can provide critical fire safety protection while also helping improve the day to day living environment for residents, whether it is in sheltered or managed accommodation, social housing or private



residential developments."

He added: "There is increasing interest and concern about building overheating, particularly in relation to building air tightness regulations and the effects of climate change and we are already helping address these effects with related technologies to help provide cost effective cooling, ventilation and smoke control solutions."

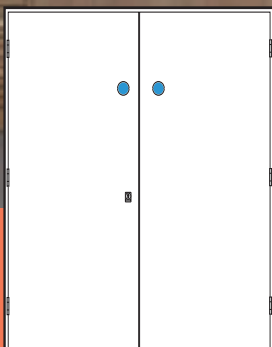
01543 443060

[www.secontrols.com](http://www.secontrols.com)

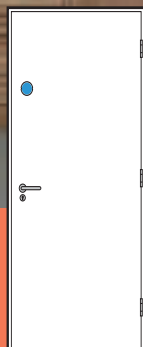
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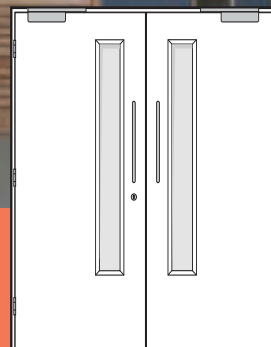
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# Flat roof manufacturer Bauder extends BIM Library

Following the arrival of the UK government's BIM mandate back in April, which requires all centrally procured public sector building projects to be BIM Level 2 compliant, flat roof manufacturer Bauder has extended its BIM offering with the creation of 19 new waterproofing system objects that are available now for free download on its website.

The launch of Bauder's new generic BIM models means its comprehensive library now includes objects for its bituminous, single ply, cold liquid applied, hot melt and green roof system options, which can easily be dropped into 3D models and plans. This allows architects, designers, specifiers and contractors to easily access and share all of the object information needed at the concept and design stage of a project. All of these BIM objects are available in Revit format, which

according to NBS' 2016 National BIM Report is by far the most popular tool used for producing drawings. In order to ensure that your BIM object meets the exact requirements of your building you



will need to register your project with Bauder, who can in turn provide you with all the necessary technical support and resources.

Bauder's Technical Director Nigel Blacklock commented: "A lot of the ideals that BIM is based upon, such as promoting the use of quality, long-lasting materials that deliver life-time value and getting things done properly first time on a project, align with our own principals as a market-leading manufacturer of flat roofing products. As a result, we will continue to invest our time and resources into BIM in order to extend our offering, as we see it as an integral part of the future of the built environment both in the public and private sector."

For more information on BIM and to download your free objects now visit the company website.

01473 257671 [www.bauder.co.uk](http://www.bauder.co.uk)

# Uplifting Architecture

The new Maggie's Cancer Centre in the grounds of The Christie Hospital in Manchester is roofed in Nordic Bronze, one of a palette of materials giving Foster + Partners' design its essential sense of warmth.

Welcoming and full of light and open space, Maggie's Centres are designed by leading architects to be uplifting places for people with cancer, their families and friends. Each architect offers a unique interpretation of the same brief, based on the needs of a person living with cancer, to create the calm environments so important to the people who visit and work there.

The new Manchester centre occupies a sunny site and its low profile reflects the residential scale of the surrounding streets. Its Nordic Bronze clad roof rises in the centre to create a mezzanine level, naturally illuminated by triangular roof lights, and is supported by lightweight timber lattice beams. The beams act as natural partitions between different internal areas, visually dissolving the architecture into the surrounding gardens.

Darron Haylock, Partner, Foster + Partners,



said: 'In keeping with the domestic character of the building, the entire palette of materials at Maggie's exudes a sense of warmth, not just inside the building, but throughout the exterior as well – this is one of the primary reasons we chose bronze as a roofing material. A long-term roofing solution that requires little maintenance, it has a durability that few other roof materials can match.

'It is a material that ages beautifully, complementing perfectly the timber frame of the building. Its malleability makes it easy to form a

pitched roof with expressed battens and scrolls to emphasise the building grid, requiring the deft skill of a craftsman to realise the true potential of the material – it encapsulates the spirit of the building in its totality.'

Nordic Bronze is produced by Aurubis, part of the world's leading integrated copper group and largest copper recycler. Other copper alloys from Aurubis include Nordic Brass, also available pre-weathered, and Nordic Royal an innovative alloy of copper giving a rich golden through-colour that is very stable. In addition to Nordic Standard copper, Aurubis architectural surfaces include Nordic Green and Nordic Blue factory-applied patinas – developed with properties and colours based on the same brochantite mineralogy found in natural patinas. Nordic Brown pre-oxidised copper gives either light or dark brown oxidation that otherwise takes time to develop in the environment.

01875 812 144  
[www.aurubis.com/finland/architectural](http://www.aurubis.com/finland/architectural)





# Hauraton RECYFIX® PRO channel runs installed at Scarles Yard Car Park, Norwich

Scarles Yard comprises a purpose built multi storey car park of concrete frame construction with ancillary integrated warehouse/workshop units located along its frontage.

With three levels, the car park provides 823 spaces for Aviva employees during the working week and is open for public use on Saturdays and Bank Holidays for a flat daily charge, being particularly popular when Norwich City FC play at home.

The top level of the car park is drained with 453 metres of Hauraton RECYFIX® PRO 100 – Type 75 channels in various run lengths. The channels are fitted with FIBRETEC® HEELSAFE 9mm slot gratings with a loading Class of C250. Made from PA-GF, the FIBRETEC® grating will not rust and has a slot configuration specifically designed by Hauraton R & D engineers to enhance the flow

of water into the channel. The slots are super smooth, elliptical openings with the moulded bars having slightly raised triangular bosses along their outside edges. As well as providing an elegant appearance, the feature ensures surface water is directed into the slots. This configuration also helps eliminate any cross-flow over the grating and important consideration for this project.

The RECYFIX® channel component is made from 100 per cent recycled polypropylene (PP) and has an intake cross section of 372cm<sup>2</sup>. The FIBRETEC® grating are factory fitted on all channels. PRO accessories include a trash box, foul air trap, mud bucket, closed and DN 70/100 end caps.

Ken Burgess, Hauraton's Project Manager comments; "As each one metre unit only weighed 3.4kg, the contractor, ATPS of Clacton on Sea, found the RECYFIX® PRO channels with their



FIBRETEC® gratings easy to install in the concreted top level of the car park".

For related Case Studies please visit the company website.

01582 501 380 [www.hauraton.co.uk](http://www.hauraton.co.uk)

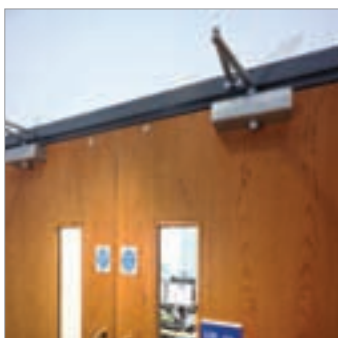
## Flat roof manufacturer Bauder launches Solar PV Design Guide



Solar photovoltaic (PV) is currently the most popular renewable energy in the UK and its deployment is rising rapidly across the globe, particularly because climate change and resource scarcity are on the agenda of every government and major corporation worldwide. Despite recent UK Government policy changes, the number of large, flat roof installations should still rise as local authorities and businesses look to reduce their carbon footprint and gain energy security for the future. All too often within the construction industry, photovoltaic specifications focus on energy efficiencies and outputs of the solar panels, omitting to give the same focus to ensuring the rooftop array is installed with methods that have as little impact on the building and its waterproofing as possible and that the array works to its maximum potential for its entire lifespan rather than just becoming a 'tick box' exercise to achieve sustainability credits. To help combat this issue flat roof manufacturer **Bauder** has launched a new design guide aimed at designers considering the inclusion of a PV array on new build flat roof construction projects, which outlines the key elements to be mindful of to ensure your design is sustainable, protects the building and meets lifespan expectations.

01473 257671 [www.bauder.co.uk](http://www.bauder.co.uk)

## Bath University rely on LCN door closers



New buildings at Bath University have relied on a large number of LCN door closers distributed in the UK by **Relcross Ltd** and supplied to the contractors by IRM of Yate.

150 LCN 1261 door closers were installed to doors giving access to corridors, seminar rooms, study rooms and toilets. In fact anywhere that reliable, effective closers were needed. The LCN 1261 is a versatile and economical cast iron closer with dual mounting capability. It is non-handed for right and left swinging doors and features adjustable hydraulic backcheck to cushion the opening swing prior to 90 degrees.

The durability of the LCN range of closers is based on the forged steel arms and cast iron bodies used. There is no better material for a door closer than cast iron. The manufacturing process may be difficult (which is why just about every other closer manufacturer has turned to aluminium) but the end product lasts for decades. Since internal wear and tear is negligible, even after extreme usage, regular re-adjustment of control valves and spring power is not necessary.

For more information on LCN door closers, visit the website or contact the company directly.

01380 729600 [www.relcross.co.uk](http://www.relcross.co.uk)

# London fire stations receive new lease of life with building systems from HUECK

The UK branch of global supplier of aluminium window, door and facade systems, HUECK, has helped rebuild four London fire stations that were no longer fit for purpose.

As part of a Private Finance Initiative project, the London Fire Brigade commissioned a rebuilding programme for some of its facilities that were in a poor condition and did not meet modern standards and requirements.

Four of these – Mitcham, Plaistow, Orpington and Old Kent Road, have been reconstructed using HUECK's high-performance, thermally insulated aluminium window and door suite, Lambda 77 L, and its popular Trigon 50 curtain wall system.

The project was delivered by Blue 3, a consortium led by the giant construction group Kier, and was finalised this year.

HUECK UK project development director,

Leon Friend, said: "The modern buildings replace facilities that were 50-100 years old, and offer state-of-the-art premises, suitable for a 21<sup>st</sup> century fire service for the City.

"We've helped deliver sustainable, energy efficient buildings with our high-performance systems, which can meet even the toughest requirements of insulation, functionality and aesthetics, with industry leading U-values.

"HUECK has designed a bespoke building envelope solution that helps to minimise the facilities' environmental impact through a series of innovative energy efficiency features. As a result, all the new fire stations supplied by HUECK achieved an 'Excellent' BREEAM rating," added Leon.

The Lambda 77 L range from HUECK can deliver U-values as low as 1.0 W/m<sup>2</sup>K, with sash weights of up to 160kg visible/170kg concealed, while the 50mm Trigon facade system offers slim



sightlines and high thermal performances, and is available in a passive house-certified version. The systems were chosen by developers and architects for their optimum performances and integration of functional elements, as well as the design flexibility and versatility they offer.

0044 121 7671344 [www.hueck.com](http://www.hueck.com)

# Demand-controlled ventilation by Renson®

For several years, Renson has been developing very successful ventilation systems. Its demand-controlled ventilation system with the Healthbox® ensures the house is optimally ventilated, according to the resident's activities. This ventilation system really can help homes reduce their energy consumption whilst creating a healthy indoor environment.

Renson's demand-controlled ventilation system combines the constant supply of fresh air through self-regulating vents and the extraction on-demand of polluted air thanks to the central extraction unit Healthbox®. Dynamic sensors measure the extraction air 24 hours a day on CO<sub>2</sub> or humidity and/or VOCs and adapt the ventilation level to the needs of the residents in an intelligent way. In this way, the system makes a healthy indoor environment possible.

## Operate without errors

The Healthbox® is installed in an unused corner in the attic or in a technical room. In



the kitchen, bathroom, toilet or any other room where the polluted air is extracted, the user only sees an aluminium design vent. The fan is calibrated fully automatically and regulates itself so as to achieve the exact extraction capacity for each room. This avoids the risk of adjustment errors, thereby ensuring a properly working ventilation system with a

proper flow rate in each room. This automatic calibration also leads to significant time savings, as installation takes only a couple of minutes.

## Renson in Maidstone: strong in customised solutions

Renson is a trendsetter in ventilation, solar shading and terrace covers. Since 1909 the company has developed and manufactured innovative products and solutions, which improve the living conditions of people and at the same time cut energy costs – Creating healthy spaces!

From its UK-based production facility in Maidstone, this company provides standard as well as customised solutions to the construction market and offers architects, specifiers, developers, fabricators and installers a wide range of innovative systems. Our product ranges include window ventilators, louvres and continuous louver systems.

01622 754123 [www.rensonuk.net](http://www.rensonuk.net)





# Fixscreen Mono AK: wind tight with extra thermal and acoustic comfort

A lot of energy can be saved by maximizing the use of daylight in buildings. That is why we can observe an increase in the glass surface of modern buildings. However, increased glass areas combined with tighter airtightness leads to higher inner temperatures along with the issues of glare and possible disturbing light reflections.

The most efficient sun protection system stops the sunrays before they pass through the glass and enter the house and therefore minimizes overheating. Wind-tight screens, aluminium blades, sliding panels... these are just a few solutions that can prevent an building from overheating. In fact, the sun protection screens mentioned can be used in almost every single configuration, thanks to a broad range of installation methods.

With the Fixscreen Mono AK, Renson offers



an aesthetical and comfortable solution which combines windproof sun protection and insect resistance. It allows an easy and smooth overframe installation for window depths between 50 and

215mm. Thanks to the patented Connect&Go®- and Click&Safe®-technology, an easy (dis)mounting of the screen tube can be guaranteed. The box as well as the screen itself meet the needs of a high stability and consistency. On the one hand official tests (according to the STS52.0-norm) guarantee a minimal distortion of the box at high windloads at the window, and on the other hand the Fixscreen®-technology provides a tight and windproof screen up to 130km/h. Then there is the Smooth technology, which provides the zipper guides of a patented wear-resistant layer and makes the screen go up and down smoothly and silently.

As these external roller blinds stop the sun's rays from contacting the glass without a loss of natural light entering the building, they also still allow the occupants to see outside.

01622 754123 [www.rensonuk.net](http://www.rensonuk.net)

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# Schöck and Thorp team up for HOOLA precast balconies

A new twin tower glass-clad landmark building – the 'HOOLA' – now dominates Tidal Basin Road in East London, gateway to the Royal Victoria Docks area. The £80m development has transformed a brownfield site into two rippling 23 and 24 storey glass towers; offering 360 apartments with a mix of studios, one, two and three-bedroom units. The buildings are super-insulated, with the concrete frame acting as a heat sink – absorbing heat on warm days and releasing it back into apartments when it cools. Unsurprisingly, a critical design requirement was the avoidance of any risk of thermal bridging at the many concrete-to-concrete balcony connectivity points. Highly efficient structural thermal breaks were required throughout and the preferred solution was the Schöck Isokorb type K for cantilever balconies. With its innovative HTE pressure-bearing module, the unit provides extremely high thermal resistance and transfers bending

moment, stress and shear forces.

The balconies on the HOOLA are all precast in a reconstituted Portland Stone Concrete and thermal break suppliers Schöck had to work closely with specialists Thorp Precast of Newcastle-under-Lyme. Luke Smerdon-White, Technical Director at Thorp: "The balcony detailing was complex. We had to design, manufacture and deliver 1410 precast concrete balcony sections, which had to be cast integrally with the in-situ concrete structure. The design and detailing coordination was taken from the 2D consultant's information, which we converted into 3D Tekla modelling".

In addition to concrete-to-concrete capability, the Schöck Isokorb range provides totally verifiable solutions for concrete-to-steel, steel-to-steel – and even a maintenance free alternative to wrapped parapets. All solutions meet full compliance with the relevant UK building regulations and offer BBA Certification and LABC Registration. The



requirement that the temperature factor used to indicate condensation risk (the fRsi value), in residential buildings, must be equal to or greater than 0.75 is comfortably met by incorporating the Isokorb. It also complies with the Government Standard Assessment Procedure, SAP 2012, concerning CO<sub>2</sub> emissions from buildings and respectively heat losses through non-repeating thermal bridges.

01865 290 890 [www.schoeck.co.uk](http://www.schoeck.co.uk)

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# Triton extends liquid applied waterproofing range

**T**riton has extended its range of liquid applied waterproofing products to offer a wider choice of systems primarily for the reliable waterproofing of roofs and podium decks. Each of the three new systems provides Type A barrier protection waterproofing as defined in BS 8102 (2009). They are quick and easy to apply, very fast curing and suitable for application in cooler temperatures – therefore extending the season for application and reducing the downtime of areas treated.

TWS-Poly H produces a totally seamless waterproof surface on prepared concrete and can be applied by squeegee, brush, trowel or roller. The 2-component polyurea formulation is ideal for waterproofing pitched or flat roofs, decks and balconies and other areas where a degree of flexibility is required. The trafficable, cured surface also makes it suitable for waterproofing concrete

floors in car parks etc. TWS-Poly H can also be applied to internal and external walls.

TWS-Poly S is another fast curing, 2-component polyurea formulation but designed for application by a twin nozzle, heated spray unit. Offering excellent bonding strength and crack bridging capability, TWS-Poly S can be combined with geotextiles to obtain on-site applied, seamless liners or coatings in tunnels or canals or used to waterproof pitched or flat roofs. The cured surface allows for building movement and is trafficable and highly resistant to abrasion.

Single component TWS Fastcoat cures as an elastic and seamless layer that offers excellent weather resistance and can withstand permanent water contact. A key feature is its ability to deliver a combination of root barrier and waterproofing layer, therefore reducing the number of layers required in green roof construction. Applied by

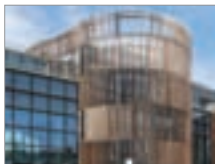


brush, spreader or airless equipment, its cured surface can be lightly trafficked making it suitable for low pitch or flat roofs and balconies.

Liquid applied waterproofing systems can deal with complex shapes and contours where joints or folds in other waterproofing materials might cause a weakness. Technical support on the specification and installation of all Triton's waterproofing systems is available from Triton's technical team. Installation guidelines and data sheets are also available for download on the website.

01322 318830 [www.tritonsystems.co.uk](http://www.tritonsystems.co.uk)

## Levolux gets the all clear in Cardiff



The new £44 million Cardiff University Brain Research Imaging Centre (CUBRIC) building at Cardiff University's Innovation Campus, which is equipped with an attractive Timber Fin Screening Solution from **Levolux**, is specially designed to facilitate brain research. Levolux's Contour and

High Performance Ventilation Louvres were utilised to provide an attractive, yet highly weather-resistant facade. Extruded aluminium louvres feature an effective 'S' shaped profile. This delivers the optimum performance, both in terms of airflow, resistance to wind and rain and their aesthetic quality. Levolux supplied and installed a single bank of Acoustic Louvres at roof level in two areas around plant and equipment.

## Portakabin helps demand for school places



The **Portakabin Group** has completed its sixth project for the London Borough of Barking and Dagenham Council (LBBD) – a £5.3 million school building constructed using a Yorkon off-site solution. The Portakabin

Group's design and build contract included a full turn-key service, comprising design, planning, off-site building manufacture, ground works, fitting out, and provision of a multi-use games area, football pitch, and additional play areas. A multi-purpose hall was also constructed as part of the package and links the new building to the first phase. A pre-installed Yorkon concrete floor minimised work on site and is providing enhanced acoustics and a high quality, robust finish for a demanding school environment.

0845 2000 123 [www.yorkon.co.uk](http://www.yorkon.co.uk)

## Balconies and balustrade bridge styles



**neaco** has created a bespoke balconies and balustrade specification for a new purpose-built UK headquarters in Leeds designed by Bowman Riley for leading healthcare IT business, TPP (The Phoenix Partnership). neaco supplied railed balconies to the front, terrace balustrade to the rear and internal balustrade to stairwells and the main

reception area's double-height atrium. The balconies and external balustrade feature traditional-style railed infill combined with a contemporary twist in the form of tapered flat-bar stanchions with laser-cut holes.

## Felmoor Park receives premium protection



The Scandinavian log cabins and lodges at the picturesque Felmoor Park in Northumberland have been given a striking new finish thanks to **Remmers** wood coatings. Remmers HK Stain was selected to provide not only effective weather protection but protection against blue stain, rot and insects. HK Stain is a "2 in 1" product which eliminates the need for an additional wood preservative primer and is perfect for both soft and hardwoods. The product penetrates deeply into the wood whilst leaving it fully breathable and as it doesn't flake or peel. Available in a wide range of traditional colours or the alternative HK Stain 'Grey Protect' range of natural grey shades, for a more modern look.

01293 594010 [www.remmers.co.uk](http://www.remmers.co.uk)

