



building construction design

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Cover image: PSP Group
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Newton Waterproofing – Leading the Way



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

And that's just what Newton Waterproofing have done.

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

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

A Rich History

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

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

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

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

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

The Bigger the Project, the Better

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

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

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

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

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

Specialist Installation Guaranteed

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

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

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

An Eye on the Environment

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

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

01732 360 095

www.newtonwaterproofing.co.uk



Advanced protects Longest Sea Crossing

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

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

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

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



advantages to the region.

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

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

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

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

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

0345 894 7000 www.advancedco.com

Form, function and fire

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

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

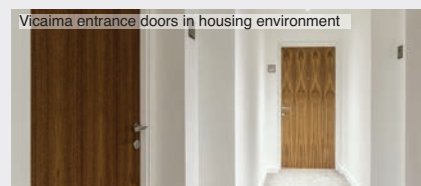
Stake-holders throughout the refurb and development market will no doubt be well aware of the vital role they play in the decisions which ultimately lead to the supply of safe products. As important specifiers in the build process, they have a duty of care and therefore it is essential to have a clear understanding, that should products fail to perform as intended, they may also share responsibility for any consequences that may arise.

Speculation regarding the actual safety of fire

doors has been widely discussed over the last two years, following the government enquiry into the tragic events of Grenfell and related risk critical products. Perhaps this was only to be expected, given the less than robust conclusions drawn by the MHCLG into composite and GRP doors; and their failure to consistently pass a 30-minute fire door test. This result precipitated the removal of many of these products from the market and led to a call for timber fire doors themselves, to be examined independently by government. The results of which subsequently vindicated the assurance provided by a fully certified timber fire door assembly.

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

A fire performance range such as that offered by Vicaima removes doubt. Rigorously tested,



third party accredited and fully traceably products that meet FD30 and FD60 rating, assures that those with a duty of care are taking appropriate steps. Additionally, formal test evidence which includes more exacting requirements such as integral face grooves, over height/width dimensions, integrated eye viewers in two positions, concealed door closers and testing to both sides of a door, illustrate a comprehensive approach. Products, which offer additional Secure by Design (SBD) compliance and meet exacting mobility and acoustic criteria ensures products are fit for purpose. Lastly, but by no means least, real design choice that is truly innovative and delivers forward thinking and on-trend answers for today's housing, means that doors are in step and reflect modern lifestyles.

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

01793 532333 www.vicaima.com

PSP Group: Synergy of the Supply Chain



There are numerous supply-chain-related challenges facing the construction industry today, from various points of contact and complex financial protocols to lack of communication and trust. These problems can jeopardise construction schedules through delays and costly overruns. Here, Chairman Heath Hindmarch explains why PSP Group made a radical decision and vast investment to overcome these issues.

A coherent sequence of operations enables seamless integration of design, manufacture and supply, which can only improve quality and client satisfaction. This was the founding principle of the PSP Group to ensure complete synergy across our supply chain, extending from the selection of raw materials to the distribution of high-quality finished products.

Only by utilising the skills products and services within our own group of companies can we ensure swift communication, enhanced productivity and the best possible service. Our supply chain in the claddings, facades and specialist fabrications market is mainly connected within the PSP Group, which comprises PSP Design, PSP Architectural and PSP Aluminium.

Design

In 2016, we expanded PSP Group with PSP Design. This growth enabled us to take full responsibility for the design, manufacture and supply of full external facades. The single point of procurement is managed by our internal quality control systems to bring complete synergy throughout the supply chain, allowing us to deliver a complete full-service solution.

Working in co-operation with client supply chains even at the early design stages means that we can enable our design services for fully manufactured PSP products. This way, we can deliver bespoke solutions from inception to customer-use. We use CAD, Solid Works (3-D modelling software) and Radan (leading CAD CAM software for machine programming) during design phases, all of which are fully compatible with programmes such as Solid Works, Inventor and Design Projects.



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



Daniel Defoe Hall University of Greenwich Halls of Residence



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

Manufacture

As leading manufacturers in our field, we work closely with architects, customers and suppliers to build long-lasting, sustainable working relationships. PSP embraces new technology and cutting-edge ERP software to optimise Design for Manufacture and Assembly (DfMA) protocols to achieve aesthetically pleasing aluminium solutions up to 6 m in length to the utmost quality to suit applications across commercial buildings, hotels, schools, hospitals and residential properties.

Our manufacturing processes take place in our precision-controlled advanced factories in Shildon, County Durham. Our

architectural and aluminium manufacturing teams also collaborate with our experienced design team in Cramlington, Newcastle Upon-Tyne to maintain premium quality throughout all processes, from design to manufacture, to transportation of finished systems.

Supply

Adopting a one-stop-shop approach, PSP offers a range of rainscreen cladding, rainwater goods, ventilation systems, solar shading, flashings, pressings and support façade systems. We also design, manufacture and supply specialist fabrications to meet individual needs, using materials such as

aluminium, brass, copper, COR-TEN, galvanised steel, pre-coated steel, stainless steel, zinc and composite materials.

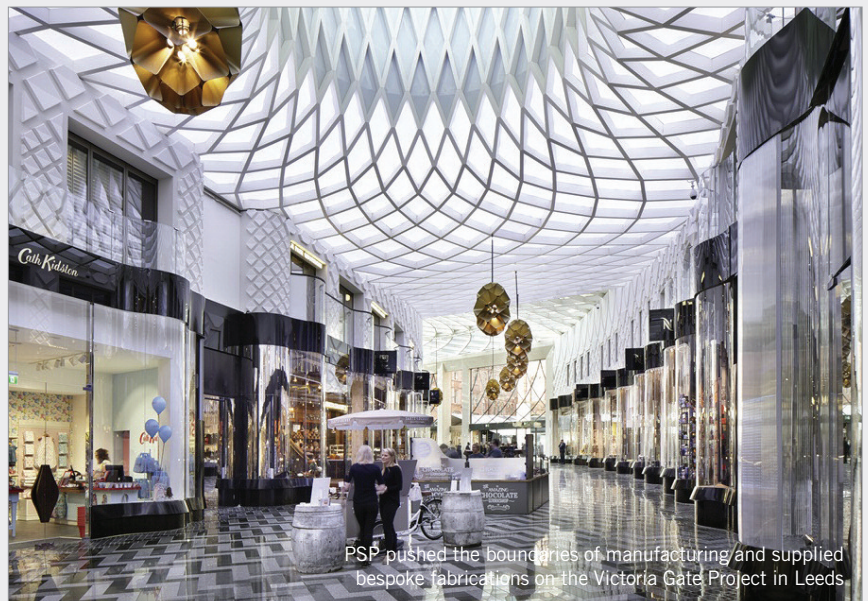
During the final phase, add-ons such as curtain walling, windows and doors can be also be supplied. PSP are approved fabricators for Schuco, Kawaer, Reynaers, Aluprof, Raico and Aluk.

To explore PSP's range of matrix systems for rainscreen cladding, bespoke architectural systems, flashings and pressings, rainwater goods, curtain walling, windows and doors, visit the website.

01388 770490
www.pspuk.com



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



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

Do you dream of a "Low energy, low cost home?"



Then look no further... Take four pages of free advice on: insulation specification, air tightness, whole house ventilation with heat recovery, underfloor heating, Thermal mass, solar shading to reduce over-heating. Then add a well-designed Nibe Ground sourced heat pump for space heating and hot water, fill your roof with Q Cells solar PV panels & Tesla Powerwall home battery. What can you expect your results to be in your new all electric house?

Here are the results from one of our recent self-builders:

- 285 m² super insulated house
- Total ALL energy consumption for the last 12 months 8,826kwh
- Solar Generation 12,232kwh/yr
- Energy stored and then used later from the Tesla Powerwall battery 2,975kwh/yr
- Electricity bought from the Grid 3,164kwh/yr



- Export 6,168kwh/yr to the grid most of which will be available in future years for electric car charging
- Total energy cost for the year at 16p/kwh £506
- Then there is the Governments RHI heating subsidy which for this house works out at £13,200 over seven years

Carbon Legacy are long term specialists in Ground and Air

sourced heat pumps, Solar PV and battery storage. We strive to help customers become as self-sufficient as possible with Renewable energy for heating, hot water and electricity.

We use only the highest quality equipment from Nibe Heat Pumps, Q Cells + LG Solar Panels, Tesla & Sonnen batteries, and Solax/ SolarEdge/SMA Inverters to give you a high efficiency, reliable system that can meet up to 90 per cent of your heat and power needs.

If you like to know more then please get in touch via our website or give us a ring.

01664 822499

www.carbonlegacy.co.uk

Email: info@carbonlegacy.co.uk



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Childcare institutions with sound design



The design of spaces for children is intriguing because of the permanent influence it can have on them. A new online theme by Danish acoustic panel manufacturer Troldekt explores through articles and expert interviews how good acoustics plays its part when designing these areas. Of course, other factors such as colour, shapes, robustness and finish also have an impact but so does sound. Careful design considerations are particularly important because a child's environment moulds their perspectives for the future. Studies such as Bronzaft and McCarthy (1975) have shown the effect noise has on wellbeing and learning – This is the reason why the products of specialist manufacturers like Troldekt are specified to solve the problems of noise and reverberated sounds. If acoustic absorption is ineffective, discomfort and irritation will result from the reverberations. If it is designed well, the participant's interest will increase, as many case studies for new and transformed buildings prove. The benefits of 100 per cent Troldekt natural wood wool panels include high sound absorption, high durability, natural breathability, low cost life cycle performance and sustainability.

www.troldekt.co.uk

ERA's lockdown provides peace of mind at Kingsland School



In a world where terror is an ongoing threat, Kingsland School, in Kingstanding, Birmingham, is one of the first to fit Lockdown from ERA, the UK's first emergency barricade device able to lock down a door in seconds in a crisis situation, helping to protect school children. Designed to provide high performance security in the event of a threatening situation, Lockdown is ideal for schools as it is simple and easy to fit, making doors inaccessible to intruders and creating a safe hiding place for students and teachers in the event of an attack. Lockdown's unique design ensures it is stronger and more robust than a regular lock as it secures the full door, not just at one point. Additionally, unlike a thumb turn lock, where the room can be accidentally or mischievously locked by students, Lockdown is always intentionally deployed. Carol Stephenson, school business manager at Kingsland School said: "Initially, we were attracted by how easy Lockdown is to deploy – we had a demonstration and could immediately see it had been designed with simplicity in mind – something that was incredibly important to us. We decided it was the right product for our school of 327 pupils."

01922 490 000 www.eraeverywhere.com

AQUALAY

Heat Dispersing Thermally Insulating Overlay Panel
For use with waterbased underfloor heating systems

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

For more information visit www.pcsboard.com

Dursilite: The impressive coatings range from Mapei

It's out with the old and in with the new... Mapei's Dursilite coatings range offers a fresh array of paint colours, ideal for all types of new build and improvement projects. The water-based paint is suitable for use on different types of internal surfaces as well as partially covered external surfaces protected against direct sunlight and rain. Dursilite creates an attractive finish with a smooth, velvety, matt surface.

With its special formulation, Dursilite is particularly suitable for painting all types of cementitious, lime and gypsum substrates which require an excellent permeability to water vapour, and a high degree of long lasting protection.

Dursilite, supplied in 5kg and 20kg plastic drums, can be applied with a brush, roller or by spray on a dry coat of Malech primer or Dursilite Base Coat primer. Typical application comprises of at least two coats, with a recoat time at around six to 12 hours in accordance with the humidity and temperature of the environment, and in any case, when the previous coat is completely dry. With excellent coverage, it also has a high whiteness level for internal walls, and is the ideal solution for repainting.

For long-lasting protection, high washability and low dirt pick-up level, this Mapei offering



Dursilite Gloss Dursilite Base Coat Dursilite Gloss

is available in a wide range of colours, created using the ColorMap® automatic colouring system.



For more information about our Dursilite range, or to request one of our new coatings brochures, visit the website or call us today.

0121 508 6970 www.mapei.co.uk

Marmox Thermoblocks specified for hotel

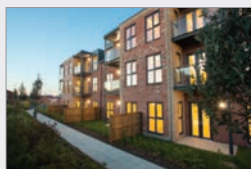


A former hotel in the Polwarth area of Scotland's capital is the subject of a complex conversion and reconfiguration project, where Marmox Thermoblocks have been specified by the project consultants to address the critical floor/wall junction within the new extensions being

constructed. At the base of the new perimeter walls, the block-layers have used a total of 117 of the 140mm wide Thermoblock units each one 600mm long and 65mm high. The site agent, Daren Colvin, confirmed: "We are using Thermoblocks in new external walls inner leaves at the ground floor slab level and also at parapet level. The blocks provide us with a simple effective means of forming thermal breaks."

01634 835290 www.marmox.co.uk

Spectus delivers for new retirement village



Over 300 Spectus Elite 70 System windows were used in the construction of a new build retirement village in Chorley town centre. The 65 apartments had over 300 windows in total. Thermal efficiency was a particular focus to keep running costs on the apartments to a minimum.

The Elite 70 System from Spectus was able to meet this requirement and within the budget. It is a five-chamber system, which increases thermal performance, meaning it is capable of achieving a Window Energy Rating of A+ and U-Values to 0.8W/m²K. The system is Secured by Design accredited where a high level of security is a requirement.

www.spectus.co.uk

Optima Windows used in retirement housing



Profile 22 Optima windows were specified in the development of 26 one and two bedroom apartments in a retirement development in Upper Norwood, London. The window specification required a U value of 1.4 w/m² k on all windows and Secured by Design accreditation on ground floor and easily accessible first

floor windows. Acoustic glazing was also required because Lewis House is situated on a busy road so traffic noise needed to be minimised. Visually, the local authority had requested a grey exterior to give a modern appearance and provide a close match to aluminium.

01952 290910 www.profile22.co.uk

Housebuilder & Developer website



The Housebuilder & Developer (HBD) website is an online provider of past and present products and news items for the housebuilder and developer. hbdonline.co.uk is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital issues that have live

links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

www.hbdonline.co.uk



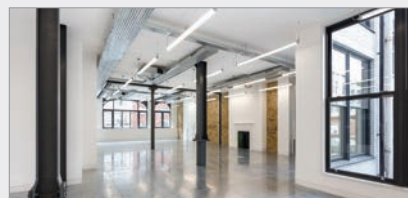
Inside and out at Hatton garden

There are many older buildings around the UK that just need a creative eye, some time and attention to transform them into a beautiful modern space. Eurobrick has been leading the brick slip cladding sector for nearly 30 years and has extensive experience of supplying its systems to redevelopment projects that aim to rejuvenate older properties.

Hatton Garden is a well-known commercial area in the Holborn district of London, famous throughout the years for its

associations with luxury products and diamonds. Minerva House has an attractive facade, but required extensive modernisation to the structure of the building to bring it up to the modern standards of today.

Developer GPF Lewis Ltd completed the project in 2018 following 50 weeks work with a £5.1m budget. The redevelopment of this landlocked site involved the demolition of the rear part of the building, adding a steel frame extension to the rear to connect to existing floor levels. The project also included



general refurbishment of the existing building and a high-end commercial fit-out throughout the interior space.

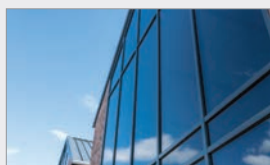
Eurobrick supplied circa 400m² of 17mm X-Clad for use both externally and internally, installed by BR Hodgson. Externally, the system was finished with glazed white stretcher and header slips and corners. These slips were fitted in a Flemish bond pattern to match the style of the existing building. For the interior, Islington Yellow Rustica stretcher and header slips were selected from Eurobrick's Classic Range. These were set out in an adapted English bond style and finished with Eurobrick's specialist pointing mortar, Europoint, in light grey.

The whole accommodation now lives up to the building's attractive facade, providing a modern and stylish commercial space.

01179 717 117 www.eurobrick.co.uk



Senior adds strength to its range



Senior Architectural Systems has developed a new aluminium curtain wall system that allows architects to create sleek and expansive fenestration designs, all with the added reassurance of accommodating greater structural movement. The new SF62 aluminium

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

www.seniorarchitecturalsystems.co.uk

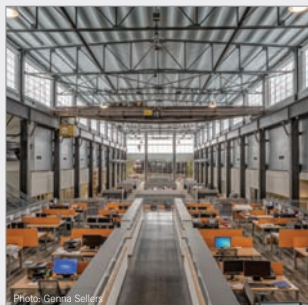
Revolutionary new timber windows



High quality timber window and door specialist Gowercroft Joinery has developed an award-winning range of Heritage Windows designed specifically for listed properties and the conservation market. Revolutionary in their design, they are the first to combine traditional joinery with ultra-thin (6.2 mm) energy efficient vacuum glazing (U-values of 1.1 W/m²K) in order to replicate the classic appearance of single-glazed windows of the past, with no discernible, double reflection, while delivering modern performance benefits.

01773 300 510 www.gowercroft.co.uk

Kalwall leads the way in retrofit design



Kalwall® translucent cladding, exclusively available in the UK and Ireland from Structura UK Ltd, has helped transform a former marble processing plant into an amazing space for the University of Tennessee in Knoxville, USA. Designed by Cope Associates, the new Facilities Services Complex has totally revitalised and refreshed the original 1908 building and the use of Kalwall has helped the projects LEED Silver Certification. The project has proved so successful it was named the Collegiate Citation winner for historic preservation in American School and University's annual Educational Interiors Showcase Award. The interior of this 8,500 sq metre building is now bathed with diffused daylight through the Kalwall panels fitted into the original clerestory encircling the central hall. The Kalwall keeps the interior free from glare and hotspots and the stark contrasts of light and shade. It also specifically helps the computer users by keeping direct sunlight and glare off their screens making it more restful and reducing eye fatigue. Furthermore, Kalwall's insulation properties mean 'U' Values of up to 0.28 W/m²K can be achieved.

www.structura-uk.com/kalwall

RECYFIX® MONOTEC drains car park

A new Home Bargains store at Prescott Parkway, Merseyside, opened its doors to customers this Spring. (2017). The 2415 m² (25,973 ft²) store is located just off the Manchester Road, near the M57. It features a wider range of goods such as health, beauty and household items including a 698 m² (7,500 ft²) garden centre. The store's 131 space car park is drained by some 151 metres of RECYFIX® MONOTEC, Hauraton's high capacity channel drainage system.

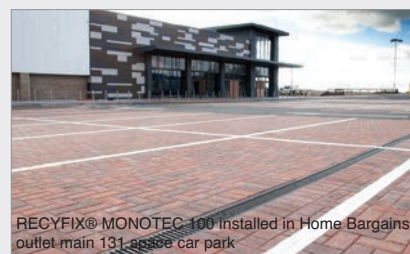
Hauraton Limited introduced the RECYFIX MONOTEC, system in January 2016. The new Home Bargains store joins the numerous installations successfully completed in the United Kingdom.

Two MONOTEC sizes were installed in the Home Bargains car park's red block surface both channel sizes having a nominal grating width of 100mm. The larger channel has an overall height of 380mm and provides a cross-section of 355.5cm². The smaller channel has an overall height of 230mm and provides a

cross-section of 190.5cm². The 151 metres of channel installed has a total water capacity of just over 5078 litres.

All RECYFIX MONOTEC one metre long channel component is of a sturdy monolithic design where the HEELSAFE grating and the tongue and groove linking system are integral to the channel moulding. The whole unit is made of tough, virtually unbreakable polypropylene (PP) formulated to be very resistant to daily temperature fluctuations from frost conditions to strong sunlight, including the Ultra Violet (UV) spectrum. PP is naturally resistant to de-icing salt. Complying with the requirements of EN 1433, the PP is given its UV resistance by adding just sufficient stabiliser so that the structural strength of the material is unaffected and a consistent appearance is maintained. The MONOTEC channels have a loading category of up to Class D400.

In addition to the car park drainage, two sizes, 100 and 200, of the company's



RECYFIX® MONOTEC 100 installed in Home Bargains outlet main 131-space car park

RECYFIX® PLUS channels were also installed in the service yard against the retaining wall, the 105 metres of channel being supplied with HEELSAFE ductile iron gratings for a D400 loading category.

Ian Burton, Hauraton's Project Manager for the North West comments; "With a maximum weight of 10.4kg per channel, John Rogers of William Tarr and Co Limited, the groundwork contractor, was particularly impressed with the easy handling of the MONOTEC channels and how robust the product was with no breakages reported during the installation process. Matching Trash Boxes and End Caps were also supplied. All Hauraton surface water drainage systems' comply with European Standards (hENs) and carries the CE mark".

01582 501380 www.hauraton.co.uk

Case study confirms that SuDS cost less

The trade association Interpave has published a new case study which demonstrates that sustainable drainage systems (SuDS) – including concrete block permeable paving – should cost less than conventional piped drainage, both initially and in terms of maintenance.

Interpave's new case study revisits the SuDS scheme at Lamb Drove in Cambourne, Cambridgeshire. This scheme demonstrates the use of as many SuDS techniques as possible, including concrete block permeable paving, used in combination to form an effective management train. The Monitoring Project measured the performance of the SuDS over time, compared with that of a conventional piped drainage system on another nearby development, similar in size and density.

Overall, both capital and maintenance costs – and therefore whole-of-life costs – associated with the Study Site were much lower than those for the conventional piped drainage system Control Site. The Monitoring Report noted capital cost savings of £314 per home and also suggested 20-25 per cent



lower maintenance costs than traditional drainage on the Control Site. Having said that, further potential cost savings were also noted.

In addition, monitoring of pollutants,

biodiversity and resident satisfaction is testament to the SuDS, notably concrete block permeable paving delivering a gradual flow of treated water to open SuDS features further down the management train. The Monitoring Report also confirms that: "The permeable pavement infiltration study specifically illustrates the robustness of the performance of this feature to limited maintenance. The infiltration capacity of the permeable pavement is able to adequately cope with the highest recorded rainfall intensity at the Study Site."

Interpave's new case study on this Monitoring project, including photos showing how the scheme has developed over time, is now available to download from Interpave's website www.paving.org.uk – an essential resource covering all aspects of design with precast concrete paving, including an inspirational project gallery and case studies, supported by background information for all design stages, as well as for CPD.

0116 232 5170 www.paving.org.uk



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

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

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

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

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

ALD Group Contracts Manager Andy

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

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

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

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

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



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

0808 223 9080
info@aquariancladding.co.uk

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

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



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

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

For full Case Study go to the website.

01582 501380
www.drainage-projects.co.uk



Comar 7P.i FSDX – British by Design

The next generation of aluminium bi-fold, folding sliding door has arrived from Comar Architectural Aluminium Systems.

COMAR FSDX: Superior, stabilised rolling action with the quietest roller in the industry and improved weight bearing capacity means fit-once and reduced call outs. The new outer-frame is one profile and is used for the track and jambs which reduces stock holding. It is a mitre frame construction with 2 crimping options: pinned cleats for creating pre-assembled outer frames that can be shipped to site or mechanical cleats which means the outer-frame can be shipped to assemble on site – a key consideration when larger door sets are to be installed.



COMAR FSDX EXTRA ROLLER

The stainless steel dual roller seamlessly integrates with the stainless steel running track, with a stabiliser the wheels always remain in contact with the track, which, means that even if the track is slightly mis-aligned due to building tolerances the smooth rolling action is not hindered. The weight bearing capacity is increased to 120Kg which with the FSDX's glazing pocket of 62mm triple glazed or acoustic glass can easily be incorporated.

COMAR FSDX EXTRA - TRACK

Superior thermal performance with integrated stainless-steel rail means that low U-values and continued performance are guaranteed. The intelligent design of the profile means the same profile is used for the jambs and the head, providing mitre frame construction and two options for site transport – preassembled or stick using pinned crimped cleats or mechanical cleats.

COMAR FSDX EXTRA - GLAZING

The view out of the FSDX door offers the homeowner that little bit eXtra. With the slimmest sightlines available of 60mm, the doors maximise daylighting into the home. Maximising glazing without lacking perform-



ance the maximum width of the doors has been increased allowing door sets to be over 4M with only three doors.

COMAR FSDX EXTRA - HINGES

The new hinge design incorporates a central gasket strip, which actively reduces hinge gasket prep and site installation. Even the roller pillar has been treated with consideration and pre-applied foam pads seal the roller to the door. This increases home-owner satisfaction with a draft-free solution and no call backs for the installer. Adequate sealing between the sliding doors ensures that a long-term solution is guaranteed.

For further information, please email projects@parksidigroup.co.uk

020 8685 9685 www.comar-alu.co.uk

Cromar acquires Acrypol

Cromar Building Products Ltd are pleased to announce their acquisition of Acrypol Products Ltd.

This is the first acquisition for the East Yorkshire Company that turns over £27 million, and by acquiring the 'original' waterproofing repair brand this is going to mean a big boost for Cromar.

Acrypol was founded in 1986 with a mission to provide quality roof repair and waterproofing products for the trade, beginning with just the one product Acrypol+. As its flagship product it is not only recognised as the quality benchmark, it is sold into more than 2,000 stockists throughout the UK. The portfolio of products was expanded over the years to include complimentary products such as Tech Seal and Metal-Kote in order to fulfil the growing customers' demands.

Mike Marshall, Managing Director of Cromar commented, "Acrypol is such a renowned name within our industry, it will make an excellent addition to the existing Cromar family of products. We are really looking forward to developing the Acrypol brand name further and consulting with the Acrypol specialists to develop even more great roofing products for the trade."



Wayne Morgan, Sales Director of Acrypol said "Acrypol has over 30 years of recognised excellence and we cannot think of a better company to take this brand onto the next level. With the combined knowledge and customer base of the two businesses the future is definitely looking bright."

All orders will continue to go through the Acrypol office in Warrington, and for more information on Acrypol contact Acrypol or your usual Cromar sales representative.

01977 663 133 www.cromar.uk.com



Innovative public housing with Nordic Copper

An exemplar for a new, progressive era of public housing design in London utilises high-quality materials – including Nordic Brown Light copper cladding – as part of its tenure-blind strategy.

Branch Place provides the first replacement homes in the second phase of the Colville Estate Masterplan designed by Karakusevic Carson Architects, part of Hackney Council's innovative housebuilding programme, delivering hundreds of much-needed Council homes for local people through a pioneering model of financial cross-subsidy. The project provides 116 mixed-tenure homes alongside new public routes, play spaces and landscaping.

The two buildings of Branch Place are crafted from a considered palette of high-quality tenure-blind materials including brickwork, timber and Nordic Brown Light pre-oxidised copper. A copper mansard roof, installed by Full Metal Jacket, to the building next to Regent's Canal reflects the roofscape

of neighbouring historic warehouse buildings and marks an entrance to Branch Place and the new Colville neighbourhood.

Nordic Brown Light is part of an extensive range of architectural copper surfaces and alloys from Aurubis with an unrivalled lifespan counted in hundreds of years, no maintenance and full recyclability. With a melting point of 1083°C and 'A1 (non-combustible material)' fire classification to EN 13501-1, copper is suitable for cladding tall buildings, using appropriate constructions. Low thermal movement makes it appropriate for any locations and it is non-toxic and safe to handle and work. Its inherent antimicrobial qualities make it ideal for touch surfaces internally as well.

The Aurubis architectural range includes Nordic Standard 'mill finish' and Nordic Brown pre-oxidised copper, with lighter or darker shades of brown. The extensive Nordic Blue, Nordic Green and Nordic Turquoise ranges have been developed



with properties and colours based on the same brochantite mineralogy found in natural patinas all over the world, and offer various 'Living' surfaces. Copper alloys include Nordic Bronze, Nordic Brass and the innovative Nordic Royal with a rich golden through-colour.

01875 812 144 www.nordiccopper.com

Keeping dry...

By Ian Weakford, Sales & Marketing Director @ Hambleside Danelaw

With the increasing unpredictability of British weather, particularly in winter, ensure you- and the properties you manage- stay dry.

Extreme winters have challenged roofing product manufacturers to develop solutions to reduce the impact of the weather, particularly wind. It causes slates and tiles to dislodge, underlays to vibrate, and can lead to rain ingress. Even winds as 'low' as 20mph can cause damage.

In most situations there is therefore a requirement to use dry, rather than 'wet', fix solutions, so that the roof details, particularly ridges and hips, remain intact, and therefore weatherproof, regardless of the extremes of winter weather. Because the fixing method is dry, remedial work can be carried out almost regardless of the weather; 'wet' methods, such as mortar, by contrast need a degree of decent weather for the mortar to cure before being subjected to load.

The realisation of the practicality and durability of dry fix solutions has seen a growth in their popularity. This in turn has led to a growth in the number of mechanically-fixed products available, with a corresponding diversity of quality and performance. It is a case of 'you get what you pay for': products with a higher unit cost are usually manufactured and tested to higher quality standards, so can be expected to be easier to use, and to perform better. Thus the perceived higher

cost can actually result in a saving, in that the product will withstand the loads, remain in place, and reduce repairs. To put it into perspective, storm Doris in 2017 saw a 300 per cent increase in the cost of insurance claims from wind damage.

Inevitably, in line with these market force changes, a British Standard has been introduced. BS8612:2018 Dry Fixed Ridge, Hip and Verge Systems for Slating & Tiling: Specification aims to create minimum performance & durability standards for dry fix products used in these areas.

But making a roof weatherproof has to be balanced alongside allowing the roof to "breathe", to avoid any interstitial condensation. Debate continues to rage about the best way to achieve this, with the arguments primarily focusing around the underlay. Should it be airtight or permeable? Because it is a topic so debatable, our view is always to follow a 'belt and braces' approach: vapour permeable underlay AND ventilation. Current Regulations require the ridge to be mechanically fixed, so the small, additional material cost is more than outweighed by the cost of fixing a roof riddled with damp and rot from condensation.

A roof does need to breathe, so ventilation openings will need to be provided anyway. Some argue that air permeable membranes are more effective in allowing the dissipation of moisture, but their use needs to be considered in the increased tile fixing specification as there will be



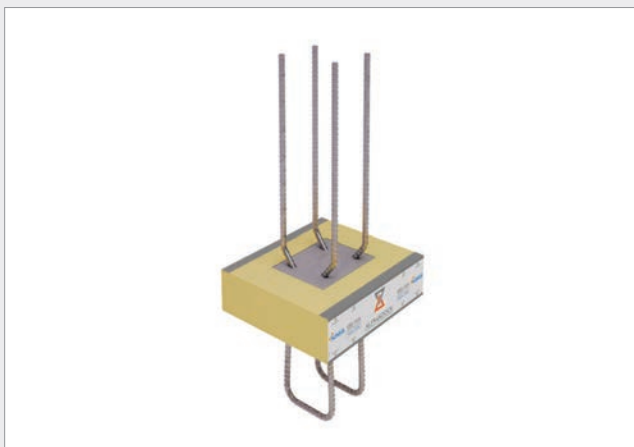
greater load on the tiles- another reason to rely on mechanical fix rather than 'wet' which is so dependant on the quality of the mix, the quality of application and the weather.

As with dry fix products, membranes too vary in quality and price, and again, you get what you pay for. With the recent years of high winds, the UK has now been zoned by wind uplift. Most membranes are not certified for use in all zones, unless particular attention is paid to the fixing method i.e. restraining battens or taped joints.

To be sure your roofs will perform, the best solution is to check your spec. with the manufacturer, and be sure you read the small print, to understand any limitations of use, and to ensure the roofing contractor quotes for and installs what you have specified.

01327 701900 www.hambleside-danelaw.co.uk

New product from Schöck – for reinforced concrete walls



The Alphadock is an innovative new addition to the Schöck range of solutions for minimising thermal bridges in building structures. This new product thermally insulates connections for reinforced concrete walls and columns, providing optimum thermal insulation and maximum load bearing capacity. Thermal bridges in concrete wall and column connections cause significant energy losses, making it difficult to achieve the highest energy standards in new buildings. Additionally they present a risk area for condensation and mould growth that can cause structural damage and occupant health issues. The Schöck Alphadock dramatically reduces the effect of thermal bridges in those areas where previously the problem was very difficult to combat.

The first product installation in the UK is at the landmark Keybridge residential development, in the heart of London's Vauxhall regeneration area. The scheme combines elements of Manhattan architecture with London's prestigious mansion block style, offering 595 new homes across six individual buildings. One of the buildings, Keybridge Lofts, which stands at 37 storeys, is the UK's tallest residential brick tower and there are exposed brick-clad columns which span two floors and tie back into the structure at the very top of the building.

The requirement was to provide a thermally broken base fixing for the columns. Previously Schöck have offered a hybrid solution involving the steel-to-steel modular Isokorb, combined with a specially designed base plate. This formed a thermally broken

base fixing, which was cast into the slab and to which a further Isokorb product was attached. Allowing a steel column to be installed, which was then clad in brickwork. The top of the column being retained and tied-in using standard Isokorb elements to provide a fully thermally broken solution. The method was effective, but not the most efficient in terms of time and cost. Now with the Schöck Alphadock, installation is easy. It is an important new solution as linear thermal bridges at reinforced concrete walls and columns are often neglected – and the resulting energy loss simply compensated for in the thermal calculations.

For further information on the new Alphadock product contact Schöck.

01865 290 890 www.schoeck.co.uk



Insulating flat roofs in accordance with new British Standard and fire regulation revisions

The recent review of the flat roof design British Standard and Approved Document on Fire feature new design considerations for insulating flat roofs. Ensure your project requirements are being met by following Bauder's guidance on achieving minimum U-values, thermal performance of inverted roofs and fire safety

BS 6229:2018

The 2018 update of British Standard 6229 – flat roofs with continuously supported flexible waterproof coverings, brings in significant changes that affect the design of flat roofs and the installation of a waterproofing system and associated insulation. The document comprises updated practices that directly impact the design of roofs on new buildings and those to be refurbished.

Minimal U-Values and Control of Condensation

Under the revised British Standard, the minimal U-value levels permitted at any point on a roof, must be $0.35 \text{ W/m}^2\text{K}$ (clause 4.7.2). 'At any point' includes the minimum thickness of tapered roof areas and gutter to maintain the thermal performance of a heated building. This is a new design consideration under the standard's revision. In such roofs, the risk of surface condensation is removed if continuity of insulation, including at upstands and roof penetrations exists.

This uplift in the standard looks to eradicate the practice of thinly insulated gutter soles and excessively low points in tapered schemes.

For reference: $0.35 \text{ W/m}^2\text{K}$ is achieved using approximately 60mm BauderPIR FA-TE or 100mm of BauderROCK.

Thermal Performance of an Inverted Roof

When designing an inverted roof construction, the principal thermal insulation layer is located above the roof structure and waterproofing, resulting in the waterproofing, structural deck and support structure being

at a temperature close to that of the interior of the building. In order to prevent water from passing around the insulation, through the joints, and reaching the waterproofing layer, where it would have a cooling effect on the building, the correct installation of a Water Flow Reducing Layer (WFRL) is required. However, the construction tolerances and installation of the WFRL can result in a less than desirable reduction of water flow and as such the corrective action is much reduced. The advice Note in clause 4.6.2.2 – Inverted Roofs to counter this reduction suggests increasing the design thickness of the thermal insulation of an inverted roof where a Water Flow Reducing Layer (WFRL) is being relied upon by "not less than 10 per cent". Bauder provides in project specifications both the design thickness for the target U-value plus the advisory minimum 10 per cent increase in thickness for the specifier to choose if they wish to follow the advice.

To ensure comparable tendering Bauder recommends that you should clearly state if you are following the advice in BS 6229:2018 Clause 4.6.2.2

Update to Fire Safety Approved Document B

On the 30th August 2019 the new edition of 'Fire Safety-Approved Document B' (ADB) came into force and with-it considerations that affect insulation within flat roofing design. For a full understanding of the testing procedures, classifications and further guidance, please visit bauder.co.uk/fire-protection-statement.

Specifying roof insulation based on fire performance

Individual construction products are covered within BS EN 13501-1 for which insulation as a separate component will be encompassed and allocated a Class according to their reaction to fire test results with letter classifications from 'A1' through to 'F'. On the whole, materials manufactured from plastics will achieve an 'E' rating, which will include the insulants Expanded Polystyrene

(EPS), Extruded Polystyrene (XPS) and Polyisocyanurate (PIR) and are excluded from 'Specified Attachments' – fixed balconies, but they are perfectly acceptable in a flat roof build-up where the whole build up achieves BROOF(t4).

There are currently a number of 'grey areas' in the legislation that further complicate this. While there are several non-combustible insulants that can be used on balconies or vertical flashings, the waterproofing membrane used will typically be Class 'E'. The MHCLG need to be more specific on their requirement for flat roofs.

Non-combustible insulants, such as cellular glass along with mineral wool, are clearly desirable materials to include in a flat roof specification because of fire performance, and it is important to consider and balance the factors for inclusion within a roof system. In general, non-combustible insulants are not as thermally efficient as PIR insulation and therefore extra thicknesses, increased weight and reduced compressive strength can be a limitation in some applications. PIR has the advantage of being highly efficient, which reduces the height and weight of a roof covering build-up whilst also offering good compressive strength meaning greater versatility on a project.

Within a Bauder warm roof waterproofing system (excluding 'Specified Attachments') the insulation, be it mineral wool, cellular glass or PIR, is not directly exposed and is therefore protected through the performance of the cap sheet and its system classification of BROOF(t4); thus these insulants in-situ all conform to Building Regulations for external fire on roofs in the same way – not one achieving a higher rating than the other.

0845 271 8800
www.bauder.co.uk





Cover image: PSP Group
See page 04 for details