

PIP

Products in Practice
May/June 2014

Landscaping and Drainage

King's Cross Square
London
30

Analysis: Housing

Does public housing policy
have more change ahead?
26

Extreme spec

Lift refurbishment,
Empire State Building
12

Flooring

Glass Mill Centre
Lewisham
18

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Ambivalence

... usually sums up my attitude to regeneration; the creeping appropriation of public land into private hands, complete with hired security, and a whiff of money often stronger than the pong of a negelected canal. Post Hadid's lovely pool and Hopkins' Velodrome, I admit I was one of the 2012 Olympic bid nay-sayers, mourning the loss of Stratford's record 'fridge mountain'. So it's with a new found sense of contentment that I find myself walking through King's

Cross of an evening. John McAslan's restoration of the Lewis Cubitt train shed, followed by the removal of its awful 1972 'temporary' extension would have been enough, but Stirling prize winner Stanton Williams has also designed the new square outside it (page 30). Now, some people claim it is hard, severe, joyless; but it's a station environment, and stations are historically hard city places. What I like about this is that it's both restrained,

deferring to the 1852 shed, and robust – its granite surfaces and benches ready to deal with the footfall of one of London's busier stations. It's also delicate, the delicacy raised on posts out of harm's way, lighting the plaza. Of course, I'm yet to take the 'tramp test' and occupy a bench, or be a 'placard braggart' and stage a sit-in, but I'm hoping that if I do, I'll be able to call Cubitt's square 'public' in the greatest sense of the word. **Jan-Carlos Kucharek, Editor**



Compendium.....	4	Flooring.....	18	Specified: Landscape and drainage.....	34
Preview: Greenbuild.....	8	Specified: Flooring.....	22	Interiors.....	36
Tech IT/Books.....	9	Costed: Flooring.....	24	Specified: Interiors.....	38
Extreme Spec: High rise.....	12	Analysis: Housing.....	26	Showcase.....	40
Made: Rainwater systems.....	14	Landscape and drainage.....	30	Sign Up...Sign Off.....	46

Cover image: iGuzzini/ProStainless lighting totems at King's Cross Square (Hufton+Crow)

Compendium

MAX CREASY



Natural Finnish

Nestled in Camley Street Natural Park in London, a small green oasis in Argent's enormous King's Cross Goods Yard scheme, is Viewpoint, the competition-winning installation by young Finnish practice AOR. Its floating timber deck provides temporary shelter for visitors to the park and a small caesura for contemplation. The design, based on the Finnish Laavus rural shelters, is clad in Cor-Ten steel for resilience, and lined with timber for comfort and warmth.

Giving any gyp

Knauf says its new Vinova panels extend the potential of gypsum fibre panels to new levels, and its 'any finish you like' approach means they can be digitally printed, coated, veneered, painted – even perforated for acoustic needs. For interior walls and ceilings, they are formaldehyde-free, so perform in fire conditions, and can even be curved, says business development director James Leaning.



Glass ceiling

If you've braved the precarious cable car to get there, the view from Chamonix's Aiguille de Midi up to the summit of Mont Blanc takes your breath away – literally, the air is noticeably thinner nearly 4000m up. But it'll do it even more if you're in the new completely glazed box that projects out over the vertical face of the Aiguille de Midi, compounding any fear of heights with a fear of falling for it. DuPont's SentryGlas helped create the case of exquisite sense of vertigo – its 36mm thick laminated glass floor and sides designed to withstand sub-zero temperatures as well as winds in excess of 200kph and regularly checked for delamination. That said, it might be good to choose your days, if the temperature falls below -20°C, you'll be frozen out.



Too Kool for school

In the latest effort to establish a tangible link between good design and good exam results, architect AHMM was commissioned to design Hull's Kingswood Academy as part of the City Council's erstwhile BSF initiative. Kingspan played its part in the design, with its Kooltherm cavity closer, rainscreen board and Thermarof products specified on external walls and roofs. It won an RIBA national award last year, while the fabric might not ultimately be proven to increase educational performance, it's definitely increasing the thermal.



Bricks on the rocks

An 18th century Ice House at Worcestershire's Croome Court might not have figured in Capability Brown's design for the estate, but it is picturesque and sublime. The egg-shaped brick and stone structure, partially sunk into the ground, had an insulating layer of thatch that would have helped to keep winter ice from the nearby pond frozen in summer. Derelict for almost a century, the whole structure was restored with a £46,000 grant from the National Trust. Cotswold handmade brick manufacturer Northcot brick supplied its 'Packwood Rural' smooth-faced bricks to match the structure's original ones. The fact that it's open to the public is good reason for a libation – although think 'over ice with a straw' rather than bubbly...

UPCOMING

May Design Series ExCel London, 18-20 May

Clerkenwell Design Week London, 20-22 May

GreenBuild Expo Manchester Central, 8-9 May



JONATHAN STONE

Brute faucet

At the Denton Corker Marshall-designed Stonehenge visitor centre, there's nothing neolithic about the state-of-the-art washrooms – although monolithic definitely comes into it. Stockport washroom solutions company Lovair supplied and installed it, charged with building two 3.2m long Corian sink troughs weighing nearly 100kg each, and designed to give the impression of floating. To do it Lovair had to get all Iron Age, designing a bespoke metal structure support frame that allowed the sinks to cantilever fully off the back wall without interfering with the under floor heating below – a modern-day trick that counter points the monument's trabeated, primal form.

Flotsam, Jetsam and Metsäm

Since Le Corbusier said buildings should be more like liners, it's no surprise that modernists saw the coastline as ripe territory – spawning the likes of the De La Warr pavilion, Midland Grand hotel and a whole host of kiss-me-quick white rendered holiday homes. Unfortunately, they discovered that concrete reinforcement really dislikes salty places, a problem that won't trouble architect Walker & Martin's design at Camber Sands in Sussex. The firm specified Metsä Wood for two homes designed to be entirely open plan and structure-free internally. With timber facing, that flies in the face of seaside sodium, off-site construction means the whole thing can be easily dismantled – even when the rot does finally claim the old sea dog.



High Camp

It's a case of an Englishman in New York, where London-based high-end lighting brand KAIA was specified to supply over 400 of its handcrafted brass light fittings for Halcyon, a luxury residential development in mid-town Manhattan. Unlike Quentin Crisp in the city, the material's not out of place in the S Russell Groves' designed tower that's crammed with limestone walls, walnut panelling, travertine flooring and bronze detailing. The LIA lights sit elegantly with the brass and Carrera marble features in the bathroom fit-out, giving a restrained Art Deco elegance to the space. PIP's making the spurious assumption that if you want to live here in the lap of luxury, that rents aren't going to be cheap – but we'd suggest that you don't go to Crisp to ask how you'd pay it.



EVAN JOSEPH IMAGES



Look mum – no hands!

I put it down to all that bracing mountain climbing and Lederhosen, but Aryans have a fascination with health and cleanliness oft seen as curious by their Anglo-Saxon brothers. It accounts for that shelf in their loos, allowing you to analyse your stool before consigning it – and then deciding to modify your daily diet accordingly. That fascination for wellbeing continues in the latest concept by Swiss firm Franke – a

wholly touch-free commercial washroom. Yep, with its 'Way 2 Solutions', the firm will design, plan and supply whole rooms that are completely touch-free. A simple swish of the hand will open and close a cubicle door and dispense the water, soap, and hot air to dry them. Of course the critical process remains a manual one, but until someone manages to put the 'bot' in 'Robot', we think Franke has pretty much cleaned up.



Warm front

Opening this summer, the refurbished Beaumont Hotel in London's Mayfair, by restaurateurs Jeremy King and Chris Corbin, promises a return to fin-de-siècle luxury, without the century-old heating standards. In its upgrade, Proctor Group's Spacetherm PP high performance reinforced laminate was applied directly to the inside face of its walls, whose plasterboard/plywood composite is bonded to an aerogel blanket, yielding low U-values in next to no space.

Treading the boards

They might not have been walked over by Hamlet (and during his extended neurotic soliloquies, he walked over a lot), but these floorboards have definitely been trod by a Prince of Denmark. This year's the 50th anniversary of the floorboards that were laid in Denmark's medieval Søndberg Castle in rugged Jutland. Family timber floor maker Dinesen was employed to replace them back then, and harking from generations of foresters, the firm implicitly understood the material. Hence the 12m long solid Douglas fir planks that gradually taper, as did the trunk that formed them – a subtle detail reflecting nature itself. Look carefully here, and you can watch the planks, by degrees, slowly go round the bend. A bit like Hamlet.



KARNDEAN TALKS: EDUCATION

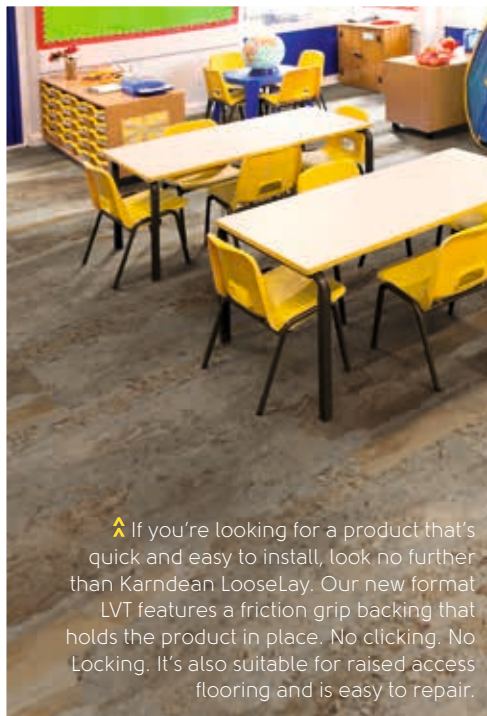
Our stylish, durable and low maintenance flooring helps you to create safe and inspiring educational environments for students of all ages.



▲ It's easy to incorporate your client's logo or a design feature into their floor. This is a great way to add interest to large reception areas or hallways.



▲ A hygienic and anti-allergen environment is important in educational environments and Karndean Designflooring is an ideal choice. Unlike many carpet and textile floorcoverings, it won't harbour dirt or dust mites.



▲ If you're looking for a product that's quick and easy to install, look no further than Karndean LooseLay. Our new format LVT features a friction grip backing that holds the product in place. No clicking. No Locking. It's also suitable for raised access flooring and is easy to repair.



▲ Specify Karndean for high traffic areas including corridors, classrooms and laboratories, safe in the knowledge that it'll last.



▲ If you're out on site with a customer, use our new augmented reality app to demonstrate what their floor could look like right there and then. The app lets you select and view different floors in the space of your choice and take images to share and compare. See www.karndean.com/app for more details.

Greenbuild Expo

We are living in interesting times when it comes to sustainability. While the government, through the Localism Act, seems to be championing the agendas of custom builders, who are generally at the forefront of pushing sustainable agendas, the coalition's purpose seems more opaque. True, in the last budget, George Osborne bigged-up his half million pound DECC fund, disbursed to a few token community energy projects, but according to the UKGBC he did nothing to incentivise zero carbon homes; while the Renewable Energy Association claimed his freezing of the Carbon Price Floor amounts to a tacit nod for energy companies to keep burning fossil fuels. Perhaps the speakers at 2014's Greenbuild Expo will be able to shed some light on these anomalies.

The show, now in its fifth year, claims to be 'aimed at those seeking ways to increase energy efficiency, reduce resource usage and improve sustainability in the built environment.' Free to attend, it offers debates, workshops and seminars, as well as exhibitors showcasing the

In an effort to keep the Green Deal on the boil, Greenbuild is putting it and the ECO debate at the heart of the show

latest green products and solutions. In an effort to keep the Green Deal on the boil, Greenbuild is putting it and the ECO debate at the heart of the show, giving visitors the opportunity to hear from government departments and key organisations about how to ensure that the Green Deal doesn't hit the buffers. They might benefit from marketing firm Be2Camp's Wednesday seminar on 'Sustainability and Social Media'.

You can hear Rob Pannell from Zero Carbon Hub on performance gaps, and overcoming ECO

challenges from Richard Griffiths of Parity Projects, while PRP Architects' Andrew Mellor will share his experiences of residential housing retrofit. And the Centre for Alternative Technology's Toby Kellner will review renewable implementation. The views of suppliers and manufacturers are well represented in the programme but make sure you pop along to the dedicated CPD room if you want to top up your required CPD points.

The winners of the Greenbuild Awards will also be announced at a dinner event at Manchester's Radisson Hotel, with Mole Architects and Richard Partington in contention. Also architect Richard Dudzicki, who, if memory serves me right, once kindly put this stranger up in his Hong Kong flat while a roving year-out student in 1990. I don't recall thanking him properly at the time; so thanks Richard, if it's you. Like a zero carbon future – better late than never.●

Greenbuild, 7-8 May 2014, Manchester Central. www.greenbuildexpo.co.uk

PIP takes a look at a selection of products exhibiting at this year's show



Marmox

The delight of being an architect must surely be the grand design, the concept that suddenly comes together. In recent years that concept has tended to be energy efficiency, so Thermoblock from Marmox will be a very welcome addition to the product book, a load-bearing composite block that can be incorporated into various wall constructions as a horizontal layer, equivalent to a course of bricks, to address a critical area of heat loss – cutting energy bills and helping your SAP calculations. Thank goodness that's sorted then; now we can get back to being the next big thing.

Stand G32

marmox.co.uk



GreenSpec

A press release that holds the phrase 'Written by specifiers, for specifiers' is guaranteed to catch PIP's eye, and sure enough the relaunched GreenSpec website has reached this hallowed spot. It aids identification of green products and links to design features, while posting up to the minute technical information. The site allows registered users to share good practice and review sustainable products, a scenario that could lead to a lively exchange between 'experts'. Who knows, if the site plays its cards right, the twitter feed could surpass that of the popular Archers in the ratings. Badgers! In the top field David!

greenspec.co.uk



Lignacite

The recycling industry is built on rubbish, obviously, and after some productive scavenging Lignacite has launched 'the world's first carbon negative building block'. The Carbon Buster – which sounds like a cartoon character, the healthy, nice guy equivalent of Nick O'Teen perhaps – is made of recycled aggregates combined with carbonated aggregates from the by-products of waste to energy plants. Since some of its materials are already on the recycling conveyor, it is well on the way to making a virtuous circle of materials simply changing useful form – the holy grail of sustainability.

8 May, yellow seminar room

lignacite.co.uk



Airflow

One of the great conundrums of the airtight house is the problem of air quality. There's no such worry with Airflow's universal semi-rigid ducting however. The narrow, oval pipe can squeeze into the smallest spaces and Airflex Pro Plus helps ensure that fittings are properly installed in both new and refurbished homes. For the film fans out there, the phrase air ducting probably summons images of our hero's escape by squirming through massive such installations, but these are too dinky to admit any more than a Lilliputian. Is there a movie there – Gulliver lands in a giant aircon unit. Gadzooks!

Stand D11

airflow.com



Keeping up standards

You've spent hours weighing up the pros and cons of a BIM platform, settled on one and started producing models. Have you considered the standards you are using? Are you ignoring those you had implemented in CAD?

Standards are like speed limits: you know they are there for a reason, sometimes they seem a little unreasonable, but when you break them and something goes wrong, they all begin to make sense. Some companies are better than others at following and enforcing them. What we find, time and again, is that those firms who are better have fewer surprises – and the capability to increase the workforce on any project with little fuss or complication.

Standards have evolved. In the early days of CAD it was enough to dictate the look and appearance of drawings: the annotation styles, the appearance of section markers, drawing borders and so on. BIM isn't just about drawings, it's about making the right information available to the right people at the right time. If you haven't already rethought your standards,

BIM isn't just about drawings, it's about making the right information available to the right people at the right time

consider focusing more on the processes and procedures required to deliver a project using BIM and align it to the industry standards in BS1192-1 and PAS1192-2.

When preparing your standards, consider BS1192-1 which defines, in addition to the technical standards for BIM (file and layer naming and spatial co-ordination), the process for moving your information through a common data environment. Understand how your information in 'Work In Progress (WIP)' is developed, and the necessary procedures for

sharing with the design team. Proper validation is critical to efficient data sharing and essential to collaborative design, leading to less ambiguity and more robust construction data further along the design chain.

PAS1192-2 extends the information in BS1192-2 and applies it to a BIM workflow, starting by defining exactly what the client requires of the information to be supplied. This understanding will allow you to model the right information and input the correct amount of meta-data that the client and the extended design team need, when it is needed.

BIM is a process, not a piece of software. While you still need the technical standards the process of developing information, the amount of detail you model and how you share that information is equally important. In order to deliver projects using BIM, you will need to ensure you're following a standard (singular). ●

Daniel Heselwood is director at BIM consultancy Evolve

Books



Intelligent Buildings: Design, management and operation, 2nd ed.
Derek Clements-Croome ed.
ICE Publishing, 344p, £45

Editor Clements-Croome, emeritus professor in architectural engineering at Reading University, is the academic daddy of intelligent buildings and is a prolific writer and lecturer on the subject. This second edition of his 2004 book pulls in the trending themes of value analysis, whole-life costing, BIM and post-occupancy evaluation. The book is split into key subjects: people-centred sustainable design; intelligent, smart and digital approaches; management and operation processes; and futures. If you're expecting a Reyner Banham-like philosophical overview of the subject, think again – there is a highly analytical, scientific rigour at work here, which gives the book a density that may not appeal to all. But the sense is of a book documenting the state of intelligent building technology as it exists today. CK



Fabricate: Negotiating design and making
Fabio Gramazio and others ed.
GTA Verlag, 270p, £55.57

This is all about digital fabrication in architecture, and represents a pooling of ideas from the Bartlett, Harvard, Princeton, Yale, MIT and, among others, ETH Zurich where Gramazio is based. Those flying robot builders beloved of YouTube are there of course, but also hard information about the digital tools used to make the 'megaframe' of Rogers Stirk Harbour's Leadenhall tower, some rather beautiful 3D-printed bricks, and other fascinating examples of direct manufacture of architect-designed components. It's the future, but it's also happening right now. HP



European Building Construction Illustrated
Francis DK Ching and Mark Mulville
Wiley, 472p, £34.99

Francis DK Ching and his simple line drawings have guided many students through a plethora of architectural elements in his *Visual Dictionary of Architecture*. In more recent years he applied that clarity to building construction. Here, in a welcome move, he collaborates with architectural technologist, Mark Mulville from the University of Greenwich, to tailor it to Europe. This is a comprehensive primer. So on the page devoted to green roofing, a drawing shows the build up of a roof, major types of system by vegetation are discussed and their value as an urban heat sink mentioned. The book attempts to lay out simply standards such as BREEAM as well as the Building Regulations, which will date it most quickly. It clarifies the language of construction; and is a first port of call when you are considering new details. EY

Spanish Tiles: A new outlook on flooring

The vibrant Spanish tile industry continues to push forward the aesthetic and functional capabilities of ceramic and porcelain, offering inspiring advances for a wide variety of environments. Solutions range from striking stone and fossil effects to the look of weathered wood – and from collections designed for interior/exterior specification to innovations for high traffic areas.



1

Precious Palaeolithic

Honouring the rare and noble stones featured in the world's grand palaces and museums, this theme takes its cue from the past while proposing a modern solution in a high-tech format. From remarkable replications of glossy agate and marble to the fine art of fossil hunting, a diversity of new designs from Spain makes it easier and more cost-effective than ever to install a luxurious mineral aesthetic.

1 Peronda 'Museum'. Reinterpretation of semi-precious agate, in two colours, 44cm by 44cm

www.peronda.com



2



3



4

2 Unicer 'Sublime'. Glossy expression of noble stone in a ceramic tile created with award-winning digital colour technology. www.unicer.com

3 Inalco 'Touche'. An ultra-white marble aesthetic in a large format, slim-line porcelain tile, 100x100cm www.inalco.es

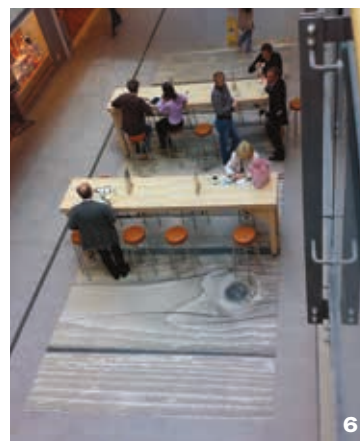
4 Grespania 'Atlas'. Porcelain stone-look tiles in multiple colours and formats, with the 'Tubqal' fossil-effect insert, 22cm by 22cm www.grespania.com

Beautifully Distressed

New methods are allowing Spanish manufacturers to achieve an appealing worn and weathered appearance in tile designs that are conversely highly durable and which will preserve their precise level of 'faded glamour' for many years. Suggesting the look of lived-in wooden floors, parquet or decking (but in a non-porous, easy care format) the distressed aesthetic offers an elegant yet robust design solution.



5 Saloni 'Open Timber - Roble' Porcelain 'wooden decking' style outdoor tile, anti-slip, available in 3 colours, 45x90 cm
www.saloni.com



6 Ceracasa 'Emotile'. Award-winning advanced porcelain tile which can be customised with images using the latest ink-jet technology. Available in various finishes and sizes.
www.emotilebyceracasa.com

High Tech for High Traffic

Other key advances tackle issues from strength to hygiene to safety. Grespania has introduced new dirt-repelling, anti-bacterial, odour-removing Hydrotect® technology for Healthy & Clean tiles with a special titanium dioxide coating. Inalco is extending its expertise in robust slim-line, large-format tiles in a range of effects from marble to metal, and slip-resistance achieves an impressive R13 rating in the form of Natucer's Canyon collection. Digital techniques allow for increasingly efficient reproductions of imagery and colour, plus the ability to print to textured and extruded surfaces. Meanwhile, attention to optimum sustainability remains fundamental both in manufacture and in performance.



10 Natucer 'Canyon'. R13 anti slip, minimum porosity, tough, resistant and hygienic for exterior applications, three colours, multiple formats.
www.natucer.es

Indoor/Outdoor

Several leading Spanish manufacturers have developed tiling solutions that connect the interior to the exterior, enabling both cohesive design themes and high-performance functionality. These include differing formats so that subtle zonal distinctions can be made while a rationality of style (and ease of specification) can run through the project. Robust, durable, UV and frost resistant, the collections suggest a variety of stone, cement or distressed wood effects and offer the ideal combination of versatility and visual harmony.



7 Tau 'Totem'. Porcelain stone-effect tiles for interior and exterior. In five colours and multiple formats in a natural matt and a textured (anti-slip) finish.
www.tauceramica.com

8 Vives 'Duomo'. Cement style anti slip porcelain tile, three colours, 40cm by 40cm 9mm thick
www.vivesceramica.com

9 Ceramica Mayor 'Rainforest'. Combining the strength of porcelain with the warm aesthetics of wood, in six colours and 10 formats.
www.ceramicamayor.com



Tile of Spain is the voice of the Spanish tile industry, encompassing more than 100 tile manufacturers. Renowned worldwide for an inspiring blend of aesthetic and technical innovation, Spanish tiles draw on a rich heritage of skill and creativity, while remaining at the cutting edge of design. Manufactured in Spain and widely available in the UK, these products embody the spirit of an industry that prides itself on proposing beautiful, meaningful and high-performance solutions to flooring, wall coverings, furnishing and external paving and cladding.

Further information on Tile of Spain:
www.tileofspain.com

High rise



What: Otis lift refurbishment

Where: Empire State Building, New York

Completed in 1931 and at over 102 floors and 381m high, New York's Art Deco Empire State Building was for decades the world's tallest building. And until the 541m One World Trade Center completes, it is, for the second time in its life, the tallest building in the city. The repeating of history, however, has not been extended to its 70 internal lifts, which have run for 80 years with the same motors, despite the occasional update of its lift call relay system. That is, until now. As part of the tower's \$550m upgrade, the original installer of the lifts, Otis, was called in by the Empire State Realty Trust to undertake wholesale replacement of the motors and cables and refurbish all the lift cars, including installing its state of the art 'CompassPlus' system which optimises the operation and sustainability of the lift call process.

As a designated Landmark building, the tower had to remain fully accessible and operational, and its lobby spaces effectively untouched, throughout the process – tempering the logistics of refurbishing its seven lift banks and giving Otis ESB branch manager Richard Castle a constant headache. Since works started

in July 2011, noise has had to be kept to a minimum while 40 operatives work on two cars per bank, six days a week, in two shifts per day. That's no mean feat when some of the works, such as in the Observatory level 'G' bank lifts, involve complete removal and replacement of the 22-person cars and mechanisms. This means securing the car at the top of the shaft to allow the steel cable to be removed, motor changed and interiors stripped out. Tonnes of material will eventually make its way out of the building via one of the few goods lifts.

The small size of the hoist room has meant that lift motors, though new, do not increase lift speeds. Castle says that an increase from the existing 305 to 365m/min would have involved a significant change in motor size. But in all aspects, he says, lift performance is dramatically improved. Door operation is silent and effortless, ride quality is judder-free, and energy efficiencies, due to better performing AC motors and the CompassPlus call system, all help contribute to the Empire State's LEED Gold status. Not that the punters would notice. Short of the high tech LCD operating panel, the lifts look unchanged, with the same green carpet and marble walls in cab, and each rear panel etched with an image of the iconic structure. ●

THE ART OF ELEVATORING

... or choosing the appropriate elevator configuration for a building. Lift consultants will consider the typology, building height and expected peak demand on the system, to estimate levels of throughput needed. Once that's understood, probability formulas and simulation software allow the number of lifts to be calculated. Desired performance is gauged according to how long people have to wait, how many stops the lift makes and how long it takes to reach their floor. With Otis' CompassPlus system, passengers input the floor they want, rather than just a direction of travel and the panel will tell them which lift to wait for. As the system knows where passengers want to go before they get in, it optimises performance by grouping them according to destination – reducing stop times and increasing turn-around time. These improvements don't mean you can cut elevator numbers, says Otis, but they can mean that a slower and cheaper system might be specified to manage throughput adequately.



Left: One of the restored 25 person, 1800kg lifts in the Empire State's 4-lift 'A' bank, using the new CompassPlus call system.

Above: The Empire State building retains its iconic form on the New York skyline.

Otis modernisation scope

Replacement 411HS controllers	300m rise at 6m/s rather than under 5m/s, decreasing transit time by 10 secs
Regenerative drives	
New Glide P door operators	Lift speeds ranging from 213m/s for A,B&C banks to 365m/s for F&G banks
New 30T and 40T machines	
CompassPlus dispatching	
New car slings, platforms and cabs in F&G banks (18 cars)	

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Rob Carder
Manufacturing manager – rainwater and drainage



John Coe
Sales director



What: Alumasc

Where: Burton Latimer, Northamptonshire

Visitors to Alumasc Rainwater's Burton Latimer factory inevitably pick up a single but significant word of Japanese – Kanban – the Japanese visual management tool for just-in-time production, whose presence is visible throughout as green tickets attached to jobs as they pass through the facility.

This innovation, which has already helped reduced lead times, is led by new manufacturing manager Rob Carder, who was brought in last year to instigate new lean production systems informed by his time working for Toyota. Armed with his Black Belt in Lean Six Sigma management, Carder lost no time in bringing new processes to the factory which produces everything from drainpipes and gutter systems to soffits and fascias.

With 3,000-plus iron, steel and aluminium products, Alumasc Rainwater can claim to be the UK market leader for metal rainwater products, with aluminium pieces made at

Burton Latimer making up 60% of its business. Cast iron, which is popular for heritage applications, takes a 30% share. Key recent installations include cast-iron hoppers at St Pancras station, to match the 19th century originals that were used to create the moulds. Alumasc's recently introduced steel range – made in Germany – accounts for the final 10% of its business.

Carder says there is 'massive scope' to increase manufacturing efficiency at the factory. It's all part of the company's quest to deliver an On Time in Full (OTIF) service to meet increasingly exacting market demands.

'We need to meet customer expectations and give them the product they want in the required timeline – a key industry issue just now,' says sales director John Coe, who adds that expectations for speedier delivery have increased.

This led Alumasc to question the blanket five week lead times it previously quoted for any bespoke jobs and to find a way to do such custom-work more efficiently, as well as ensuring that standard items are always in stock via the Kanban replenishment system.

The green tickets – which are used to track orders and signal when replenishment of stock is needed – are only the tip of the iceberg of the lean manufacturing changes. Carder analysed the journey of a component around the factory and found it could travel for miles, but often sat waiting for days between processes. In particular, he saw that often straightforward jobs were being held up behind more complex projects.

His solution was to set up a 'dual carriage-way' system of fast track small jobs alongside slower, more complex jobs. He also started sub-contracting standard jobs to a trusted group of suppliers when necessary to free up capacity at Burton Latimer.

'We tracked the progress of products and found they often waited in queues for welding and painting,' says Carder. 'We've introduced flexes in capacity by pushing simple products out to sub-contractors in order to concentrate on the larger, more complex jobs in house.'

As a result, lead times have already been cut from 25 to 10-15 days for its Skyline aluminium fascias and soffits range, helping Alumasc

Far left A machine carries out high pressure casting of automotive parts.

Left A line of aluminium products enters the automated paint plant.

to convert far more enquiries into orders. This enabled it to meet its targets for the whole of the last 12 months in the first six, says Coe.

Carder also has his eye on a reorganisation of the relationship of processes within the facility. By reducing the aisle width in the warehouse from 4m to 2m he hopes to take in the overspill stacked elsewhere in the factory. This would free up space to move processes around to create a more efficient flow.

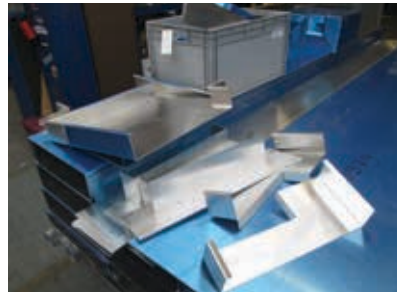
He plans to invest in a CNC milling machine, which would reduce a half hour jig saw process to under a minute. Despite all the lean manufacturing progress, it's relatively early days and Carder estimates he is only up to step two of the five-step programme. But even when he gets to five, the job will not be finished. Here, Carder points to another Japanese word – Kaizen, the concept of change for the better that underpins the whole lean management process. It is this state of continuous improvement that Carder, and Alumasc, have as their ultimate goal.●

This editorial is supported by Alumasc Rainwater. Alumasc.co.uk



1. BOMBS TO GUTTERING

Over 70 years ago Alumasc's Burton Latimer factory, then Sterling Metals, was set up to produce bomb casings during the war and subsequently produced saucepans and beer barrels before developing its expertise in rainwater systems. Now, Alumasc Rainwater is part of the publicly-quoted Alumasc Group, which includes building brands such as Apex, Harmer and Levolux. Processes on site range from gravity casting, low and high pressure sand-casting and automated powder-coating.



3. FOLDING

Aluminium is folded in one of the factory's two cold folding presses. The operator cuts the appropriate blank sheet on the guillotine and inserts it into the pre-programmed press, which creates the bend by force in a five minute process. The component is then re-inserted in a different position for the next fold, with some products requiring up to seven different folds. A typical gutter will require four bends in succession. Any off-cuts can be fed back into the aluminium furnace.



5. POLYESTER POWDER-COATING

Alumasc invested 10 years ago in an automated powder-coating plant that can cover any aluminium product in a choice of 26 RAL colours with a BBA-certified paint finish. An overhead conveyor moves products to the powder-coating machine, which applies a pre-treatment and electrostatically applied polyester powder in a pre-programmed colour. The line enters the oven where the colour is baked and bonded. By the time the products emerge, another colour has already been applied to the next batch. Once removed from the line, products are boxed up or wrapped.



2. WELDING

Manufacturing manager Rob Carder monitors the queue of jobs for welding, organised by urgency into small (less than 10 items), large (over 20 items), their priority indicated by the Kanbans flipped from the green to red side. Medium sized jobs are allocated to whichever queue has capacity. Overtime or sub-contracting is introduced when necessary to maintain work flow.



4. GRAVITY CASTING

This man is lifting a giant ladle of shining molten aluminium which will soon be transformed into a gutter channel using the gravity casting technique. First a crucible is filled with aluminium at one of six blast furnaces and delivered to the gravity casting worker, who pours the appropriate amount into the inclined tool, using gravity to help it flow down the tool into the mould. Then the tool is closed and the mould cast, then air cooled in a matter of minutes. The gutter is then checked for flatness before moving to the hole punching machine which will punch holes for fixings.



6. WET PAINT SHOP

Unlike the powder-coating facility for aluminium, Alumasc's cast iron products are spray painted manually in a choice of eight standard colours, with a top coat following a two-part primer. The wet paint shop is operated by two people and the whole process usually takes approximately one hour. Alumasc buys in cast-iron products from China and Germany.

Senior's architectural vision setting the agenda

Senior Architectural Systems' ability to match the latest technology with nurtured relationships and environmental responsibility has brought it to where it is today



Left The automated vertical powder-coating line lifting the aluminium profile lengths through pre-treatment, powder-coating and baking processes.

There's something cathedral-like about Senior Architectural Systems' Doncaster plant, despite the fact that here it's assembling the components of buildings, rather than a building itself. But with 7m long aluminium profiles being slowly and consecutively lifted to hang vertically before twisting round the production line to the spray area and oven, you're seeing architecture of sorts being created before your very eyes.

Founded 25 years ago as a privately owned, family company, Senior Architectural Systems has since grown into one of the largest fenestration companies in the UK,

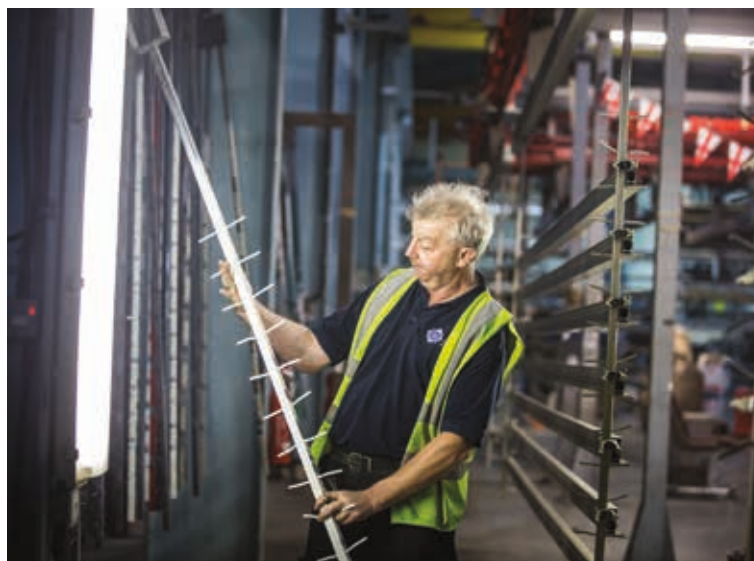
with an annual turnover in excess of £25m, and serving more than 200 UK cladding fabricators across the commercial, education, healthcare and housing sectors. The firm has spent years developing strong industry relationships to ensure it has an implicit understanding of both client needs and those of the sector in general.

With a workforce of 170 people across four UK plants; two in England and one each in Wales and Scotland, that nurtured relationship means the firm has made key sector acquisitions to ensure that it best meets the needs of its client base.

That makes it the first company in the UK to provide a full fenestration service to its customers of aluminium system profiles, bespoke powder-coating and glazed units, all deliverable anywhere in the UK mainland. Senior prides itself on its willingness to take on projects of any size, specification and budget. Offering a full service package, it is able to remove uncertainty in the supply chain, and generate a five day turnaround of products delivered to the customer via its fleet of eco-vehicles, as well as offering a no-quibble guarantee with its powder-coating services.



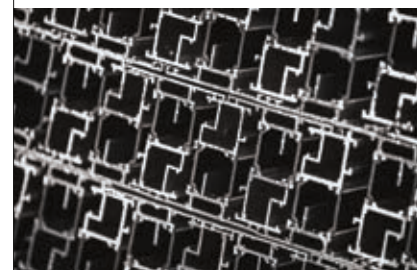
Above The powder-coating line is fully automated and used for large batches, going in gradually darkening colour runs through the spectrum, with a 40-minute cleaning process between each colour change.



Left Horizontal hangers being made ready for the manual powder-coating line, which runs smaller batches and one-off replacements for larger batches.

Below left Quality control processes include electronic monitoring to check coating thickness as well as visual checks for runs and inconsistencies.

Below Aluminium profiles stored in the factory's warehouse.



Senior has always taken its environmental responsibilities seriously, manufacturing its profile systems from recycled aluminium and, with its 'Hybrid' range, timber from PEFC-certified European forests. For every tree it uses, four are planted to minimise environmental impact. Through careful specification of its products, Senior claims to be able to offer up to 40 of the 119 BREEAM credits available for new buildings, helping the industry to build better for the future. Sustainable sourcing and manufacturing is at its core and it is

accredited to ISO 9001, ISO 14001 and ISO 18001.

Senior managing director Lennart Jonsson has made it his mission to drive innovation to make sure that the firm remains at the cutting-edge of the industry, spending more than £1m in inward R&D investment last year alone, focussed on developing the products, processes and services to ensure it remains the leader in its sector. Investment is continuing apace with Senior expecting to launch new products later this year, which will incorporate revolutionary technology.

Unlike some companies driven only by the bottom line, Senior has spent years being service-driven, building up long-term relationships with its clients. It takes both trust and tradition seriously, but knows that to survive in a competitive and environmentally challenging world, it has to innovate. From its Doncaster HQ, Senior's friendly and customer-driven approach is its strength, offering bespoke and flexible solutions to its customers in a timely manner. It remains, in the great British entrepreneurial manner, a local firm with big ambitions for the future. ●



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Fax: 01709 772 601
www.seniorarchitectural.co.uk

Glass Mill Centre, Lewisham

Ceramic trounced both stone and vinyl to produce a high quality finish and easy maintenance at this busy leisure centre

Words: Jan-Carlos Kucharek Photography: Craig Auckland

Below The double height main reception area of the Glass Mill Centre, looking east. First impressions count and LA Architects has concentrated resources here to create a bright voluminous and high quality space.



London's Lewisham seems to be engaging in a game of Tetris on an urban scale. As part of the planning gain for house builder Barratt's dense 760-apartment development by Assael Architecture, the requirement for 35% social housing was extended to include a new leisure facility. Brighton-based firm LA Architects was appointed to design the Glass Mill leisure centre, prominently sited at the corner of the development, which further draws attention to itself with a multi-coloured, pixellated glass facade wrapping around the building. Designed by artist Phil Coy, the 1400-panel skin is interactive, lighting up in response to noise levels generated by passing traffic – creating a night facade in constant modulation.

The facade is interactive to a degree by day too. LA architects has built 18 leisure facilities

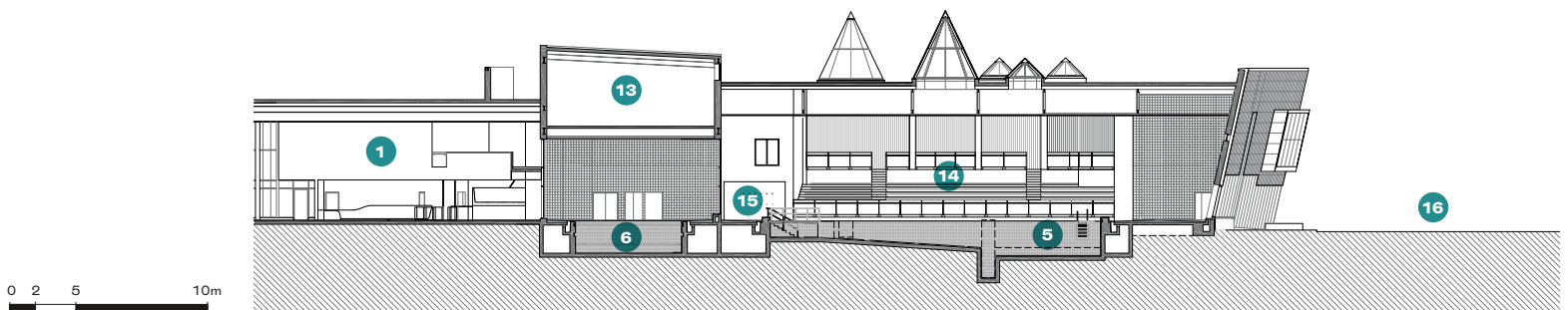
in the last 21 years, and gained confidence in big formal moves. For Glass Mill, the aim was to ensure that the centre was highly visible to the public realm. So, against that recent, reactive cultural phenomenon of not exposing bare, especially young flesh, to the public, the firm has boldly revealed its eight-lane, 25m public pool to the street with floor to ceiling glazing. On a sunny but bracing spring day, the sight of warmly wrapped people scurrying to station and shopping centre past children bathed in water and warmth is rare and refreshing – a brave move from a small practice, and one it no doubt had to fight to justify to the client.

Associate Leigh Pullan says the building had structural challenges. The £16m centre sits at the foot of a 28-storey apartment block, necessitating a hybrid approach in which the

residential block's concrete structure was encased in the leisure centre's steel. This is most evident in the foyer, which sweeps round from Loampit Vale to a park area to the south in a double-height curve of steel columns, between which frosted glass brise soleils hang off a framework, reducing the solar gain. This grandiose foyer, looking out to Cornmill Gardens, is the reception space for two pools, fitness suite, two exercise studios, spa, climbing wall and wet and dry changing areas. Pullan says the emphasis here was about generosity of space and quality of materials, adding: 'Rather than the pool, the fitness suite and spa spaces are the main revenue generators for facilities like this, so material choices are important.'

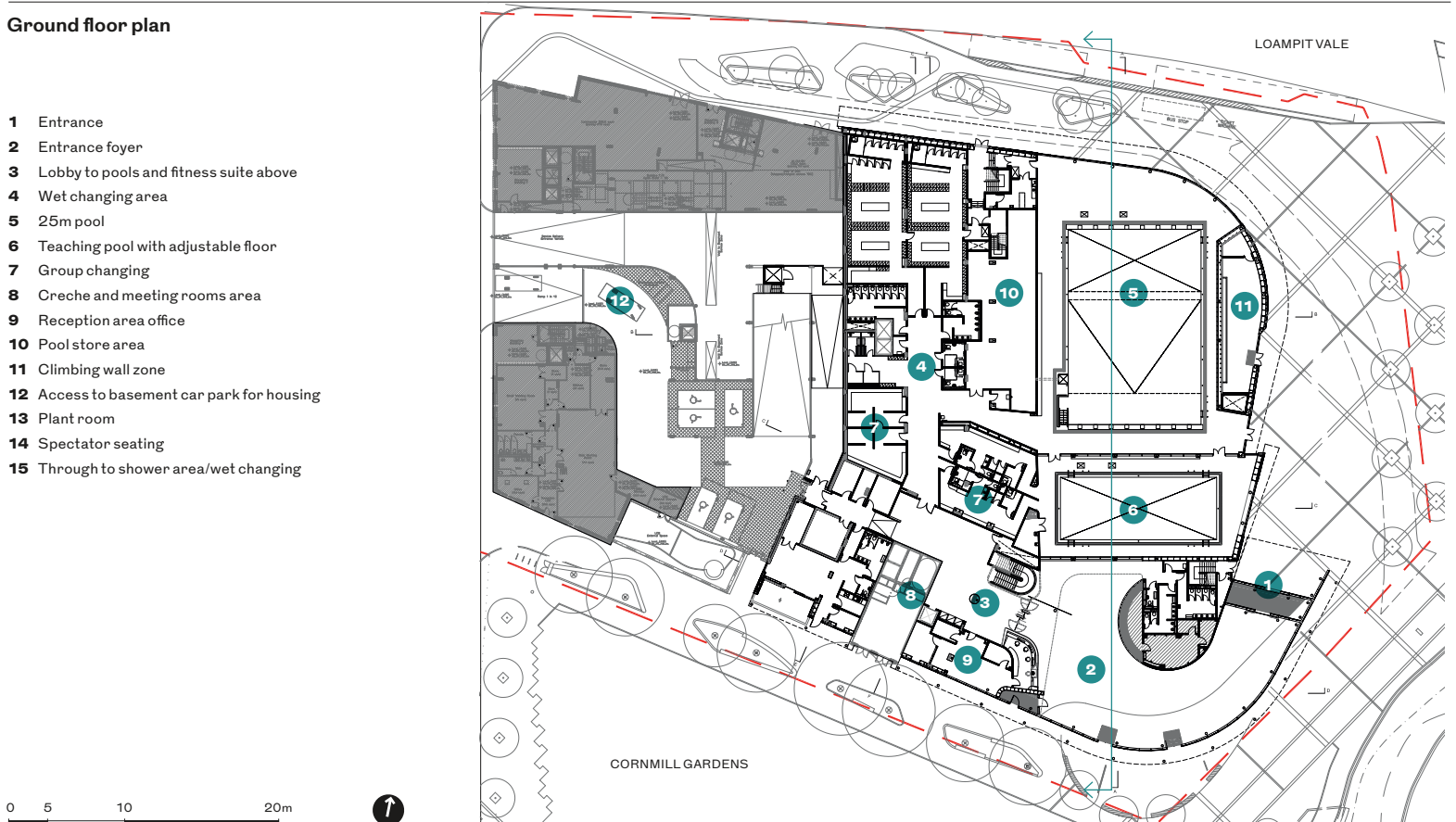
Over the years working in the leisure sector, the firm has spent a lot of time looking at

North south section



Ground floor plan

- 1 Entrance
- 2 Entrance foyer
- 3 Lobby to pools and fitness suite above
- 4 Wet changing area
- 5 25m pool
- 6 Teaching pool with adjustable floor
- 7 Group changing
- 8 Creche and meeting rooms area
- 9 Reception area office
- 10 Pool store area
- 11 Climbing wall zone
- 12 Access to basement car park for housing
- 13 Plant room
- 14 Spectator seating
- 15 Through to shower area/wet changing

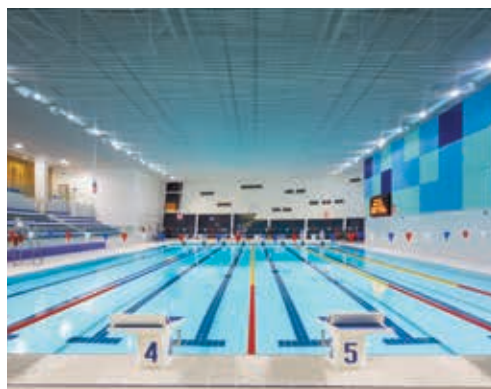


material finishes to make sure they are both fit for purpose and convey the correct qualitative messages. Pullan says the client supported the firm, insisting that specification of all materials, including floor surfaces, was incorporated in the tender. There was no allowance on this job for 'equal approved' items.

With the emphasis on quality, it is curious that no natural stone was specified. Pullan's reasoning is clear. 'We anticipated a yearly footfall in excess of 200,000, so we had to look at flooring not just from an aesthetic angle, but a long-term safety and FM perspective,' he says. 'Experience told us to avoid natural stones. They are far harder to specify, usually require special treatments and invariably need more complex maintenance which FM managers are, with good reason, reticent to adopt.' There was a vested interest too – the firm was required to supply an O&M manual detailing the cleaning regime for every specified material.

So a strategic approach was taken to every floor surface, involving reference to both HSE guidance and the Building Regs before specifying. Interestingly, with no stone, 600mm by 600mm Spectile terrazzo appears in lobby areas as a workable quality alternative, with bamboo planks installed where seating areas sweep alongside the curve of the double-height glazing. Pullan says this went against the general drive of these facilities for vinyl tiling everywhere, but the firm was set on ensuring high levels of finish throughout. Its Polaris white speckled gloss finish certainly contributes to the impression of size.

For the main and teaching pools, the firm opted for 245mm by 245mm KlinkerSire Beach white tiles. 'For wet areas we always specify extruded and fully bonded tiles,' says Pullan. 'With barefoot traffic, Cat C slip resistance and easily maintained tiles are essential.' As it turns out, it was about not just the punters but the installers. Pullan adds: 'We like to use elastomeric grouts, which allow movement, but epoxy's strong odours can be challenging for fitters.' Instead, the firm went for Ardex EG8 grout for reception and all wet zones, which was, he claims, 'less



Client London Borough of Lewisham
Developer Barratt London
Architect LA Architects
Contractor Pellikaan Construction
Structural engineer AKT II
M&E engineer Hoare Lea & Partners

Suppliers

Structural steelwork Graham Woods Structural
Mechanical installer DIS Design Installation Services
Electrical installer Barrie Beard Ltd, Bromsgrove Electrical Engineering Services
Reception desk & joinery P2 Contracts (Nottingham) Ltd
Lockers and cubicles Prospec
Roofing Voland Roofing
Handrails and balustrades BA Systems
Fabric acoustic screens (pool halls) ReSpace Acoustics
Curtain walling Schüco Curtain Walling
Sanitary appliances Ideal Standard

Top Artist Phil Coy's pixelated interactive glass facade announces the Centre, and faces the street and train station to the south.

Middle LA Architects produced a characterful circular exercise space, complete with Ronchamp-like windows in the walls.

Below Pool area, looking south towards the full height glazed area to the street.

aggressive yet still easy to apply, and worked in a similar way to epoxy equivalents.'

In the pool shower zones and wet changing areas, ceramic tile sizes change to 200mm by 200mm Pietra Serina extruded. It's deliberate, Pullan explains. 'The smaller size allowed us to create falls to the strip gullies by sloping the 75mm screed that they sit on to 1:40, rather than having to cut the tiles themselves. This generally works, although the odd diagonally cracked tile implies the screed isn't adequately laid to falls. Notably, there's far more tile cutting going on in the higher spec fitness suite changing areas upstairs, where curiously the demand was for spot gullies rather than strip. To give a more indulgent feel to the spa and wellness areas, a riven Italigraniti grey ceramic tile was chosen, which came with a requisite R10 slip resistance.

Specifying the fitness suite floors was no easier, Pullan notes: 'The cardio area and free weights room not only need to be high spec, but the market is ever-changing and spaces have to be flexible and open to reconfiguration.' To this end, the engineer recommended a substrate of 3 no. 18mm boards on batons at 400mm centres to run through the fitness suite, with carpet, timber or rubber crumb where desired. This enables future flexibility and sub-floor surface runs, but Pullan is aware of at least one point where the substrate is failing, suggesting baton centres might need reducing where heavy weights might be dropped. Exercise studios have more standard approaches, using Reflex maple and beech timber strip sprung flooring.

That said, LA Architects tried to avoid generic approaches, carving out a characterful circular studio space at first floor, with small coloured glass lights in deep reveals giving the space a vaguely Ronchamp-like quality. It's in details like this that the firm proves it is a step ahead of the general game. 'At Glass Mill we budgeted £2700/m² for wet areas and £2400/m² for the dry – the kind of ballpark costs you'll need to deliver a decent level of quality on the ground,' says Pullan, reinforcing the fact that, like the sweat and testosterone addled fitness suite, it's ultimately all about figures. ●



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* SLP, WLC, LCA and GWP data available in timber window research by Heriot Watt University 2012-13



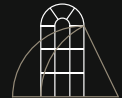
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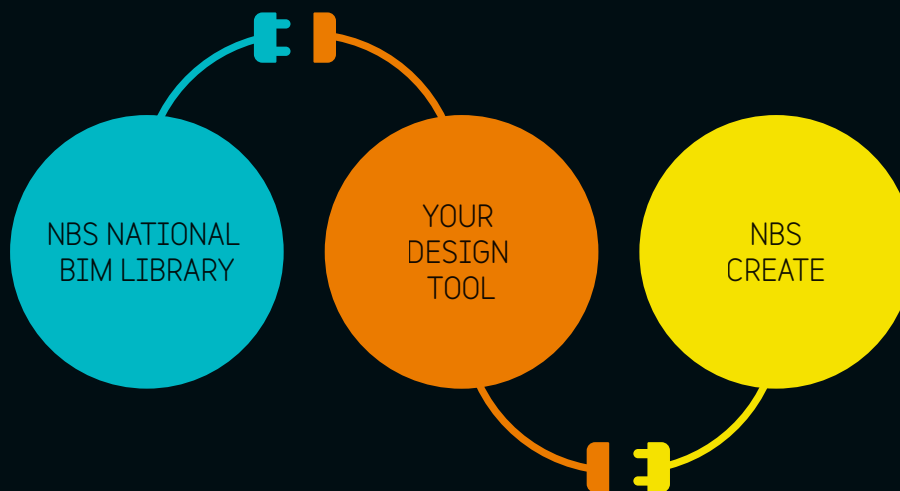


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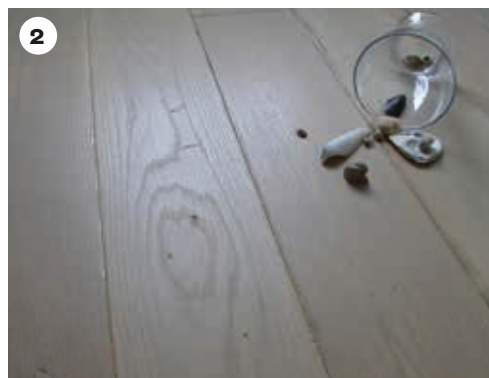


Specified



1
Walnut Montreal
Kährs

Don't be fooled by the sensual, no, passionate, crimson and wood interior of the Corby Cube, the venue at the heart of the former steel town's regeneration. The space is about to be filled by 'Fifty Shades of Beige', which could well take that shine off Kährs' sumptuous Walnut Montreal wood floor. Oh, hang on, now I've put my specs on I see from the Cube's website that it's Jenny Eclair's comedy about Grumpy Old Women, which scarily includes a brief Zumba demo. Once they're groovin' on that eco-friendly floor though, won't the urge to polish it overtake them? kahrs.co.uk



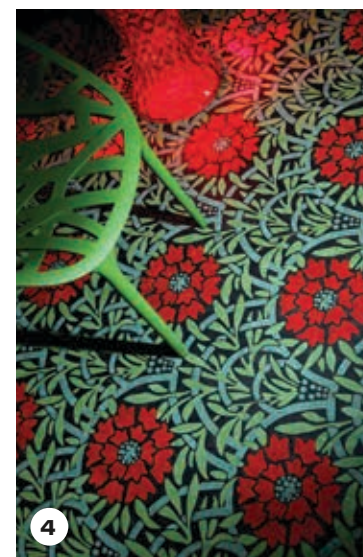
2
Aged oak boards
Bausen

In this age of personal grooming, when image and youthful looks dominate public aspirations, less obvious attributes like kindness or interesting conversation seem overshadowed. The opposite is true of Bausen's new 'aged' oak engineered boards, which remain solid and functional while their distressed and broken finish adds 'instant charm and character to any project'. It's a sort of no make-up selfie for floors. Now, if the company could only do a human version they'd really hit the jackpot – bringing a human angle to shabby chic, and the older the better. Yay!! bausen.co.uk



3
Non-slip flooring
Altro

Here we are again on PIP's regular curriculum slot, the maths lesson. This month we're in Dunfermline, where the geometry class must have designed the newly built high school (founded 1468, one of several venerable institutions on this page). With no curve in sight, the shapes on the internal street floor depict a timeline of all six Dunfermline High Schools, laid in Altro Suprema II which is durable, non-slip and easy to clean while promising value for money. So that's maths, history and home economics covered; the art department is clearly of the minimalist school. altro.com



4
Marmoleum
Forbo

William Morris, socialist, designer and temperamental cuckold, initially planned to be an Anglican clergyman. Luckily, he soon decided (with Edward Burne-Jones) to pursue the creative arts, and upset his family by joining the office of architect GE Street. We all know the story from there – his prolific and varied output – but he slipped up in the lino department, so to speak, producing only one design. This has been reinterpreted for a floor in the William Morris Museum, and laid in Forbo Flooring's resilient Marmoleum – everlasting flowers indeed. forbo-flooring.co.uk



5
Sentica rubber tiles
Nora

When in 1209 the University of Cambridge was established, Europe was awash with crusades and massacres – an unlikely context for the higher aspirations of the founding intellectuals fleeing persecution in Oxford. But if life was brutal then, it was as nothing compared to the torture chamber you see before you: the university's new Sports Centre. Luckily for the poor souls on the treadmills, nora's Sentica rubber flooring offers warmth, good acoustics to muffle the groans, and a soft landing when inmates crumple. Is that a couple of racks leaning against the wall?
nora.com/uk

6
Porcelain paving
Refin

Giving the headline writers yet another opportunity to adapt the 'Fifty shades of grey' moniker, Greensquares has added two new grey squares to its Refin porcelain paving range. As is the fashion nowadays, both lines can be used inside or out which, given the propensity for white painted walls and industrially-styled furniture either side of near-invisible glass doors, further blurs inside and out. Imagine being colour blind too: that helpful bamboo planting would turn grey, banishing all sense of the outside. You'd only know where you were if it started raining.
porcelainpaving.co.uk

7
Silkmatt coating
Bona

Meanwhile in the alma mater of the Cambridge founders, Oxford, the interrogation – oops, dining – room looks a lot calmer. The University's first female college, Lady Margaret Hall, has had its original oak floor (a youthful 136 years old) refurbished using Bona Mega Silkmatt, a high performance coating made sustainable partly with vegetable oils. Perhaps they've moved so far from the bloodthirsty days of yore that bread-knitting, grow your own furniture, and vegetarianism drove the choice. Either that or they've scraped out the redundant vats of boiling oil...
bona.com

8
Taraflex sports floors
Gerflor

This year, the 700th anniversary of Bannockburn, Scotland's independence referendum could not be better timed. What would Robert the Bruce have made of today's war of words? Presumably the arachnophile would advocate perseverance and determination. Sadly such advice doesn't seem to be working at the Witburn Centre near Edinburgh, where five-a-siders are getting extra bounce and a softer landing from Gerflor's Taraflex covering, quickly laid straight on the wood floor. Judging by their laconic style of play, the words of encouragement fell on stony ground!
gerflor.co.uk

Costed

Jonathan White, R&D executive at Gleeds, gives an overview of flooring costs

The choice of material for a floor covering should consider durability, sustainability, heat resistance, safety, hygiene and acoustic properties. Materials fit into five main categories.

Soft coverings: carpet, woven or felted from natural or man-made fibres. These are selected primarily for comfort and are the easiest covering to replace and upgrade.

Wood flooring: Hardwoods are more durable than softwoods. Laminate has either a plywood


or fibreboard core with a plastic surface styled to match timber. Wood floors are wear resistant, durable and can be refinished, but vulnerable to moisture, may dent easily, shrink and expand and can wear unevenly.

Hard flooring: concrete/cement, ceramic tile, glass tiles and natural stone – hard versatile and extremely durable, heat and stain resistant and easy to maintain. This is difficult to repair and tends to be more expensive.

Resilient flooring: formed from materials with some elasticity, including linoleum, vinyl, cork and rubber. One of the most affordable floor coverings, durable and easy to maintain. It must be installed over a smooth substrate, is difficult to repair and vulnerable to moisture in tile form.







Seamless chemical flooring: Applied in liquid form to provide a completely seamless covering for wet areas such as laboratories. Added granular or rubberised particles can improve grip. ●

FLOORING TYPE		Rates are a guide only, are Q1/2014 averages, excluding VAT. They do not include any contractor prelims	
In situ screed and floor finishes: laid level			
Self-levelling latex screed; 3mm thick on existing sub-base	£6-£7/m²	Roman travertine marble paving polished	£192-£263/m²
Cement and sand (1:3) screeds; steel trowelled; 100mm thick	£19-£24/m²	Granite paving 20mm thick	£295-£396/m²
Granolithic; laid on green concrete; 38mm thick	£27-£35/m²	Parquet/wood block; wrought hardwood block; 25mm thick;	£99-£139/m²
Epoxy floor finish; 1.50mm-2.00mm thick	£27-£36/m²	Flexible tiling: welded sheet or but joints tiles; adhesive fixings	
Epoxy floor finish; 5.00mm-6.00mm thick	£46-£61/m²	Vinyl floor tiling; 333mm by 333mm by 2.00mm thick	£13-£16/m²
Resin; 3 part solvent system; up to 3mm thick	£26-£33/m²	Vinyl safety flooring 2.00-2.50mm, 3.5mm thick	£32-£41/£52/m²
Resin; slip-resistant; 3 part solvent-free system 5mm-6mm thick	£60-£76/m²	Linoleum tile flooring; 333mm by 333mm by 3.20mm thick	£34-£43/m²
Sheet/board flooring		Linoleum sheet flooring; 2.00mm thick	£27-£35/m²
Chipboard; 18mm-22mm thick chipboard flooring; T&G joints	£14-£18/m²	Rubber studded tile flooring; 500mm by 500mm by 2.50mm	£31-£39/m²
Wrought softwood T&G strip flooring; polished; including fillets	£21-£27/m²	Carpet: including underlay, edge grippers	
Wrought hardwood T&G strip flooring; polished; including fillets	£79-£104/m²	Heavy domestic/contract duty	£38-£50/m²
Sports quality; 22mm thick T&G plywood, S/W battens	£120-£165/m²	Entrance matting	
Sprung block flooring (sports), court markings, sanded and sealed	£79-108/m²	Barrier matting with polished brass / stainless steel frame	£450-£575/m²
Rigid tile/slab finishes		Access floors	
Quarry tile flooring	£50-£49/m²	Raised access floors; inc 600mm by 600mm steel encased particle board on height adjustable pedestals →300mm; medium/heavy grade	
Glazed ceramic tiled flooring; anti slip tiles	£36-17/m²	£38-£70/m²	
Glazed ceramic tiled flooring; designer tiles	£76-£100/m²	Common floor coverings bonded-access floor panels	
Terrazzo 28mm thick Sicilian marble aggregate tile	£36-£49/m²	Heavy duty fully flexible / anti-static vinyl	£21/£24/m²
York stone 50mm thick paving	£124-£168/m²	Needle punch carpet	£12-£17/m²
Slate tiles, smooth; straight cut	£48-£64/m²	Under floor heating	
Portland stone paving	£203-£277/m²	Electric cable system woven into mats for laying under tiles	£338-£411/room
		LTHW system; pipework at 300mm centres for areas over 250/m²	£29-£44/m²



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Housing policy: more change ahead?

Will the upheaval in England's public housing of the last 30 years be repeated over the next three decades?

Words: Professor Christine Whitehead Images: Melissa Fernandez



Perceptions of social housing have changed out of all recognition over the last 30 years. In the 1970s nearly a third of households lived in what were then rightly regarded as high quality, low rent housing. At the same time the perception of the much smaller private rented sector was that, apart from the top end, it provided poor quality housing with high rents for those unable to access social renting or owner-occupation. Then four major changes happened. First, financial deregulation meant far larger numbers were able to obtain a mortgage. Policy supported this move to owner-occupation through Right to Buy, which allowed better off tenants to buy their own homes, and the government shifted allocation rules towards more vulnerable households through the Homeless Persons Act and other guidance. But perhaps most importantly, life expectations increased rapidly, so we are now housing four generations rather

than three – with large numbers of older people continuing to live in secure, social sector homes.

Lower demand from better off households and a rise in vulnerable and poor households needing support means that social housing is now perceived more as the sector for the elderly and inactive of all ages living in aging accommodation. Moreover, even though most estates are multi-tenure and a great deal of investment has been made to bring dwellings up to decent standards, a significant proportion of the stock is seen as old fashioned at best and barely habitable at worst – especially in lower demand areas.

Will the next 30 years see a similar change in the scale and role of the sector? Will social renting be replaced by much more diverse provision? And will there still be some form of social housing for those that need it?

What do we actually mean by social housing? Traditionally, it was local authority owned

and built on land they already owned. Since 1988 new building has been the province of independent social landlords with capital subsidies. A lot of local authority housing has also been transferred to these landlords. In the last few years it has become possible for purely private providers to enter the sector, so there are many more providers. The definition is moving away from ownership to subsidy and allocation.

Over the next 30 years we may well see more privately owned and financed housing which will take over the role played by social housing. However, existing providers have large capital assets which should enable them to compete effectively and to maintain their social mission, although with much more emphasis on efficiency – and some real incentives to move back into the lower income employed segment.

Demand and supply

The size of the social rented housing stock in England has declined by some 1.5 m units since its peak of 5.54m in 1979. As a result it now accounts for some 17% of the housing stock, down from 20% in 2001 and 31% in 1979. This is due to Right to Buy which saw almost 2 million social sector dwellings sold to their tenants, and to the massive declines in output from peak levels of nearly 150,000 units in 1968 as compared to little more than 10% of that number in the mid-2000s. Will these trends continue?

In terms of numbers, social housing has proved quite resilient over recent years, running at nearly 4 million units since the mid-2000s and indeed increasing in the last couple of years because new build has held up better than private since the financial crisis. With the political emphasis shifting toward getting as much new investment as possible and the main lever available being publicly owned land, this tendency could well be maintained for a significant period. So the main threat is further sales to tenants – but the make-up of the sector

Left Overview of the Aylesbury Estate in London's Elephant and Castle, 2,704 council dwellings built between 1963 and 1977 and site of Tony Blair's first speech as prime minister.

Right The Southwark Resource Centre for Independent Living, which replaced the 1975 Aylesbury Estate Day Centre and is considered a symbol of the area's regeneration.



in terms of ownership and tenants makes this much less likely now, and there is little sign of significant take up under current conditions.

The scale of social renting in England is mirrored in other European countries which are seen as stronger welfare states than the UK. Denmark, France and Sweden are all within a couple of percentage points and only the Netherlands stands out as having a far higher proportion of social rented housing. This suggests it is unlikely that the social sector will do much more than hold its own in proportional terms – but the large scale of existing assets owned by independent landlords gives it potential to maintain current levels.

Different roles

Four main initiatives can change the sector.

Local authorities have regained their powers to build, but are likely to do this in partnership with housing associations and other stakeholders – providing land and keeping equity involvement in the housing provided. Capital subsidies have been heavily cut, raising 'affordable rents' to up to 80% of market levels. Providers can undertake new investment by obtaining more debt finance against the higher rental income stream – but it also raises major issues around affordability.

A number of initiatives are being put in place to enable time limited covenanted private rented sector housing to be provided, some of which may be at sub market rents. Finally, there is increasing interest in social providers moving into the intermediate market to provide for those who need only shallow subsidy, but also into pure private provision with good quality management and more secure tenure.

Together, these tendencies suggest much more integration across the rented sector but a greater mix of rents and conditions, from short term market housing; more secure but still market-based provision; affordable rents

The size of the social rented housing stock in England has declined by some 1.5 m units since its peak of 5.54m in 1979, now accounting for some 17%

and low cost home ownership for lower income employed households; and more traditional social housing for the lowest paid and welfare dependant households.

Germany provides one future scenario, with a very low proportion of social renting at 5% and large local authority sectors in the east sold off to private equity to help pay for other local authority services and bring some existing stock up to modern standards. In reality, it has a far higher proportion playing a social sector role, including time-limited subsidised housing which continues to be let on similar terms.

Some providers in England will almost certainly go down this route – but again the scale of capital assets available is likely to mitigate against extreme privatisation approaches. In this context England is more like the Netherlands, where the Housing Associations have built up significant capacity to operate

independently from government.

So yes, the role and structure will change by greater diversification of ownership; of rents; of tenure conditions; and of finance. But the need for some sort of support for perhaps a quarter of all households will remain and core providers have capacity to keep operating in this sector.

Risk factors

Three interrelated risks must dominate social housing policy into the future.

First, income distributions are worsening across the developed world. This means that those further down the system, especially those without parental support, will be increasingly excluded from stable long term housing unless social housing continues to be able to provide.

Secondly, governments may try to move almost entirely towards income related subsidies rather than support through lower rents and new social investment. This means that social landlords will have to fund their own development programmes and will (like private landlords catering for lower income households) depend increasingly on the welfare regime. Third, this may simply not give enough capacity and incentive to enable investment at levels that can ensure adequate housing for all.

But there are positives: unless the world is very different from the past, overall incomes in 30 years' time will be at least 50%, and probably 70%, higher than they are now. So we will also want higher standards – as has proved to be the case for almost everyone over the last 30 years.

As we are already seeing as pressures rise, there will be enormous pressure on governments to increase housing output across the board – and social housing is one of the easier ways of achieving this goal. ●

Christine Whitehead is professor of housing economics at the LSE and senior research fellow at the Centre for Housing + Planning Research, University of Cambridge

Ceiling rings the changes

A 'ceiling cloud' that can change colour is ideal for setting the mood at a new church that doubles as a space for civic events



Sustainability and imaginative design, as well as a tight budget, sit comfortably together beneath one roof, thanks to Armstrong Ceilings' Axiom canopies.

The ceiling, at a new community church in Buckinghamshire, also covers a range of activities, from worship to civil events. Armstrong's canopies were specified for their aesthetics, acoustics and green credentials. Some 52 Axiom Classic square canopies (1.8m by 1.8m) and 14 half-sized triangular ones, all comprising white mineral Dune Supreme tiles within a 24mm Prelude exposed grid, feature over

1,500m² of the auditorium at King's Church, Amersham.

Built over a year at a cost of £2.8m by main contractor Jarvis Construction, the church occupies a 2.69ha disused school playing field. After searching for a larger site for some years, the church leaders submitted a joint planning application with CALA Homes.

Architect Byrom Clark Roberts was briefed to design a landmark building that had a civic presence but did not look like a church, even incorporating a paved café forecourt as public space. It is also future-proof, capable of accommodating a



Above Soft blue lighting creates a contemplative mood for the church.

Left A more business-like tone is set by lighting that turns the canopies grey/green, and edges them with lively red splashes.



Below Ceiling canopies can display various colours to match the atmosphere of the room to the activity taking place in it.



balcony if required later.

As well as traditional worship, the 375-seat auditorium had to cater for activities including concerts, conferences and banqueting – which it was used for in a celebration service in November 2013.

Byrom Clark Roberts had already used Armstrong Ceilings on the LifeChurch in Sale, Manchester, but at King's Church LED lighting was incorporated in some of the canopies.

Architect Ian Caveen said: 'I came up with the ceiling cloud idea when designing a church in Leeds in 2007. We had

used Armstrong Ceilings on a previous scheme, but for this one sustainability was a key issue, so the Axiom canopy was a given.'

King's Church has ground source heat pumps for low-temperature hot water heating throughout, underfloor heating and heat recovery ventilation that recovers more than 70% of the heat.

Caveen added: 'The auditorium is mechanically ventilated and acoustically attenuated to reduce noise impact on the surrounding housing. Noise break out from the auditorium was a key constraint which required careful design consideration, particularly to the

roof, windows and mechanical services. There was also a budget for the ceiling which could not be exceeded, with value-engineering workshops at key stages through the design process.'

Axiom Classic is an easily relocatable modular system that comprises an aluminium grid with a choice of highly light-reflective mineral, metal or soft fibre tiles made of up to 82% recycled content.

Specified either at initial design stage, as at King's Church, or for quick-fix refurbishment, the canopies help to reduce reverberation time and noise levels and increase speech intelligibility.

They also allow specifiers to play with different planes and levels to conceal and co-ordinate with services such as the LED lighting.

The canopies were supplied by CCF Manchester and installed at graduated heights at the steel-framed King's Church by Conron Ceilings, whose two to five-strong team worked on site for two months. ●

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King's Cross Square

A restrained and elegant plaza in London is happy to play supporting role to the star act – Cubitt's King's Cross, revealed for the first time in 150 years

Words: Pamela Buxton Photography: Hufton + Crow

If ever a site presented challenging constraints it's King's Cross Square, Stanton Williams' new public space outside London's King's Cross station. When passengers pour out of the station into the 7,000m² square, little do they know they are walking just 300mm above the roof of the London Underground ticket hall. But proximity to this and other underground infrastructure, such as the Fleet Sewer, had a major impact on the firm's design of the new space, influencing drainage strategy and trees in particular.

Constraints weren't just subterranean; prominent London Underground ventilation shafts within the square and perimeter security bollards also challenged the creation of a unified whole. And while this needed to be a civic space worthy of the splendour

of the newly-refurbished Lewis Cubitt station, it was important that it did not compete with the terminus.

Stanton Williams worked with these constraints to create what it conceived as a 'welcome mat', edged on three sides by an apron of York stone, for passengers leaving the terminus.

The design, won in open competition in 2009, uses two types of granite to create 1200mm wide parallel bands that reference the terminating train lines within the station. Seating, trees, and raised planters are set on an axis within these stripes, which run perpendicular to the facade. This rigour imposes an order on the wedge-shaped site that is strong enough to deal with the three protruding ventilation shafts. Rather than remaining disruptive

elements, these are instead absorbed into the square design by being treated as craters growing out of the landscape, according to Stanton Williams associate Stephen Hadley.

Robust, easy to clean granite was specified in two shades – a darker Crystal Black Chinese stone and a lighter SPI granite from the Granitos Pardais quarry in Portugal, both with a flamed finish chosen for slip-resistance and aesthetic quality. Where the bands terminate near the facade, the square continues in the lighter shade of granite – except for the eastern corner, which is paved in the darker shade. Granite also appealed to the architect because of its success as a cladding material, since a key aspect of the square is the continuation of the paving to form the cladding of the seating/planters and vents.

All three vents – a rotunda to the centre rear of the square, an egg-shape to the west and a small rectangular push vent east of the facade – are clad in the darker granite. In addition, two larger, curved vents have been expanded to incorporate kiosks and information screens.

This base skirting detail on the curved vents was particularly challenging, incorporating both the curve of the vent in plan, and its curve rising out of the paving. Rather than being faceted, the curved granite was cut to order in China and assembled on site around the vent. The result is practical as well as visually pleasing – providing an easy to clean intersection between paving and cladding.

The granite vent cladding also incorporates vertical ventilation slots set at a 3m high datum. These impose outward consistency on the more random ventilation grilles within and contribute to the architect's idea of giving the vents a plinth, fluted middle and canopy. Downlighting in the top of the vents highlights the vertical details, while the Rotunda's illuminated parapet gives a halo effect. The darker granite continues beyond the Rotunda towards Euston Road.

'We wanted to take something very



Below King's Cross Square at twilight. The subtle lighting of the Cubitt shed is not overwhelmed by the square's lighting totems and low level illumination, which give nocturnal preserve to the granite seating.

Below left The new square recontextualises the formerly dowdy eastern end of Euston Road.



utilitarian and unloved and turn it into something quite sculptural,' says Hadley.

Set outside the striped bands, the egg vent is used to help signpost the station's main entrance towards the west side of King's Cross; the proximity of platforms to the facade means the front of the building is used only as an exit.

Seating at the east along Euston Road is formed from granite-clad concrete bases supported on a steel frame, and incorporates concealed, below-seat LED lighting. On the west are two stretches of benches/planters. Planters rise to around 1100mm between seating on either side, and can themselves double as higher level seating. Like the vents, the idea is that these benches are emerging from the landscape.

Four smaller benches sit at the head of the striped bands in front of the facade, each facing a monolithic information panel, which also discreetly includes CCTV.

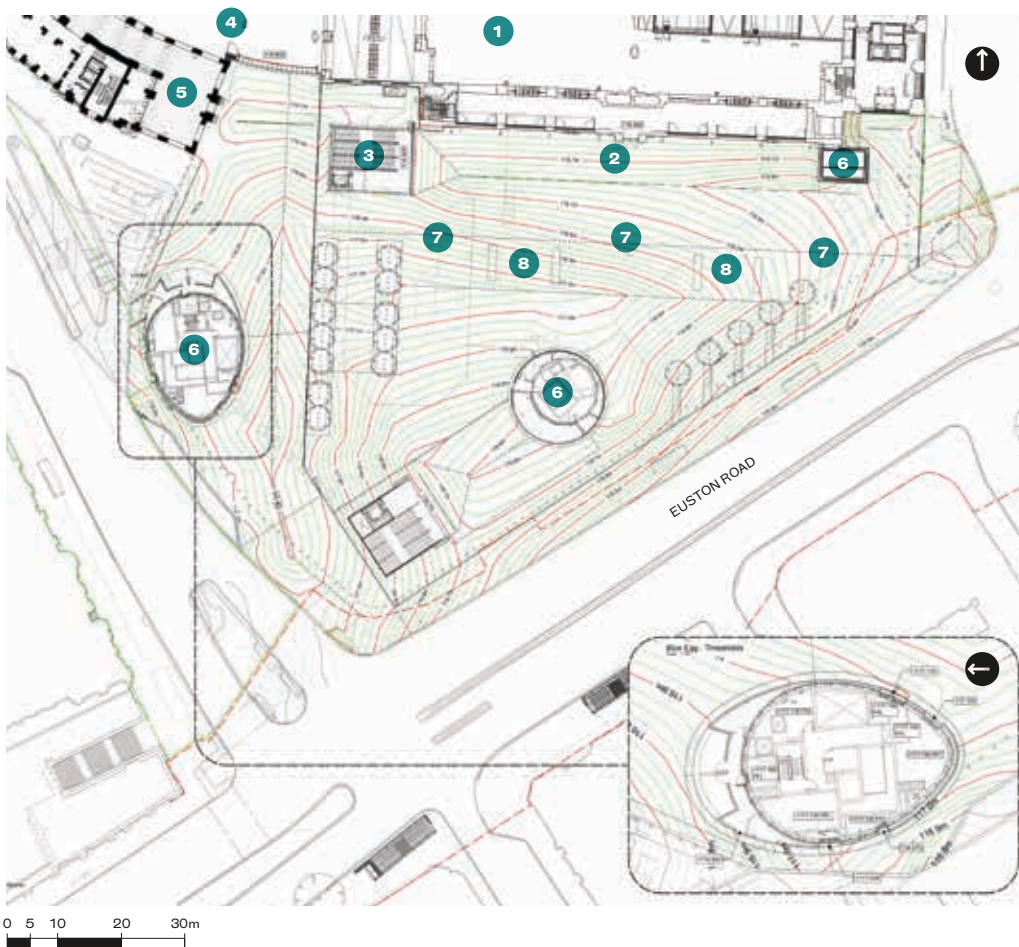
Drainage was one of the biggest challenges across the square, which has a 500-600mm fall. Visually, Stanton Williams wanted it to be as flat as possible to avoid distortions to the strict geometry of the paving. Yet it also had to be designed to ensure the surface gradient fell away from entrance thresholds to avoid potential flooding of the mainline or underground stations, or run-off to the public highway. There were also limitations on outlet positions caused by the proximity of the station hall roof.

Arup Infrastructure used a three dimensional surface model to analyse the shape of the surface and the flow direction of rainwater run-off, and simulate a variety of storm conditions to determine what drainage capacity was needed. This resulted in some areas being lowered by up to 400mm and others raised by up to 300mm.

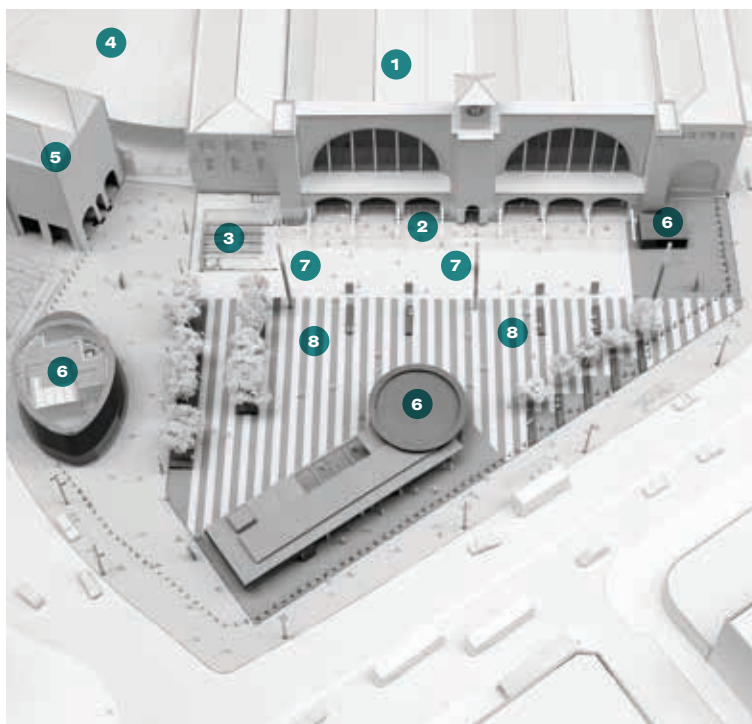
'Too shallow gradients could result in ponding and too steep gradients could visually impact the dark and light granite stripes,' says Arup Infrastructure associate director Craig Rew. 'A series of subtle ridges and troughs were introduced in the paving in order to influence the flow direction of rainwater runoff.'

Gulleys were rejected as they'd increase the number and variation of gradients across the square and might be a hazard for high heels. A more discreet approach was essential. The solution was twofold. A linear drainage channel was introduced to the perimeter of the square to intercept run-off heading for the public highway, using Aco's MultiDrain with Heelsafe stainless steel grate. In addition, unobtrusive twin-slot drains with stainless steel grilles – Aco's MultiDrain with Twin Offset Brickslot – were used within the square itself, including one drain parallel with the main facade. Water is then channelled into a network of new sub-surface pipes and chambers that discharge into the Fleet Sewer via three new sewer outfall

Drainage strategy drawing



Site model



- 1 Cubitt station shed
- 2 Glazed canopy at station's south exit
- 3 Entrance to Underground
- 4 New King's Cross ticket hall (McAslan)
- 5 Great Northern Hotel
- 6 Vents
- 7 Lighting totems
- 8 Granite seating areas



‘We wanted to take something very utilitarian and unloved and turn it into something quite sculptural’

Left High level view of Stanton Williams' plaza floor patterning – a mix of dark China and lighter Portuguese granites in alternating strips.

connections and two existing connections.

The trees issue highlighted the architect's tricky balancing act between client Network Rail, London Underground, English Heritage and local community groups.

Community consultation revealed a desire for more greenery in the square as well as the 12 *Sophora Japonica* trees proposed for the planters on the west, which are expected to grow to the same height as the nearby egg shaft. But the architect wanted to maintain as uncluttered an environment as possible and there was concern from English Heritage that mature trees would in time obscure the newly revealed canopy-free station facade. The solution was to incorporate five more – German plane – trees over to the east of the square at the front of each run of bench seating. Root space was sufficient to dispense with raised planters.

Since King's Cross is equivalent to airports for security risk, security-approved bollards with deep foundations had to be used at 1200mm intervals around the perimeter to prevent vehicles getting through. To the east, the

positioning of the benches deliberately breaks up this line, with bollards interspersed in pairs between the seating. This is itself constructed with concrete bases built to security specialist engineering requirements.

For the lighting, the architects worked with Studio Fractal to design three 18.5m high bespoke masts. These address the height of the facade, and are broadly in line with the side and central towers, while six smaller masts define the edges of the square next to the Egg ventilation shaft and tree planters. Stainless steel columns are combined with iGuzzini LED lighting, with a shot-peened texture specified to give a robust finish on the masts up to a 3m level, and a brushed steel finish above.

The overall effect may seem to some a little austere, although this will be softened as the trees grow. But for Stanton Williams it was important that the square be a backdrop to the fine station exterior rather than seek to be the main event, providing a restrained setting ripe for animation by the 140,000 daily arriving passengers and passing pedestrians. ●

Client Network Rail
Architect Stanton Williams
Multidisciplinary engineer Arup
On site engineer Robert West
Lighting design Studio Fractal
Arboricultural consultant BHSLA
Contractor J Murphy & Sons
Station architect John McAslan+Partners

Suppliers

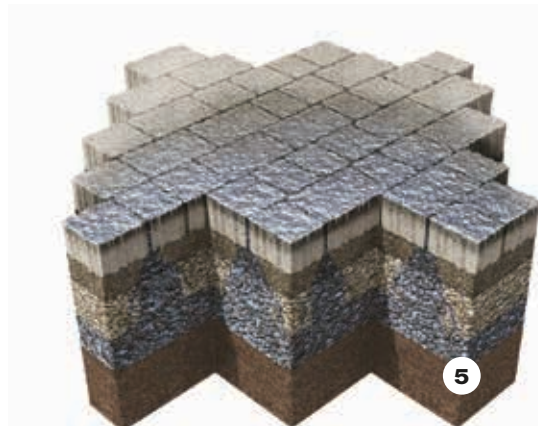
Yorkstone Johnsons Wellfield Quarries [Szerelmey] ● **Granite** Hardscape [Szerelmey] ● **Lighting masts** iGuzzini / ProStainless ● **Metalwork** McGrath and Lee Warren ● **Glazing** Wrightstyle and Windell ● **Glazed doors** Ingersoll Rand ● **Drainage channels** Aco ● **Roofing** Sarnafil ● **Rendered soffit** Marmorit ● **Grilles** Neaco ● **Bollards** ATG Access ● **Louvres** Levolut ● **Landscaping** Willerby ● **Manholes** Jones of Oswestry ● **Gates to Tube** Mercian ● **Roller shutters** LBS ● **Signage** Browse Bion ● **Lighting and comms** Fourways ● **Sealant to paving** Community Clean ● **Metal ceilings** SAS Lighting Bega, ACDC Lighting / Kemp's Lighting

Specified



Glasgow's Emirates Arena, built for the Commonwealth Games, is hugely important for the city and, says the press release, is surrounded by £350,000-worth of Tobermore products... goodness, the delights of Scotland's single malts are legendary!! Oh, no, hang on a sec, that's Tobermory, from the distillery on the Isle of Mull. Disappointingly, but more practically, we are referring here to the elegant paving products supplied by the Tobermore plant in Northern Ireland. Well, bottoms up, it looks world class, and as part of a SuDS strategy, brings new meaning to 'old soak'.

tobermore.co.uk



5
Permeable paving
Marshalls

One doesn't like to be ungrateful, but this slab of Battenberg cake doesn't really look very inviting – even to the sweetest tooth. In fact to be honest, it looks more suitable for laying in front of some new housing scheme – permeable paving to mitigate flooding. But as hard landscaping manufacturer Marshalls points out, when it comes to the crunch, despite a wealth of products, regulations to boost the use of systems like SuDS, swales and permeable pavers are rarely enforced. Why? And as for the latest delay to the National SuDS Standard, well, that really takes the biscuit.
marshalls.co.uk

6
Conipur clay courts
Conica Technic

With the Wimbledon tennis championships looming, shops in south west London are stocking up: strawberries, cream, sun lotion, binoculars... umbrellas, pac-a-macs, something to while away extended breaks in play due to the rain... Of course, now it has that roof, if the All England Lawn Tennis Association got off its grass and put in some clay courts, things would be so much easier – think of the nightmare of coping with the danger last winter of waterlogging. Conica Technic's Conipur Pro Clay, laid by Fosse Contracts, could solve all those problems – game set and match!
conica.com

7
Illuminated handrail
SG Systems

In the good old days of smog, black and white telly, drinking and driving and bobbies on the beat, we made our own entertainment – and often our own safety systems too. There's a tale of two young men driving home from work after a few too many in the pub. The smog was thickening. 'Don't worry,' said one, 'I'll lead – you just follow my tail lights.' Illumine, an LED-studded handrail system from SG System Products, should stop stumbling in poor visibility, and might have been inspired by this story. And the boys? They're still telling the tale during the ad breaks.
sgsystems.co.uk

8
Terrabound
Addagrip

Abbotsford House near Melrose is where Scotland's most famous literary son died, having created legions of romantic heroes and heroines depicted in a style desiccated enough to bring the Gobi desert to the soggy Borders. Scott's fairytale mansion should be equally dry, now that 850m² of Addagrip's Terrabound resin surfacing has been installed below its paths and walkways. Such neatly cared for lawns seem a long way from the battles, intrigue and passion of Ivanhoe and Rob Roy, but surely Liam Neeson would be happy to fall into Jessica Lange's arms here.
addagrip.co.uk

Dongdaemun Design Plaza, Seoul

It took cutting edge design to realise Zaha Hadid's Korean Palace to Design

Words: Jan-Carlos Kucharek Photographs: Virgile Simon Bertrand

With over half a million visitors in its first week of opening, it seems Zaha Hadid's latest exercise in urban parametrics has already stamped itself on Seoul's cultural map. The Dongdaemun Design Plaza, a vast 56,000m² development with 30,000m² of park in the heart of one of the city's most historic, buzzing districts, does nothing by halves. Open 24 hours a day, the new centre is made up of 'Art Hall', a national design museum, 'DesignLab' and 'Design Market', all melding fluidly into the surrounding 'History and Culture Park', linked to it by public routeways.

Won in an international competition in 2007, there is no meanness of ambition here – especially in the construction methodology, with 30,000m² of flat, single curved and double curved cladding panels pre-formed out of over 45,000 pieces; of either concrete, aluminium, steel or stone. All are attached to a double layer space frame and single layer rigid frame. As well as using BIM to ensure the complex project was fully integrated in terms of its architecture, engineering and construction, with each facade element unique to its position, the DDP was Korea's first public project to implement advanced 3D modelling to fabricate the panels.



There is no meanness of ambition here – especially in the construction methodology, with 30,000m² of flat, single curved and double curved cladding panels

Future flexibility was necessary for most of the internal spaces, so the practice had less control of the interiors, except in the key areas – notably the conference hall, exhibition spaces and the grand staircase that connects them to the underground shopping plaza and basement car parks. Here the firm has been fully involved with the volumes, using GRG panels for complex forms, and flat gypsum elsewhere, generating its signature fluid white forms, spiralling up and through the spaces. There is a practical use to all this too, especially in the conference area, where the GRG ceiling hides high level air handling ducts and doubles as an acoustic surface to reduce echoes. The conference hall itself is fitted out to a similar level of spec, and has the flexibility to be extended to nearly 5000m² if desired.

Hadid's office remains tight-lipped about the project's cost, although unconfirmed figures put it at over \$450m – an aspect that might have contributed to its dismissal by Seoul's residents as a hugely expensive vanity project by the city government. But if visitor numbers are right, it seems that whatever they may have initially thought, the city is now voting with its feet. ●



Client Seoul Metropolitan Government/ Seoul Design Foundation

Architect Zaha Hadid Architects

Local architect Samoo Architects

Structural engineer Arup/ Postech

Services, lighting & acoustic engineer Arup/ Samoo

Landscape architect Gross Max/ Dong Sim Won

Quantity surveyor Davis Langdon/ Kyongg Won

Fire consultant Korean Fire Protection

Facade Evolute, Group5F/Mac M&C

Civil engineering Saegil engineering & consulting

Contractor Samsung Construction

Project management Kuwon engineering/ Heerim architects & engineers

Main image Central staircase within the design museum of DDP.

Left North-west elevation facing Jangchungdang Street in the Dongdaemun district.

Left, below The 1600m² convention hall (one of six major spaces ranging between 1200m² and 3000m²).



Specified



1
Oriented strand board
Norbord

The West Country has always led the alternative vanguard, and Exeter's Hub-Box is right up there with both its food and its mood. Eschewing traditional flock wallpaper, carpets or chandeliers, this uber-trendy stripped back, exposed, industrial aesthetic is set off by Norbord's Sterling OSB and a shipping container kitchen. And as well as offering 'craft beers', its menu – which disconcertingly feels a need to assure us that the food is made by humans – strangely lists a Big Dog, Hot Chick and Boston Butt... actually, mine's an M&S readymeal, slippers and a DVD.
norbord.co.uk



2
Floating ceilings
Ecophon

Ecophon's Master Matrix floating ceiling system is a far cry from the asbestos ceiling tile which proliferated in 1980s student bedsits, along with strip lighting, nylon sofas and ridged glazing in the front door. This ceiling system is quite a different kettle of fish, adding smooth clean lines to large open plan areas. As can be seen, its relaxed style puts staff at ease, encouraging easy banter and informal bonding. With such good acoustics, we'll hopefully be able to hear exactly what the equally smooth Mr Pickering is saying about bottom lines to Marjorie from accounts.
ecophon.co.uk



3
Door furniture and closers
Laidlaw

At the opposite end of the style spectrum to the riotously textured Hub-Box is the National Theatre on London's South Bank, where only the smoothest finish will do. Like the actors on the stage, these sleek doors offer a top notch performance, fitted as they are with concealed door closers and escutcheons from Laidlaw's Orbis Commercial range. What a wonderful word escutcheons is. It could feature in the old favourite Call my Bluff: Are they a type of embellished Victorian leg irons, door plates, or the shell frills that line the edge of a lobster's body to protect its soft undercarriage?
laidlaw.net



4
Hexagonal tiles
Trend

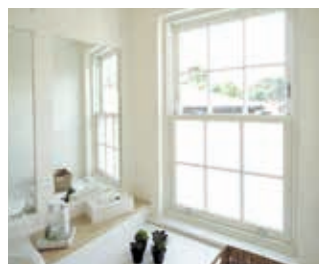
Given the parlous state of Britain's bee population, Italian tilemaker Trend's hexagon tiles for honeycombs not only show how the human population values the humble honey bee, but they come in gorgeous semi-transparent glazes for optimum robustness. How happy those bees would be in their designer hives! Unfortunately the tiles aren't small enough, but we humans can get busy with the lovely 35mm by 30mm Hexagonal Collection to adorn our own homes, as they are mounted on the firm's Trend Plus installation system for easy application inside or out.
trend-group.com

FREE

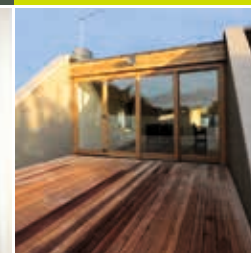
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Flooring

NORA Norament floors University of Ulster Coleraine campus



Frequently used in schools worldwide, nora flooring systems' norament® 926 crossline flooring has recently been installed in the canteens at the University of Ulster Coleraine Campus in Co. Londonderry. norament® 926 crossline is offered in 16 expressive colours and features a subtle 3D texture, inspired by hand-crafted woodcuts. It is made from high-quality rubber and carries the Blue Angel certification for low emissions.

www.nora.com/uk

FORBO Creating better BIM environments with Forbo



Forbo Flooring Systems has launched a comprehensive range of BIM components, created in partnership with Bimstore. Forbo was one of the first manufacturers to upload carpet tile models for Bimstore users, who can access all models free and build up a library of components. Additionally, Forbo's models hold all key technical data and green building properties, while containing links to installation information, product webpages and download sections.

www.forbo-flooring.co.uk/BIM

QUADRANT Fitnice woven vinyl flooring joins expanding product portfolio



Quadrant Carpets, one of the UK's leading commercial flooring specialists, has introduced the Fitnice woven vinyl flooring collection. Four woven patterns, each available in a selection of modern colours and in sheet or tile format, give specifiers beautiful, durable textured flooring. Colourfastness is unrivalled and easy maintenance assured by manufacturer Vertisol's thermofixing process, which seals the flooring surface to keep out dirt.

www.quadrantcarpets.com

IDS ProClick – luxury vinyl alternative to laminate



IDS' ProClick luxury vinyl tile (LVT) flooring combines stylish looks, high performance, easy maintenance and fast click-system installation. It's warm underfoot and has none of the tip-tap noise associated with laminate flooring, making it an ideal alternative floor covering. ProClick can be used in most domestic applications and comes with a 15 year residential and 8 year light commercial limited warranty against manufacturing defects.

www.idsurfaces.co.uk

FILA Surface care system specified at iconic Library of Birmingham



A Fila surface care regime has been specified for the new, award-winning Library of Birmingham and adjoining Repertory Theatre. At the £189m, BREEM Excellent library, over 1,800m² of Brazilian Slate was installed. After installation, FILA Cleaner was used for the initial wash, then the surface was treated with FILAW68; a water-based stain-proofing protector, designed for internal and exterior porous surfaces. FILA Cleaner was recommended for maintenance.

www.filasolutions.com

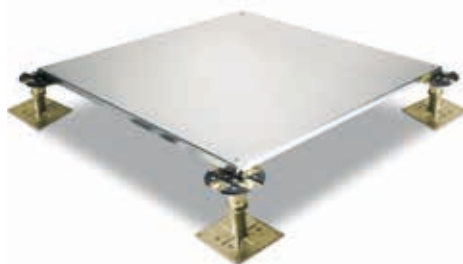
KAHRS Capital Collection reflects new 'even grain' wood trend



Kahrs has launched its new Capital Collection of wood floors, reflecting a growing trend for even grained finishes. The six new designs are crafted in Sweden from sustainable European oak and feature a wide-board one-strip format. Handcrafted finishing treatments define the look and reinforce the tactile appearance. All the new floors are defined by their clean timber grade, and all measure 187mm wide by up to 2420mm long.

www.kahrs.com

KINGSPAN ACCESS FLOORS New TL Series panel launched



Kingspan Access Floors has launched the TL Series, a new raised flooring system based on a 26mm steel encased panel without a perimeter flange, which reduces the possibility of edge damage during handling. The system comprises the TL3 and TL5 systems, tested to surpass the requirements of BSEN 12825 Class 3 or Class 5 respectively, and the TLM26, independently tested in accordance with the PSA specification to medium grade.

www.kingspanaccessfloors.co.uk

HECKMONDWIKE Montage sets the scene for new university learning



Heckmondwike FB's innovative Montage carpet tiles have been specified for a flagship new education centre, University Square; a collaboration of the University of East London with Birkbeck University. It features 4,100m² of Montage fibre bonded carpet, which was specified by Make Architects in Flint. Montage has a distinctive, random-textured surface design that comes in 16 different colours, and is specified in education and commercial environments.

www.heckmondwike-fb.co.uk

Landscaping & Drainage

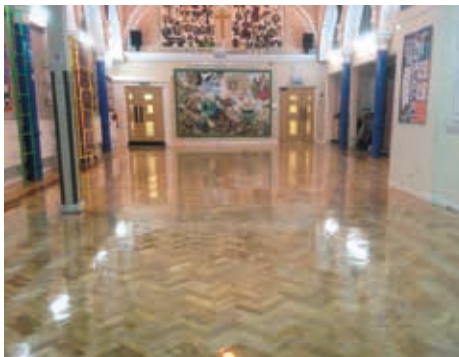
FLOWCRETE Sustainable floor finish puts in polished performance



Flowcrete UK's sustainable floor finish, Mondéco Mirrazzo, combines style with substance in a stunning project at Doncaster Civic Office. The seamless terrazzo was applied in a phased refurbishment installation over five weeks at the South Yorkshire site. Mondéco Mirrazzo is a seamless epoxy resin terrazzo floor finish, which uses a blend of up to 60 per cent recycled crushed clear, coloured and mirrored glass and metal particles, for environmental performance.

www.flowcrete.co.uk

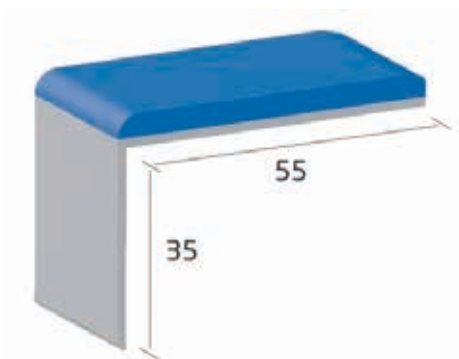
GRANWAX Granguard floors the competition at St Philips primary school



When St Philips Church of England Primary School needed to refurbish its assembly hall floor it turned to Traditional Flooring UK, who uplifted, reset and sanded the genuine parquet wood blocks. Granwax Granguard, a specialist finish, was chosen for its superb tractional strength and ability to enhance the durability of the maple and preserve its natural tones. It's ideal for surfaces that are subjected to extremely heavy wear.

www.granwax.co.uk

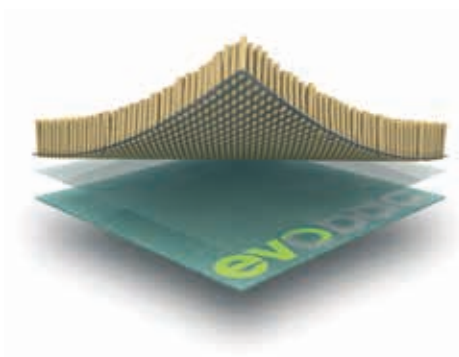
QUANTUM BIM models for stair nosings for free download



Quantum Flooring has become the first flooring accessories manufacturer to create and distribute BIM objects for stair nosings. Five key stair nosing profiles are now available for free download via the National BIM Library (www.nationalbimlibrary.com). The objects come in five software formats (ArchiCAD, Revit, Vectorworks and Bentley, IFC). Now architects and specifiers can easily download and insert objects directly into a model.

www.quantum-ps.co.uk

NEWHEY Ten green bottles squashed up in the floor



Constantly pushing the boundaries of innovation in sustainability, British manufacturer Newhey Carpets has recently introduced a revolutionary carpet secondary backing system – 'evobac', which is made using 100% recycled plastic bottles. Evobac presents a unique, low energy, sustainable secondary backing solution for specifiers and end users in hotel and leisure applications.

www.newheycarpets.co.uk

HYDRO Filterra™ engineers in nature's way



The Hydro Filterra™ sustainable drainage system introduces the principles of bioretention and biofiltration to UK highways and car parks. Hydro Filterra™ harnesses natural biological and chemical processes to combine stormwater control with treatment of pollutants and sediments. From the surface, the Hydro Filterra™ system looks like a tree box. Stormwater runoff is channelled through a kerbside inlet into a concrete container beneath filled with a mulch, plant and soil filter medium.

www.hydro-international.biz

ALUMASC Harmer SML soil and waste solution for Jesus College



Alumas's Harmer SML lightweight cast iron soil and waste system has been installed at Jesus College, Cambridge. Recent developments mean the Harmer SML range now presents contractors and specifiers with superb design and installation benefits, while advances in cast iron technology ensure products are fully attuned to modern construction needs. The system is durable, recyclable, quick and easy to install, and has British Board of Agrément Certification.

www.harmerdrainage.co.uk

INSTARMAC-ULTRASCAPE Permeable paving helps combat flooding



Ultrascape's new permeable paving system, SUDScrete, is now available, offering an eco-friendly porous sub-base for areas such as tree pits, footways and driveways. Permeable paving systems are designed to offer an alternative to non-porous flexible or rigid paving constructions. SUDScrete contains recycled glass to help drainage and water management, reducing pressure on sewerage networks and the threat of flooding – a topic high on the local authority agenda.

www.instarmac.co.uk

TUSCAN FOUNDRY Strong and long lasting cast iron rainwater systems



Tuscan Foundry Products' cast iron rainwater systems are renowned for their strength and longevity, and provide a low maintenance product. Tuscan Foundry Products has replicated traditional profiles to replace failed sections of original Victorian rainwater systems. In total, Tuscan Foundry Products has 19 different profiles, three pipe profiles and over 100 ornamental rainwater hopper heads.

www.tuscanfoundry.co.uk

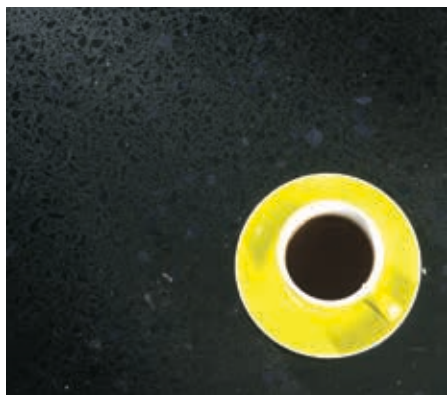
Interiors & Bathrooms

HI-MACS TANGLE_ONE table is attractive, striking and functional all in one



Dutch designer Alex Groot Jebbink introduces his first piece of furniture: the table TANGLE_ONE, which comes onto the market under the label a-LEX. The thin surface with its sleek, sharp lines evokes a bird's wing. The legs are made of solid antique oak which contrasts with the modern solid surface HI-MACS® to create an attractive, striking and functional design. The table is a meeting space, a work space, a space for having drinks or food: it has a multitude of functions. www.himacs.eu

GRANITE TRANSFORMATIONS Black Sapphire sparkles in three new colours



The popularity of black worktops means the inclusion of Black Sapphire among three brand new worktop materials from Granite Transformations should go down well with homeowners. New Black Sapphire highlights deep, stylish black with fragments of deep blue and mirror fleck; Royal Beige adds a shimmer of beige, quartz, grey, silver flecks and mother of pearl; while Pietra Serena elegantly fades to grey, with pale grey, misty browns and pinpoints of steel. granitetransformations.co.uk

CROWN PAINTS Green is the colour, football is the game



Green was always going to be the colour of choice when the most sustainable football club on the planet opted for a fresh new look. To enhance the vision of chairman Dale Vince OBE, of turning Forest Green Rovers into the ultimate environmentally-friendly venue, Crown Paints' Specification Services painted feature walls in the reception area a shade of bespoke 'FGR Green'. Created specifically for the club to boost Rovers' sense of identity the signature colour was offset with grey and white colour. www.crowntrade.co.uk

DRU FIRES Global gas fires come in free-standing and built-in options



DRU Fires has added new models to its growing range of mid-priced, Global contemporary gas fires. Global Beu is a classic, free-standing gas stove with a conventional flue, designed to connect to a Class 1 chimney or be installed into an inglenook chimney. It is available in black or ivory finish with Ceraglass interior and runs on natural gas or LPG. The Global 60i is a classic rectangular gas fire with log or stone fire beds and a smooth black interior. www.drugar.com

TWYFORD Definitive new commercial product 'bible' launched



Twyford Bathrooms has published its first commercial products guide, for complete range of bathroom, sanitaryware and brassware products for the sector. Brimming with designed-in functionality, the colour-coded sections cover WCs, washbasins, brassware, stainless steel, Doc.M packs, baths and showering, urinals, and fireclay. Each product-per-page has bulleted product descriptions, key benefits and features, product codes, drawings and dimensions. www.twyfordbathrooms.com

GAIA Experts in hydronic and electric underfloor heating



Focusing on providing a comprehensive range of high quality underfloor heating (UFH) systems, Gaia (formerly DEVI Electroheat) designs, supplies and installs hydronic UFH as well as the electric alternative. The hydronic, ultra-efficient wet, UFH system is suitable for a wide range of applications and provides high comfort levels by circulating water at low temperatures through a series of pipe loops laid within a screed, or between timber joists, beneath the floor. www.gaia.co.uk

AET Flexible space air conditioning is the answer to height restricted refurb



AET Flexible Space has supplied under floor air conditioning (UFAC) equipment to a high specification refurbishment in Soho, London. Conversion of a heated-only building into fully air conditioned commercial office space had to retain the aesthetic values of period architecture. UFAC was specified to overcome height restrictions, unique structural elements and floor plate configuration, while maintaining a minimum floor to ceiling height of 2.6m. www.flexiblespace.com

MULTIKWIK Bathroom products make spotless appearance at London hotel



Spotless bathrooms with a funky modern feel are a key selling point of the Qbic Hotel in London's buzzing Brick Lane, where M&E contractor Flo-Heat used products from the new Multikwik range of concealed bathroom frames to fit wall hung suites easily and quickly. With a high volume of bathrooms to complete, and tight timescales, Flo-Heat specified the frames for wall hung WCs and basins along with flush plates, plus soil and waste pipes and fittings. www.multikwik.co.uk

General

KINGSPAN TEK Helping hand for the zero carbon Hanham Hall



The Kingspan TEK® building system has been installed as part of the walls and roofs of 185 new properties at Hanham Hall in South Gloucestershire, helping to form one of the UK's largest zero carbon developments. Kingspan TEK® building system panels comprise a high performance insulated core sandwiched between two layers of Oriented Strand Board type 3 (OSB/3) and were designed and factory pre-cut to the project's requirements by the firm's delivery partner, Kingspan Timber Solutions. www.kingspantek.co.uk

BAUDER Hethel Engineering Centre revitalised by photovoltaic energy



Bauder's Thermoplan single ply membrane was chosen for the 2,500m² roof to the BREEAM Excellent Hethel Engineering Centre in Norfolk, as the client wanted to meet very high sustainability levels and use renewable technologies such as photovoltaics. Robust wind uplift calculations were undertaken to ensure the new roof could resist the weather at its exposed location, and the long lasting and environmentally friendly Thermoplan was selected. www.bauder.co.uk

ANCON Three additions to the range of insulated balcony connectors



Construction fixings specialist Ancon has extended its existing balcony connector range to include three new thermally insulated systems designed to minimise the effects of cold bridging at concrete to concrete, concrete to steel and steel to steel interfaces. The new systems, called Isotec, STC and STS, are designed to provide an effective thermal break while maintaining full structural integrity by transferring moment, shear, tension and compression forces at the joint. www.ancon.co.uk

APL StrongBak and Tritherm, excelling in industry's large projects



At the huge boiler house for the Biomass Power Station at Blackburn Meadows, Sheffield, black external cladding was installed over the APL Tritherm™ spacer system which in turn was fixed to the APL StrongBak™ structural wall framing system. This combination forms an APL Slimwall™ construction, which has been independently assessed as saving up to 45% on carbon emissions and 28% on annual energy consumption. www.archprof.co.uk

A PROCTOR Wraptite Tape seals the deal



Wraptite Tape has been used for a project of seven new tower blocks in Alperton, London, by Simco External Framing Solutions. The tape was needed to create a permanent air-tight seal of the membrane overlaps. Easy to work with and having excellent sealing performance, Wraptite is an air-tight, tear resistant tape with high vapour permeability suitable for internal and external applications. It fully bonds to most standard substrates, suppressing air leakage around joints, openings and penetrations. www.proctorgroup.com

BOON EDAM Secure but friendly entrance for University of Birmingham City



Boon Edam is to provide the main entrance for the new University of Birmingham City Phase 2 building. As a 'front door' to the university, entry security had to be considered at design stage. Boon Edam will install a bank of Speedlane 300 speed gates at the entrance, offering simple but effective security while maintaining user friendliness. The gates help receptionists and security guards keep track of staff and students while ensuring only authorised visitors pass through. www.boonedam.co.uk

COXDOME Rooflight delivers daylight for bespoke office pods



Archipod, which serves the growing trend for working from home, is using circular Coxdome rooflights to bring daylight into its customised spherical office pods. The Coxdome Circular Rooflight comes in sizes from 600mm – rising in 100mm increments – to 2200mm diameter. With double, triple or quadruple skins, the domes are manufactured from 3mm polycarbonate and the upstands from glass reinforced plastic. Glazing is clear, diffused, opal, or cool & clear. www.jet-cox.co.uk

DOW BUILDING Styrofoam manufacturer offers Part L 2013 summary



Styrofoam manufacturer Dow Building Solutions has released a new, independent publication summarising key changes to Part L of the Building Regulations, which come into force from April 6 2014. Authored by Huw Evans, the paper describes key changes to Part L of the Building Regulations introduced in 2013 and 2014. The changes are a further step towards the government's commitment to reduce CO₂ emissions to 80% below 1990 levels by 2050. www.styrofoam.co.uk

General

GLASS SOLUTIONS Stamp of approval for window replacement programme



One of the world's largest sorting offices, at Mount Pleasant in London, has undergone energy-efficient window replacement by glass and glazing specialist Glassolutions. Render was replaced and integrated into a new Technal MX curtain walling system incorporating SGG Planitherm Ultra N low-E glass. This high performance thermally insulating (low-E) glass offers both low U-values and unrivalled neutrality. Its coating is highly durable and easy to process. www.glassolutions.co.uk

KALZIP Overclad solution for spectacular Bolshoy Ice Dome at Sochi



Over 22,000m² of tapered Kalzip aluminium standing seam sheets were used to create the weatherproof building envelope of the spectacular 12,000 seater Bolshoy Ice Dome that was used for the 2014 Winter Olympic Games at Sochi in Russia. The dome's Kalzip aluminium roof is overclad with pearl-coloured aluminium composite panels studded with LEDs to produce a 'glowing' envelope that reflects both the environment and the continual changes of daylight. www.kalzip.com

NORBORD Timber framer favours Sterling OSB



Aberdeenshire timber frame and self-build kit specialist, Caledonia Homes, can offer its customers a truly home-grown product. One of its principal raw materials is Sterling OSB, made less than 100 miles away at Norbord's Inverness factory, from locally grown timber. Sterling OSB is used in a variety of roles on Caledonia's homes; as a sarking board for pitched roofs, as a sheathing board for insulated timber frame panels and as a gable panel and as a former for bellcast mouldings. www.norbord.co.uk

SIKA SARNAFIL Success assured for Newcastle College's green roof



The Sarnavert green roof on Newcastle Sixth Form College's new £22m facility is flourishing thanks to Sika Sarnafil registered contractor European Roofing Systems. ERS recommended a sedum blanket roof, and Sika Sarnafil's S327-12EL single ply membrane in light grey to cope with the metal standing seam detailing. Sika Sarnafil membrane is more flexible than metal and the detailing was much more easily managed using its heat-welded system, said ERS. www.sarnafil.co.uk

XELLA SILKA offers bigger blocks for quicker build times



SILKA Elements large format calcium silicate blocks are manufactured in sizes up to 1000 mm by 645 mm. Suitable for load bearing and non-load bearing walls, they offer excellent sound insulation, fire resistance and a far faster alternative to both blockwork and steel or concrete frame. Xella supplies working drawings in which each block is identified according to its designated location. www.xella.co.uk

STRUCTURA Kalwall's highly insulating curves flood daylight



This Canadian Mausoleum is flooded with daylight achieved by imaginative use of the highly insulating Kalwall translucent system. It dramatically demonstrates how the panels, normally supplied flat for cladding, can be used in a completely different way with the Kalcurve® variation. Apart from new build, Kalwall is increasingly used for the refurbishment of cladding or rooflights on aged buildings. www.structura-uk.com/kalwall

BLACKDOWN SSE Hydro's Green Roof challenges solved



A striking Blackdown Green Roof has boosted the green credentials and supplied an attractive feature at Glasgow's SSE Hydro landmark venue. A thick, hardy green mat of Lonicera Nitida 'Maygreen' shrubs, planted over the low level 'skirt' above the arena entrance, is permanently fed and watered with minimal manpower by an automatic irrigation system. The undulating profile of the roof, varying in pitch between 8 and 52 degrees, also required an innovative solution. www.blackdown.co.uk

AIR DESIGN Sounds of war ring loud and clear at Bannockburn Experience



Air handling and heat recovery specialist Air Design is helping give visitors the full experience in a Scottish heritage centre that commemorates the Battle of Bannockburn. When specifying the air handling units required for the centre's HVAC system, M&E contractor FES stipulated low noise as a fundamental requirement. The units installed feature a single phase AC backward curved fan with 45mm double-skinned panels, mineral wool infill and silencers. www.air-design.com

DR SERVICES Dramatic edge protection for glass balustrades

Thanks to its patented DR-yR SHOE, DR Services can not only create glass balustrades that are elegant and unobtrusive, but is also able to meet the highest level of barrier load condition at 3KN. Furthermore, thanks to the Harlow based architectural glazing specialist's extensive experience across all the sectors, the balustrades can also be specified to comply with the fullest extent of DDA legislation. The shoe can be bolted to either the face or edge of the floor slab.

www.drservices.co.uk

KEMPER SYSTEM Helping Huddersfield Uni build on biodiversity

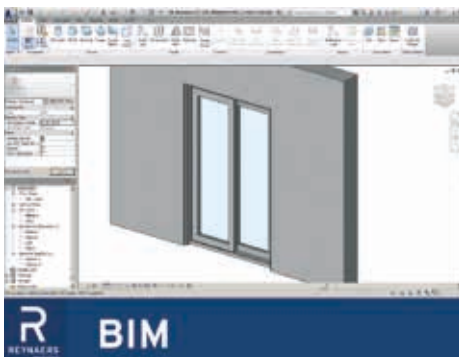
Liquid roofing and waterproofing specialist, Kemper System, has collaborated with a roofing contractor and green roof specialist to create green and warm roofs for four new buildings at Huddersfield University. The group developed roof systems to take account of different roof levels, aspect and bio-diversity of planting. Kemperol V210 cold liquid-applied waterproofing membrane was used with a 'blue roof' drainage system from green roof supplier ABG.

www.kempersystem.co.uk

SCHUECO Aluminium window has acoustic/thermal insulation and solar shading

New to the Schueco AWS aluminium window range is the high performance AWS 120 CC.SI which combines exceptional sound and thermal insulation with integral solar shading. The window is officially Passive House certified when appropriate glazing is used and is available as tilt/turn, side-hung inward opening or combined with fixed lights. Its composite construction has an inner and an outer vent with a blind in the cavity.

www.schueco.co.uk

REYNAERS Building Information Modelling library launched

Reynaers has released its latest BIM (Building Information Modelling) library, enhancing collaborative partnerships. Based on Autodesk® Revit, the system provides fully compatible models of Reynaers' systems for building designs, plans, and simulation. Accessible via the Reynaers extranet, the library includes product data, operation details, maintenance information, guarantee data and web links in a downloadable digital format.

www.reynaers.co.uk

EUROBOND NRG panels light the way for energy savings

Eurobond Laminates' new NRG wall panel gives energy savings of over 8% per annum for a building's life, a reduction in CO₂ footprint and a positive contribution to a BREEAM assessment. The panel has a special high reflectivity internal steel face that maximises daylight reducing reliance on artificial lighting. Available on Europanel, Rockspan, Rainspan and Firemaster panels in a wide range of external finishes, it combine aesthetics, functionality and performance – plus low environmental impact.

www.eurobond.co.uk

TORMAX New door drive has slimmest profile yet

Extending its range of automatic door operators, TORMAX has launched the iMotion 2302 sliding door drive. The 2302 has an especially narrow installation height of just 150mm, allowing it to blend seamlessly into the facade of almost any building. TORMAX iMotion technology delivers one of the most comprehensive door drives available. The new iMotion 2302 delivers a reduced-height operator, allowing a truly minimalist automatic entrance to be created.

www.tormax.co.uk

EUROBOND BIM library launched

Eurobond Laminates has launched BIM files for its range of stone wool core internal and external wall and ceiling composite panels. It includes material colours and COBie datasheet parameters with a wide range of construction details. Different file formats help ensure most BIM users can use them. The new BIM files – which include those for Europanel, Rockspan and Firemaster – are available on our new website – or on 02920 776677.

www.eurobond.co.uk

WINTTECH CWCT Section 9 Hose Testing & BS EN 13051:2001 Spraybar Testing

Spraybar Testing is suitable for open-jointed systems such as rainscreen cladding, unsealed patent glazing, opening lights or doors. Hose testing is intended for testing permanently sealed joints to ensure that the performance of the system has not been reduced by the fabrication and installation processes.

www.winttechtesting.com

Sign Up

David Archer, partner at Archer Humphryes Architects, gives us three of his specification favourites



RIBBED INDUSTRIAL GLASS

I grew up in a 1960s terraced house designed by Barry Fineburg. The ground floor was divided by full height sliding ribbed glass partitions. I always loved the refraction of the both light and image that played across the glass surface. We have detailed this material within our interiors in the Great Northern and AAYA restaurant. More recently we used it in the windows of The Chiltern Firehouse, rotated at 90° in each window light, an idea I saw used beautifully in Richard Norman Shaw's Cragside House. I never tire of using this material. preedyglass.com/



SUKABUMI LIMESTONE

We are completing our first resort hotel, which includes a five storey building on a tropical beach overlooking the Bay of Thailand. What allows it to fit into and add to its surroundings is the Sukabumi cladding. I know of no other building constructed using this stone and it will make our project, the Beach Resort in Koh Samui, unique. We had the idea when swimming in pools clad in the stone, with the play of light and water. It is reminiscent of Lake District slate but in the sun! The stone was sourced locally and set out by the contractor. thebeach-samui.com



MARQUETRY

Two aspects of our identity are an interest in history and a love of technology applied to contemporary craft. Using modern CNC technology and veneer presses we developed a marquetry floor tile for our Sans Souci Hotel in Vienna. Sycamore and wenge veneers created a beautiful patterned floor that was like a modern Versailles. This type of technology and decoration let us create interiors to reflect the detail, colour and beauty we admire in 18th and 19th interiors but previously thought inapplicable because of labour costs. tekne.co.uk

...Sign Off

Jan-Carlos Kucharek enjoys three of this issue's out-takes



OINK IF YOU'RE VIÑOLY

Immortalised by Pink Floyd's 1977 album *Animals*, Giles Gilbert Scott's Battersea power station is burned into our cultural consciousness – ensuring all ideas for its redevelopment after it closed in 1983 were always whacky, misguided or eye watering expensive. Current developer SP Setia and Sime Darby got Rafael Viñoly to develop the masterplan, which will not offer all three. Architect of the \$1.5bn Tokyo International Forum, he plainly has the gift of the gab as most of Phase I's 800 units sold off plan in days. Quite what mark he will leave here remains to be seen, but if it's nothing more than the marketing suite recently craned onto its roof, pigs might fly.



LITTLE AND LARGE

As a mark of how petit bourgeois political activism is now, a local lobby in one UK town whipped residents into such a frenzy that it prevented a Tesco Express moving in – in favour of a Little Waitrose. It makes you want to take to the streets in support of councils like Woolwich, who gave permission for a Tesco so huge that Sheppard Robson installed a whole town on top of it, thus rendering the facility technically invisible to those it's supposed to piss off so much. Meanwhile, at Greenwich's egg-shaped, eco-friendly Sainsbury's, despite a call for spot listing, the council ratified its decision to 'chuck out its Chetwood' in favour of a sprawling IKEA. Gravadlax all round!



ZAHA HEIDI'D

In 1881, when Joanna Spyri wrote the story of a little orphan girl living with her grandfather and some goats in the Alps, she can never have conceived the name would become synonymous with Swiss online fashion house Heidi. She'd also probably be raising a teutonic eyebrow at the thought that when the firm decided to create a non-virtual identity in malls, it brought in Zaha Hadid to design its Staron retail totems. But one wonders how in tune she is with the 'back to basics' story of the Heidi character? Hadid is, after all, synonymous with tottering around in Issey Miyake and Manolo Blahniks rather than cheesecloth and clogs. Parametricism – it's the new teleology!

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**For more information call 0808 100 2008
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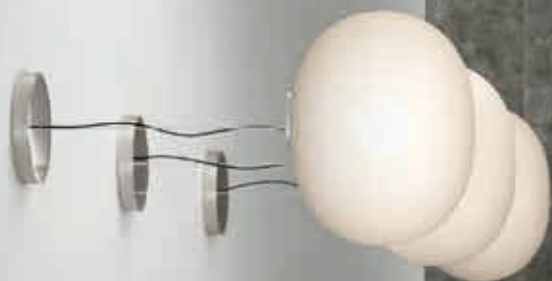
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