

PIP

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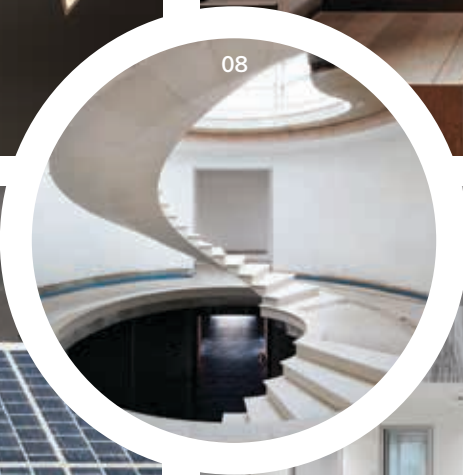
...how disappointed I was when I first saw Zaha Hadid's IBA housing. To be honest, that wasn't why five of us had spent 12 hours in a mini racing to Berlin. It was the day after our Bartlett Diploma show in 1995 and the aim was to make it in time for a sektfest aboard a party boat on the Spree for the opening night light-up of Christo and Jeanne-Claude's 'Wrapped Reichstag'. I'd missed The Wall coming down, so wanted to make damn sure I'd see one getting covered up.

The next day, no doubt hungover, I went expectantly to Stresemannstrasse and my heart sank. Perhaps I had spent too long staring at Hadid's paintings; black and blue canvases of a bruised world in warped isometric; a dull skin from which designs broke free in a riot of red, orange, turquoise, international blue. But the block in front of me seemed tethered, beached, lumpen; a reality that bore no relation to the image. I felt that, unlike Christo, she'd failed

to deliver on the possibility of something new.

Later I recognised I'd underestimated her, and saw the industry would take time to reach the levels to realise her vision. A world where museums could rise free of the ground; where floors, as if oiled, would slide past each other, where forms could slip down and peel off mountains. In her paintings, Hadid dared us to believe buildings could fly – that's unforgettable. ●

Jan-Carlos Kucharek, Editor



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Cover image: Supreme Court of the Netherlands by KAAAN Architecten, photographed by Fernando Guerra

Compendium



Flat, free frankfurter

South Korean giant LG used Frankfurt's recent Light+ Building trade fair to showcase its latest product and, like the city's eponymous sausage, it's got a bend to it. The firm has developed a 0.32 x 0.32m OLED panel that connects to others to create a single surface of consistent light. The panels are flexible and unshatterable, so bending OLEDs around physical forms becomes possible. Forget Corb's dictum of architecture as 'the masterful, correct and magnificent play of masses brought together in light', how about the actual masses as light?

Set in stone

Haddonstone seems responsible for a classical resurgence, if its PR's roll call of recent clients is anything to go by. Names such as Adam Architecture, Robert AM Stern and even Sir John Soane's Museum suggest the firm's attractions, even for those long dead. Some of the aforementioned would claim the classical language is still alive and well, such as in this Octagon development at Wotton Place, Esher – positively taxidermied with classical details.

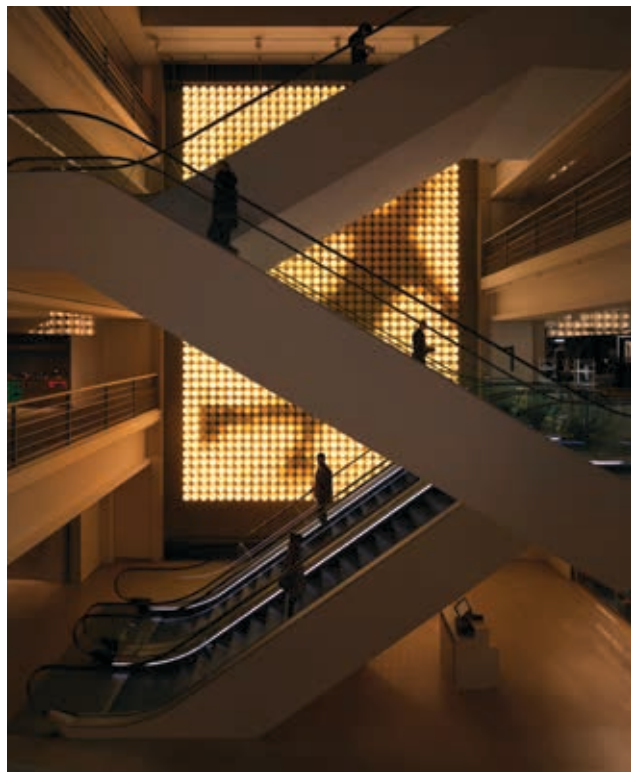


Ooh la light

French department store chain Galeries Lafayette has unveiled a huge new artwork in the menswear department of its flagship Boulevard Haussmann store in Paris. Designed by French artist Xavier Veilhan, Light Machine is 13m high and 9m wide and hangs behind a bank of escalators in the atrium. The artwork consists of 1536 custom-made 250mm diameter light globes containing 6144 LED lights. The globes depict a film that has been pixellated by the globes to the edge of abstraction, creating a ghostly after-image in amber and black, allowing, as Veilhan explains, 'a more poetic and dreamlike experience'. One wonders if that idea will be extended when London's AL_A starts remodelling the 40,000m² store in 2017.

The mind Boggles

With a name that instantly evokes the wonderful lines of Italian car design, specialist metalwork fabricator Mazorati Ronchetti has been busy in London, courtesy of Bogle Architects' office refurbishment at 140 Fenchurch Street. Highly polished steel panels extend from the reception back wall to the exterior facade, hopefully safely reflecting away any Walkie Talkie death rays that might still be lurking in the area.





ALAN MCATEER

UPCOMING

Design in Mental Health, NCC Birmingham, 17-18 May

Clerkenwell Design Week, various venues, London, 24-26 May

Vision London, Olympia Central, London, 2-3 June

Seminal seminary

Perhaps only such dereliction could excite in the British mind notions of sublime Romanticism. Despite its parlous condition, Gillespie, Kidd and Coia's 1966 St Peter's seminary was used as the backdrop for Hinterland, Scotland's 2016 Festival of Architecture's public art launch event. With monochromatic light installations, projections and a specially commissioned work by composer Rory Boyle, performed by St Andrew's University's St Salvator's Chapel Choir, it was, by all accounts, a sight to behold. We'd expect nothing less from the masterpiece and its RIBA Gold Medal winning designers Isi Metzstein and Andy Macmillan – reputedly dubbed 'the alter boys' because they were constantly changing the details on the modernist icon.

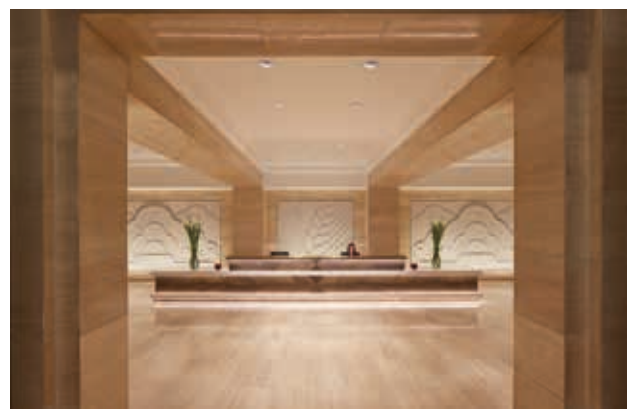
From the Earth to the Moon

Jules Verne's classic novel *Journey to the Centre of the Earth* might need updating now that Swedish solar lighting firm Parans has developed 100m long cables that technically allow full spectrum sunlight to be transmitted 30 floors down into the ground. Verne had an eye for the future, but even he couldn't have predicted London property values being such that the well-to-do might prefer to luxuriate in a jacuzzi deep underground rather than floating in a hot air balloon high above it.



Boudoir boulder

Despite its demure blushing pallor there's something of the night about Italian firm Antolini's Rose Quartz, part of its Precioustone Collection. Its crystalline properties become most evident when it is backlit, giving the stone its dusty pink and ivory colour. Where should one avail oneself of this visceral, flesh-like hue? The press release suggests it's 'ideal for an intimate and refined bedroom space that can help you establish a peaceful haven'. Obviously a material to be specified for the higher end development, it can't be appealing to the likes of me, whose domicile is less 'One Hyde Park' and more 'Mr Hyde' – probably the only person more amenable to an urgent makeover than myself...



EDMUND SUMNER

Re-deco-rate

Architect Aukett Swanke has given London's 1938 Adelphi Building a new lease of life by refurbishing the art deco icon as state-of-the-art offices, highly visible from the River Thames. For the grandly proportioned travertine-clad lobby, the firm commissioned huge reliefs for the back wall, based on exploded details of original carvings and sculptures on the Adelphi's exterior. In keeping with the building's sense of Great Gatsby-like exclusivity, private members club NeueHouse will be taking two floors of space, in its first foray outside the US.

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Is it getting too easy?

We've tried to do many things with software in architectural offices over the last 20 years. I used to enjoy challenges such as negotiating between Autocad 12 and a pen plotter over large scale drawings with line thicknesses in the right place. Or a 3D render with shadows and a bit of reflection finished on time, rather than three weeks after the final presentation. In the last couple of years the challenges have mostly disappeared. In 2016, the office Part I can rustle up a 900Mb Revit model with 45 plans, 16 sections and a quick 3D printed model. The system doesn't fall over when he emails the whole folder to the project team. It really makes me feel old.

About two years ago I was asked to help an urban design practice in London implement Revit as a masterplanning tool. It didn't seem much of a challenge. A couple of boxes, thrown at the general direction of a site with the technical accuracy of a charcoal sketch, should be well within the range of most halfway decent CAD systems these days.

As with most aspects of London, it turned out

to be a lot more complex than you'd expect. Land ownership alone is a sticky web from which we may never escape. You'd think that some time in the last 2000 years somebody could have sorted out a straight line between owners or a property peg to work with. It's not like the City hasn't burned down a couple of times and offered the opportunity. But here we are, we have invisible viewing corridors projected across London from St Paul's, turning even the neatest of sites into a mishmash without a parallel line in any dimension. Throw a couple of other elements into the mix, like a Tube line beneath a Roman road, tangled around a Victorian sewer, and you have some interesting constraints to manage.

Revit is usually reserved for the later stages of projects, but it has proved itself at a front end for us. Being able to collect and coordinate a vast amount of information about a neighbourhood within a single file has huge advantages. The ability to create building envelopes in 3D, schedule areas and visualise townscape impacts was obvious. Cutting blocks into discrete

components which can then be assigned custom parameters like ownership, project phasing and building use becomes remarkable.

The biggest asset has been visually managing and communicating data with custom filters such as automatically colour coding heights, densities or tenure. Each study requires a good deal of thought and time to create, but once the filters, schedules and sheets are set up, they pay dividends as the design evolves, exposing the invisible complexities of each design decision.

However, while it's really exciting to get drawn into Grasshopper or Dynamo each time a challenge is posed, we've accepted that most designers are not programmers and don't have a week spare to unravel somebody else's spaghetti code. We're after solutions robust enough to survive multiple years and many hands. It's hard enough to make sense of a file using design options, worksets, filters and families. If we can solve a problem using standard software as intended, it makes good sense for all in the end. ●

Vaughn Horsman is a consultant at Farrells

Books

Buy at ribabookshops.com



Beyond Live/Work: The Architecture of Home-based Work

Frances Holliss, Routledge. 230pp PB £29.99

The bane of the planning world, the live/work unit, is the subject of Holliss' quite riveting book; and you have to say that the case she builds up is quite compelling. Starting with the tradition as a way of life, the author traces how live/work developed as an aesthetic concept from the 19th century to the modern day. A reading of live/work both as a social reality as well as a valid urban typology follows, with an extensive chapter on the legal framework both here and in the US that seeks to limit its roll-out, and why that may be. The sustainability of live/work is then discussed, pulling in heavyweights such as Jan Gehl to fuel the argument for urban work and living practices that are less stressed, less congested and less commuted. An in depth and well illustrated study for clients, architects and policy makers of this most aspirational of urban living types.



Generative Design: Form-finding Techniques in Architecture

Asterios Agkathidis, Laurence King. 160pp PB £9.95

Time was when you just waited for Peter Eisenman to come up with another project for a corporate HQ on a seismic fault line in Asia or a conference centre revealing the 'layers' of a site – but now it seems like everyone's at it. Agkathidis is lecturer of digital design at Liverpool School of Architecture and has pulled the book together from undergraduate projects by his research-led design unit. Before we go all madly morphogenetic, he is at pains to point out that the programme was designed 'to satisfy learning outcomes specified by the RIBA'. In an architectural world now dominated by some extreme parametric design approaches and the likes of Oculus Rift, the comment seems slightly apologetic about his findings. I mean, I've not seen anyone at RIBA wandering around with virtual goggles on, although I have spotted a Google Glass.



Prototyping for Architects

Mark Burry and Jane Burry, Thames & Hudson. 272pp HB £36

As founders of RMIT's Spatial Information Architecture Laboratory, and with Mark Burry using his digital expertise in the completion of Gaudi's Sagrada Familia in Barcelona, the authors' familiarity with the subject is a given. In this copiously illustrated book, they guide us through the abstractions of computer generated design by grounding the reader firmly in the process of physical modelling. To show the importance of prototyping in establishing a relationship of a design with its real world context, the authors consider the design approaches of some of the most famous and the smallest cutting-edge practices out there. The book proves inspirational, both in helping us look to the future as well as reminding us of Gaudi's own physical installations of reversed chains – the inspiration for his own ground-breaking architecture.

Stone spiral stair



AGNESE SANVITO (2)

What: 320° self-supporting stone stair

Where: Manchester and elsewhere

This stair is as remarkable as it looks. It is a 320°, self-supporting staircase made in solid limestone. No supports, no cantilevers, no tricks of the eye; just snaking through space, in two identical flights. Oh, what the Georgians would have given for this kind of elegance.

Designed and constructed by The Stonemasonry Company in collaboration with Webb Yates Engineers, the 320° stair is believed to be the first of its kind in the world. It is the team's latest innovation aimed at proving how, as the firm's project manager Pierre Bidaud puts it, 'there is still scope to use stone as an innovative, modern load-bearing material'.

Based on reinforcement and post-tensioning, the staircase – in a private new build house by RAL Architects in Manchester – rises through two flights of 22 steps. Each tread is 1.3m wide and weighs 150kg. Each flight measures 3.7m from top to bottom and has a diameter

of 3.4m. They are thinner than corresponding concrete structures, with the advantages of architectural stone for detailing.

The Stonemasonry Company's first collaboration with Webb Yates was in 2009 on a 70° stone staircase. The team has upped the stakes on every subsequent project, to 90°, 180°, 280° and now 320°. Each flight in this latest project weighs 3.3 tonnes and costs about £60,000. They are held together by two fine 12mm diameter post-tensioned steel cables, threaded through the treads 'like a string of pearls' on site. Each was built up step by step using a temporary supporting blockwork wall. The cables were attached to hidden metal plates at the top and bottom of each flight as it was completed, creating a rigid, floating structure.

'Although it looks stunning, there is no magic here; the staircase is actually very simple,' says Bidaud. 'We are using 1000 years of

LEARNING THE CRAFT

The Stonemasonry Company was founded by Frenchmen Alexandre Bertrand and Paul Henri Teillant in 2009 and sits at the end of the limestone belt in Wyomondham, Leicestershire. 'There is more scope for exciting work in the UK than France,' explains Bidaud. 'France has a rigid construction design process that does not allow such a flexible use of natural materials'. Today the team comprises 22 people, but the company could not exist without its very specific training in France, which is more holistic than the equivalent in the UK. The founders and Bidaud were trained as part of Les Compagnons du Devoir et du Tour de France, a guild of journeymen and women transforming traditional materials such as leather, wood, metal and stone. It takes between six and ten years to qualify as an 'ancient', and trainees are required to travel through France and western Europe working on live projects as they go. The first two years are spent as an apprentice, learning on the job by day and attending evening and Saturday workshops and lectures. Unlike in the UK, where The Stonemasonry Company employs architectural draughtsmen to draw, these French stonemasons are fully absorbed in their craft, learning its full breadth, from drawing to building.



Above Stone allows thinner flights than concrete.

experience from our stonemason ancestors and combining this knowledge with modern engineering. To get the 320° staircase from the drawing board to reality, we needed to develop new thinking not usually part of a stonemason's toolkit – we use software modelling and we advanced our methods of physical testing. Much of the work is upfront research, making models and prototypes.'

The firm has 48 stair flights on its order book, mainly in London, the Home Counties and the North-west, but also in France and Greece. ●

Technical information per flight

Turn: 320°

Steps: 22

Stressed load: 15 tonnes

Weight: 3.3 tonnes

Cost: £60,000



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Kameha Grand hotel, Zurich



Below The Kameha Dome events space.

Below right The Sushi restaurant picks up on natural timbers and shadow puppetry references.



From the outside the Kameha Grand looks relatively restrained. It's a very different story inside, and the design exuberance spills on to the floors

Words: Pamela Buxton Photography: Francesco Secchi

With walls resembling giant slabs of chocolate, huge cow-bell lamps and bank vault style mini-bars, Marcel Wanders' interior design for the Kameha Grand Zurich makes full use of references to the new hotel's Swiss location. The result is an extravaganza of colour and pattern that may well have minimalists reaching for the grappa.

Every element is used to the max, including the hard and soft flooring, which encompasses everything from lavishly patterned bespoke carpets to a bedroom floor designed like a running track.

Built in the new Glattpark business district

between the airport and the city, the 23,700m², five-storey hotel was designed by American practice tecArchitecture and is intended for business users as well as tourists. This perhaps accounts for a double-skinned exterior that is comparatively sober, despite being enlivened by patterned mullions intended to evoke a dress flowing across the facade.

But the real fun is inside, where Wanders' typically ebullient approach is given full rein.

Carsten Rath, founder and CEO of the Kameha Grand chain, wanted a statement design that 'emotionally touched' the guests and 'spoiled their eyes'. He naturally turned





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Above from left The Workout Suite, Fairplay Suite and 'blonde chocolate' boardroom entrance area.

to the Dutch designer, whom he'd worked with previously, to fulfil this brief.

'Marcel always has the big picture in mind but is also very much into details, which I respect him for,' says Rath.

Wanders' aim was to create a 'must-see destination in Zurich' by using aspects of Swiss culture in unexpected ways.

'A hotel should entertain, inspire and stimulate,' he says. 'We want the guest to have a lifestyle experience, by creating a place full of surprises and beauty.'

With such an abundance of attention grabbing, Swiss-themed features, you might expect the flooring to take a back seat. Instead it is an integral part of a design that is deliberately diverse in mood, from the exotic Middle Eastern vibe of the Shisha lounge through to the playfully themed suites and the dramatic Kameha Dome events space. Lobby areas feature rugs with intricate Guilloche rosettes and metamorphosis patterns as well as others designed to look like giant golden coins. All give the golden cow-bells and quilted walls a run for their money.

But perhaps the most significant flooring component of the hotel is 8000m² of bespoke Axminster carpet, made in the UK by Brintons following a year-long collaboration with the Dutch designer.

This was installed throughout the standard bedrooms, conference rooms and corridors, along with 6000m² of underlay, and also features in the bedroom suites.

'The role of the carpets in Marcel Wanders interiors is to tie all the design elements of the interior together,' says Wanders. 'Remarkably, in the Kameha Grand Zurich, the carpets fluently incorporate the many elements of Swiss themes, the hotel logo, Brintons' know-how and Marcel Wanders' signature patterns into a gracefully cohesive whole.'

Brintons' head designer Andrew Howell says the project was a fantastic opportunity for the company.

'The collaboration process with Marcel Wanders took a year in total from creation to completion and we worked closely with Marcel's team to interpret his hand-drawn designs into electronic carpet patterns, which were then used to create the final carpets,' he explains.

'On this project we used state of the art jacquard looms, which sent the carpet designs electronically across to the loom from which we then weaved the physical carpet.'

The Axminster carpets are an 80% wool, 20% nylon blend and incorporate a weave of up to 32 individual colours to create the pattern. They are designed to last for 40-50 years.

'The wide range of carpets join together to create a cohesive walkway that guests can enjoy throughout the whole hotel, from boardroom to bedroom...The rich, floral inspired designs depicted in maroons and creams create a traditional Swiss aesthetic for the bedrooms, contrasted effectively against the monochrome, geometric inspired designs of the boardrooms,' says Howell.

In the business rooms, even the duller meetings will surely be enlivened by the triangulated large-scale carpet pattern, inspired by a silver wrapper around a chocolate bar and executed in sober colours to counterpoint the golden and dark chocolate wallpapers.

Along the main corridors, the hotel's floral logo, a Wanders-designed motif of flowers and tulips interlaced through branches, is interpreted in a geometric pattern of various greys to establish a calm ambience as guests enter and leave the room.

In the corridors leading to the meeting rooms, the flowers alternate between background and foreground over stripes of various widths. Within the 224 premium and standard bedrooms, a variety of intricate flora motifs are again combined with contrasting, striped borders.

But it's in the 11 themed suites that Wanders really ramps up the design volume, providing

Below Shisha lounge where the carpet is printed with the effect of overlaid Persian rugs.



With its frequent references to Swiss motifs, the hotel's interior establishes a distinctive identity at odds with the more anodyne approach of many international hotels

a visual overload of themed furnishings. In the Burlesque suite, deep red blooms on the carpet coordinate with red drapes, combined with dark chocolate wallpaper and sumptuous quilted walls and furniture. A lighter rose pattern is used in the Diva Suite, while in the Middle Eastern Suite, the carpet incorporates Arabic shapes and colours.

The Gentleman's Suite has a monochromatic theme with a similar carpet pattern to that used in the business rooms. A darker design with more saturated colours is used in the Poker Suite to evoke the feeling of being in a casino. In the Watches Suite, the carpet has a restrained black and grey heart pattern to offset the multitude of busy clockworks in the room. However the Workout Suite breaks with the use of carpet, featuring a section of running track-patterned hard flooring instead.

In the suite bathrooms, sober grey floor and wall tiling is used to offset exuberant chandeliers, as well as floor-to-ceiling 3D images printed on to glass, that refer to aspects of Zurich's heritage such as banking and clock-making.

After the luxurious texture of the rugs and

carpets, and the warm wooden floors of the restaurants, the monochromatic tiled floor of the Kameha Dome, the hotel's 701m² ground floor events space, is a complete contrast in tone. Here black and white tiles are combined with opulent red draped curtains and chandeliers to give a contemporary twist on grandeur. The tiles are arranged in a large-scale, pixellated pattern of the hotel logo.

With its frequent references to Swiss motifs, the hotel's interior establishes a distinctive identity at odds with the more anodyne approach of many international hotels. This bold use of pattern, especially on the carpets, chimes with current flooring trends in hospitality settings, according to Brinton's Andrew Howell.

'The carpets that we created in collaboration with Marcel Wanders for this project reflect a more adventurous and complex style of flooring within hospitality interiors,' he says. 'We have been working closely with designers to create more intricate carpets that allow flooring designs to become the main focus of the interiors.' ●

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1
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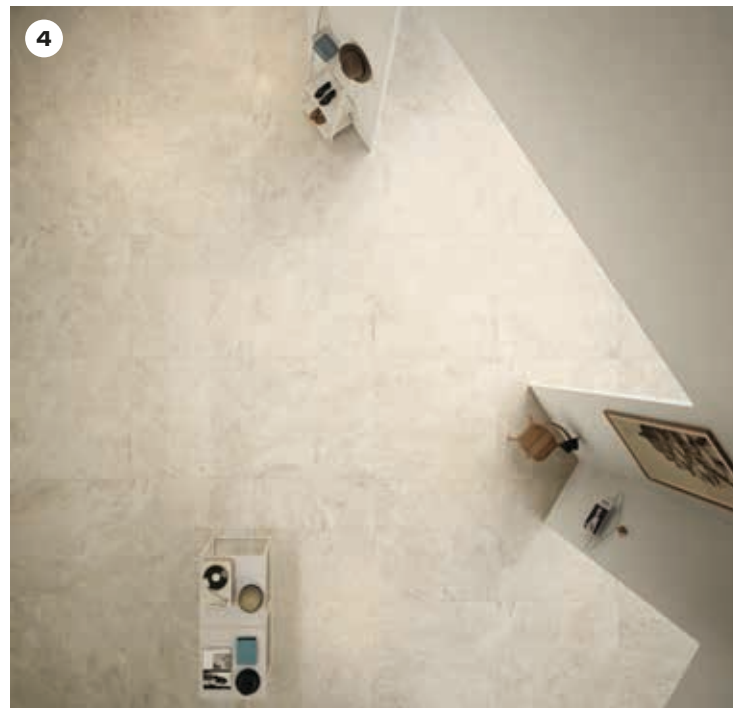
Here are some floors that would have made a real difference at celebrity guzzle-shack, Nobu Berkeley Street in London: a floor that sucks the carbs from your body through special plates in the red soles of your Louboutins; a floor that makes you highly visible to the right kind of paps if your career is on the way up; another that makes you invisible to the wrong kind of paps when your career is on the way down. However, management opted for Amtico's Limed Grey Wood flooring as its star-crossed stand-in for the previous Pergo laminate.

amtico.com

2
Stage floors
Harlequin

The Rite of Spring again, already? It seems only last month they were prancing around 'ere like demented peasants on a stag night. The only diva-like walkout likely to be seen during this rendition of Stravinsky's ballet is going to be for a wee or more ice cream, that's for sure, ducky. It almost makes you wish that Jack and the Beanstalk was still on. Even a fully 'Twanky'd up' Christopher Biggins could move with a bit more grace now that Amsterdam's Het Musiek Theatre's newly installed Harlequin stage floor is so well sprung. I said 'sprung'! Ooo, you are awful...!

harlequinfloors.com



3
Underfloor heating system
Gaia

The Rous family may have owned Henham Park in Suffolk since the 16th century, but that doesn't mean they are behind the times when it comes to building technology. Owner and developer, Hektor Rous, who returned from sheep farming down under to run the family estate in 2004, chose a Gaia wet underfloor heating system to warm up the power-floated concrete floor in the estate's 18th century barn. The choice obviates the need for radiators in the grade II-listed structure, now used for weddings and other celebrations, and stops the punters bleating on about the cold.

gaia.co.uk

4
Magnum XL floor tiles
Domus

'Darling, have you seen the sofa?' 'Yes, sweetie, I put it in the loft along with the armchairs.' 'Oh, is it "spring clean" time again?' 'Yes, the living room was looking far too cluttered.' 'So, the TV is up there as well, is it?' 'Yes, it's next to the dog's basket...' 'And the dog?' 'In the cupboard under the stairs.' 'I suppose it was shedding a lot of hair. At least we can see our enormous Magnum XL Lightweight Porcelain Slab tiles.' 'We could have anyway – at 3.2 x 1.6m they're bigger than the maid's room. And only 6mm thick.' 'Oh.'

domustiles.co.uk



5
Rubber floorcovering system
Nora

Who is the lady in red ascending the scarlet ladder? Why, it's Nora with her rubber flooring surface, rising up the russet runway at Ropemaker Place in the City. The shiny stair treads are preshaped in one piece to prevent dirt absorption and make this climbing crimson corridor easy to clean without the need for any extra sealant coatings. The floor coverings from the Norament range are also said to be quick to install, slip-resistant and comfortable to walk on. They come in other colours too – although as far as Nora is concerned it's red or dead.

nora.com

6
Parquet effect flooring
Karndean

Students at the University of Worcester may have noticed that free education has been replaced by tuition fees and grants by hefty student loans, while professional degrees guarantee them no more than years of debt and a career dealing with self-checkout snarl-ups at Asda. What they may not clock is that the 50-year-old parquet floor in their cafeteria has been replaced by Karndean's vinyl simulacrum, Auburn Oak Parquet. Whether that's a tribute to the product or the impact of large amounts of ever cheaper vodka on the student brain is hard to tell.

karndean.com



7
Underfloor heating system
Schlüter

You can tell this kitchen isn't in the UK. Who in this country would store 30 bottles of wine in the kitchen unless for a party, and even then you'd probably dump them on the island under the halogen spots. No, it takes a cultured continental European to build up a 'cellar' where vintages can mature despite their proximity to the corkscrew. Also on tap in this Euro kitchen is a fast-delivery water-fed underfloor Beckotec-Therm heating system by German firm Schlüter, which claims it's 30% more energy efficient than a standard radiator.

bekotec-therm.co.uk

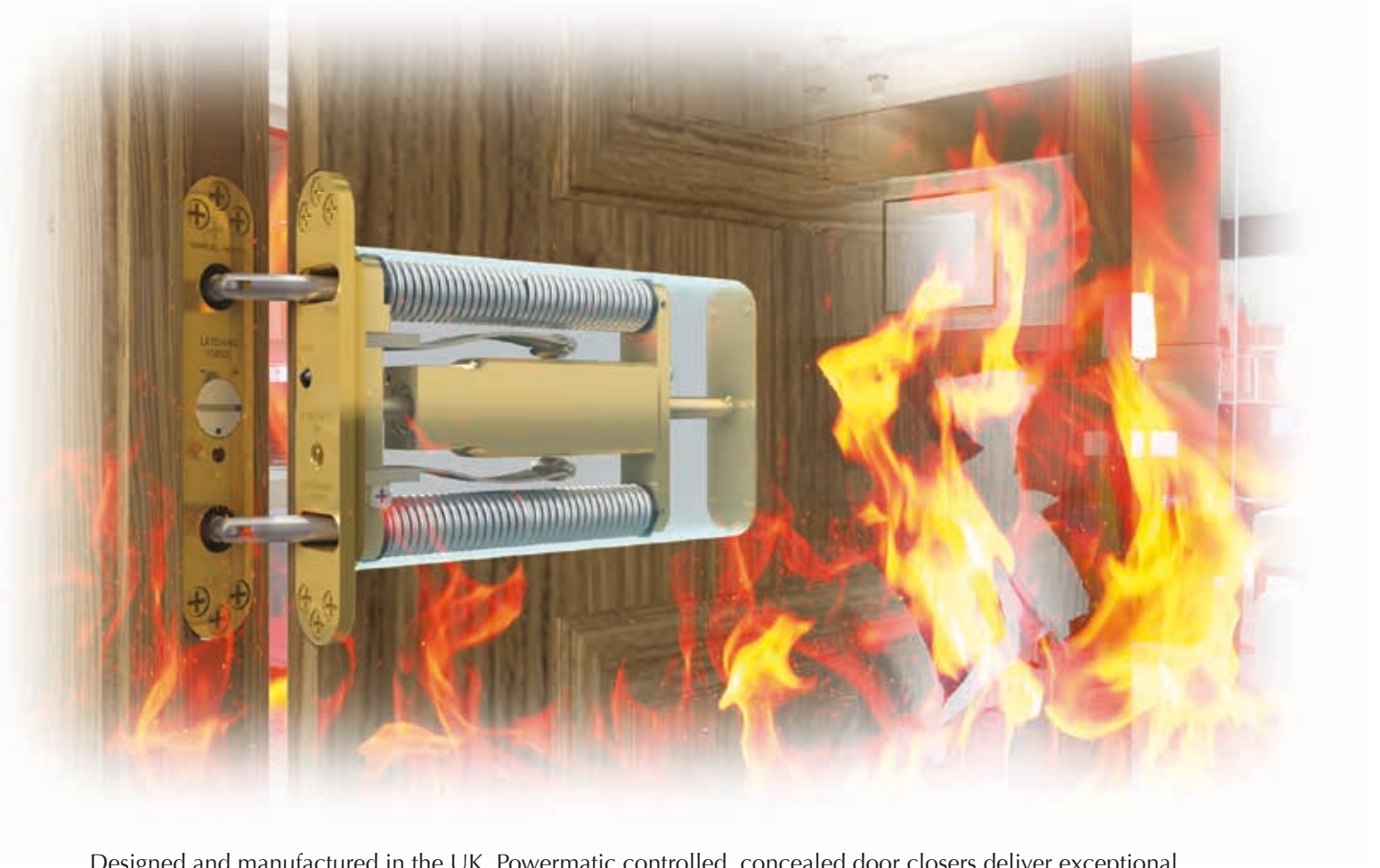
8
Patterned wood floors
Kährs

Looking at this picture, you might think the near right corner of the worktop is 50% larger than the nearside left and more than twice as big as the far right corner. But that would mean you'd somehow missed the revolution in perspective kicked off by Brunelleschi in 15th century Renaissance Florence, allowing flat images to replicate effects of binocular disparity. And, as you have also no doubt gleaned over the perspective of time reading this, the Kährs Chevron parquet-look planks are all the same size, just getting further away.

kahrs.com

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Build to rent sector is blossoming

Banish the image of seedy bedsits – the new private rented sector is focusing on innovation, design, sustainability and keeping its tenants satisfied

Words: Josephine Smit

What is it that makes today's build to rent homes so different, so appealing? The embryonic sector has become the new darling of UK housing, attracting attention from government, investors, developers and the media. That might surprise some, as only about 8,000 homes have been completed, but another 30,000 are estimated to be in the pipeline, all being delivered in the firm belief that – barring deterrents such as the Chancellor's surprise tax grab in the recent Budget – the private rented sector is firmly on the up.

The figures supporting that belief have been well rehearsed. With housebuilding totals continuing to substantially trail demand for homes, property consultant Savills has forecast that 1.2

million more households will need to be accommodated in private rented property by 2020. Up to now, private rented homes have largely come from individual buy to let investors, but build to rent operators have a very different market offer. For renters who can afford to make the choice – generally young professionals – an institution-led, private rental sector with purpose-built developments managed by professional operators offers the promise of escaping a landlord class whose image remains on a par with Rigsby, the seedy landlord of shabby bedsits in the 1970s sitcom *Rising Damp*.

Early players in the build to rent market, such as Essential Living, Fizzy Living and Grainger, have been joined by blue chips such

as Legal & General (L&G), which has entered the sector with big ambitions and a £600 million fund. According to the 2015 report *Build to rent – Funding Britain's rental revolution*, by the British Property Federation and law firm Addleshaw Goddard, UK institutions have now committed more than £10 billion to the sector.

The development pipeline alone makes it appealing to those in construction and architecture, but there are other attractions too. New build to rent clients are eager to differentiate themselves from private rented sector Rigsbys and to define their brands through their buildings as well as their service. Although some of them buy buildings off plan from mainstream developers, their business model bears little relation to that of the housebuilding industry, and their product is very different, focusing on factors such as innovation, design, and sustainability.

The science of design

Russell Pedley, director of architect Assael, says what is so different about working with build to rent players is their business model: 'What's changing for us from a design point of view is the client focus, which is on net operating income rather than capital value.' That brings a longer term perspective to every aspect of a development, from materials specification to placemaking, and changes the economics of sustainability and life cycle analysis.

Design matters, as testified by the 180 pages of the latest edition of the Urban Land Institute UK publication *Build to rent: A best practice guide*. It is becoming commonplace for build to rent players to research and interrogate the composition of their schemes. Such an intense focus does not create a restrictive working environment for architects, says Pedley. 'For us it's more rewarding to be focusing on the product and the place, and to be working for the operator. We've found it motivating.'

New mid-market developer Hub has 1,200 units in the London pipeline – a mix of market sale and private rental homes – designed by names that are not closely associated with mainstream housebuilding, including Newground Architects, MaccleanorLavington, shedkm and Studio Egret West. The architects were carefully chosen, says Hub development director Steve Sanham. 'We are not looking for



Left Fizzy Living's Lewisham Gateway scheme, designed by PRP.



Top Hub's triplex apartments at the Material Store, Hayes.



Above Hub's 152-home development in North Acton.

Fizzy works to keep rents affordable because build to rent success depends on keeping customers happy and in their homes

standard solutions. We want to work collaboratively with our architects.'

Hub has 152 private rented sector (PRS) homes due to come on stream at its Rehearsal Rooms development, in North Acton, later this year and 189 PRS units alongside 54 for sale completing next year at the Material Store in Hayes, which is part of the Old Vinyl Factory site. The latter will include three-bedroom, triplex apartments with a bedroom on each floor, an innovation designed to appeal to three flat-sharers.

Essential Living's Creekside Wharf development, in Greenwich, south-east London, features 60 two- and three-bedroom apartments that are designed to be family friendly. The scheme incorporates a creche and play space, while apartments have features such as corner living space, oversized balconies and

nurseries designed to minimise noise disturbance. 'The design was very much driven by focus groups organised by the clients,' explains Rory O'Hagan, director of Assael, the project architect. One ingredient influenced by those focus groups is the balconies, which will be clad in perforated sheet to prevent children from losing or throwing away toys or other objects.

Such examples are a long way from the two-bedroom, two-bathroom apartment that has been the staple PRS product. That model stemmed from its broad appeal, from two sharers needing to pool funds to a number of family variations. But the evolution of the build to rent sector creates scope for product innovation, says Kitson Keen, head of market rent strategy at Peabody, an affordable housing provider that sees private rental as part of its overall regeneration activity. 'It's important to understand the local market,' he says. 'You have to look at what is already there locally – in terms of units – and at the ability of the local market to absorb new units, as well as at the local amenities.'

Home or hotel?

Build to rent players compare their homes not to the housebuilders' standard fare but to hotels, with their star rated services, welcoming receptions and host of amenities. 'By designing buildings to be rented as a whole where a customer's home begins at the door of the building – not the flat – we can make renting an aspirational choice rather than housing of last resort,' says Andrew Teacher, spokesman for Essential Living.

In the US, build to rent developments – known as multi-family housing – are being equipped with amenities such as climbing walls, pet grooming areas and office space. Westrock operations and strategy director Dominic Martin explains: 'In the US, agents describe an amenities arms race, to highlight the competition over the amenities being provided. Yet a misconception has grown up around this; in fact, the critical element in US rental developments has always been service. A private rented building can be considered like a long-stay hotel – it's the operational aspect that is key. We've recognised that; it's why we've recently appointed LIV as our property manager.'

Westrock is developing five PRS schemes, all created from office to residential conversions and located outside London, the first being in Exeter. These developments boast such features as a gym, keyless access and a residents' lounge. Provision of amenities comes down to simple business economics, says Martin. 'What you put into a development depends on the size/quantum of units of the scheme – generally, the bigger the development, the more you can put into it, because there are more residents to

share the fixed running costs. For instance, the Pan Peninsula scheme, in Canary Wharf, has a gym, pool, 24-hour concierge and rooftop bar, but that's because it's a large development. That often gets forgotten when people compare US rental developments to UK ones – UK schemes are generally smaller, at the moment, in scale.'

Fizzy Living has a manager – always known as Bob – on hand in every building, as well as space where tenants can socialise both face-to-face and via Facebook. 'Our flats are well located and our customers are generally in their early 30s so they don't need an on-site pool or have the money for luxuries,' says Harry Downes, Fizzy Living's managing director. The firm, which is backed by affordable housing provider Thames Valley Housing and a sovereign wealth fund, has 250 units in occupation and around 1,000 more under contract. These include Fizzy Lewisham, a PRP-designed development in Lewisham Gateway, south-east London, acquired from Muse Developments. Fizzy works to keep rents affordable – an average of 20% of income and no more than 30% – because build to rent success ultimately depends on keeping customers happy and in their homes. 'If a tenant doesn't like what we're doing they'll pack their bags and leave,' Downes says.

To keep its customers happy, Hub's the Rehearsal Rooms has community function rooms and rooftop allotments. Essential Living has added a communal roof garden to its Vantage Point scheme in Islington, which is a revamp of the 1970s Archway Tower office block, designed by GRID Architects. 'So even if you're renting a smaller apartment, you still get to enjoy the view and host parties for groups of friends,' says Essential Living's Teacher.

The business rationale of build to rent rules out sumptuous penthouse roof terraces for the lucky few, says Kitson Keen of Peabody. 'It's a matter of dribbling the benefit through to all residents and is a really good way of adding value for the customer. You don't hog the benefit for one person; instead you share it out for everyone to enjoy.'

Doing more differently

The sector could prompt further innovation, notably with its interest in offsite manufacture of housing. Build to rent developers gain no commercial benefit from phased delivery of schemes, and so they aim to get developments built and let quickly. L&G is establishing a 550,000ft² factory near Leeds (due to be up and running in June) that will be producing cross-laminated timber modules for housing. Assael Architecture is looking at prototyping in cross-laminated timber at its two L&G projects in London, at Walthamstow and Hackney. ●

A picture of a lady bare foot on a warm floor is nice,
but our advice at this stage would be better.



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Street furniture shows its power

‘Smart city’ technologies, designed to exploit big data analytics and renewable energy, are making the leap from lab experiment and early adopter trials to fully realised products with large scale installations across European cities

Words: Stephen Cousins



Pavement taps foot power

The prospect of using human footfall to power street lighting in cities worldwide came a step closer in March when tech start-up Pavegen announced it would be able to offer its smart street paving tile for under £600/m² by the end of this year, in line with traditional high end paving.

Pavegen tiles generate about 7W of power from each footstep then store it in a battery for use in street lighting or other street-side applications. The firm attracted over £2.63 million of crowdfunding investment in 2015, through the clean technology funding website Crowdcube, which has been channelled into R&D to develop a cheaper, more efficient tile.

Laurence Kemball-Cook, entrepreneur and founder of Pavegen, says: 'We now have clout with some of the biggest manufacturers in the world, making it possible to deliver volumes not possible two years ago. We aim to have our product retailing for sub-£600/m² this year, where currently one square metre of granite floor at King's Cross station costs around £1,000.' Last year, the company costed its product at £1250/m².

The improved tile, due to launch this summer, is expected to be more energy efficient than the previous version. It will offer increased data functionality for smart city applications, such

as monitoring levels of foot traffic to help facilities managers better understand and manage properties, or enable property owners to raise advertising revenue based on footfall.

'We have a data and energy proposition we are really excited about,' says Kemball-Cook. 'We can provide a granular look at how people move, which is really important for the smart city of the future... every footstep has a unique ID, link it to people's smartphones (with their permission) and it gets really exciting because you can know who a person is, and where they are.'

Pavegen has already completed 100 projects in 30 countries and plans to have millions of tiles installed in every major city in the world within the next five years. The largest UK installation, at Heathrow, features 65 tiles across a corridor, used to power LED lights.

No-skid solar

The first large scale implementation of solarised roads, capable of supplying up to 5 million people with electricity, was announced by the French government in January.

The Positive Energy programme will involve paving 1000km of carriageway with photovoltaic panels over the next five years, enough to supply up to 8% of the French

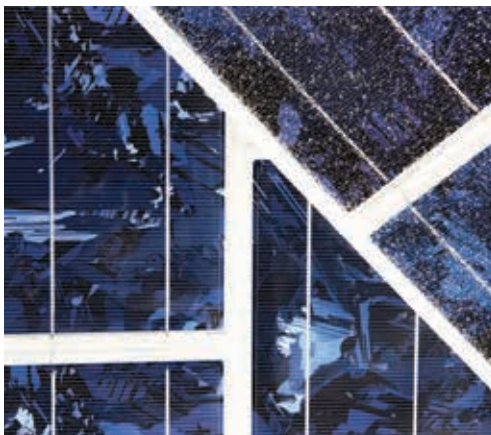
population, Ségolène Royal, France's minister of ecology and energy, told a conference.

The 7mm thick panels are based on Wattway technology, developed over the past five years by Bouygues subsidiary Colas, in partnership with the French National Institute for Solar Energy, and will be glued directly on to the road surface. The panel's cells are embedded into a multi-layer substrate and collect solar energy using a thin film of polycrystalline silicon. They are able to bear all types of vehicle traffic, including trucks, and resist skidding.

According to France's Agency of Environment and Energy Management, just four metres of solarised road is enough to supply one household's electricity needs, apart from heating, and one kilometre will light a district of 5000 inhabitants.

Wattway has been described by Colas chairman and CEO Hervé Le Bouc as a building block for smart cities. It is seen as a first step in creating 'intelligent roads' that can monitor and manage traffic, gather maintenance information, carry out automatic diagnostic programmes or charge electric vehicles, perhaps using induction technology.

Tenders for the Positive Energy roll-out have already been issued and tests on the panels are expected to begin shortly.



Left Pavegen's smart street tile.
Above and right France is using Wattway PV panels to pave 1000km of carriageway.



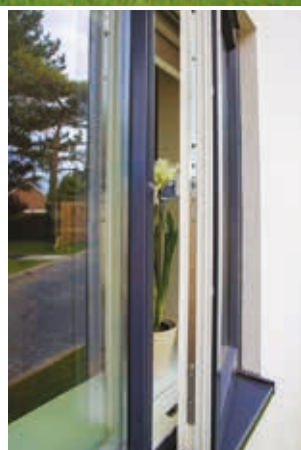


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Below Strawberry's interactive Smart Bench.



We saw all the obsolete street furniture in cities and tried to work out how it could be reinvented to bring more value into everyone's lives and be more responsive to modern needs

Mobile charging benches

That mainstay of our streets, the humble public bench, will be offering far more than just a sit down if smart city start-up company Strawberry Energy has its way.

Its interactive solar-powered bench is able to charge a mobile phone, access the internet, relay sensor data on local noise and air quality to a central server, and even allow members of the public to call for help using an emergency button.

Four Strawberry Smart Benches were initially installed across Canary Wharf last summer as part of a pilot run by the Cognicity Challenge, a smart city incubator project run by the Canary Wharf Group.

Installation of up to 13 more is planned across the capital and the south of England over the next six months, through deals with major real estate companies.

Milos Milisavljević, founder of the

Belgrade-based firm, says: 'We saw all the street furniture in cities that is quite obsolete and tried to work out how it could be reinvented to bring more value into everyone's lives and be more responsive to the needs of modern generations. Benches seemed the most obvious choice because they are the most commonplace.'

The Strawberry bench is able to deliver about 200 ten-minute phone charges per day in London conditions. The new installations will look the same as those at Canary Wharf, but will also incorporate a set of plug and play connections to allow different sensors to be fitted, such as air quality sensors, or a people counter designed to measure local foot traffic.

A mobile app, for iPhone and Android, has been launched to enable users to locate the nearest bench when their phone battery is running low. They can also access environmental information on air temperature, air quality and noise levels at the bench.

Right LightMotion, a 'smart city hub'.

Below Each pole has two electric car charging sockets at the base.

One pole is all we need?

Metropolitan areas are cramped, making it impractical and expensive to roll out separate infrastructure for lighting, electric vehicle charging, CCTV, mobile phone masts, wi-fi and other features. Why not combine them all into the compact profile of a single streetlight?

That's the idea behind LightMotion, a 'smart city hub' launched this month by Dutch street lighting specialist Lightwell and charging hardware vendor The New Motion, to a design developed by Rem Koolhaas' studio, Office for Metropolitan Architecture.

Each LightMotion pole has two charging sockets at the base to enable car battery recharging direct from the street. A smartphone app guides drivers to electric vehicle charge locations and users swipe to pay for power using an RFID card reader.

The system is being marketed to local

governments as plug and play, with all the smart city hardware in place ready to integrate with specific back office software. LoRa connectivity provides the long range low-power communications to enable the Internet of Things.

The concept was piloted on an installation of 185 streetlights in Rotterdam and further trials are planned at the Doll Living Lab smart city project in Copenhagen, and schemes in Los Angeles and Beijing.

Virgil Warnars, managing partner at LightMotion, says: 'Cities know they want this type of integrated solution because it makes a lot of sense, but it is complicated because decision makers require an overall strategy combining totally separate functions, such as security, lighting and car charging. However, we are now at the tipping point and over the coming six months to a year these types of systems will move fully into the public sphere.' ●



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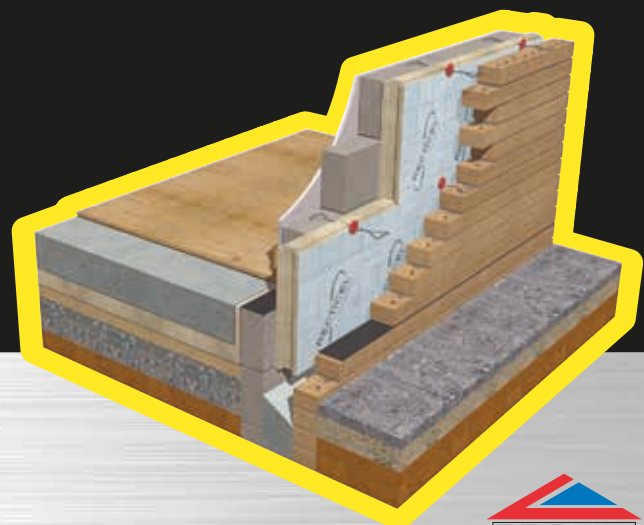


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Costed

AECOM’s David Holmes looks at external works and drainage costs

Pedestrian and vehicular access areas can be provided by many different materials. Popular choices include block paving and brick paviors, particularly for residential developments. Concrete paving stones can be a cost-effective alternative to traditional clay block pavers, especially if large numbers are required.

In industrial environments reinforced concrete is preferred for access roads and loading bays. These are often combined with brick

paviors for turning areas which suffer the most wear and can be more easily repaired. Tarmac can be used for large areas, such as car parks, as it accommodates small settlements without detriment and can be used quickly after laying.

Street furniture is probably the largest and most diverse category of external works. Benches, seats and associated products are made in a wide range of material and styles.

The term ‘external works’ describes any

works carried out to the external environment of a building project. These can provide functional and aesthetic features.

BRE’s description is: ‘All items outside the building footprint but inside the site boundary, encompassing wastewater and surface water drains, supply of utilities (eg gas, electricity and cabled services), footpaths, and access for vehicles including car parks and hard standings to be found in the vicinity of buildings.’

Rates are a guide and current as at Q2 2016, based to a location of UK mean. No allowance is made for sundry or related preliminaries costs. VAT is excluded.

HOUSING DEVELOPMENTS	
Housing cost models meeting minimum planning requirements or to maximise sales potential at economic cost. Soft landscaped space only; planting: turf ratio's as shown; planting sizes and densities as indicated; 1 tree of 18-20cm girth at 1 tree per 100m² overall external area; mulch and watering after planting	
Landscape:turf and trees only; imported topsoil to turf at 50 thick	£1127-£1281/100m²
70:30 turf to planted area with imported topsoil to turf at 50 thick	£2145-£2437/100m²
50:50 turf to planted area; imported topsoil to turf areas at 50 thick	£2475-£2812/100m²
SCIENCE AND OFFICE PARKS	
More dense landscape incorporating relaxation areas and larger planting schemes; generally more mature at implementation, with larger trees. Schemes often incorporate larger swathes of groundcover to give graded views over landscaped areas; planting density and sizes are of higher standard than housing. Soft landscaped space only. Planting:turf ratios as shown; sizes and densities as follows; 1 tree of 25-30cm girth at 1 tree/100m² overall external area; mulch and watering after planting	
Landscape: turf and trees only; imported topsoil to turf at 50 thick	£1375-£1562/100m²
70:30 turf to planted area with imported topsoil to turf at 50 thick	£2365-£2687/100m²
50:50 turf to planted area; imported topsoil to turf at 50 thick	£2722-£3093/100m²
CIVIC ENVIRONMENTS AND STREETScape	
Civic and public areas in current climate encompass high quality surfaces for public access, larger planting and a need for furniture and lighting	
Civic town centre area of paved open space; model area 500 m² General open area; one 30-35cm tree with root cell planting system every 400m²; metal tree grid; one bench per 200m² and one bin per 500m²; granite kerb surround.	
Concrete slab paved	£10,120-£11,500/100m²
Granite paved	£17,600-£20,000/100m²
As above w/stepped terraces: 3no steps 10m long in 500m² area	£20,900-£23,750/100m²
Living wall; design and installation of planted modules with automatic irrigation, fabric based systems; indicative area rates as shown:	
Wall up to 20m²	£682-£775/m²
Wall up to 50m²	£539-£613/m²
Wall up to 100m²	£506-£575/m²

Wall up to150 m²	£495-£563/m²
SURFACED AREAS	
Parking; macadam base and wearing course	£900-£1100/per bay
Parking; block paviors 80mm thick	£78-£90/m²
Pedestrian areas; 100mm thick concrete	£60-£70/m²
Modular grass concrete paving 100mm thick	£65 -£75/m²
Resin bonded 1mm-3mm golden pea aggregate pathways	£77-£90/m²
DRAINAGE	
Access chambers	
Excavate inspection chamber; concrete base; half section pipework and benching	
Precast concrete inspection chamber	
600 X 400 X 900mm deep	£479-£544
Polypropylene inspection chamber	
Mini access chamber 600mm deep	£330-£375
475mm dia X 900mm deep; ductile iron cover with screw-down lid	£572-£650
Drainage pipe	
Excavate and lay 100mm diameter upvc pipes > 1.0 m deep	£43-£54/m
Excavate and lay 150mm diameter clay pipes > 1.5 m deep	£85-£110/m
Excavate and lay 300mm diameter concrete pipes > 2.5 m deep	£150-£185/m
Excavate and lay 150mm diameter cast iron pipes > 1.5 m deep	£155-£200/m
Street furniture	
Road signs; reflective traffic signs 0.25m² area on steel post	£115-£140
Road signs; internally illuminated traffic signs; dependent on area	£190-£225
Pedestrian area lighting, estate roads; 4-6m columns: 70W lamps	£215-£260
Main road lighting; 12-15m columns: 400W high pres sodium lamps	£580-£700
Benches; hardwood and precast concrete	£950-£1150
Litter bins; bolted to ground	
precast concrete / hardwood slatted	£170-£215
cast iron	£350-£425
large aluminium	£520-£630
Planters: supply and install precast concrete planters w/ exposed aggregate finish, topsoil, 50mm shingle and drainage mat with assorted 5 litre and 3 litre shrubs to provide instant effect; 700mm dia X 470mm high	
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Specified



1 Fascia, soffit system and guttering Marley Alutec

As a population we might be living longer every year, but that doesn't mean many of the residents of new housing for the over-55s in Arbourthorne, Sheffield will see out the Marley guttering on their homes. Given the product's 50-year guarantee, it would be quite a feat for any of them to remember to grab a cuppa to watch the replacement of the aluminium system when 2066 rolls around and they'll be 110 – or older. The system won't offer much entertainment for anyone gazing out the window until then, either, as the product's virtually maintenance free.

marleyalutec.co.uk

2 Resin bound rubber-based paving Trailflex

Buzfeed Mental Stability Quiz Question No 15. Given the image above, what happens next? Do you A) go up the drive and hope to feast sumptuously in the house of a Russian gas oligarch? B) Run away before a gamekeeper armed with a shotgun chases you? C) Wait behind a tree for the fabled ghost of the headless horseman to arrive, or D) Examine the illusion of gravel presented by Trailflex's highly porous recycled car tyre and stone mix, which allows the rainwater to be absorbed into the ground and keeps the nearby trees healthy?

trailflex.co.uk

3 Landscaping material Bituchem

It's not easy being a landscaping material: you've got to stand out from tarmac roads while blending in with the houses you provide access to. This is particularly so for modern homes in the countryside. A good solution seems to be Bituchem's Natratex Cotswold, 700m² of which was used on Bellway Homes' new Bluecoats estate footpaths, in Sheffield, to complement the stone finish of the houses. It can be used for both pedestrian and vehicular areas and laid all year round, proving the old adage that discretion is the better part of parkour.

bituchem.com

4 Porous paving products Sudstech

Check your answers! Mostly As: delusions of grandeur and you will probably vote to leave the EU. Bs: you became paranoid after failing an audition for a bit part in the last series of Downtown Abbey. Mostly Cs: you have an overactive imagination and an underactive thyroid. Mostly Ds: you're an environmental engineer, marvelling how Sudstech's paving at Canary Wharf's CrossRail uses naturally sourced UK stones with special resins which stretch to avoid the delamination often occurring through the freeze/thaw cycle.

sudstech.co.uk



5
Green roof plus PVs
Bauder

Hmmm, green roof or PV array... how best to advertise your environmental credentials? Claim the moral high ground by having both. In Bauder's BioSolar system the front edge of the photovoltaic panels sits 300mm above the green roof, which not only keeps them clear of the vegetation as it grows but provides shaded areas, allowing a broader range of plants to thrive. That's good news for bees and other insects, and if they're happy, we're happy. The system could be a good way to clinch planning on new builds, but can also be retrofitted.
www.bauder.co.uk

6
Linear drainage system
Aggregate Industries

As Oscar Wilde observed, we are all in the gutter, but some of us are looking at the stars. Perhaps best to be a bit more pragmatic after heavy rain, or we might find ourselves looking down at a nasty splash over our best trousers because we didn't see the evil-minded taxi driver swooping towards the puddle by the kerb. The relaunched Charcon Safeticurb linear drainage system should it more difficult for them in future while having a smoother bore for improved hydraulic flow. Manufacturer Aggregate Industries says installation is quicker too.
www.aggregate.com

7
Flood control system
Hydro International

Nestled in the Vale of Mowbray, Northallerton sounds like a picturesque spot. But a vale isn't such a good place to be when it's raining cats and dogs – especially with the Turker and Sun becks running through the town, making Northallerton susceptible to flash flooding. Now they've been tamed by a flood alleviation scheme using Hydro-Brake's vortex flow control system to hold water in flood storage basins upstream. With '100-year rainfall events' now happening what seems like every few months, it seems a good investment.
www.hydro-int.com

8
Stone landscaping products
Natural Paving Products

Child labourers make up about 10 percent of India's workforce according to the UN Development Programme. UK company Natural Paving Products, which prides itself on ethical sourcing, says such poor communities often surround areas where stone is quarried, so it's supporting a campaign to eradicate child exploitation. It is funding 10 new villages guaranteeing education for children to the age of 14, with a ban on child labour and child marriage. NPP owns several Indian quarries and recently opened a new factory there.
www.naturalpaving.co.uk

Transformative powers of complementary concrete colours

The colouring process is different for poured concrete floors and precast concrete, so achieving the right colour balance really matters. Lazenby's experts transform architectural spaces with their craftsmanship and technical know-how

Photographs: Simon Maxwell



The mesmerising mottled and organic colour characteristic of polished concrete is created when colour is mixed into the wet concrete during installation

The complementary concrete colours of Basalt and Azure Grey positively transform this stunning kitchen/diner extension in east London. The Azure Grey precast worktops are all 100mm deep, and include a 450mm x 400mm cast in sink with drainer grooves. The 1480mm x 650mm worktop is cantilevered from the wall with a bracket fitted behind a false wall and steel plate to the adjoining worktop. The splashbacks are 20mm thick. All the precast concrete was manufactured off-site.

The Basalt polished concrete floors, which cover a combined area of 52m² internally and externally, were installed first over three days. There is even a Basalt cast in-situ step into the kitchen which allows the colours to naturally flow

throughout the ground floor.

The mesmerising mottled and organic colour characteristic of polished concrete is created during the installation process, when colouring is mixed into the wet concrete. The chemical reactions associated with each colouring process give mastercrafted results, making each floor a one-off. Yet precast concrete colourings are easily repeated to give hundreds of square metres of tiles all matching, yet unique.

Colour-complemented pairs are able to transform spaces in unique ways. In this retrofit project, Basalt and Azure Grey are making a confident statement and provide a practical solution. The kitchen/diner is a high traffic, heavily used area but pairing two complementary concrete installations means it remains an impressive part of the home too.

Architect Paper House Project selected visual concrete for its high impact and enriching effect over time. Just like any other flooring or surface finish, concrete needs to be maintained. But unlike any other substrate or material it can be easily repaired. It is easily cleaned with water. This project demonstrates that Lazenby's clever visual concrete is an architectural success. ●



Clockwise from below

The polished concrete floor covers 52 m².

Lazenby's precast concrete colour range.

Polished concrete floors give the impression of the space flowing to the outside patio.

Azure Grey worktops complement the Basalt-coloured poured floor beautifully.

Lazenby's polished concrete colour palette.



Marble	Coast
Fossil	Sahara
Platinum Grey	Silver Sleet
Tempest	Azure Grey
Dusk	August Grey
Chestnut	Forest
Midnight	Ebony



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Supreme Court of The Netherlands

Changes in material, both obvious and subtle, delineate zones in KAAN Architecten's new court building in The Hague

Words: Jan-Carlos Kucharek Main photograph: Fernando Guerra

On the vast end wall of the lobby of The Netherlands' new Supreme Court in The Hague is a painting, *Hoge Raad*, by Dutch artist Helen Verhoeven. At 4 x 6.5m, it's a monumental and sobering piece. It shows dozens of citizens milling in front of a panel of judges, with hundreds more in the square outside. Gruesome images on the walls behind the judges depict the consequences when the legal system fails.

The work alludes to a Latin quotation reproduced in huge letters behind the 6m high sheer glass walls of the court's 104m main facade: translated it reads 'Where justice falls short, armed struggle begins', the words of 16th century Dutch jurist Hugo de Groot. Ranged in front of the quotation, beyond the glass, are bronzes of six Dutch scholars of jurisprudence, previously scattered about the city, brought together to guard the court's public entrance.

Dutch firm KAAN Architecten's €59 million building, which opened last month, brings together in a very public way administrative functions formerly dispersed around the centre. Facing on to the main street of Korte Voorhout, in sombre grey Bateig limestone and glass, the Supreme Court's materiality is intended to make evident to the city and Dutch society the civic role of law.

KAAN Architecten's partner Vincent Panhuysen says the functions of the building are explicit from this elevation – opening to the public realm at ground, the second, solid floor of support staff, and four other glazed levels of judicial offices, isolated from the main courtrooms at ground level, ushered above street level to allow quiet debate of the finer points of law.

Those functions are further distinguished internally, with a complex circulation that belies the raw simplicity of the exterior. Beyond

the direct public access to courtrooms, circulation is about seeing that those due to testify and those who are accused do not cross paths.

The same thing happens on a more nuanced level for the judges and the Procurator General staff who formulate and bring cases forward for consideration – a form of Chinese wall to discourage any osmosis of influence. Part of the programmatic solution of the building was in making this complexity of routing seem completely natural.

Panhuysen says they wanted the communication of information to run through the building like a seam; like veins through marble in fact. Here, the domains of the Council of Judges and the Procurator General staff are literally defined by the materials used. In the Council atrium the surrounding floors feature the fine vertical black and grey lines of Marmara Equator marble, producing a dramatic, homogenous space laden with formal gravitas. Procurators, meanwhile, enjoy the more Rorschach-like effects of mottled Skyline marble, its panels given a softer, suggestively uncompleted, bevelled edge.

Even the privacy screens on the glass doors to the different offices are defined by their patterns, Panhuysen explains. 'These are clearly expressed as a print of either vertical or horizontal lines,' he says. 'As judges are sitting magistrates, they are denoted with horizontal lines; the Procurator General staff, meantime, are always standing in front of them – and so we use vertical.'

In the courtrooms themselves, behind the seats of the judges, the choice was for backlit alabaster; a wry comment perhaps on the hoped-for justice shining through the relative opacity of a modern-day legal process. ●

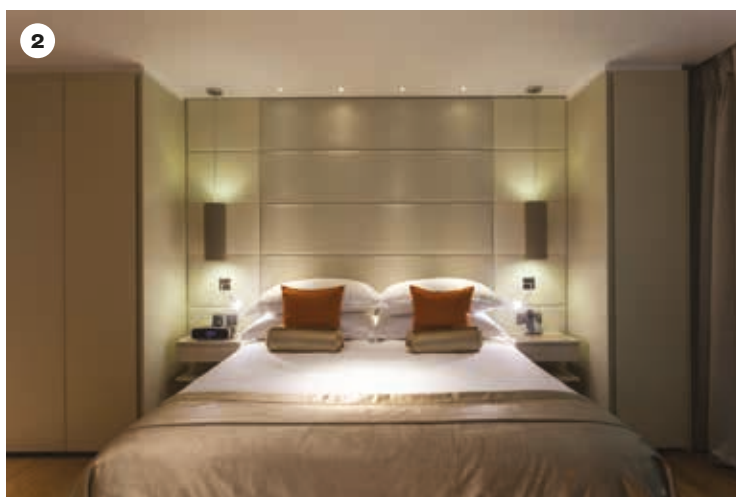


Far left Vertical striations in the marble give civic gravitas to the Council of Judges' atrium.

Top Judges sit in front of a backlit wall of alabaster.

Above Six Dutch scholars of jurisprudence guard the public entrance to the public lobby.

Specified



1
Duravit
Stonetto shower tray

If you want to re-create the feeling of being in that waterfall like the 1980s' Timotei shampoo model, Duravit's softly curved shower tray is the bathroom solution for you. It's made from DuraSolid Q, which looks and feels like natural stone beneath your feet. And, if you share the habit of flinging your freshly washed (blonde) hair over your shoulder, you'll be pleased to learn that the product will help stop you or your partner slipping on the resulting suds. The Stonetto shower won a 2016 iF Design Award, along with the company's Cape Cod Bath tub and P3 Comforts Washbasin. duravit.co.uk

2
Lyndon Design
Wall panels and headboards

Why have two identical pillows when you can have four in three designs? As well as the traditional rest-your-weary-head version in white, Forme UK, interior designer of Cheval Three Quays apartments at Tower Bridge, has gone for shiny cylindrical green and plump brown ones. But what are you meant to do with them all before getting into bed? Throw them on the floor? Spin them across the room like a spongy discus? Jam them under the duvet? Ponder these questions prone before Lyndon Design's bespoke silk headboards and opulent Crest leather wall panels. lyndon.co.uk

3
Kaldewei
Duo Pool bath

Remember that time in the Hotel Royal Savoy, Lausanne, when we couldn't get Becky out of the bathroom the day after Paula's hen do? She'd got drunk on kirsch and swam out to the fountain in the middle of Lake Geneva which ripped clean through the seaming on her pleated Top Shop cotton-poly pencil skirt! Back in the suite, she emptied all the decadent complimentary smellies into the luxurious, 50.5cm deep Kaldewei Duo Pool tub, submerged herself up to her eyeballs in bubbles and had room service leave restorative champers, ice cream and waffles outside the door. kaldewei.com

4
Steel Window Association
Door and window screen

In Fulham, the most fashionable underground movement is likely to be diggers hauling earth from below Victorian houses to build a basement extension like this one at a 1900s semi. Like yesterday's movers and shakers, these foundation-tremblers annoy the hell out of any conservatives in the area. But unlike the arrivistes of yesteryear, they don't want to overthrow the current order, unless it happens to be ever-more concerned planning authorities. The steel windows creating this striking opening are 5.4m by 2.8m W20 double glazed screens with two sets of double doors. steel-window-association.co.uk



Photo: Positive Image Photography

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Panel aids quicker construction **SureCav**

SureCav25 is a new, 100% recycled polypropylene panel that provides the solution to several building design issues. It forms the cavity with the SureCav50 panel, which has been a trusted building product since 2004. SureCav25 is ideally suited for brick, stone and all other masonry finishes and can be installed with either traditional build or timber frame construction.

www.surecav.co.uk



0.5 air changes per hour **A Proctor**

The UK's first permanent Passivhaus show house has been built at Potton's Self Build Show Centre in St Neots, Cambridgeshire. It utilises Kingspan TEK Building System and Wraprite-SA air barrier membrane supplied by the A Proctor Group. To meet the Passivhaus standard the air change rate must be less than or equal to 0.6 per hour, but at a recent event Potton managed to improve this to 0.5.

www.proctorgroup.com



Landscaping product portfolio **Aggregate Industries**

Aggregate Industries has launched an in-depth product portfolio for its full range of Charcon hard landscaping materials. Designed to offer complete commercial solutions for all types of products, the brochure includes inspirational photography, exciting new products and detailed technical information about Charcon's natural stone and concrete paving, kerbs and surface water solutions.

www.aggregate.com



Supermarket's new look **Armstrong Ceilings**

Metal and mineral ceiling tiles from Armstrong were specified for upmarket supermarket chain Booth's flagship store in Lytham St Anne's, Lancashire. Dark grey Mesh Board metal tiles feature in plasterboard margins in the lower sales area, while Ultima mineral tiles were used on the first-floor back-of-house areas. The system helped meet a tight timescale and has acoustic benefits too.

www.armstrong-ceilings.co.uk



Huge range of interior coatings **Akzo Nobel**

AkzoNobel interior coatings ranges from across Europe have been brought together in a new brochure. The list of applications ranges from furniture to kitchen and bathroom cabinets, table tops, shopfitting and flooring. The breadth of technical knowledge at AkzoNobel delivers a host of solutions including PU acrylic, PU alkyd and polyesters, to acid curing, waterborne and UV curable plus oils and waxes.

www.sikkens-wood-coatings.co.uk



Quieter life in Covent Garden **Black Millwork**

Windows and doors from Black Millwork have reduced noise levels for residents of a recently refurbished listed property in Covent Garden. The replacement sliding sash windows look identical to traditional Victorian fittings but have a high acoustic performance as well as a U-value of 1.5. Tests after installation showed a dramatic 46-decible reduction in noise levels.

www.blackmillwork.co.uk



High-tech cooking **Blanco**

The new Blanco hob collection includes the latest technology for high-speed, energy-efficient cooking. This is one of the models in the nine-hob line up – the touch controlled, bevelled edged BH467827. The 520mm x 590mm four-zone black glass hob has a Flexi induction zone for multiple pans, auto power/stop and the boost option that brings liquid to boiling point in seconds.

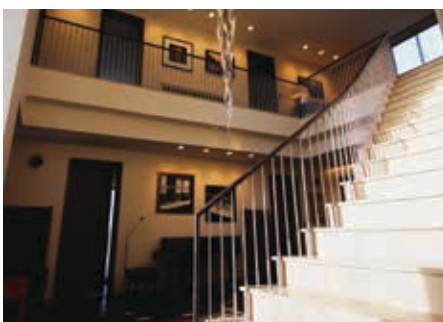
www.blanco.co.uk



Premium paving **Aggregate Industries**

Charcon, the commercial hard landscaping division of Aggregate Industries, has introduced three new concrete pavers to its portfolio: UrbanPave premium flag paving (left), Vianova Maxx large element textured paving and Monksbridge rumbled effect block paving. UrbanPave is aimed at ultra-contemporary public realm schemes such as town centres and prominent pedestrianised areas.

www.aggregate.com



Leather in architecture **Canal Engineering**

With a growing number of finishes available, the popularity of including leather in architecture is increasing. Over the past 12 months Canal Architectural has seen a rapid rise in demand for leather on staircases. This staircase has dark brown leather on its handrail and around the intricate balustrade design. Visit Canal at Clerkenwell Design Week, May 24-26, to watch its Leather Feature short film.

www.canalengineering.co.uk



Maximising retail space **DR Services**

The retail area at London's Embankment underground station has a fresh new look thanks to sliding and stacking glazed walls installed by DR Services. Using movable walls for shopfronts in covered arcades maximises floor space and blurs the boundary between inside and outside. Sliding or stacking glazed walls typically cost from £12,000 to £15,000 for a 6m opening.

www.drservices.co.uk



Children's toilet cubicles Kemmlit

The Oak Tree Restaurant at Cotswold Wildlife Park in Oxfordshire has Kemmlit's Bambino cubicles in the children's toilets and Cronus in the adults'. Bambino is virtually indestructible, with panels in 30mm high density melamine or 13mm solid grade laminate. For safety, Bambino has edgeless door handles, integrated doorstop buffers and outward opening doors with rounded edges.

www.kemmlituk.com



Quartz work surface Compac

Unique Calacatta is a quartz work surface from COMPAC that features grey veining on a pure white background. Inspired by the beauty of natural stone, Unique Calacatta has a mechanical and chemical performance superior to nature's own. Its hardness, along with a waterproof, hygienic finish, makes it appropriate for intensive use areas such as kitchen surfaces, floors and walls.

www.compac.es



Safety flooring feels like home Altro

Altro Pisces bridges the gap between high performance safety flooring and demand for a more domestic style. It is the first flooring to be developed with AltroBead Technology and is aimed at care homes, student accommodation, spas and social housing. Whether wet or dry it has a high level of slip resistance to shoes and bare feet. It stands up to the wear and tear of footwear while going easy on bare soles.

www.altro.co.uk



Tough, versatile decorative film David Clouting

Interior Film from David Clouting is a range of high performance, self-adhesive, decorative films made by LG Hausys that can be adhered to most substrates including wood, metal, plasterboard, plastics and melamine. It is resistant to impact, abrasions and scratching and remains stable if exposed to heat, humidity or low temperatures. It is available to view on BIMstore.

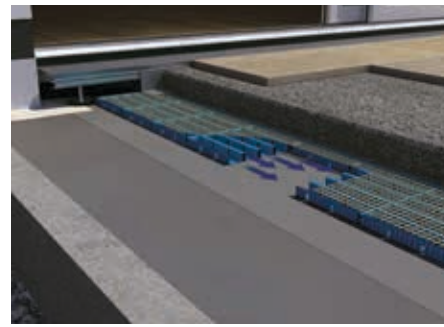
www.davidclouting.co.uk



Ambitious regeneration project Kingspan Insulation

Premium performance products from Kingspan Insulation have been used to insulate new high- and low-rise buildings as part of one of London's largest and most ambitious regeneration programmes. The eight-phase project will replace outdated concrete tower blocks at Woodberry Down in Hackney, east London with more than 5,500 new homes over the next 20 years.

www.kingspaninsulation.co.uk



Tiling for outdoor spaces BAL

BAL, market leader in full tiling solutions, is launching an innovative range of outdoor tiling products for balconies, terraces and patios. Gutjahr System Technology from BAL is a full system for external tiling with innovative drainage and ventilating solutions to protect from frost, staining and water damage. For more information contact the BAL specification support team on 01782 591120.

www.bal-adhesives.com



Bathroom partnership Kaldewei

Launch of Kaldewei's washbasin series complements its longstanding range of steel enamel shower surfaces and baths. For example, the new Cono washbasins (left) perfectly partner the popular Cono series which includes the Conoflat shower surface and Conoduo bath. Kaldewei steel enamel is extremely hygienic and easy to clean, showing no signs of wear and tear even after years of extensive use.

www.kaldewei.co.uk



Elegant remodelling Mumford & Wood

Timber windows and doors from Mumford & Wood's Conservation range have been used in the remodelling of this former gallery into a coffee shop in Little Chalfont, Buckinghamshire. Wide, double-glazed six over six sliding sash windows face the street while timber panelling and a recessed half glazed double door with overhead fanlight complete the look.

www.mumfordwood.com



U-values made easy Recticel

A U-value calculator for anyone involved in establishing a building's thermal performance has been made freely available by leading PIR manufacturer Recticel Insulation. Designed to give instant access to accurate calculations for common constructions, it covers the majority of Recticel's portfolio for floors, cavity walls, timber and steel-framed walls, flat and pitched roofs and soffit linings.

www.recticelinsulation.co.uk



Panels help power project Rodeca

Some 4,000m² of translucent polycarbonate cladding panels by Rodeca are being installed on the £760m Severnside Energy Recovery Centre (ERC) project in south Gloucestershire. The 34 megawatt facility will produce enough electricity to power the equivalent of 50,000 homes. Rodeca's tongue and groove Opal panels in up to 13m lengths will clad the ground-floor process areas and north-east gable end.

www.rodeca.co.uk



The translucent link Structura

The new Equinix 8,000sqm data warehousing facility in Slough was designed by Arup Group. Here, translucent Kalwall diffuses natural daylight internally, while its 0.56 W/m²K U-value optimises thermal performance. Unlike conventional glazing, Kalwall eliminates shadows, glare and the stark contrasts of light and shade with no need for blinds or solar control. Kalwall is also increasingly used for the refurbishment of aged cladding or rooflights.

www.structura-uk.com/kalwall



Building control made easy Recticel

Eurowall+, the full fill cavity wall product from PIR manufacturer Recticel Insulation, has been certified as a Local Authority Building Control (LABC) registered detail. This ensures that products and systems are accepted by building control departments in England, Scotland and Wales, increasing confidence for inspectors on site when approving the use of new or innovative construction techniques.

www.recticelinsulation.co.uk



Time-saving ceiling system Armstrong Ceilings

Armstrong Ceilings has formally launched its time-saving Drywall Grid System (DGS) to the UK market. Up to 40% quicker to install, the DGS suspension system for plasterboard ceilings is available in three different versions – standard for typical flat installations, faceted for curved and domed ceilings of any radius, and Shortspan for smaller areas such as corridors.

www.armstrong-ceilings.co.uk



Anything but ordinary Gerflor

International flooring and interiors specialist Gerflor is set to wow visitors at Clerkenwell Design Week this May with stunning examples of how its innovative flooring ranges are making their mark not only in commercial applications but in the home. Its luxury vinyl tile and plank (LVT) products and safety flooring look stunning, challenging 'the ordinary' on every level.

www.gerflor.co.uk



Planters with punch Component Developments

Four roof terraces at Ropemaker Place, a new commercial building at Moorgate in the City, include irregularly shaped planters with many pointed corners. Component Developments was asked to create a continuous stainless steel fascia around the edges of each planter, without any welded joints. Each corner was a bespoke piece, locking together with straight edge sections.

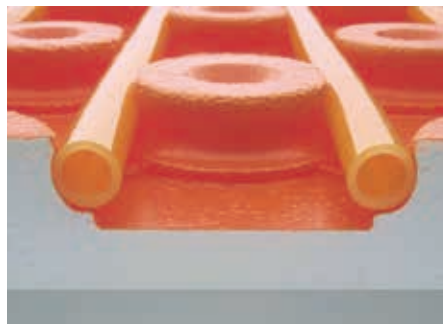
www.componentdevelopments.com



Shape of pure sound LG Hausys

These sculptural, 1.5m tall speakers from the Burmeister Diva sound system are made of HI-MACS natural acrylic stone from LG Hausys. The solid surface material minimises vibration of the housing, allowing the top-class speaker system to generate neutral, unadulterated sound, even at high or low volumes. HI-MACS is widely used for architectural interiors and can be moulded into any shape.

www.himacs.eu



Energy saving underfloor heating Schlüter

Hydronic system Schlüter-BEKOTEC-THERM uses only two-thirds as much energy as electrical underfloor heating, and a modular screed panel replaces part of the screed, bringing the pipes close to the surface. It can be up to 30% more energy efficient than radiators due to its heated floor area and the proximity of the pipes to the floor covering, which means it can use water at a lower supply temperature.

www.bekotec-therm.co.uk



Keep the engine running Comar

Motorsport company Prodrive's new headquarters in Banbury, Oxfordshire features thermally efficient windows and cladding from Comar Architectural Aluminium Systems. The 110,000m² building has Comar 5P.i top hung and casement windows, Comar 6 stick build curtain walling and Comar 7P.i pivot commercial doors, all installed by approved fabricator Charter Commercial.

www.comar-alu.co.uk



Blinds that won't take off Hunter Douglas

Motorised external roller blinds from Hunter Douglas were specified for Goodwood Aero Club's striking new building at the world famous aviation site in Chichester, West Sussex. The 24 specially designed blinds each measure 7.5m². They are protected from high winds with automated wind sensors. Bespoke powder-coated anchors complement the glazing hardware.

www.hunterdouglas.co.uk



New University Building Junckers

Hudson Architects have undertaken a complete refurbishment of an historic building to house Norwich University of Arts School of Architecture featuring over 750m² Junckers Nordic Oak, a solid hardwood floor with a white-pigmented finish. Junckers FSC and PEFC certified oak floors can be sanded and re-finished several times, an ideal choice for a heavy traffic area such as a university.

www.junckers.co.uk



Revamp for 70s classic Kährs

Kährs Walnut Linnea wood flooring has been specified throughout No 1 Hagley Road, a landmark renovation programme in Birmingham city centre. The development for Seven Capital provides 20 levels of apartments in the iconic 1970s tower, originally designed by renowned architect John Madin, in Five Ways. More than 14,500m² of Kährs flooring was specified for the project.

www.kahrs.com



Long and short of flooring guides Fermacell

Specialist building boards manufacturer Fermacell has launched new literature to support its MAXifloor hollow flooring system which guarantees a future-proof, functional and flexible solution. A four-page A4 guide previews the simple tongue and groove system for new-build and retrofit while its 16-page big brother details its characteristics, applications, installation, accessories and finishing.

www.fermacell.co.uk



App for calculations on the move Kingspan Insulation

Kingspan Insulation is taking U-value calculations mobile with a free app for Apple, Android and Windows devices. It features over 6,000 calculations, all approved under the BBA/TIMSA competency scheme. The mobile and tablet friendly app requires no registration and is suitable for use with the Building Regulations/Standards in England, Scotland, Wales and Northern Ireland.

www.kingspaninsulation.co.uk



A barn for all seasons Gaia

A Gaia wet underfloor heating system keeps guests warm in the grade II listed barn at Henham Park in Suffolk, now a popular wedding venue. The owner chose the system so as not to spoil the barn's beautiful interior by bolting unsightly radiators to it. Covering 690m², the system is connected to an LPG-fired gas boiler but there are plans to replace this with a ground source heat pump.

www.gaia.co.uk



Parks protected from flooding Hydro International

Geocellular block storage from Hydro International is a key part of a flood defence project in Southwark, south London. The project involves above and below ground temporary flood storage in two historic parks, in Herne Hill and Dulwich. Wrapped in geotextiles, the 1m deep modular tanks will be covered in topsoil and become effectively invisible, allaying local concerns over the effect on the parks.

www.hydro-int.com



Even tougher chipboard Norbord

Ease of handling and robust edging make Norbord's Caberboard the UK's best-selling chipboard flooring. Under pressure from the housing market tradesmen looking for ever quicker ways of completing projects are turning to Norbord's advanced CaberDek and CaberShieldPlus products. Extra protection on both of these means they can be laid even before the roof is installed.

www.norbord.co.uk



Impressive in Prague Reynaers

Reynaers' improved aluminium Concept Wall 50-HI system has been used to create an impressive art space and office complex in Prague. This new variant of CW 50 benefits from improved insulation profiles, which can achieve impressive U-values down to 0.56 with a glass thickness of 60 mm. Previously this was 0.73, while the standard CW 50 system has a U value of 1.7.

www.reynaers.co.uk



Bathrooms at your fingertips Keramag

Keramag Design has launched an updated specification manual, providing an easy guide to its entire luxury bathroom portfolio. The full-colour 164-page guide is a neat A5 size, making it ideal to have on the desk. Each page contains the model, full dimensions and material, plus all compatible products. Hard copies are available on request and a digital version can be downloaded online.

www.keramagdesign.com



Smart refurbishment Smart Systems

Installation of 1200 Eco Futural windows from Smart Systems was recently completed at the Esher Wing of Kingston Hospital in Surrey. Working with its specialist partner Heritage Window Systems, Smart developed a system based on a curtain wall grid with variable trim to allow for the significant variation in size of the original 1960s' heavy duty steel windows.

www.smartsystems.co.uk



South London style Kingspan TEK

A new apartment building in south London combines the excellent fabric performance and fast-track construction of the Kingspan TEK Building System with stylish design by Groves Natcheva Architects. The 142mm thick panels used for the roof and walls feature a highly insulated core sandwiched between two layers of OSB/3, delivering high thermal performance.

www.kingspantek.co.uk

Sign Up

Vivian Chan, director of Studio Verve Architects, gives us three of her specification favourites



HIMLEY EBONY BLACK BRICKS

For our Domino Houses in Bounds Green, north London, we wanted a robust and cost effective material for a monolithic black envelope combined with a curving green roof and domino language of circular porthole windows. The dominant ebony black bricks within the undulating facades lent an amazing sculptural quality to the series of houses. We had extensive meetings with Ibstock technical representatives and the builders along with 3D modelling and 1:1 onsite mock-ups. Normal bricks were used as far as possible with the rare exception of negotiating tight curved corners.

ibstock.com



PREFAB CURVED CONCRETE PANELS

We chose concrete as a primary material for the curved walls of our Redchurch Loft in Shoreditch to maintain the industrial aesthetic. To meet structural weight constraints, we worked with Mass Concrete to come up with 18mm concrete panels prefabricated in its factory in Poole. These were poured into skilfully made curved formwork. An extensive finishing process of water-curing and polishing produced hand-crafted individual pieces. A tough stain-resistant sealant ensures the panels remain robust despite retaining the pockmarks of naturally poured concrete.

mass-concrete.com



IPE FIN WALLS

We developed an interior language of hardwood fin walls for both aesthetic and acoustic reasons at our Bow Quarters warehouse duplex in London. We chose Ipe as it was hardy and warm in its natural colour and experimented with spacing and dimensions to accommodate 'hidden' doors. The fins were secret fixed to a marine plywood base. We used them in the lobby of our Print House development in Clerkenwell and later as exterior cladding on our Narrow Lane farmhouse in Ormskirk, with birch ply as a substrate and the Ipe stained with Osmo decking oil to avoid it weathering into silver-grey.

woodtrend.co.uk

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...Sign Off

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



BUS LIGHTYEAR

It's always the way, none for ages then 10 come along at once. Last month website DesignCurial announced its 2016 World's 10 Best Designed Bus Stations, four of them in the UK. These offerings seem either pointy, as in Norwich, or blobby, like Bblur Architects' apparent omnibus homage to Georgian astronomer William Herschel in Slough (left). Herschel lived with his sister Caroline in nearby Datchet, grinding his telescope mirrors for a reputed 16 hours a day. He wouldn't have been interested in the No 61's local service to Slough, but Caroline, bored as she must have been with seeking a planet 1.7bn miles away, surely would.



AIR SHIRE

Forget the hole in one so immediately associated with the Home of Golf, St Andrews in Fife. How about the Hole in One Million that ventilation manufacturer Envirovent has just celebrated? The Yorkshire-based firm presented a gold-plated filterless fan to Fife Council's Judy Hamilton to mark the millionth hole knocked through an exterior wall in the UK to accommodate its products. Fife Council has over 25,000 of them in its housing. The high tech, low energy extract unit obviates the need for a filter and reduces condensation issues for tenants; for whom mould acquaintance should definitely be forgot.



EURO PAN

As home of the annual meeting of the world's political and financial elite, you imagine that there's a lot of handwashing in the Swiss alpine town of Davos. Thank goodness for the wonderful bods at Grohe, who've fitted the washrooms of the 12,000m² conference centre with its Essence basin taps and Sensia IGS shower toilets, offering 'a variety of personal cleansing programmes' – perfect for a profession so often caught with its trousers down. The functions are remote control too, managing direction, jet strength and heat, which should leave commanders-in-chief feeling right at home – but I won't drone on about that.

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Project architect: Octavio Mestre Arquitectos

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to none"***

David James
David James Architects

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