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PiP

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One of the wettest . . .

...Junes on record as PiP went to press last month, and memories of many a rain-soaked Serpentine Pavilion opening came flooding back. The most notable drenching for me was in 2005, in Alvaro Siza and Eduardo Souto de Moura with Cecil Balmond's iteration, which haemorrhaged like an upturned sieve and ironically had punters running for cover. But this year's pavilion seemed marred with a leaks of a different sort.

First, the disclosure that Junya Ishigami, architect of this year's one, a 61 tonne wing of Cumbrian slate floating on the gallery's lawn, was employing unpaid interns, until Ishigami rapidly agreed to pay them. Secondly, head of the Serpentine Gallery itself, Yana Peel, was revealed to part-own – with husband, Novalpina Capital's Stephen Peel – an Israeli cyberweapons company: causing her to stand down after 'misguided personal attacks on me and my family'.

While things are markedly less salacious south of the river, it's certainly not dull in Dulwich, where architect Pricegore and designer Yinka Ilori have pulled off their lovely 10m high Colour Palace, drawing on Soane and 'the buzz of fabric markets in Lagos' – a pavilion that feels less loaded (and certainly less slated) than its competitor in Hyde Park.

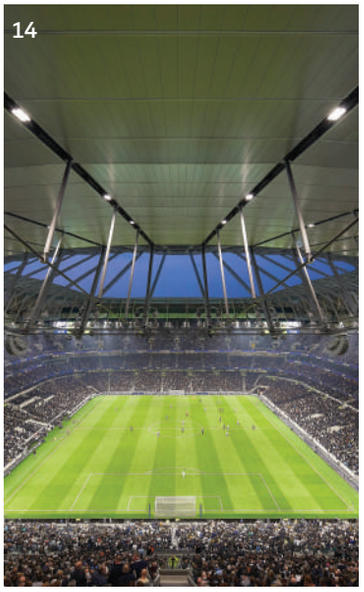
But for sheer wit and cleverness, keep an eye out for RAW Architecture's 'Under One Roof', an inverted mirrored pitched roof, winner of the Architecture LGBT+ competition for a float at the London and Manchester Pride events this summer; reflections the profession can enjoy rather than gossip over. ●

Jan-Carlos Kucharek, editor

More online...

Installed panels are scientifically proven to have comparable structural performance to regular curved CLT

A twisting tower near Stuttgart shows self shaping timber could rival CLT for structural use, discovers Stephen Cousins: ribaj.com/selfshapingtimber



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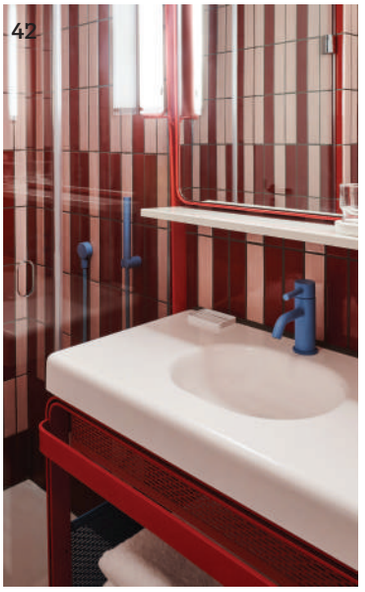

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Dolmen Table in green Alps Stone by Giulio Cappellini for Cappellini

Jaime Hayon's JH97 chair for Fritz Hansen

Movement series stone effect surface from Meganite

Martin Eisler's Reversivel chair, reissued by Tacchini

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Cover image: Solar screen geotextile curtains at Lobe Block, Berlin. Photograph: Erica Overmeer

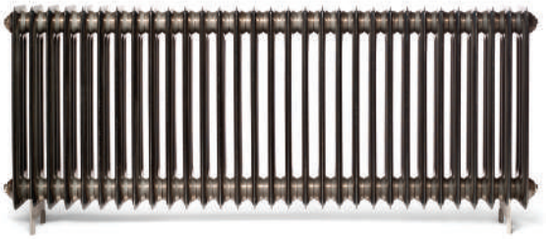
Compendium

Dutch oven

With half of Jamie's Italian going, ahem…down the pan so to speak, you'd think we'd have hit 'peak celebrity chef'. Not so! Just across the water in the Netherlands, Herman Den Blijker (not Gordon Ramsay) is the face of TV show Herrie in de Keuken (Noise in Kitchen) and has a number of fine eateries to his name. The kitchens and bathrooms in his latest, Goud in Rotterdam, have been slathered in Neolith's Sintered stone as the chef was impressed with its hardwearing and hygienic qualities – so even if there's a meltdown front of house, it's still all ship-shape out back.

What a corker

If you thought Cork tiles went out in 1981 with the Austin Maxi, think again! Yes, just as 'baggy's back', Havwoods has completely reinvented cork to make PiP love it even if it isn't attached to a bottle of wine. Add to that the fact that the material can be harvested from the same tree for 200 years and is a natural sound and heat insulator – vagaries of fickle fashion notwithstanding – what's not to like? The 3D Cork collection, with a highly textured raised-pattern finish, is available in three signature designs: Giza, Moso and Reyes and 150mm or 300mm square tile formats. Time to crack open a bottle methinks…



Too cool for school

You can tell a classic when it still works in a contemporary environment, like Mary Shelley's Frankenstein or Oasis' Definitely Maybe. Cue Vasco's attempt to live forever, with its Vintage radiator 'combining opulence and nostalgia'. Available in white, it also comes in natural and metallic shades. Why, it's even available as 'authentic' with a transparent coating to allow the natural tones of raw steel and its welding 'to take centre stage'. Ah, it's a retro school chic that reminds me of those bullying days of yore…

Avocado is back in

Walker Simpson Architects was doing its level best to 'Be Prepared' with its design for the Girlguiding Centre in Cheshire, a new residential building replacing a 30 year old lodge that was no longer fit for purpose. There are eight dorms with en-suite facilities, a large, open dining area and kitchen, activity hall and service area. Wanting the flooring to emulate the 'forest setting', the architect chose Forbo's Sarlon Code Zero flooring in avocado in common spaces. 'Fruit salad' loop pile carpet tile in the bedrooms!

The tesseract
It might look like Emperor Constantine's Byzantine boudoir, but it seems gold mosaic tiles are bang on trend again and Orsoni, a traditional Venetian producer of glass mosaics, seems to be reverting to type nearly 1700 years later. Its 24 carat tesserae are handmade, sandwiched between glass before being heated to fuse the layers together – giving a single tessera with its crack-free finish. But while the process might be ancient, the range isn't – the firm offers 32 different hues for those Auric Goldfinger architects who are picky about their gilt.

Move over, Shoji
Formed over 60 years ago in Osaka, Japan, door handle manufacturer Union Corporation looked to mark the decades with an installation at the recent Milan Design Week. Called 'One Design – One handle', this piece was designed by architect Tsuyoshi Tane. It covered the company's history and showcased the most ancient techniques for the production of artisanal handles with its cutting-edge range. Coming from the country that gave you the shoji screen, one wonders where the door handle figures in the country's social history, but the show scotches any doubt, with samples of sand mould casting – 'one of the most ancient fusion processes known to mankind'. It seems that in a more occidental, door-focused Orient, the firm's cornered '80% of the high-end domestic market'.

So high, Soho
Londoner's eyes are usually set dead on the road ahead but look up in Soho and you might spot an intriguing rooftop extension to Axtell House by Darling Associates, adding three floors to an Art Deco office. The firm chose Shackerley's SureClad engineered stone, with CNC drilled channels in the panels referencing the original facade. The channels are further echoed in the brass-effect metal cladding, tipping its hat indulgently to the Roaring Twenties before the Stock Market crash of 1929.

Double you see
The apple doesn't fall far from the tree at Abacus Bathrooms. Much thought went into the design of the new facilities in its HQ in the spa town of Harrogate, and on the evidence of its ladies' loos, it looks like either Hans Hollein or John Hejduk could have produced the achingly satisfying symmetry. White Marble Elements basins complement the White Gloss Marble Trex3 tiles, bouncing down natural reflected light. There are lovely features too; the Trend 2 designer press panels, the wall mounted taps in brushed bronze and the LED lit recessed storage. Taken together, they're a perfectly good reason to 'give it five minutes if I were you'.

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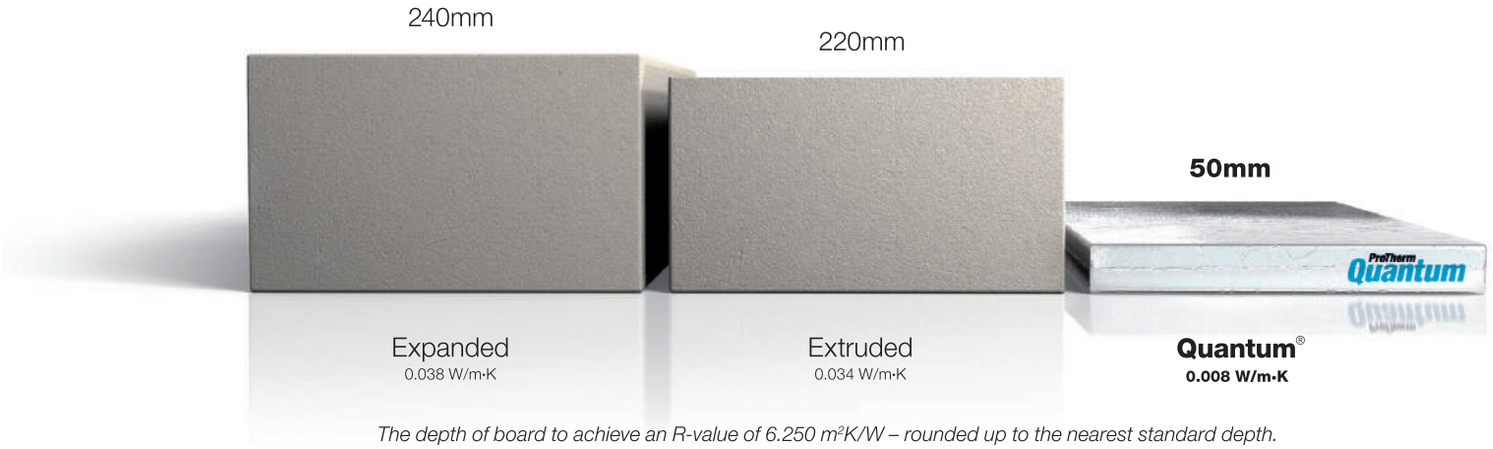

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BIM set to adopt digital twins

You may not have heard much about digital twins but they're likely to become common parlance in the drive to digitise construction.

The concept of a digital twin originates from the aerospace sector. In basic terms it is a virtual replica of a real product or process. In the case of a building this would be an advanced building information model (BIM). This model is paired with the live building so that data is transmitted continuously about the status of components in the real world. This data might be readings from sensors or indicate the status of components such as fans, windows that open and blinds.

Continuous monitoring of data in the virtual model reveals details of the building's performance in terms of energy or comfort – also possibly by indicating how it is occupied at various times of day. And it can predict when components may fail and aid maintenance.

For other sectors using a digital twin a key element of the technology is to facilitate virtual prototyping via simulation based on the current status of the real-world machine and historical data. This allows potential improvements to be tested before live deployment. The film Apollo 13 shows how ground-based simulators were set up using live data from the stricken spaceship. The team used them to work out how to ensure a safe return based on the limited power available – a very early example of the idea of a digital twin. Formula 1 cars screaming around a racetrack also transmit sensor data back to engineers who use it to help improve the cars' performance.

I am researching challenges in similar simulations to buildings. While a Formula 1 car is a complex machine, the physics of its sole task are relatively predictable. But a building's physics are continually disrupted by the occupants. So, while building systems may be relatively simple to simulate, the number of factors occurring in a space – including occupant behaviour, the weather and the physics of heat exchange – makes accurate simulation very challenging.

In the long-term, digital twin will be the confluence of a building information model which provides the digital skeleton, the internet of things which provides the link allowing the digital model to be paired to sensors in the real building, and artificial intelligence and machine learning. This last aspect will be key to improve the understanding of how buildings work and generate more accurate simulation tools.

At the beginning of the year, Cambridge University's Centre for Digital Built Britain published The Gemini Principles, which sets out a plan to build a National Digital Twin. This will not be a single model but an ecosystem to transfer data between disparate models, at a building or perhaps campus scale. It will essentially push towards the more widespread adoption of digital twins and indeed build on the momentum which has risen from the requirement for all UK government projects to use BIM. ●

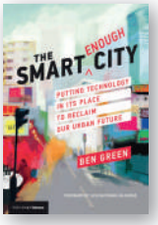
Dan Cash is a building services engineer and senior lecturer at the University of the West of England

Books

Buy at ribabookshops.com

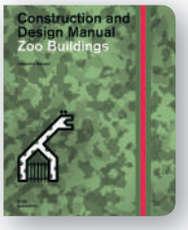
Critical Care: Architecture and urbanism for a broken planet
Angelika Fitz and Elke Krasny eds. MIT Press 303p PB £30

I was struck by a still of Australian artist Linda Tegg's work Cameratrap, set in a forest in which a camouflaged man crouches by a tree as a deer stands gingerly beside him – one striking visual in this book which is brim-full of them. Fitz and Krasny's book, a director of the Vienna Architecture Centre and a professor at its Academy of Fine Arts respectively, is a joy. A stark analysis of the 'capital-centric, speculation-driven and investment-dominated' worlds of architecture and urbanism, it posits ways in which the construction community can dispense 'critical care' on a beleaguered planet; concentrating on the three key areas of economy, ecology and labour. Divided between learned essays on ethics, land policy, diverse economies and ecology and real-world global case studies, there's ultimate belief in our ability to reformulate ourselves as a society. This gorgeous, considered book design less sugars the pill than spikes it.



The Smart Enough City
Ben Green. MIT Press. 223p HB £20

The author, an affiliate at the Harvard's Berkman Klein Center for Internet and Society and a PhD reader in mathematics, might not be worth heeding were he lost in Ivy League academia. But as a former data scientist at the City of Boston, his work interrogating data on its Emergency Medical Services led to the set up of a community assistance programme, generating real improvements in ambulance response times. Green draws on this and many other examples in his technological study of how data changes the nature of contemporary cities – not all for the better. Smart city technology, he states, can create algorithms unwittingly driving pedestrians out of cities as part of optimising traffic flows, perpetuate racist stereotypes or facilitate private companies' monitoring of citizens. Green's argument is for more targeted analysis recognising the complexity of urban life and subjugating technology to put it at the service of civic society.



Construction and Design Manual: Zoo Buildings
Natasha Meuser. Dom Publishers 550p HB £106

Book price aside, DOM's books continue to be the gift that keeps on giving, even in the context of the contentious subject of zoo design. Wenzel Peter's Adam and Eve in the Garden of Eden proves a fitting frontispiece to the author's introduction and three extended essays covering the theory, history and building typology of zoos. The lion's share of the book is dedicated to detailed accounts of zoo buildings around the world, the first section historical examples, the latter contemporary ones. The author, architect and professor at Dessau's Anhalt University of Applied Arts, has specialisations in zoology but has to tread a fine line in this extended account. She concedes the primary influence of zoo design is prison architecture but states that design is not 'geared toward disciplining'. But given the eradication of species worldwide the regret is that, far from becoming moribund, zoos may well turn out to be some species' final refuge.

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FEILDEN CLEGG BRADLEY STUDIOS

Above Visualisation of abbey without pews.
Left A full-scale mock-up of the pipework system and Great Drain constructed outside the abbey.

Hot springs fire underfloor heating

What: Underfloor heating from hot springs
Where: Bath Abbey, Somerset

The Roman baths were constructed around 70AD in the city of Bath as a grand bathing and socialising complex. The baths are still kept topped up by thermal springs which deliver 14 litres of 46°C steaming water to the complex every second. However, since the late 1970s bathing has not been permitted following discovery of a dangerous amoeba, so the hot water from the attraction has, quite literally, gone down the drain – the Roman Great Drain – to the River Avon.

Now, under the £15 million Footprint Project, architect Feilden Clegg Bradley Studios, working with engineer BuroHappold, is working on a scheme to capture heat from water passing along the Great Drain for use warming the neighbouring 16th-century Bath Abbey.

This ambitious scheme is only possible because under the Footprint Project the abbey's historic floor is being repaired and restored. The floor is completely paved with carved memorial stones, beneath which are the bodies from 6,000 burials. Under the scheme, the memorials will be revealed for the first time since the 1860s, when they were hidden from view by new pews. The team is using the opportunity to install a new underfloor heating system to replace the existing cast-iron pipes and floor gratings, which had reached the end of their life.

Underfloor heating is ideal for connection to the low grade heat captured from water in the drain because it operates at a relatively low temperature. It will provide radiant heat to occupants in the Abbey's cavernous interior.

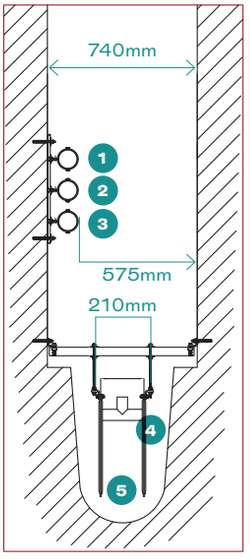
A sub-floor will protect the bodies. Underfloor pipes will be cast into a screed laid on the restored floor, which will then be covered by the 150mm-thick memorial stones placed on top. The thermal mass created by this solution means the floor will be very slow to respond to temperature fluctuations so it is envisaged that from October to March the heating will remain on for 24 hours a day.

Heat exchangers will capture heat at 25° from water flowing through the Great Drain (see box). Electric heat pumps then further raise the temperature to 55°C so it can be used to heat the abbey's floor.

A particular challenge was that water flowing in the Great Drain is only about 200mm deep. To increase its depth to cover the energy-blades, a 600mm high weir is being installed in the drain. This will have a slot at its base to allow some underflow to prevent any build-up of silt.

The project started in 2010. It is now on site with the energy blades set for installation in autumn. The project is scheduled for completion 2020. ●

Left The heat exchanger blades visible in the full-size mock up.



1 S/S flow pipe
2 S/S return header pipe
3 S/S reverse return header pipe
4 Energy blade heat exchangers
5 Great Drain

BLADE RUNNER

The high mineral and silt content of the spring water means that custom-built 3,000mm long energy-blade heat exchangers had to be built of high marine grade stainless steel. They are provided by Isoenergy and will be fitted in the Great Drain to capture up to 160kW of heat. The blades will be installed in 10 pairs along a relatively straight section of the drain, which is about 7m below street level. At this point the water temperature in the Great Drain is about 36°C. The blades are connected to the heat pump by a closed stainless steel pipework loop containing a glycol solution.

Numerous trials have been carried out both in the Great Drain and above ground. Subterranean tests included a mock-up of the weir to test that the water would be deep enough for the heat exchangers, without it backing up to the Roman Baths. The River Avon was also found to back up the Great Drain in winter, which diluted the temperature of the spring water in it – though not enough to have a major impact on the scheme's operation. Above ground, the team has built a mock-up of the drain to demonstrate the installation method for the pipework and heat exchangers and to plan their maintenance within the confines of the Great Drain.

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Installation of thin porcelain tiles

A cracked tile on your newly-laid floor or wall is the last thing you need. Kerakoll has the tips and products to keep the surface perfect

When specifying thin porcelain tiles and panels it is very important to take into account the British Standards (BS 5385-3 2014 for floor tiling & BS 5385-1 2018 for wall tiling) as the reduced thickness and large size can lead to various problems which may cause the installation to fail. The tiles' size makes handling difficult, plus they are fragile and easy to damage so suitable lifting equipment must be used and special care taken with corners and edges.

Floor tiling

For floors, the substrate should be totally level and stable, as any unevenness can cause cracking. Where possible in renovation work, laying on top of an existing sound tile installation is ideal, otherwise a self-levelling compound such as Keratech Eco R10 should be specified. Keratech Eco R10 can be used in thicknesses between 1mm and 10mm, and has a long open time but hardens

very rapidly, allowing foot traffic after two hours and laying of coverings after 12 hours. Adequate time should be left to ensure that all substrates are properly cured to avoid movement after tile installation as the reduced thickness means the tiles are more likely to crack under stress.

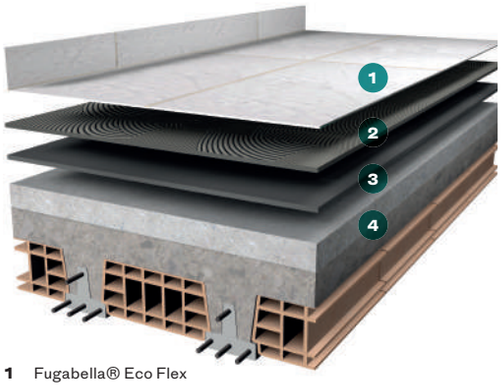
Care should be taken when fixing to ensure there are no air cavities under the tiles and that the back of the tile is entirely covered by adhesive, as again failure to do so can lead to cracking. BS 5385-3 2014 recommends the use of both back buttering the tile and a layer of adhesive spread across the floor, spreading only enough adhesive for one tile at a time to avoid a skin forming on the adhesive which could prevent proper adhesion.

Kerakoll's award-winning Biogel adhesives are perfect for this sort of installation, as they thoroughly wet the back of the tile, do not shrink and hold their shape, meaning that the tile is fully supported. The range of gel adhesives is made up of three products, which can each be used on any substrate and for any material. Biogel No Limits is the standard set C2 TE S1 version, Biogel Revolution is the rapid set C2 FTE S1 and Biogel Extreme the hybrid gel R2 version. Biogel No Limits has an open time of up to 60 mins at 23°C ,making 'skinning' before the tile is laid extremely unlikely.

Grout joints should be at least 5mm for 3m long tiles to allow adequate room for potential movement and avoid damaging fragile edges and corners. Movement joints should also be built in to allow for shrinkage of, or movement in the substrate. Under no circumstances should the tiles be butt-jointed. All joints should be clear of adhesive as far as possible before grouting to avoid cracking of the grout where there is inadequate depth of coverage. Kerakoll recommends the specification of Fugabella Eco Flex grout which can be used on joints from 2mm-12mm, and is extremely durable, waterproof and colourfast with low Volatile Organic Compounds (GEV-Emicode EC1). It is also very fast drying meaning the floor is ready for foot traffic after two hours.

Movement joints should be filled with Fugabella Eco Silicone, a solvent-free silicone sealant with very low VOC emissions (GEV-Emicode EC1 Plus).

Below The system ensures a level solid bed to avoid installation failure through cracking



1 Fugabella® Eco Flex
2 Biogel® Adhesive
3 Keratech® Eco R10
4 Keracem®Eco

Left Enough adhesive is spread on the substrate for one tile at a time and special equipment used to place the back-buttered tile on the floor.
Opposite Extra-large tiles used to create a striking effect on a feature wall. The thin tiles reduce the weight of the installation.

Wall tiling

The same principles apply for wall tiles, with the main challenge being that the large size of the tiles makes them very heavy even with the reduced thickness, so they are liable to come away if the bond with the substrate is not strong enough or if there is any movement in the substrate. It is therefore imperative that the substrate is totally solid and not flexible. BS 5385-1 2018 outlawed tiling onto plywood and a suitable tile backer board should be specified instead if a solid wall is not available. All the Biogel adhesives are very high grab and can be used on any substrate, making them the perfect choice to fix thin tiles. Fugabella Eco Flex and Fugabella Eco Silicone should be specified for grout and movement joints in the same way as for floor tiles, with the width of the grout joints being exactly the same.

Technical advice

More details on specifying these and other products including CFP and other environmental information can be obtained from the Kerakoll team, who will be delighted to offer technical advice during the specification process and should any unforeseen issues occur on site. ●

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Spurs FC London stadium, Tottenham

Below The new 62,000 seater stadium looking towards the famous South Stand.

Top flight football is all about the atmosphere – and Tottenham Hotspur's new roof on its London stadium creates a cauldron of atmosphere to steal the show

Words Pamela Buxton Photographs Hufton + Crow

Left The new stadium has to squeeze its massive form behind some far smaller period neighbours.
Middle The grand new entrance is beneath the massive South Stand.
Bottom The soffit treatment of the roof contributes to the stadium's excellent acoustics. Glazing is bonded glass, preferred to polycarbonate, which dulls over time.

When Populous designed the 2012 Olympics (now London) Stadium, it was the first cable net roofed stadium in the country. Now, the same architect has completed the second such structure, this time at the long-awaited new stadium for Tottenham Hotspur Football Club in north London.

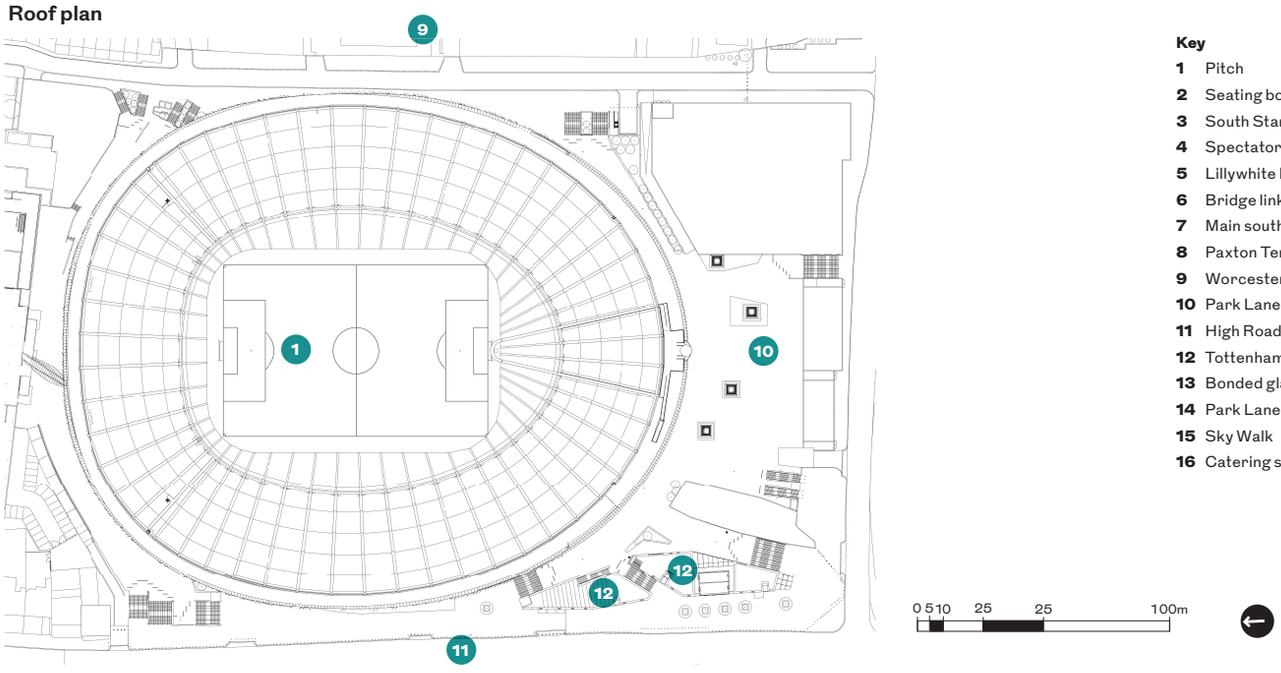
Although delays had pushed back the opening to April, now that the stadium is finally up and running the atmosphere inside – most notably the wall of sound created by the 17,500 seater South Stand – has been widely praised. So much so that the stadium's much anticipated, ingenious retractable pitch (to enable dual use for NFL American football) has had to play second fiddle.

This acclaim is gratifying for the design team, which took the club's brief for a stadium that creates memorable experiences to heart. And it is the roof, as well as the asymmetric stadium bowl itself, that has had a key part to play in this atmosphere by amplifying the sound through the carefully designed acoustic treatment of its underside.

The new 62,062 capacity stadium is part of a wider regeneration of the Tottenham area, with further residential and hotel development to follow. A redevelopment of the original White Hart Lane ground, the project had to contend with proximity to Tottenham High Road and residential areas as well as delivering exemplary sporting and hospitality facilities. Another key factor in the design of the stadium was construction time – the club wanted to minimise the time spent at its temporary home venue of Wembley, so speed of erection was a priority.

Populous aimed to create what principal Mark Craine refers to as 'a cauldron of atmosphere'. At the heart of the design concept is the tight seating bowl, arranged as a horseshoe meeting the all-important South Stand behind the home goal. This stand is unprecedented as a single-tier, and is some three times the size of the previous home end. In order to achieve such a high capacity on a tight site and maintain excellent sight lines, the super efficient stands are angled at 35° – the maximum pitch allowed – and seats are compact rather than generous in depth and width. Hospitality boxes are kept to the east and west sides so as not to disrupt the atmosphere of the end stands. Further extensive hospitality facilities are contained in nine levels of stand accommodation, including a dual aspect

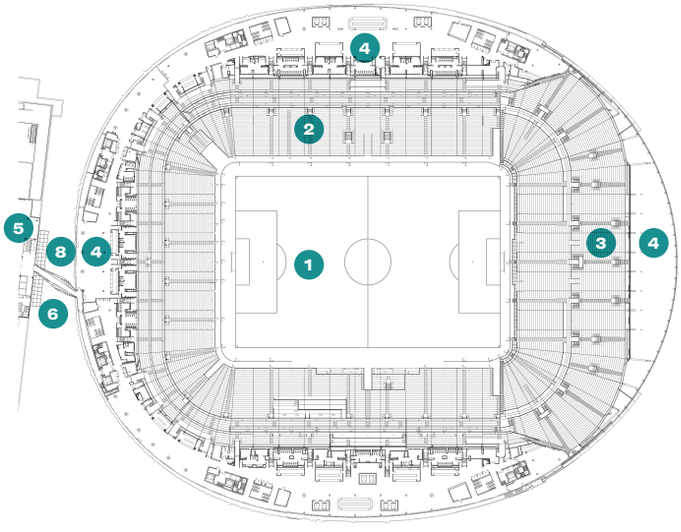
Roof plan



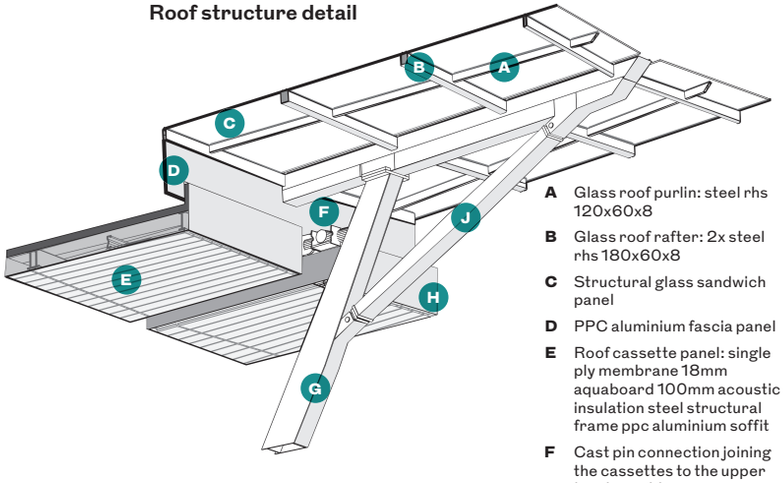
Key

1 Pitch
2 Seating bowl
3 South Stand
4 Spectator concourse
5 Lillywhite House
6 Bridge link to Lillywhite House
7 Main south entrance
8 Paxton Terrace
9 Worcester Avenue
10 Park Lane Square
11 High Road
12 Tottenham Experience
13 Bonded glass inner roof perimeter
14 Park Lane
15 Sky Walk
16 Catering support

Roof plan level 5 upper concourse



Roof structure detail



A Glass roof purlin: steel rhs 120x60x8

B Glass roof rafter: 2x steel rhs 180x60x8

C Structural glass sandwich panel

D PPC aluminium fascia panel

E Roof cassette panel: single ply membrane 18mm aquaboard 100mm acoustic insulation steel structural frame ppc aluminium soffit

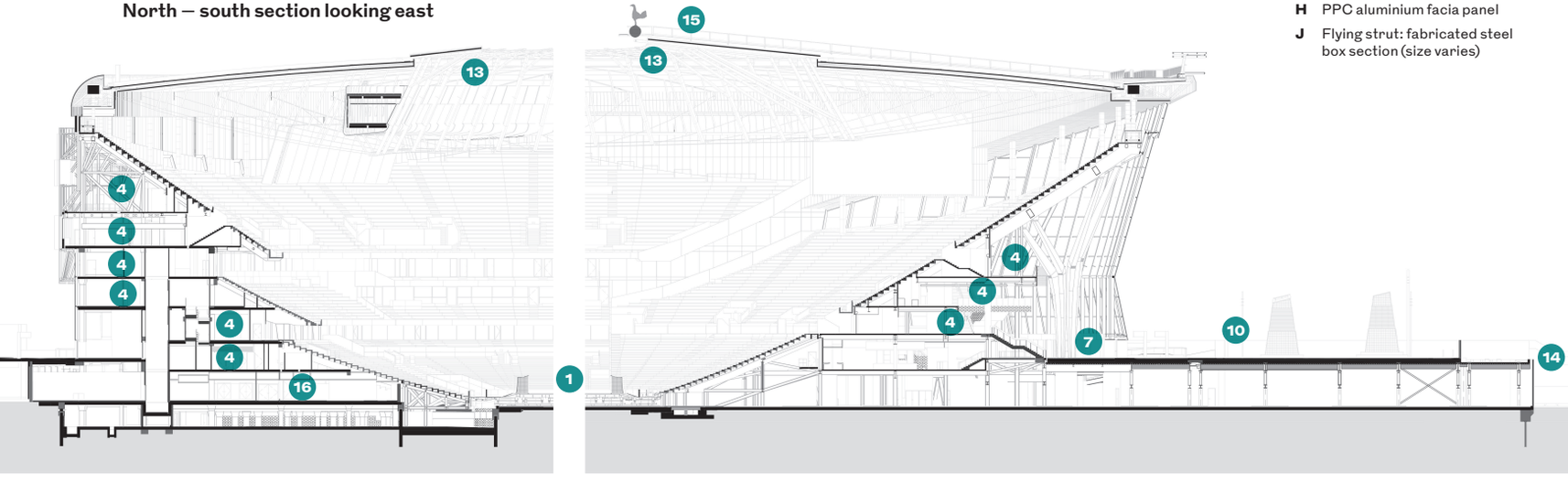
F Cast pin connection joining the cassettes to the upper tension cable

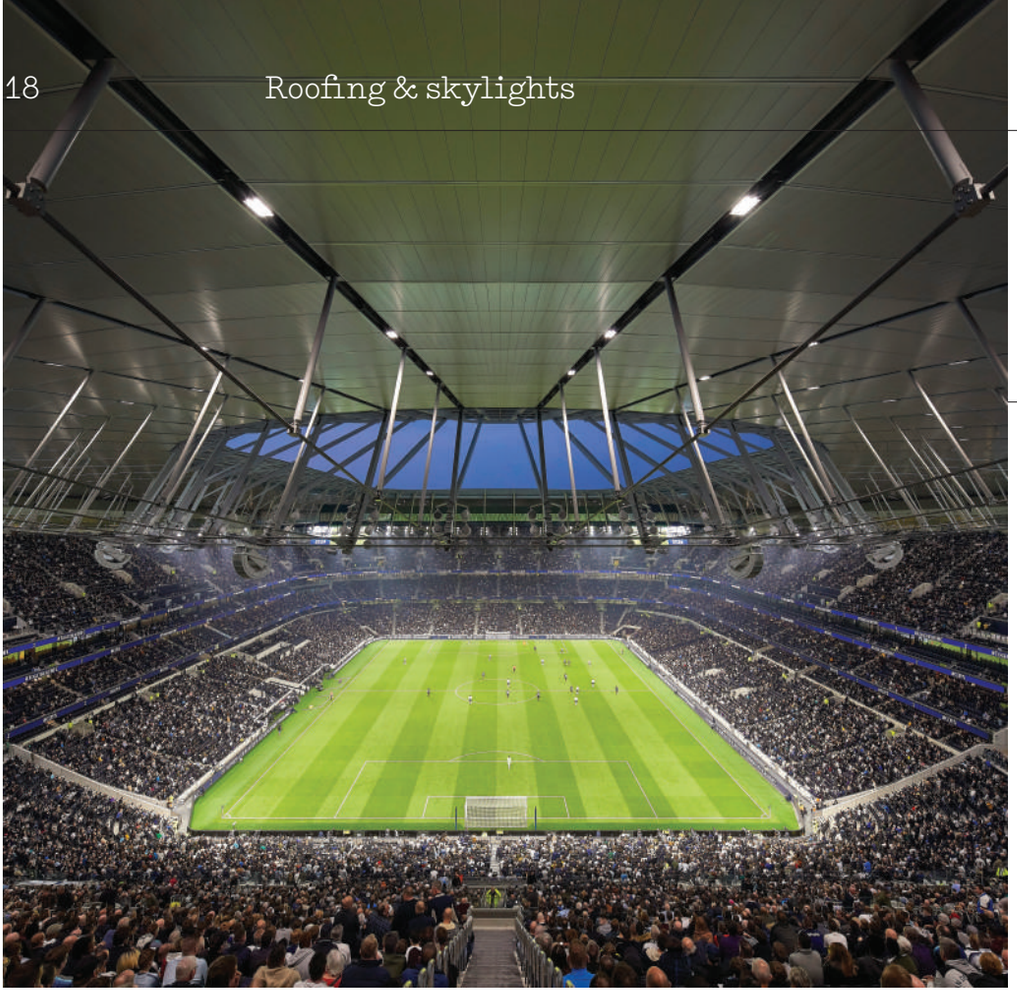
G Flying column: fabricated steel box section (size varies)

H PPC aluminium facia panel

J Flying strut: fabricated steel box section (size varies)

North – south section looking east





Left Despite the size of the stadium, its steep rake and enclosing roof structure create a genuine sense of intimacy.

Sky Lounge with views both into the stadium and out at the top of the South Stand. Externally, the facade is clad in a mosaic effect of perforated metal cladding which wraps into the roof to give the full enclosure essential for noise control.

A steel truss roof was initially considered but the firm opted for a cable net structure, created using form-finder software to achieve the distinctive irregular geometry and accommodate expected movement. As well as being far lighter (600 tonnes) and more elegant, this had the advantage of ensuring that the roof structure wouldn't comprise views from the Sky Lounge.

'It's a super-efficient structural system that is super-elegant when detailed correctly,' says Populous senior principal Tom Jones. 'It's a very refined piece of design and engineering.'

The structure uses an oval compression ring at the back of the stands created from a welded steel box girder about 700m in length. This supports two tension rings – one upper, one lower – which in turn support the roof above. The tension rings are connected back to the compression ring by 54 upper and 54 lower radial cables measuring approximately 42m and 38m long respectively. There are four flying struts per radial grid making a total of 216 between the two rings. The upper and lower tension cables are connected between the compression ring at the back of the roof and with 'flying columns' at the front, which vary between 12m and 15m in length. The maximum span from the roof edge to the compression ring is about 65m above the South Stand.

After extensive preparation laying out the galvanized steel cabling, the cable net structure was lifted into position and tensioned in just two weeks, with six cables supporting the lower ring and four supporting the upper.

The transition between roof and facade was navigated with a curved eaves in standing seam aluminium. The 30,000m^2 roof area was then covered in two different ways. It is mostly clad in 270 insulated roof cassettes – five per radial bay – supplied by Buckingham. Each cassette is roughly 8m long and tapers in width from around 15m at the back of the roof to 10m at the front. These are topped with a metallic finish polymer membrane that had been pre-bonded to the substrate and finished with an aluminium panel underside.

However, the perimeter section of the roof closest to the pitch needed to be transparent to ensure that enough sunlight reaches the pitch to keep the grass healthy. Most stadiums have a transparent polycarbonate but Populous and Spurs preferred the higher quality of bonded glass. This was achieved using 1,200 panels of extensively tested bonded structural glass, also supplied by Buckingham.

'It's just a better quality way of doing it – polycarbonate does go cloudy over time,' says Craine. 'It's great that we've had a client who's been open to pushing boundaries and is very focused on the best quality.'

The design of the opaque roof section was vital in creating the stadium atmosphere. Populous worked closely with acoustician Van Guardia to ensure the desired balance of sound absorption and reflection so that the sound from the stands and public address system was neither too quiet or too deafening. The solution was a combination of perforated and solid panels to generate the required wall of sound – the rear third are perforated and the rest are solid.

Where the glass and metal roofing meet, a 'relief valve' detail allows air to move between the two.

Visual simplicity and a lack of roof clutter was a priority, with services integrated into the flying columns, which each house six LED sports lights. 'It's all very simple. Nothing is left exposed,' says Craine. 'You don't see a lot of services but there's an awful lot of services up there. We've kept everything very clean. It doesn't look like there's a lot going on but there is.'

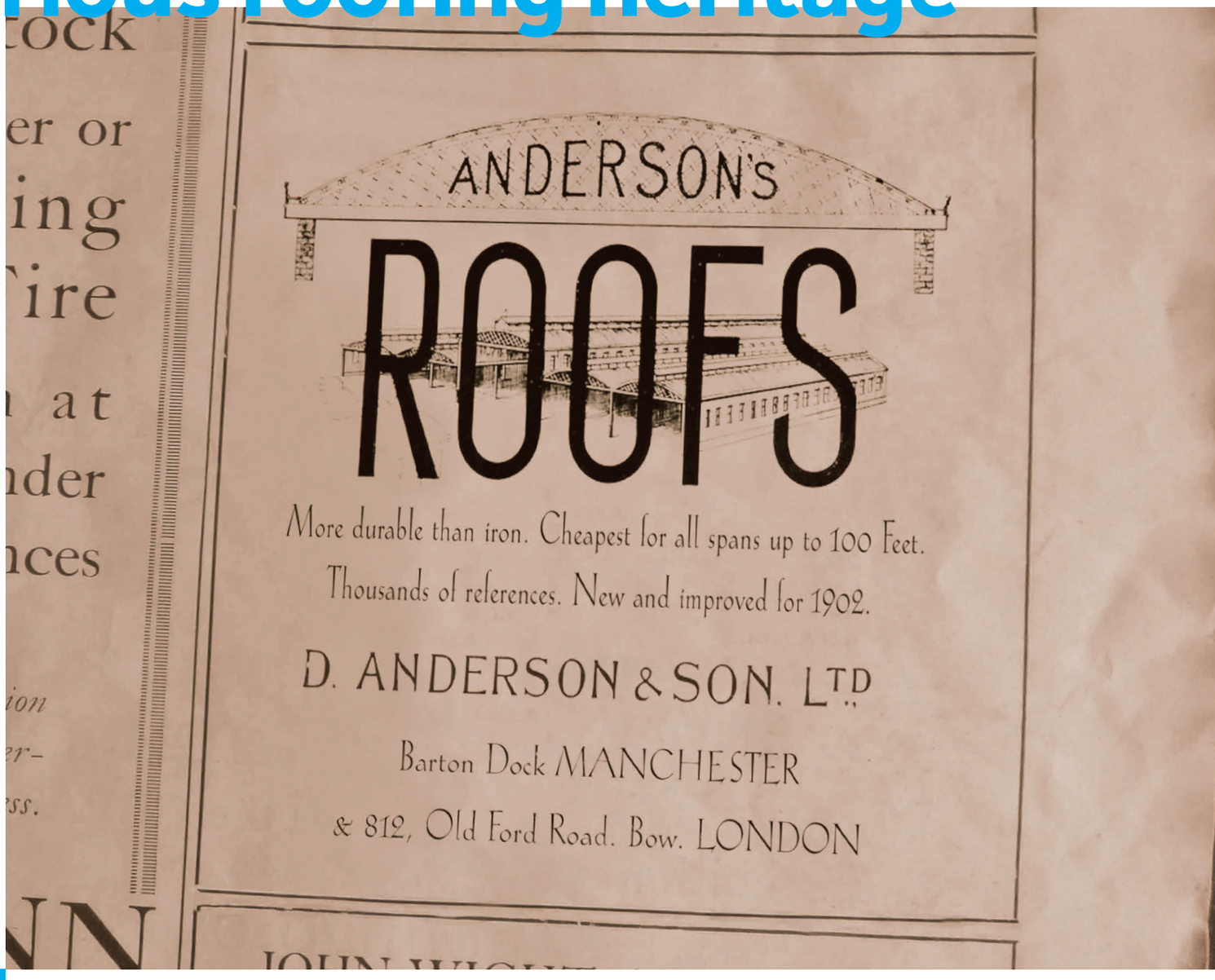
In each corner are massive screens so spectators can see close ups of the action.

The designer is satisfied that the roof has helped give the ground a unique visual identity. 'When you look at the stadium on television, it can only be Tottenham,' says Jones.

Anyone wanting to get a really close look at the roof will soon be in luck – the club is planning to open a 'sky walk' experience giving intrepid visitors a view down through the glass into the stadium as part of a walk past the large golden cockerel resplendent on the roof top of the South Stand. ●

Credits
Client Tottenham Hotspur Football Club
Architect and principal designer Populous
Interior designer Jump Studios – a Populous company
Tottenham Experience designer Populous
Planning consultant DP9
Structural engineer BuroHappold Engineering & Schlaich Bergermann Partner
M&E consultant BuroHappold Engineering
Quantity surveyor Arcadis
Landscape architect Populous
Lighting consultant BuroHappold Engineering
Main contractor Mace
Premium areas fit out BASE Contracts & F3 Architects

New name, serious roofing heritage



This 1902 advert in Architecture is a testimony to BMI Icopal's flat roofing heritage, and we're proud that we can look back even further to 1849 when we manufactured our first tarred flax felt. Ever since we've been delivering innovative roofing and waterproofing systems. Now as BMI we continue this work by providing shelter, protection and peace of mind for architects, roofers, building and homeowners alike - through roofs that are designed to transform the way people live and work.

bmigroup.com/uk

Providing total roofing solutions

BMI Decra · BMI icopal · BMI Monarplan · BMI Redland · BMI Sealoflex · BMI Sureplan · BMI WOLFIN

Left neo: the roof window for pitched roofs designed to look like a sheet of glass.

The elegant expansion of natural light

As demand for higher levels of natural illumination grows, the Rooflight Company's neo range maximises light ingress with style

'I want more natural light'; say more clients than ever, who are increasingly clued up on the health and wellbeing and energy-saving benefits that natural light provides, but also want to create the wow-factor in their projects with large expanses of vertical and overhead glazing.

A room with a window might be considered a naturally-lit space. However, daylighting experts would argue that for any space to be considered daylit it must use natural light as the principal source of daytime illumination. They also would insist that the external environment and internal space need to be seamlessly connected and that the natural light must create a thermally comfortable place.

The good news is that top-lighting allows up to 30% more natural light to enter a space than vertical glazing of the same size. Top-lighting also connects people with the sky above, bringing the sky into the room below.

With many options available in pitched roof windows and flat rooflights, it is not difficult to specify a top-lighting solution. However, the real challenge architects face is finding a solution that elegantly expands their natural light.

Elegant simplicity

The neo range from the Rooflight Company comes in expanses of up to 2.3m by 1.4m. Architect Jenny Harborne of Imago architects was approached by her client to add elegant roof windows to an extension to a minimalist property in Fulham, London. She specified neo from the Rooflight Company because unlike most modern roof windows, when closed it has totally clear views uncluttered by opening mechanisms. Privacy was a key element of the brief as the property is flanked at either side by homes overlooking the extension. With this in mind the glazing was upgraded to Optifloat Opal privacy glass.

Three neo S12 roof windows were specified, two being motorised and one fixed shut. The motorised roof windows were fitted with rain sensors to ensure automatic closure during adverse weather conditions.

'I like the clean lines and modern design of the neo roof window,' says Harborne. 'It merges well with the standing seam roof at this project and complements the minimal design perfectly.'

Featuring a sleek, contemporary and elegant design and flush edge-to-edge glazing, the neo specified by Harborne offers a roof window that combines unique properties with a frameless, minimalist appearance to complement modern architecture and interiors perfectly in a property like the one in Fulham. Designed entirely from the specifier's point of view, its clean lines merge unobtrusively within the roof line.

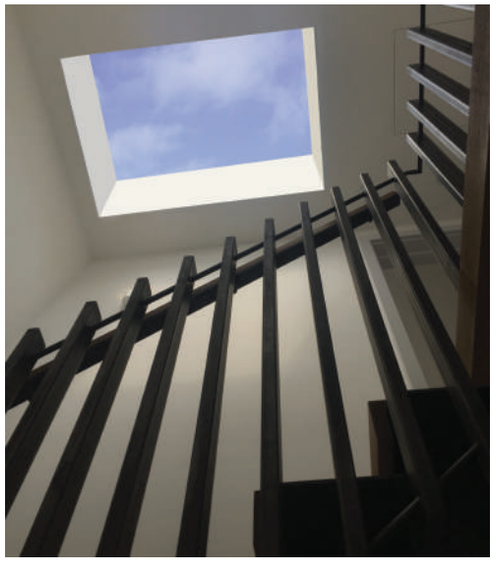
Light from above

The neo Plateau range consists of sizes up to 2m by 1m. The range combines superior design features such as its unique Thermoliner® detail, to minimise the risk of condensation and mould, and an insulated kerb detail to retain heat within a building. neo Plateau follows the elegant design of the neo pitched rooflight.

Gallery, a high-end residential and commercial installation specialist based in London, was looking for a solution that could give its project quality natural daylight, without compromising heat retention. Its team identified the neo Plateau as the perfect solution for its needs.

As a company founded by an architect, the Rooflight Company understands the wants and needs of architects. It appreciates the importance of aesthetics which is why its ranges are designed to complement a building's design and provide an unobtrusive finish when compared with other options on the market.

The Rooflight Company was founded by architect Peter King more than 25 years ago and in March 2019 made the transition to employee ownership. The news came at the same time as London-based architectural practice Assael revealed that it turned down a large offer from the United States, before also making the decision to become an employee owned company. ●



Left The clean lines and modern design of the neo roof window are a perfect fit for the standing seam roof at the property in Fulham.

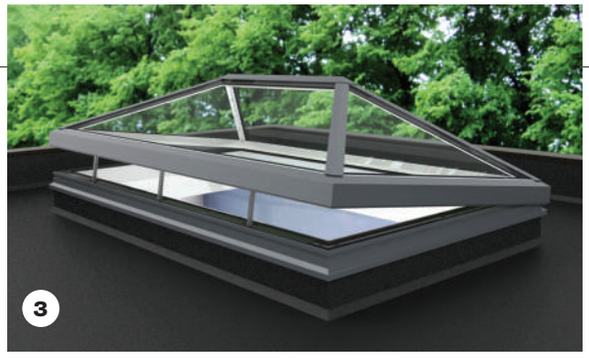
Below neo Plateau gives quality natural daylight without compromising heat retention.

the Rooflight Company

To find out more about the Rooflight Company and its range of rooflights, from conservation to contemporary and bespoke options, visit www.therooflightcompany.co.uk, call 01993 833108 or email enquiries@therooflightcompany.co.uk

PiP specifieds are compiled from supplied company press releases

Specified



1
Parabit Duo hot melt system
BMI Icopal

Came here for a family celebration. Opted for a 'Parabit Hot Melt Duo' and even ordered cheesy football toppings for a special treat. Was looking forward to a feast of mustardy melted twin cheeses, but surprised to be served 800m^2 of concrete roof deck topped with inverted insulation, spun-bond polyester fabric sheet, and a 'special blend' of bitumen, synthetic rubbers, polymers and additives. Was not helped by the Astroturf garnish. Five stars for waterproofing and playing surface; two stars for the food.
forbo-flooring.co.uk

2
Cwt Y Bugail slates
Welsh Slate

'Boris? Tommo here... Heatherwick. THOMAS HEATHERWICK. Just to let you know we've finished off at King's Cross so London's regeneration is looking considerably more [COUGH] shall we say... prime ministerial. Hah! Looks bloody marvellous, actually. Yes, tidied up the old rave sheds. Put some extensions on; can hardly see the join. Topped 'em off with a nice bit of Welsh slate.
'Hmm? "Cwt Y Bugail", same as the originals. Cutting was a nightmare, apparently. Bit of a SNAFU on the old drawings – but I don't think anyone will notice."
welshslate.com

3
Aero Pyramid lantern
Sunsquare

Thousands of Ancient Egyptians could still be with us today if not for greedy Pharoahs, say campaigners. A new report claims that thousands born between 2589 and 2504 BC could have been saved if ventilated canopies had been fitted to their landlords' post-life dwellings. 'Tomb industry claims that slaves were brained before burial are being questioned,' said report author Dr Will Saynithing-Fercash. 'Sealed pyramids cost lives. It's a scandal it's taken a full 4000 years for 30° mechanical hinging to finally bring funerary structures up to modern safety standards.'
sunsquare.co.uk

4
Hawkins Fired Sienna clay tile
Marley

Our countriman mr Shaksper is willing to disburse some monei upon some od yardeland or other Shottrei and sendeth to inqeyr upon ye availabilitie of ye newe buyldes reputed to be situate in ye Shyre of hys birthe, viz. Warwick Shyre. He seketh in particular dwellynges in ye half-timbred stile, and specifieth that ye tyles ypon ye roofes shal be onlie Hawkins Fired Sienna plain clays from Marley, for he ynderstondeth that extra BREEAM credits are avaylable for theyr BES 6001 accreditacioun and ye colore forsoothe ys 'swag'.
marley.co.uk

5
Curved aluminium box guttering
Guttercrest

'Caesar says the Britons paint themselves with woad, which gives a blue cast to the skin and makes them look dreadful in battle. Their ruler is a woman of kingly descent, and their houses are large, of circular construction, and roofed with well-cut slates. Their skill in smelting and working with metal, particularly a salvaged material light in both colour and weight, has not before been reported. They attach ingenious curved enamel-coated sections of this 're-cycled aluminium' to houses for the elegant conveyance of rainwater.'
- Obsequius Locutor, 59 AD
guttercrest.co.uk
-

6
Kerto LVL laminated veneer lumber
Metsä Wood

'Good god, professor! Some of the members in this web are over 23 metres long!'
'Yes, Jimmy... just imagine the size of the creature that created this perfect structure... It's a marvel of nature. Or...'
'What, professor? Tell us! You don't say this is... natural!'
'It is, Barbara. Or rather...'
'Jimmy! Hold me! I'm frightened!'
'What? WHAT? FOR PETE'S SAKE! Professor?!!!!'
'The new atomic isotope, giving us power to cause such phenomenal growth, is so powerful it may have triggered our spider nutrient into a timber engineering miracle.'
metsawood.com

7
SP4-12 sunlight collector
Parans

My dearest Count ---,
It pains me to impart that Ikea Helsingborg is renamed 'Van Helsingborg', and we must escape the comfort of our stronghold. Your sanguine battalions here will shortly die --- indeed, I say, die --- and that horribly, subject to the fiery annihilation of a new and ingenious engine whereby the pestilential glare of sunlight penetrates the fabric of the very roof and into the dusky labyrinths where formerly we were pleased to hunt and feast at will. Please order 80 'FRAKTA' blue trolley bags for delivery to Castle Dracula without delay.
parans.com

8
Heavy 3 natural slate
Cupa Pizarras

The location of the 2020 Monsanto Second Coming™ has been announced, to a mixed response from the people of Glasgow. Paddy Power is now offering even odds on the Virgin Birth™ taking place in one of the 52 mid-market flats in Glasgow Housing Association's development of AW Wheatley's four-storey Bell Street Stables. Ahead by a nose in the betting are units directly under the 2000m^2 Cupa Pizarras Heavy 3 roofing. So close are these slates to Heaven that penthouse sales to single women are proving heavy going.
cupapizarras.com/uk
-

New name, serious roofing heritage

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bmigroup.com/uk

Providing total roofing solutions

BMI Decra BMI icopal BMI Monarplan BMI Redland BMI Sealoflex BMI Sureplan BMI WOLFIN

Leisure centres break out of the big box

Demand keeps rising for active leisure facilities, but the modern pleasure dome performs other functions too. And they're complex beasts to build

Words: Josephine Smit

FAULKNERBROWNS ARCHITECTS (2)

Fun can be a serious business. In the 1930s, the 9th Earl De La Warr, mayor of Bexhill, spoke of promoting the 'growth, prosperity and greater culture' of his town with what would become the landmark pavilion. Today, public and private sector clients are looking to activities from archery to zorbing to produce business profit, push regeneration, plug gaps left by retail decline and deliver other benefits for places and people.

Nigel Costain, senior director at property consultant CBRE, talks of 'curating leisure time' with varied experiences. In a town centre, for example, there need to be multiple reasons to visit, he explains, 'So you have a series of leisure mini-anchors, rather than the old anchor store, to create a leisure day out.' This can help leisure schemes break free of old 'big box' constraints and out-of-town locations, but it means more complicated projects, where buildings have to be planned with an eye to the future.

Snow business

When the UK's first indoor ski slope with real snow was being planned in Milton Keynes, retail had to be incorporated to help de-risk a pioneering project and a contingency plan to convert slopes to terraces of tennis courts was drawn up, recalls Russ Davenport, partner with FaulknerBrowns. 'We came up with a plan to replace slopes with stepped terraces of tennis courts,' he explains. Two decades on, Xscape's Snozone has attracted two million visitors, and a sixth UK centre is in planning in Middlesbrough.

Retail remains in the mix, with other activities, restaurants and cafes, creating leisure destinations. Subzero's planned centre in Middlesbrough is intended to help drive regeneration at Middlehaven. But while the number of centres is rising, the ski slope itself may have reached its size limit, Davenport says. 'It is unlikely that in the UK we'll see ski slopes go beyond 200m in length, which puts the slope 50m in the air,' he explains. 'For every metre longer beyond that, there is a massive on-cost.'

Commercial limitations in size and use of ski slopes are prompting developers to set their sights on snow play – with elements like slides, tobogganing and zorbing – which has broader audience appeal. 'It's more flexible and profitable,' says Davenport. Swindon's North Star Village, being developed by Seven Capital, will have the UK's largest snow play area – set between an approximate V formed by a nursery slope and 160m main slope. The play area will have a flat floor with features built onto it, which can be replaced easily as trends change.

Within the snow centre, space is typically around 75%/25% 'cold'/'warm', with the latter comprising snow-side restaurants, changing rooms and other services. The interface between the two has to be limited for energy efficiency, with triple glazed windows at lower levels providing glimpses to tempt in punters. Snow operators generally want to limit public views into their facilities to preserve commercial exclusivity, but spectating is increasingly important too, points out Davenport. 'We are generally finding that five, six or seven people will come to watch for every one person who takes part.' As a result, part of North Star's mall circulation space will look onto the snow action.

Above FaulknerBrowns' £31 million Chill Factore in Trafford Park. At 180m long, it's the UK's longest indoor ski slope.
Below FaulknerBrowns' Middlesbrough Snow Centre proposal.

There are challenges to designing for snow. Doors and fire escapes linking to the cold side require trace heating around them to ensure they don't freeze shut. 'It's like a home freezer in that it doesn't require a lot of energy,'says Davenport. 'But a cold bridge or a leak in wall panels can present a huge problem, so we have to make the cold side as sealed as possible.' Insulated cladding panels connect and lock

GUY HOLLAWAY ARCHITECTS

Right Guy Hollaway Architects' F51 skate centre in Folkestone where undulating floors are par for the course.

to keep out water which could freeze and ultimately cause panels to blow. 'Manufacturers will only guarantee their systems if they are used flat, so that affects the shape of the slope in plan and elevation,' says Davenport.

There is only so much you can do with a giant ski slope, unless you are building it on a hill, he adds. 'It is hard to make it anything other than a box. The architecture becomes fairly pragmatic' – and cladding such a massive area often means relatively cost-effective materials are used. Swindon's centre will have a brick plinth, in a nod to its location's rail heritage, with industrial style cladding above, while the Middlesbrough design uses Corten steel.

Skateboarding for social purpose

Skateboarding is coming to Folkestone town centre and, in a world first, will have its own purpose-designed, multi-storey building. The F51 skatepark is being developed by The Roger De Haan Charitable Trust, founded by businessman Roger De Haan, which has invested in other projects in the town.

The skatepark began as a plan to develop a multi-storey car park. But De Haan and architect Guy Hollaway got talking, and the urban sports centre is now under construction. Hollaway says his response to the brief was, 'Cool. Let's do it,' but defining 'it' has been more of a challenge, and the building's design has had to evolve during delivery. 'We're almost inventing a new building type architecturally,' Hollaway says. 'It's without doubt one of the most technically challenging buildings we've worked on because it has never been done before and there's a huge amount of concrete in the air.'

F51, which has a lozenge-shaped footprint, combines café/bar, function room, boxing gym and bouldering room with a climbing wall and three skate floors. At first floor are the centre's concrete bowls: the pool bowl, extending to 2.5m deep, which is modelled on the California swimming pools where skateboarding originated, and a more modern style bowl, 1.65m at its deepest. Above that the construction is lighter weight timber, with a street level, where skateboarders can test their skills on steps and rails. A flow floor at the top has undulations of up to 1m and features such as waterfalls.

The park will cater for hobby skateboarders and BMX bike riders as well as serious competitions, with space for hundreds of spectators. Experts Maverick Skateparks and The Bartlett's Iain Borden are helping ensure users won't be disappointed. 'When I was a kid, I tried skating, got my wheels stuck on a drain and that was it,' says Hollaway. His hope that the building could be designed to allow people to skate the 5m between its floors came a similar cropper, ruled out by experts on safety grounds.

Hollaway says Borden's guidance was invaluable in marrying skateboarding and architecture: 'There's a fine line between making something cool and making it regularised.' The design is urban and honest, so people in the café will see the exposed underside of the bowls and hear the skateboard wheels. Hollaway says, 'It'll be like being under the belly of a sumo wrestler.'

Like the car park it could have been, the building is unheated and designed for ultra-low maintenance. Above the glazed ground floor exterior, it is wrapped in anodised metal mesh, which helps protect skateboarders – and the concrete bowls – from sea mists and rain. The bowls were made on site using sprayed concrete, with pre-formed polystyrene blocks to shape the curves. Maverick adds the finishing layer to make the surface skateboarding-ready.

The centre has caught attention in the USA, not least from skateboarding guru Tony Hawk, but UK imitators look unlikely yet. 'It's a bit of a one-off, and has a wider social purpose,' says Hollaway. Although a big budget project, F51 will be accessible to users for a £1 membership fee. This project, like others by the trust, is intended to help make Folkestone a better place to grow up and foster positive childhood memories, so young people that move away in search of opportunities want to return when they start their own families. As such, it's part of a bigger investment in generational regeneration.

From leisure centre to community hub

Local authorities not only have social and business imperatives for driving leisure development, many also have ageing existing facilities. 'A lot of the old 1960s leisure centres are no longer fit for purpose, and are being replaced with centres that place a much stronger emphasis on health and wellbeing,' says Karle Burford, director of AHR.

On the inside, the focus is now on flexible exercise spaces, soft play and rectangular fitness pools, which maximise potential for use and revenue. 'Local authority clients generally seek a tight and efficient design, which is sustainable to run and provides multifunctionality to enable them to make the most of the spaces,' says Burford. Its Places Leisure Eastleigh, a centre developed by Eastleigh Borough Council, has glazed elevations that flood the swimming pool and sports hall with daylight, as part of its BREEAM Excellent design. The centre is vast, including an eight-lane swimming pool, 15 badminton courts, all weather pitches and soft play area, but its transparency throughout connects it to its parkland setting.

While in the past centres looked inward, their new replacements are designed to be welcoming. 'These buildings are becoming increasingly important elements of larger community hubs,' says Burford, 'and need to attract and cater for people of all ages and abilities.' The practice's refurbishment and extension of the 1960s-built Keynsham Leisure Centre, for Bath and North East Somerset Council (BANES), is being accompanied by the transformation of former council offices above the swimming pool to homes by BANES' Aequus housing company. Redevelopment gives connectivity to the town centre, while embracing surrounding green spaces. Alongside, there are new council offices, a library, multi-service centre and market square, also designed by AHR.

In nearby Chard, the architect is working up plans that could see leisure moved from out-of-town box to the town centre, as part of another larger-scale regeneration. Bringing the large volumes and flexible spaces of today's leisure uses into tight urban sites, and presenting a friendly face, can demand stacking and well-considered use of space. 'The Chard project will be complex,' Burford acknowledges, 'but the mixed-use community scheme is important as a catalyst for regeneration. These projects provide public value and put the civic heart back into towns.' ●

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Feel well, work well approach drives good office design

Wellness, sustainability and reuse are primary considerations for office design – along with the social importance of the washrooms

Words: Ruth Slavid

Most of us know how important communication is in contemporary workspaces, but have you ever thought about the communication that happens in and near to the toilets? Lynne Clapham-Carter from plumbing company Geberit has. Speaking at the PIP seminar on office development in April, she described the increasing popularity of 'superloos' which contain washbasins as well as WCs and so can be gender-neutral. Conversations therefore take place on the way there, and not within a single-sex environment. And careful positioning within the office can assist interaction. 'Steve Jobs recognised the ability to engineer staff relations by the position of wash rooms,' Clapham-Carter said.

Wellness is a primary concern in offices today, and much of her presentation was about it. This included creating a relaxing environment, dealing with sounds by using asymmetric pans and white noise, and eliminating smell. And Nicola Gillen of AECOM, lead author of the practice's book Future Office, published by RIBA, identified millennials, those born in 1997 and after and just entering the workplace, as the group most concerned with wellbeing. Given that their work style is 'autonomous and opportunity driven' and that their work style is 'anywhere, virtual' it does beg the question, what is the office – wellbeing or not – for?

One of the answers is as a destination, a place for experiences, which millennials value over physical possessions. But there is a way to go. Research by AECOM, admittedly in 2011, found that '75% of workers say an energizing workplace is important, yet think their workplace is boring'.

Buildings of the future should be sustainable and adaptable, according to the AECOM book. Designing new buildings today that can adapt in the future is important, but so is adapting the buildings of the past to satisfy today's needs. Cartwright Pickard adapted the four disused red-brick warehouses of Albert Works in Sheffield

Above Large windows and an extra storey on the roof turn the Weaving Works into an asset on Belfast's streets.

Right At the R7building in London's King's Cross, Morris + Company used loggias to connect users to the city.

JACK HOBHOUSE

Right AECOM created a large studio space out of three bays at Albert Works in Sheffield for marketing agency Jaywing.

TOM KAHLER

to create a headquarters building for brand and marketing agency Jaywing.

This put the company at the heart of the city's cultural quarter, moving it from a conversion on the outskirts that visitors could only reach by walking past a string of sex shops. Three bays have been opened into one large impressive single studio space, with raised walkways to either side, and there are more intimate areas, set in and above containers.

New-build elements that support the open space are expressed externally with bronze-finished aluminium cladding, indicating that there is something new inside. What is most impressive about this project is the reaction of Jaywing's creative director, who not only talks about the wow factor but also says that the building has changed the way people work and has helped to win new business.

Re-using old buildings is fundamental to Belfast based RMI ('Respond Make Inspire'). Partner Rob Jennings talked about a project where the practice applied this philosophy, the Weaving Works in Belfast. This was a former government-owned building that had stood derelict for 20 years. Despite a fascinating history (it was the first reinforced concrete building in Belfast), it looked pretty depressing.

Jennings however saw the potential of the large windows and the location in an area on the brink of a renaissance. He has made the ground floor into a retail space plus a snazzy reception and put a lid on the building, a glulam structure that includes a terrace for chilling out and to benefit from fabulous views that were previously seen from a hideous flat roof. 'The building looked as if it had been lobotomised,' he said.

Joe Morris of Morris + Company expertly shared the way in which his practice designed the R7 building in London's King's Cross. With two blocks effectively slipping past each other, the main achievement was the creation of outdoor space with loggias on every floor. So although its users are raised above the city, they are within it.

TODD WATSON

Steve Jobs recognised the ability to engineer staff relations by the position of wash rooms

This wellness approach was also a concern of Ben Hancock, director of Oscar Acoustics. 'Poor acoustics can be stressful,' he said. His company's products are mostly sprayed recycled paper, with good sustainability credentials and low emissions. They come in a range of surfaces, from pretty rough to smooth, suiting different aesthetics and budgets.

Because they are spray applied, they can follow complex contours, allowing the design of the office to remain as intended. As office life becomes more social, with impromptu discussions and video conferencing, so the role of acoustics becomes more critical. Wellbeing in offices is about much more than ergonomic chairs and sit-stand desks. We need to get everything right, including the acoustics, to ensure people want to continue to work there. This is a real challenge for the profession.

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Lobe Block, Berlin

Kitchens, individually customised, play a pivotal role in an art curator's dream to build a creative space in Berlin

Words Jan-Carlos Kucharek Photographs Erica Overmeer

If Lobe Block client Olivia Reynolds, beneath her outer calm, is feeling fraught and preoccupied, there's a reason for it. Since the previously London-based art curator, who moved to Berlin in 2009, decided to sell her home in London Fields in 2014 and invest everything she had to establish a life for herself and her two daughters in the city, it's been a hair-raising financial journey.

But Reynolds had at least done her homework. Having spent the first five years setting up art residencies in Berlin and London, often putting the artists up in her home (in either city), she gained a foothold in the local art scene, along with curator and business partner Elke Falat, which let her develop a vision she might realise.

A self-confessed entrepreneur since she studied at the Glasgow School of Art, Reynolds had spent years living in the art community and dabbling in property. Her plans overrode everying. 'My idea was to build an art gallery,' she recalls of those first heady days, 'a living space for me and maybe a couple of families, a courtyard for community projects I wanted to initiate, with a garden and maybe some farm animals.'

The result, though it's a compromise on the purity of her original idea, is no less bold a proposition: a dramatic, multi-storey, ziggurat-shaped concrete structure in the inner-city Wedding industrial/residential area – 'Berlin's grubby equivalent of Kennington'.

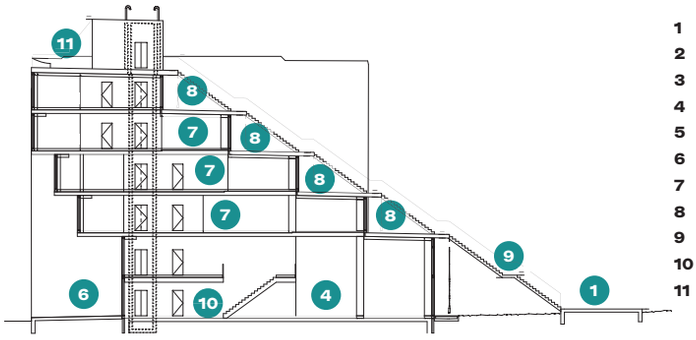
In the end it was planning Use Class, legal issues over tax relief on the construction cost and Reynolds' severe budgetary constraints that ended the dreamy notion of a a low-rent community live/work space, but both client and architect pursued this agenda nonetheless. Reynolds had asked up-and-coming local firm Brandlhuber + Emde to propose 'a one or two-storey development' – having cut its teeth on small art projects and self-funded built commissions, the Lobe Block would be its first large-scale work.

Seemingly enthused about Reynolds' idea of a homestead, the architect returned with a model of a sizeable, five-storey concrete building of narrow, double-aspect live/work units with wide, stepped south terraces. Keen to see her capitalise on the potential of a valuable urban site, it focused on a 1958 zoning plan which allowed commercial development up to this height.

With a louche optimism that hearkened back to West Berlin's more contingent days

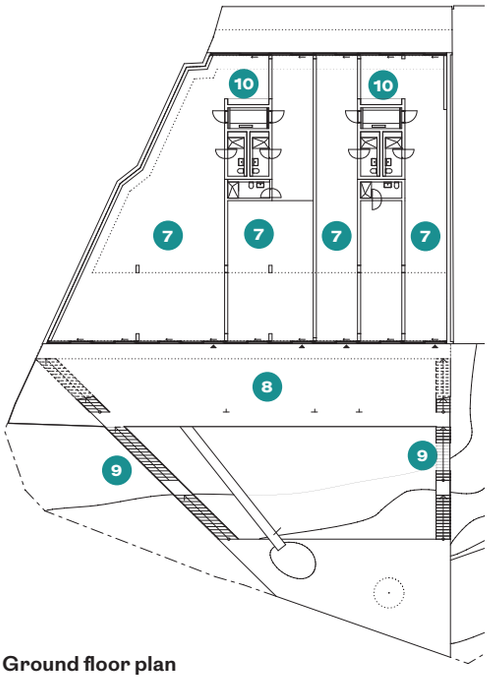
Right The south elevation of Lobe Block facing the courtyard and the railway tracks beyond, envisaged with exhibition spaces and communal facilities below and live/work spaces above. The reality is a little more commercialised.

Section AA

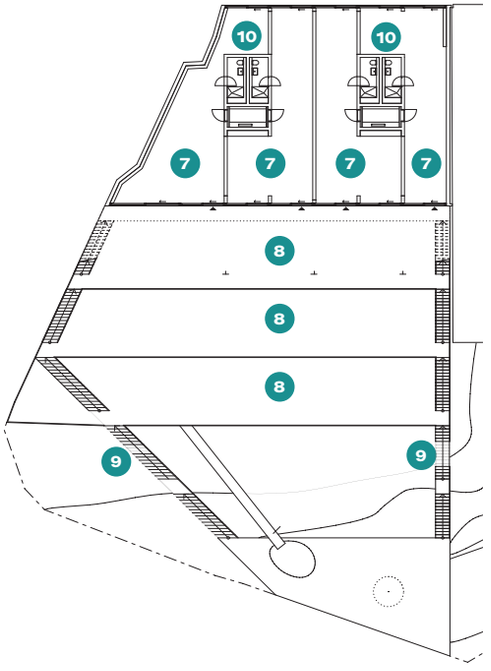


1 South courtyard
2 Garden
3 Access to courtyard
4 Double height commercial units
5 Café
6 North plinth to street
7 Single storey business units
8 Stepped terraces
9 Emergency escape/access stairs
10 North core and lift access to street
11 Roof terrace

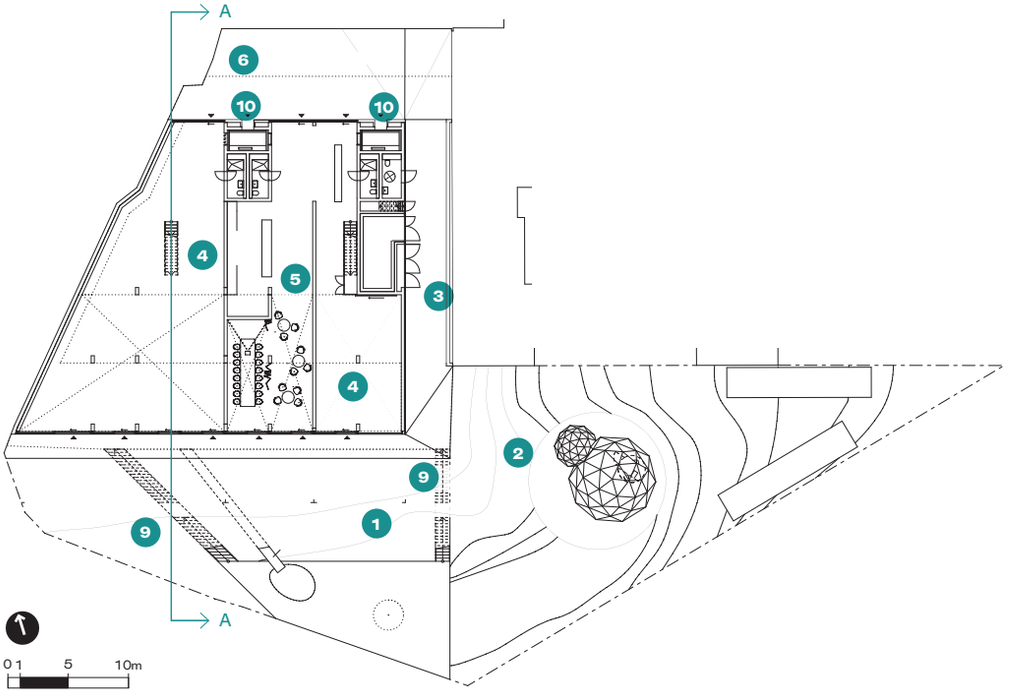
First floor plan



Third floor plan



Ground floor plan



before the fall of the wall, Reynolds recalls Arne Brandlhuber arguing persuasively that the notion of live/work was just a shot away. 'I said that's all very well but having spent a good proportion of the money I'd got from the sale of the house in London, how the hell was I going to pay for it?' she adds. Two years later, with a wincingly frugal business plan, financing secured from German ethical bank GLS, a 19% federal tax break for commercial build, and a stern caveat from her lawyer and accountant that any use other than work units was out of the question, construction began in 2016.

But even in its 3,400m² built iteration of 16 business units, there's a palpable sense that their mutual dream of communal domesticity never really left – certainly once you've risen above the three double-height commercial units on the ground floor. But it was compromised. Reynolds had to fight tooth and nail to build her own residential 'caretakers flat' on the site (whose cost was subject to that 19% tax) but the four artist-in-residence flats she envisaged at the top of the building, along with her ground floor art gallery, are now commercial units helping to pay the mortgage. But on a sunny spring day in the courtyard, with chickens clucking in the garden and workers socialising on the terraces, the power of the original idea pervades.

Brandlhuber + Emde and its build architect Muck Petzet Architekten took a stripped-back approach to the design. Its storeys are simply formed of 350mm thick slabs of reinforced concrete, with two central cores of 260mm thick walls serving two units each on every floor, spaced equidistantly between the building's blank concrete side walls. Regs guiding the dimensions of the two emergency escape/access stairs that run up the south side of the building

JAN-CARLOS KUCHAREK (3)

also dictated the depth of communal terraces. With units reducing in size as they ascend, the architect stepped back floors to cantilever a maximum of 7.5m over the north side, tempting Reynolds with a proposition that created a covered 'art terrace' over the street-facing side. From here, the 7.5m high ceiling height of the ground floor units works with their 26m depth. Those above all have more-homely 2400 floor to ceiling heights – topmost units are only 11m deep.

From the full-height glazed doors to units to the south, the 5.7m wide terraces have 2% falls to their edges, and for design clarity, absolutely no guttering or drainpipes. Architect Muck

Above The ground floor double-height spaces provide community/commercial units; here a café.
Below left Concrete units were created at the client's behest – a device to impose homogenous order on the blank canvas atelier spaces.
Below middle The client's fully customised kitchen.
Below right One atelier-customised kitchen; the door to the bathroom is to its right.

Petzet says the project was hard to put out to tender, noting that: 'Costs had to be kept very low, construction had a high degree of difficulty, with waterproofed, pre-stressed concrete and wide overhangs, but it was at the same time a relatively small project.' Reynolds says the architect approached 10 contractors, most of whom didn't want to quote for it, adding 'it was lucky anyone built it in the end'. On rainy days, she must be glad they did – water pours down the building romantically, collecting in a balancing tank below the permeable courtyard paving.

Internally, there was similar pared-back specification; open-plan spaces roughly expressed in concrete and plywood with floating floors of acoustic insulation and cement topscreed, in line with the architects' 'logic of indeterminacy; only the technical connections and sanitary facilities are pre-installed.' The worker residents are at liberty to arrange the internal spaces as they saw fit – the only proviso concerning access to the two cores, whose double-sided lifts serving each unit provide direct external access to the north terrace.

Beyond holding the lift shafts, cores carrying the geothermal heating and cooling system, mains, sewage stacks, electricity and IT runs.

Right A ground level unit with mezzanine and kitchen below the access stair. Currently put to commercial use, the aim is to return it to its original intent – as a gallery space.
Below Ateliers are a blank canvas – each unit afforded the large terrace beyond the glazing to socialise.

Above Heavy duty silver geotextile curtains act as a solar shade, allowing a diaphanous light into the interiors.

And while the units' dual aspect ensures natural cross-ventilation, a mechanical ventilation system is reserved for cores to deal with the two internal bathrooms that sit back to back on each floor. These flip from the south to the north side of the lift shaft, as the building steps back and rises. Brandlhuber + Emde originally intended their walls to be completely mirror-panelled to counter the general asceticism of the building – a dramatic if confronting effect – but value engineering put paid to the notion, says Petzet. As it is, fitouts are in restrained grey tiling, access doors similarly specified to disguise them.

For flexibility, the architect proposed that in the kitchens only the connections would be designed in. But Reynolds' insistence that each unit be installed with a fixed kitchen unit had an unintended, homogenising effect on the development. Reynolds criticises what she calls the 'western illness' of designer kitchens so instead looked to a single, robust design to be installed. 'So I decided to just ask the contractor that was building the thing to cast a concrete worksurface into every unit with a void for the hob,' she tells me. 'In that way tenants could customise them in any manner they see fit and you wouldn't be wastefully ripping things out at the end of a tenancy. That seemed to fit more with my ideas for the place.' So, for an extra £30,000, that's what they did. And the effect has been dramatic. Each unit has, in a sense, treated the kitchen as a form of art project, building in and customising each self-supporting concrete surface themselves. Walking around the homogenous development, it's as if these installations have become signature pieces in each unit, where tenants treat the kitchens in their workspaces as a form of branding or identity; signing their own space. One, with pink units, calls it the 'meat desk'. The move is pivotal; the cores, rather than being just the technical heart of the project, also become the symbolic one (hearth).

Inadvertently, Reynolds' artful action aligned with Brandlhuber + Emde's agenda. 'Although today the project meets the legal standards of a commercial building, it aims to overcome the separation between living and working, commercial and residential, questioning existing norms', it stated of its project. That strategy is best-expressed in two key details: the architect's giant geotextile curtains drawn along a cast-in track to protect the south facades from the sun's worst effects – an external trope of domesticity writ large – and Reynolds' domestic, concrete kitchen units inverting Lobe Block's material language to reify the egalitarian, communal nature of her project internally. For a whole lot of reasons, though not lived in yet, it feels as if Lobe Block has been primed for this future iteration. If you build it, they will come. ●

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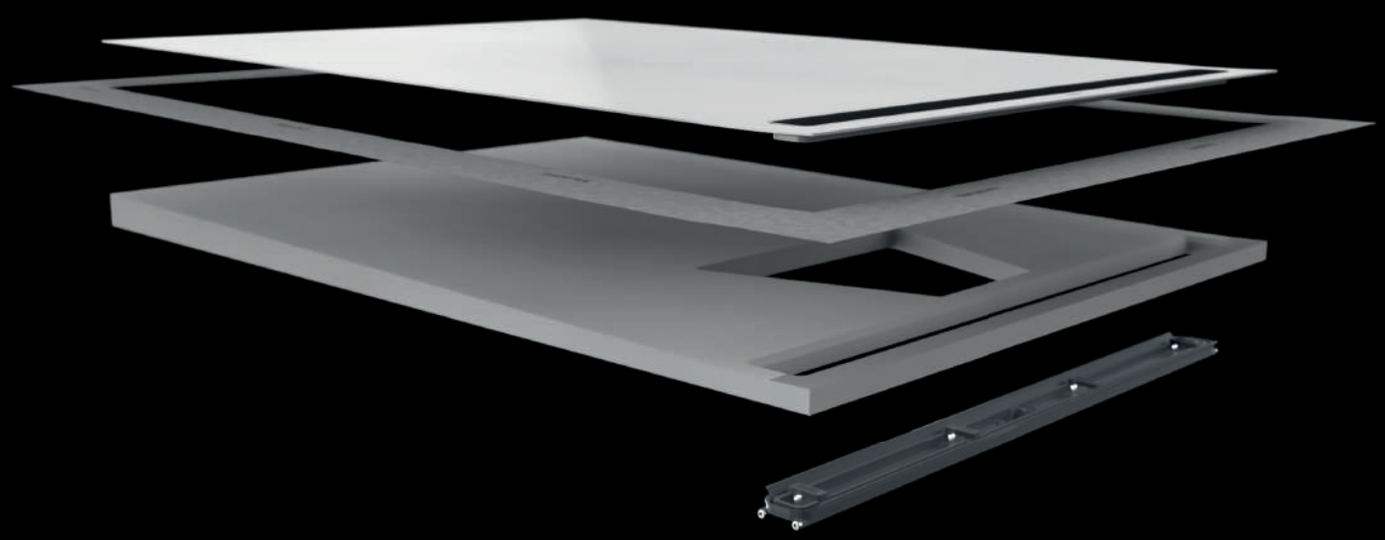

NEXSYS shower surface with channel waste outlet and designer cover

kaldewei.co.uk

Costed

Nang Vo Kham Murng, head of resource data, and Alan Cowan, construction data analyst, both at RICS, on kitchen and bathroom fixtures and fittings costs

Worktops are one of the most hard-working elements of a kitchen. Granite, composite and solid surfaces are tough, durable and will give the kitchen a professional finish. Kitchen cabinets have a big impact on the budget as well as the aesthetic. They are one of the first things people see when they walk into in a kitchen and have a large influence on the feel of the room.

Bathtubs, toilets and wash basins also come in various shapes/styles and materials. Before choosing, consider any size constraints and how the bathroom fittings will be installed.

The following rates are for the supply and installation of domestic kitchen and bathroom fixtures and fittings and are intended as a guide to costs from basic to top-end. However, there is no upper limit to the amount of money that can be spent on fittings. Consequently, although costs for top range quality allows for a higher standard of finish and fitting out, they cannot be taken as an absolute extreme or suitable for the 'super-luxury' market. Prices are based on the BCIS schedule of rates online estimating data (service.bcis.co.uk/BCISOnline).

The rates below are a guide to kitchen and bathroom costs as at 2019 Q2. No allowance is made for sundry or related preliminaries. VAT is excluded.

	Range £
FURNITURE/EQUIPMENT	
Kitchen fittings	
Floor cupboard units, 500 or 600mm deep, 900mm high, supplied assembled	
Door line units: 300mm/500mm/1000mm long	71-169/80-196/115-331
Drawer line units: 300mm/500mm/1000mm long	89-174/101-201/167-336
4 draw units: 500mm/1000mm long	180-250/321-447
Pan draw units: 500mm /1000mm long	162-224/290-402
Sink drawer line units: 1000mm long	130-298
Belfast sink unit: 625mm long	86-181
Door line corner units: 1000mm long	121-275
Draw line corner units: 1000mm long	143-279
Oven and tall storage units, 500 or 600mm deep, 2100mm high	
500 or 600mm long	222-395
Wall cupboard units 300mm deep	
720mm high: 500mm/600mm/1000mm long	78-121/84-138/103-212
720mm high: 600 x 600mm corner unit	156-230
900mm high: 500mm/600mm/1000mm long	129-200/147-226/226-350
900mm high: 600 x 600mm corner unit	245-377
Worktops	
40mm MDF: applied veneered, 600mm wide	53-90
Extra for cutting hole for sink unit, hob etc/ forming corner	22-31/19-25
40mm beech/oak block: 600mm wide	96-155
Extra for cutting hole for sink unit, hob etc/ forming corner	35-49/28-40
40mm beech/oak, solid: 600mm wide	154-224
Extra for cutting hole for sink unit, hob etc/ forming corner	50-63/40-52
40mm polished Purbeck stone/granite: 600mm wide	610-972
Extra for cutting hole for sink unit, hob etc/ forming corner	161-236/133-195
12mm Corian: 600mm wide	602-928
Extra for cutting hole for sink unit, hob etc/ forming corner	206-258/170-212
Sundry accessories	
End panels 500 x 600mm wide x 900mm high	39-56
Cornices	20-29
Lighting pelmets	19-37
Tidy bins, vegetable racks and the like	74-107
Cooker hood/island chimney hood	136-297/472-849

	Range £
Sinks etc	
Stainless steel, single/double bowl, single drainer	173-285/210-368
Belfast sink unit	278-403
Ceramic, single/double bowl, single drainer	273-384/314-431
Mixer taps/ waste disposal unit	75-102/201-259
Appliances, fitting and testing	
Hob, gas/ electric	147-277/187-344
Oven, single/double, gas or electric	269-400/632-935
Range cooker, stainless steel/ Aga or Rayburn	1028-1874/5854-8454
Microwave, integrated, combined	308-668
SANITARY APPLIANCES/FITTINGS	
Bathroom sanitaryware	
Toilet suite	
Close couple, cover and seat	277-387
Close couple, syphonic, cover and seat	313-421
Bidet	-
White or coloured, including fittings	319-437
Wash basins	-
Standard, white or coloured, including fittings	164-238
Vanity, white or coloured, including fittings and base unit	215-292
Baths	
Plastic /pressed steel with panels and mixer taps	400-509/455-576
Cast iron with panels and mixer taps	916-1349
Cast iron, antique with brass mixer taps	1852-2913
Corner bath with panels, whirlpool and mixer taps	963-2092
Showers	
Ceramic, standard size, thermostatic mixer valves, hose and rose	480-827
Ceramic, quadrant, thermostatic mixer valves, hose and rose	580-950
Wet room tanking, 1.5 x 2m, thermostatic mixer valves, hose and rose	1430-2302
Shower partitions	
Sliding door and side, glass, standard size	252-344
Bath side panel, glass, standard size	186-304
Shower door and side panel, glass, standard size	253-409
Quadrant door and side panel, glass, standard size	300-490
Independent cubicle	1199-1635

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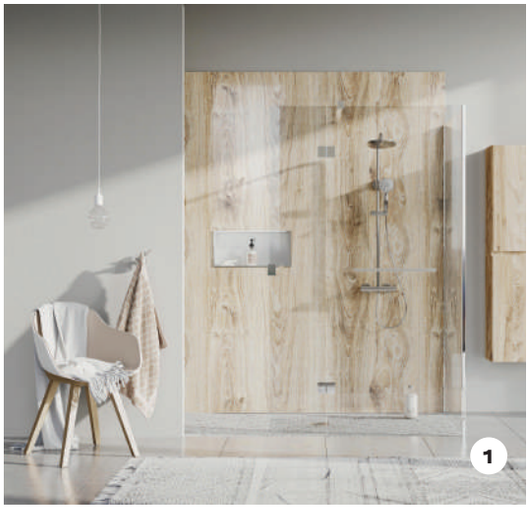
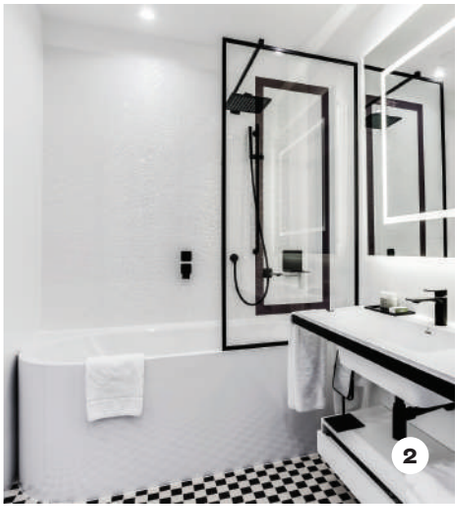
Specified





1
M1 Series PVC wall and ceiling panels
Abacus

We are surprised upon rising to find Mr Crusoe in the Wet Room, crouched beneath a quilted Floral Canopy.
'How so, Mr Crusoe?' Say I,
'When so Cosy a Cot lies yonder?'
'Tis true,' says the Wretch,
'I savour the Comfort of this Polycotton Mantle, yet so long have I dwelt under Soggy Timber that great succour lies too in these Walls of Rustic Oak.'
'But Sir!' I expostulate, 'This is not Oak! Yet, seeming thus, this is Hygienic, groutless, honeycomb-section PVC Panelling! And please! Do not again use the Wastebin so!'
abacus-bathrooms.co.uk

2
Meisterstück Centro Duo Oval bath
Kaldewei

This is not, as may first appear, the newly-refreshed bathroom of a four-star Warsaw hotel, but rather the most recently completed phase of work at Sir John Soane's Museum. Here we see the refurbished sarcophagus of Seti I (1290-1279 BC), now re-imagined for the 21st century in hygienic, hardwearing and easy-clean enamelled steel. Health and safety compliance dictates that dirty, porous alabaster is finally history, and the setting's contemporary restyle is far more visitor-friendly than that cramped, unsafe and poorly-lit basement. Progress!
kaldewei.co.uk

3
Zip Hydrotap
Zip

Somewhere, over the rainbow,
not too high,
there's a Zip tap I heard of once in a lullaby.
Somewhere over the rainbow,
water boils
And the squash that you dare to mix really does run cold (amazing really).
Someday I'll wish upon a mug
And wake up where the clouds of steam surround me
Where sugar melts like lemon drops and filtered flavour is the tops
That's where you'll find me.
Somewhere over the rainbow
teabags fly
Mugs fly over the rainbow
Why then, oh, why can't I?
zipwater.co.uk

4
Design+ Matt Black shower enclosure
Crosswater

Dalek 1: 'Getting the Doctor in there was easy – she is so pathetic!'
Dalek 2: 'Yes she enjoyed that shower like a typical inferior being – the plant was a nice touch though – I did like that.'
Dalek 1: 'But it is unfortunate that she was able to reconfigure the equipment – when she regenerates in a far galaxy the new-look tardis will resemble a Design+Matt Black shower enclosure.'
Dalek 2: 'Affirmative. It is unfortunate. But with the matching MPRO water fittings that refined tech will look good for light years.'
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The Standard Hotel, King's Cross, London

Words: George Grylls Photographs: Tim Charles

West Coast modernism has burst onto the capital's hotel scene in a town hall conversion by ORMS, Archer Humphryes and Shawn Hausman

When tourists come to London they expect grey: drizzly skies and Trafalgar Square pigeons, mushy food and miserable faces. If everything was quite so monochromatic, they might not come at all. Luckily, they also think of the red: the routemasters and the postboxes, the Tower of London's beefeaters and the fluttering Union Jack.

ORMS had plenty of grey to work with when it set about transforming a brutalist annexe to Camden Town Hall into a hotel. Situated opposite St Pancras and above the Euston Road, it is an uncompromising grid of oblong windows recessed into precast concrete.

So naturally, ORMS decided to add a dash of red. Breaking the facade is a shiny new lift, whose deep carmine outshines even the passing 73 bus. Superficially, visitors use the bubble-like device to ascend to a new rooftop bar, but its real function is to connote a groovy London, the sort of city that attracts The Standard's clientele.

This is The Standard's first hotel outside America. But the team is an extremely experienced lot. Taking their cue from Julius Shulman's photos of Case Study houses, they create achingly hip interiors that sell a very luxurious, all-guns-blazing brand of Californian modernism.

Bright splashes of colour outside hardly prepare you for the explosion within. Tropical wood abounds. On one floor, interior designer Shawn Hausman has covered the walls in rose pink, hot pink, Oxford blue, tangerine orange and heavy claret. The lobby flaunts a mixture of travertine, terracotta and terrazzo floors, while the ceiling can be anything from sports-floor rubber to laser-cut wood (painted to look like

Left Timber slats and geometric tiles set the scene in the hotel's reception.
Right Visualisation of the refurbished former council office with its bling roof extension.
Below There's a retro-future look to the hotel's compact bedrooms – waffle slabs are exposed.

Outdoor baths on a shared terrace hit exactly the right level of cheekiness

plastic, of course). Only lists can really do justice to this amount of excess.

Given the solidity of the building's core, collaborator Archer Humphryes has done well to carve out a variety of rooms. Small couchettes with neat bespoke furniture find space alongside king suites that drip leather and Harris tweed (yes, really). ORMS' two-floor roof extension gives some breathing space. Not yet completed, the roof terrace should offer spectacular views.

There are occasional nods to the building's past. Waffle-slab ceilings are left exposed in most of the rooms, but framed by plaster and doused in what one presumes is a flame retardant, they lose some of their heft. In general, rather than respect the building's integrity, Hausman has successfully recreated a period feel. The Barbican is a touchstone when creating some swinging 70s doors. All the signs use a clear Futura font.

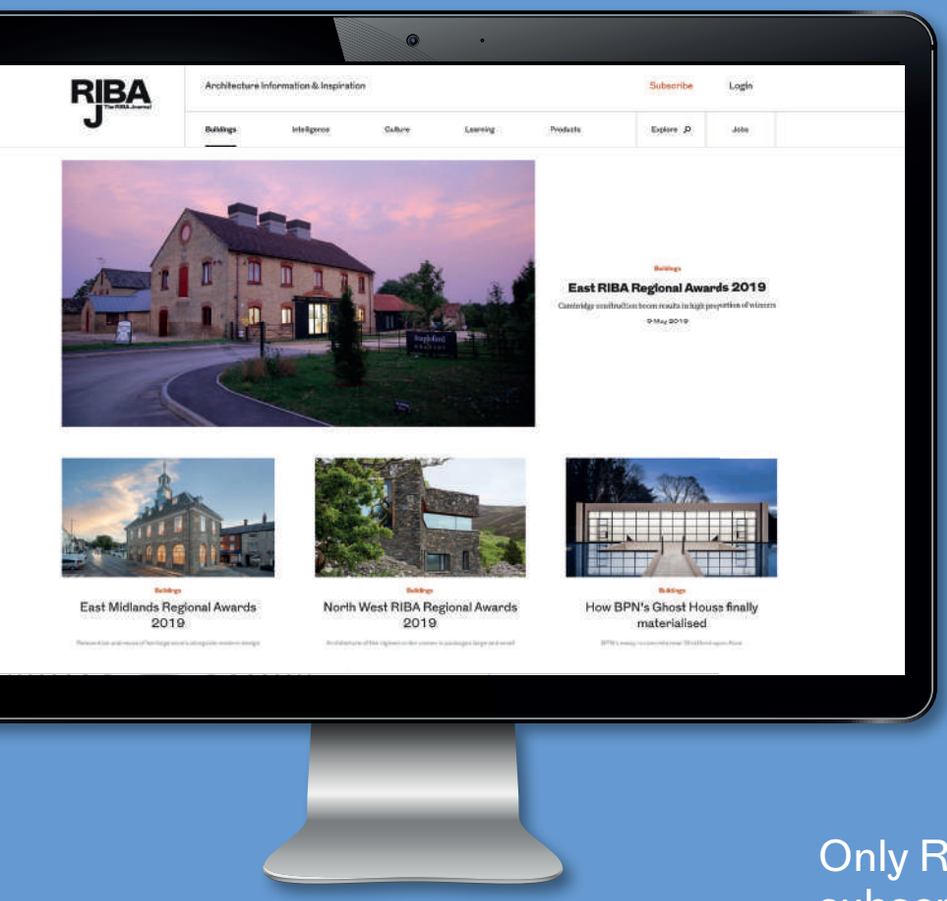
Sometimes the sheer gaudiness works out well. Outdoor baths on a shared terrace hit exactly the right level of cheekiness. But there are also mistakes. Earlier this year I went to a former dictator's palace in Kiev. I have no doubt one table-cum-vase at The Standard would have attracted a Yanukovych bid at auction.

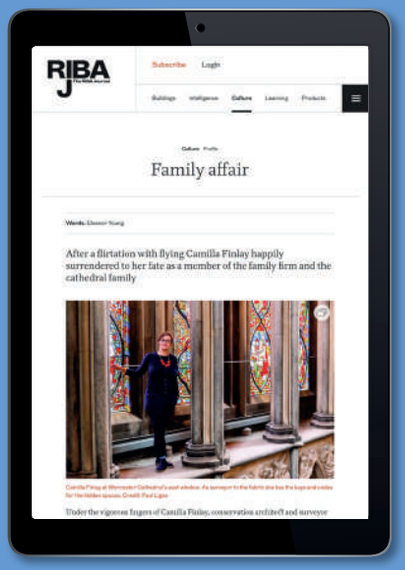
When the Standard opens in July, walk through the ground floor and you will quickly get a sense of the building. It contains in no particular order: a fermentation bar, a podcast studio, the vestiges of a council library and a seafood restaurant. At the Standard you are bound to love some things, hate others, but by god, you won't be bored. ●

Right Timber and tile mosaic complete the bar's 50s look.
Far right The 70s are referenced on the two-tone striated walls and bevelled edges of the bathrooms.

More

architecture information and inspiration online





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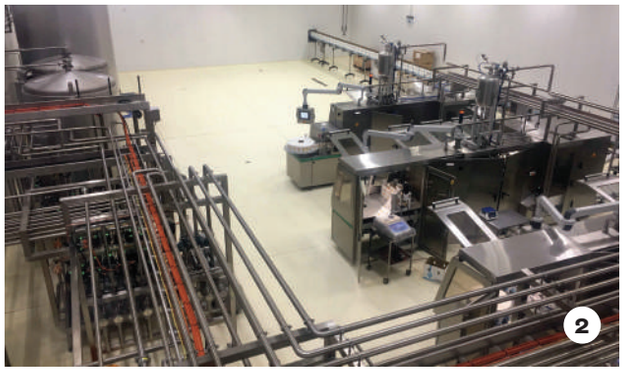


SARAH AKWISOMBE

1
Skyfold Zenith partitioning
Style

'Alas', lamented Anil Agarwal, tearing his last worn-out nightshirt into soft squares. 'How I wish I had been born a rich boy, and so saved from the toil of keeping all this copper gleaming!' Then suddenly Anil awoke from the witch's curse, remembered his billions, and remembered too that the ore his company drew from the earth was not for polishing, but for processing and selling! So he swiftly ordered mirrored Rw 54dB moveable partitions for his Vedanta headquarters – and a very nice set of brand new flannel pyjamas.
style-partitions.co.uk

2
Flowfresh SR resin flooring
Flowcrete

Slurry. That's what we are seeing here. And yet this high-end Australian dairy is proud of this picture showing its floors under 2,350m^2 of ACTUAL SLURRY. Now, they claim that this lustrous creamy finish is actually Flowfresh SR; an hygienic, antimicrobial, hardwearing, and highly temperature resistant slurry-broadcast poly-resin screed which is HACCP International certified and suited to the rigours of deep-cleaning; but THIS IS A DAIRY, PEOPLE. If you ask me, there's only one kind of slurry you'll find on the floor here.
flowcrete.co.uk

3
AA100 zone-drained & SSG curtain walling
Kawneer

A plague of urchins is reported at the new O2 Icon retail space, where quaintly-attired infants have been pressing their noses up against the windows of such unlikely brands such as Radley, Levis, and Aspinal Jewellers. But the picturesque miniatures claim to be ogling not these wares, but to be transfixed by the sheer beauty of the outlets' AA100 zone-drained and SSG (structurally silicone glazed) curtain walling. Needless to say, they will be transported to the colonies for unauthorised anachronistic mercantile staring.
kawneer.com

4
4003 Sleek Concrete surface
Caesarstone Quartz

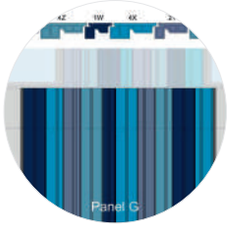
'Our operative is in the building now, sir'
'How so, 8008? I have no reading.'
'Hiding in plain sight, sir. Part of the kitchen refit.'
'Ah, so the canary yellow tap?'
'No, sir. Far too obvious.'
'Ointment pink cabinet fronts?'
'No, sir. No need for a front.'
'A concealed appliance, then?'
'I'm afraid they're Moscow, sir. No. One of our grey men. He's everywhere in there, surfacing uniformly without detection. Almost indestructible. Codename Sleek Concrete.'
'Ah! Yes, 8008! Agent 4003, I see you now! Impressive work. Carry on.'
caesarstone.co.uk

Sign Up

James Badley, director at multi-disciplinary practice rg+p, highlights three of his specification favourites

CORTEN STEEL

To create a striking frontage for a prominent new housing development in Hemel Hempstead, we specified Corten steel. A strong, bold and robust material, it is recommended for its high structural strength and where maintenance is difficult. Comprising a group of weathering steel alloys, Corten changes character over time and develops to form a rust-like appearance which typically stabilises between 18-36 months. We deliberately designed separation between the Corten and its complimentary materials to avoid contamination or discolouration. The result is a distinctive design feature which gives the facade depth and texture.



FLUTED ALUMINIUM

Following uncertainty over the safety performance of this building's original ceramic tiles, we specified coloured, fluted aluminium profiles to create the facade of the 435-bed student accommodation scheme at Bath Court, Birmingham. Designed to invoke a rippling effect like running water, these profiles have been specifically designed for this building, in consultation with a facade specialist. Featuring four different profiles in four shades of blue, we are able to create 16 combinations of shapes, shades and reveals, to create a tactile effect from the top to the bottom of the building.

BACK-LIT WALL

One of the statement design features of the leisure suite at Royal Warwick Square, Kensington, is a 17m long back-lit wall. Flanking the main swimming pool, the wall comprises a fully bespoke concealed aluminium frame which supports 17 pivot-hinged glazed panels. Each panel incorporates a bronze perforated interlayer laminated between two layers of toughened glass, to create a luxurious and ever-changing motif which interacts with reflections in the pool hall to complement the interior.

...Sign Off

Jan-Carlos Kucharek enjoys three stand-outs from the inbox

BELLY OF AN ARCHITECT

Lidewij Edelkoort's been busy. The Paris trend guru was signed up by quartz surface designer Caesarstone for its annual kitchen trend book 'Form follows food,' in which three young designers rustle something up with Caesarstone and what appear to be cheeses, focaccia and a pestle. The photos look like something from Masterchef being judged by Nick Knowles from DIY SOS. 'Marbling Mood' was melanged by London chefs 'The Meringue Girls', 'Conceptual Concrete' by Italian design duo Studio Formafantasma and 'Dark Rituals' not by 'Rosemary's Baby's' Sissy Spacek but Dutch food influencer Marije Vogelzang. PiP awaits a 'Wickerman' version from CLT suppliers...

NO-ONE CAN HEAR YOU SCREAM

Speaking of wicker and muffled screams, Australian recycled acoustic finishes supplier Woven Image, looking to gain a stranglehold on the UK commercial interiors market, recently showed off its Longitude acoustic panel in the Clerkenwell showroom of writable glass board firm Clarus. Despite its high percentage of architects, Clerkenwell has a murky past – in the 19th century it had the worst murder rate in London. No prison bars or iron shackles here though; the offices have 'Crittal-style' meeting rooms, a 'collaborative studio-style bench' and 'seating booths'. Indeed, far from looking like a grisly scene from 'The Hostel', these guys seem to be having a hoot!

WET ONES

Popping into PiP's inbox recently was not what we excitedly thought was an invite to a Rachel Whiteread private view but, alas, a press release about the Homes (Fitness for Human Habitation) Act 2018, which came into force in March. YouGov research shows that now 42% of renters are more likely to complain about the condition of their home, with 51% of them saying they had lived in a damp one. Who paid for the survey of 600 disgruntled wet people? The Department for Communities and Local Government? No. Safeguard Europe, 'specialising in providing damp-proofing and waterproofing solutions for the construction industry'.

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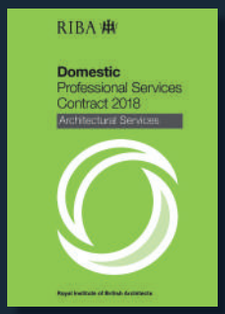

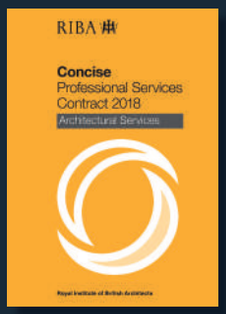

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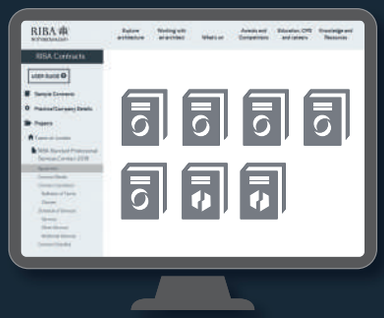

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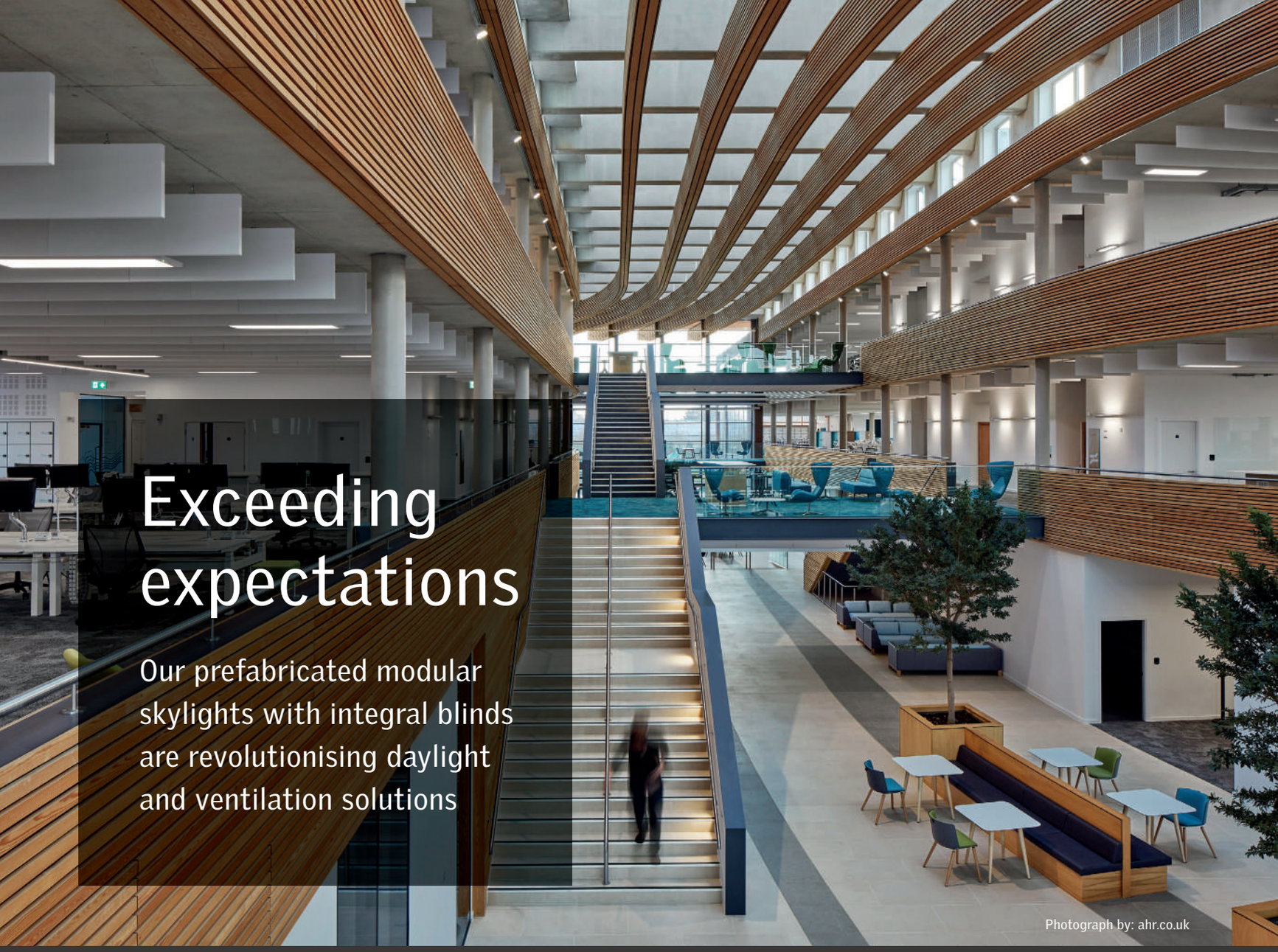

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