PiP

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While my head ...

... went with the award of the Stirling Prize to Mikhail Riches with Cathy Hawley for their Passivhaus Goldsmith St, my heart still went with Grimshaw. Bizarrely overlooked in 2001 for its seminal Eden Project, I hoped London Bridge would win this year. The £1bn state-of-the-art station better connects to the city and wider south east, and also links Southwark either side of the tracks. This qualitative investment in mass transit surely deserved recognition.

It is even more pertinent with Extinction Rebellion apparently seeing public transport as part of the climate change problem, and a legitimate target rather than a means of mitigating it. So perhaps it was the perfect time for Transport for London commissioner Mike Brown to jump ship in October to be announced as chair of the shadow Delivery Authority Board for the £4bn Palace of Westminster restoration and renewal, where he'll oversee the UK's biggest, most complex renovation of a heritage building ever.

One casualty of this will be William Whitfield's 1984, grade II* Richmond House in Whitehall. This fine building, ironically influenced by the Houses of Parliament's Pugin, is still set for demolition to turn it into an AHMM-designed temporary home for MPs while works go on. Despite SAVE Britain's Heritage and the 20th Century Society weighing in with sustainability arguments too, and putting forward alternative sites, Richmond House's days are numbered. Perhaps Historic England's recent Heritage at Risk register, which this year added 247 sites to its running total of over 5000, might see its way to making it 248? ●

Jan-Carlos Kucharek, editor

DAVID LEVENE

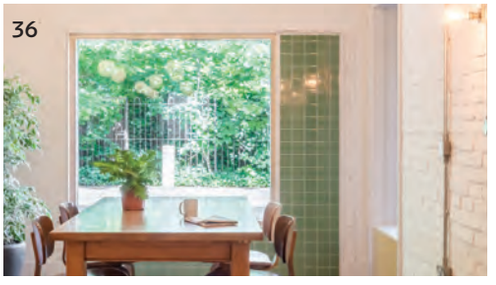
JAMES FRENCH

More online...

The structure will have a very low density and around 99% empty space. Light photons that enter will become trapped until the energy dissipates

Stephen Cousins finds something blacker than Vantablack: ribaj.com/blackerblack

JACK HOBHOUSE



NICHOLAS WORLEY

PiP's on Pinterest! See the latest products on our Pinterest feed: pinterest.co.uk/productsinpractice

Leva chair by Foster+Partners for Mattiazzi

Cloudburst concrete from Caesarstone's Metropolitan Coll.

Juul 103 sofa by Eilersen

Wagenfeld WA24 table lamp by Wilhelm Wagenfeld for Tecnolumen

Cover image: Exoskeleton detail, Brunel Building, Paddington, London. Photograph: Dirk Lindner

Compendium

UPCOMING
Batimat Parc des Expositions, Paris Nord Villepinte, France, 4-8 November
Lux Live ExCel London, 13-14 November
Sleep + Eat Olympia London, 19-20 November
Architect@Work Old Truman Brewery, London, 29 - 30 January 2020

HUFTON + CROW

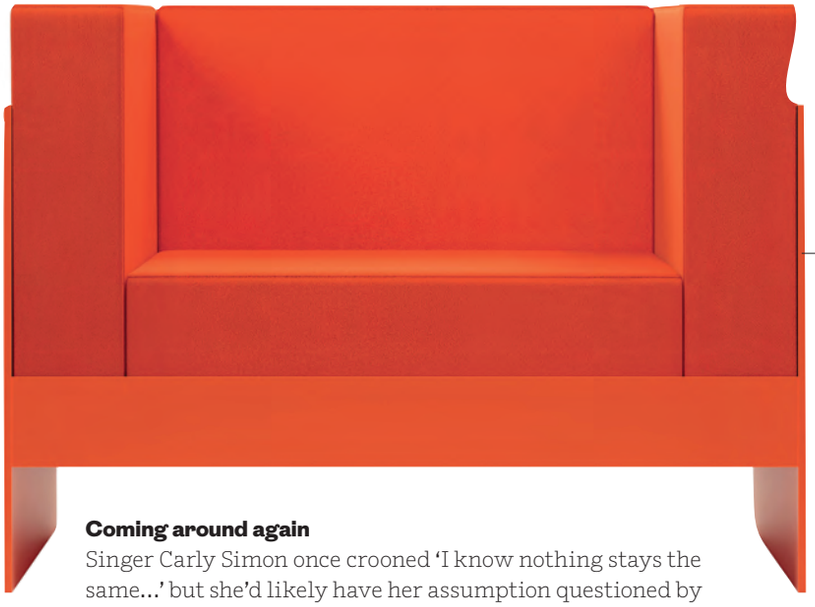
Double happiness
China doesn't do anything by halves and its Beijing Daxing Airport by Zaha Hadid Architects is a case in point. The 700,000m^2 airport was built to handle 45 million passengers a year but with further expansion is planned to deal with up to 100 million. The starfish-shaped structure with up to 100m spans is characterised by its massive, central, daylit grand courtyard and its five radiating piers ensure passengers travel minimum distances from it to get to their seats.

Wool in, walls out
Doncaster City Council's wish to see the city turned into a prime shopping destination has been given a boost by the refurbishment of its historic wool market into an enclosed destination hub for local traders and eating and drinking. The market's new aluminium doors and curtain walling, which allow light deep into the space, was supplied by Senior Architectural Systems, which coincidentally has its head office down the road in Denaby. One of 10 in the town's Market Place, the £7.6 million project saw 75,000 people through its doors on its opening weekend.

Plymouth ah+oe!
Constructed at the same time as Plymouth city architect Hector Stirling was having his Civic Centre erected to revised designs by Geoffrey Jellicoe's office in the space left by wartime bombing, the city's market hall by Walls and Pearn was completed in 1960. In marked contrast to the Wool Market below, this was reinforced shell concrete with rooflights deeply illuminating the space. SIG Design & Technology was recently involved in the refurbishment of its 60 year-old roof with its low VOC AH+ Liquid Waterproofing, hopefully keeping it dry for another 60.

OLIVER ALLAN

Back to the land
Supported by Alan Titchmarsh and Sting, Fordhall Farm in Shropshire, part of Fordhall Community Land Initiative, is also supported by 750 hay bales, 130 car tyres and 25 larches. Sheep's wool, clay and lime also went into its new Bunkhouse, built using just ropes, pulleys, 50 volunteers and 1000 man-hours. Committed to organic farming since he established it in the 1940s, tenant farmer Arthur Hollins, faced with paying £800,000 or eviction in 2003, began selling £50 community shares in his farm. It now has over 8000 'landlords' and is going from strength to strength.



ARAM STORE

Coming around again

Singer Carly Simon once crooned 'I know nothing stays the same…' but she'd likely have her assumption questioned by upstart Bauhaus University graduates Manuel Goller and Sebastian Schönheit, whose Berlin-based design studio New Tendency applies 'modernist design principles to contemporary objects.' The name came about when their in-school collective, feeling the weight of history, first branded themselves 'My Bauhaus is Better than Yours' before being hit with threats of legal action from not only, er… the Bauhaus, but even a German DIY store. The weight is still there though – they design metal things. A lot of them. This is their Standard lounger. Hot off the press at Aram Store.

Iron cross

Perhaps not the most impressive of churches from the outside, the 1814 stone Perp of Everton's grade I Church of St George hides a cast iron structure inside, to the designs of John Cragg and Thomas Rickman – even JM Gandy might have been involved. Pevsner calls the galleried interior 'a delightful surprise…light and delicate owing to the use of cast iron throughout.' But its innovative design and almost flat patent slate roof – and failing 'sealing putty' – meant that over the years it fell victim to water ingress . As part of the recent refurbishment, Welsh Slate was brought in to work on the new overlapping Penrhyn Heather Blue slate panel detailing, including a sarking layer, laid to the original, shallow, seven degree pitch.

Bending light

Lighting consultant Nulty, which was involved in this month's lighting feature (p28) were also responsible for Samsung's new retail experience store at Thomas Heatherwick's Coal Drops Yard at London's King's Cross. Sitting directly beneath his 'kissing' rooftops, the design envisioned a day-to-night lighting scheme for the 1900m^2 space that capitalised on Heatherwick's structural gymnastics. The firm came up with a 'ribbon of light' concept, linking the two halves of the space beneath the mirrored roof forms and running along floors, walls and ceiling.

LED and buried

You wouldn't think it was necessary, but in the way marketing people can cleverly re-brand a classic in order to sell it back to you, Danish designer Louis Poulsen now presents its PH lamp Limited Edition 2019, available from now until, somewhat ominously yet randomly, the last day of this year. Poul Henningsen's 1950s reading lamp, with its finely balanced lever action, was affectionately renamed by fans the 'The water pump'. The PH 3/2 Amber Coloured Glass Floor Lamp sits on a base of brushed brass, so will patinate, and with its hand-blown, three-tier glass shade, emits the kind of 'dull religious light' that would have so transfixed John Soane – had he lived long enough to see electric light in.

How to manage data in the digital age

Ever-advancing tech capabilities have given architects new ways of developing and designing projects and fundamentally changed the way we work and manage data and information. Best practice regarding document management and staff buy-in are important.

At astudio, our documentation management follows a file structure based on our function as a design practice, specifically catered to the nature of its workflow. This focuses on design and project administration and is informed by software that we use: Revit, MicroStation, NewForma and Office 365.

As the design needs of the sector and technology have evolved, the initiative covers design data production and information exchange. This has involved development of the BIM Protocol, established by the Construction Industry Council as a standardised supplementary legal agreement.

Document management is an essential aspect of ISO 19650: International Standard for managing information over the whole life cycle of a built assets using BIM. It outlines concepts and principles, and provides recommendations on how to manage building information and supply information management requirements in the delivery phase of assets. The ISO standard is designed to reduce the barriers to collaborative working and competitive tendering across organisations.

Astudio is a founding member of the BIM4Design Forum, an initiative formed by digital technology representatives of architectural practices to improve BIM processes. This includes design documentation, production, management and exchange. This has meant implementing new document filing systems to speed up communication and navigation of drawing files. BIM4Design Forum engages with industry documentation managers at industry events and within members' architectural practices, if they wish.

Ensuring staff adhere to document management protocols means giving new starters effective training and resources, first with an induction and comprehensive training on astudio's intranet site.

For current staff, it's important that training is refreshed during courses, meetings and internal masterclasses. This ensures everyone adheres to the same standards and ways of working, because ultimately the employer is responsible for ensuring the protocol is in place.

Keeping your practice at the forefront means staying ahead of industry standards; hence the need for the BIM4Design Forum. Structure and staff enthusiasm sit at the heart of this. As the way we work and technical capabilities evolve, so too will documentation management.

We see its future blending into the delivery of the BIM model, a single source that can document a project's progress and be a facilities management tool. This will streamline architectural activities towards the design model.

Richard Hyams is director/founder at astudio

Books

Buy at ribabookshops.com

Soft City: Building Density for Everyday Life
David Sim. Island Press.
260pp PB £26

In a nice rounding of the circle, Jan Gehl provides the foreword to David Sim's book, whose frontispiece aims to define what the author means by 'soft'. Fuelled with words like 'comfort', 'sharing', 'calm' and 'plurality', the aim of the book is set out from the very start. Organised in four chapters entitled 'Being neighbours', 'The Time of Your Life', 'Layering Life' and 'Soft is hard to Break', Sim describes the conditions for a liveable city using copious examples from Europe and beyond. Generously illustrated with diagrams and photos, Soft City is easy on the eye and lays out guidance for creating well-designed buildings and public spaces in a clear and accessible way. Some may argue that there may be some egg-sucking going on here; but there are times when being well-reminded of the obvious is no bad thing.

Planning Learning Spaces: A Practical Guide for Architects, Designers and School Leaders
Murray Hudson and Terry White. Laurence King Publishing.
144pp PB £24.99

A foreword written by Herman Hertzberger, the last word in great school design, sets the context for this highly readable guide on school design. This is all the more surprising since Murray Hudson stems from Gratnells, an educational products supplier, and Terry White from property consultancy WSP. Their book, showcasing contemporary thinking behind the design of educational spaces that hopefully optimise learning outcomes, is all the better for not seeming to be tailored just to architects. Perhaps that accounts for the fact that it is well photographed and illustrated, simply laid out and highly accessible, allowing the content's key messages to shine through. It's a shame, however, that most of the exemplars are from abroad. So it's a straight A for the book, but the UK 'could do better'.

How to Design Humane Cities: Construction and Design Manual – Public Spaces and Urbanity
Karsten Pålsson. DOM Publishers. 272pp PB £40

Recommended by a member who took the trouble to phone in and tell PiP about it, Pålsson's book proves a visual treat. The author has worked as an architect for over 40 years and dealt with urban renewal in his role as a consultant to the Danish Ministry of Housing and Urban Affairs. Placed firmly in Europe, the author's point of departure is clearly marked by the European historical tradition of the dense classical city. Following Jan Gehl's thinking, emphasis is placed on physical and spatial parameters, on development patterns and building types, and on guiding principles of access, and on interconnections with public roads and pathways. These form the foundations of urban life, and cities that make provision for safety and security. Ten thematic chapters provide a general outline of these core challenges together with proposals for meeting them, all done with DOM's characteristic aplomb.

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Lux Live

Lux Live returns to London's ExCel in November, billing itself as London's largest lighting Expo and while some architects might consider lighting to be a more niche and specialised affair, you only need to go back to Le Corbusier's quote about architecture to be reminded that it's all about masses 'brought together in light'. The show brings hundreds of lighting manufacturers and suppliers under one roof for two days and gives the opportunity to keep abreast of the latest innovations in a fast-changing technological world.

There is also a number of seminar arenas where a programme of experts in the field will discuss the latest issues and developments, and this year's line-up looks like a good one. Since PiP finds almost gothic comfort in the relative darkness of the Thames as one crosses it, it's always been circumspect about the Illuminated River public art commisssion, but it's open to having its mind changed by Sarah Gaventa, director of the Illuminated River Foundation, which aims to light up 15 bridges on the Thames. She'll be joined by Jonathan Gittins of Atelier Ten, who will describe the technical challenges of creating the longest public artwork in the world.

There's been a lot of research conducted into human-centric lighting, which analyses how lighting can affect general wellbeing by improving circadian rhythms, mood, visual acuity and performance. But are there any empirical findings backing up the assertions? 'We believe we're ready to go,' says scientist Mark Rea of New York's Lighting Research Center, on implementing human-centric lighting in the workplace. But many experts and organisations, including the Society of Light and Lighting, urge caution. They believe that more studies are needed before we can start deploying the technology. A panel including consultants from Hoare Lea and Arup will debate this contentious issue.

Watch out for award winning, live performance, lighting designer Paule Constable, keynote speaker for the 'Women in Lighting' seminar topic. A literature graduate with no formal lighting training, she claims to be more obsessed with the language of ideas than light and employs an almost Japanese minimalism that gives as much value to the notion of darkness as she does to light. With an 'Amish' approach to design, rigorous, extreme and simple, her work is more about what you can't see than what you can, and what the stories the viewer can be left to imagine in the darkness of shadows. PiP would love to be a fly on the wall if Constable were to sit down and discuss bridges with Gaventa. ●

Lux Live runs at ExCel London from 13-14 November. www.luxlive.co.uk/RIBA.

Pip takes a look at a selection of products on show at Lux Live

Infinitas System

Hacel lighting

Infinitas by Newcastle-upon-Tyne based Hacel is a new, refined LED system. Available in Surface, Suspended or Recessed, in both Bezel and Bezel free formats, Infinitas is sleek, slender and precision extruded. It offers continuous lines of uninterrupted uniform lighting and flexibility and is enhanced by uplighting variations and completely illuminated corners. Optional accent luminaires further enhance Infinitas' versatility. Stylish Solo Modules are available to complement the continuous system.

Stand D44, D48

hacel.co.uk

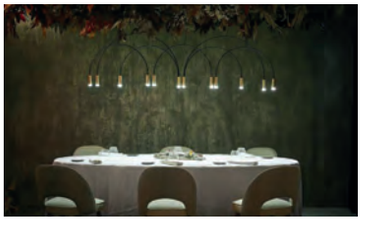
LED Focusable track light TL0015

Acevel

Guangdong-based ACEVEL Group focuses on providing professional lighting to a global customer base, notably in the field of lighting for artworks and museums. Creating precision luminaires, it aims to continuously innovate in its R&D, making operational functionality a priority. Emphasizing the overall integration of scientific design, technological advance and environment, it aims to make its products environmentally friendly with a positive impact, to reach a perfect unity of science, technology and design.

Stand L30

acevel.com



Volta Pendant Lamp

Volani Lighting Design

Volani Design's new Volta pendant fittings of semi-circles, and semi-circles within semi-circles, offer Dante-esque flexibility, allowing specifiers to interplay the forms to create complex lighting arrangements through use of the basic modules. Volani concentrates on high-end residential and hospitality markets and the Volta's units range from £400-£600. The firm has a dedicated technical team to help meet the needs of specifiers, 'offering luminaires that thrill the imaginations of architects and interior designers'.

Stand B28

volani-designs.com

Optolite Libra

MagnaTech LED

Optolite Libra is a versatile adjustable modular LED flood light for indoor and outdoor use and suitable for use for area lighting such as car parks, warehouses, sports areas and tunnels. Each module is adjustable through ±15° for precise targeting. The PC lens gives impact protection to IK10 and the fin type housing ensures good heat dissipation. Libra's wide range of smart lighting controls include adaptive lighting and dimming microwave sensors and wireless cluster control. The Libra can be supplied with drivers suitable for DALI, 0-10V and PWM systems.

Stand F12

magnatechled.com

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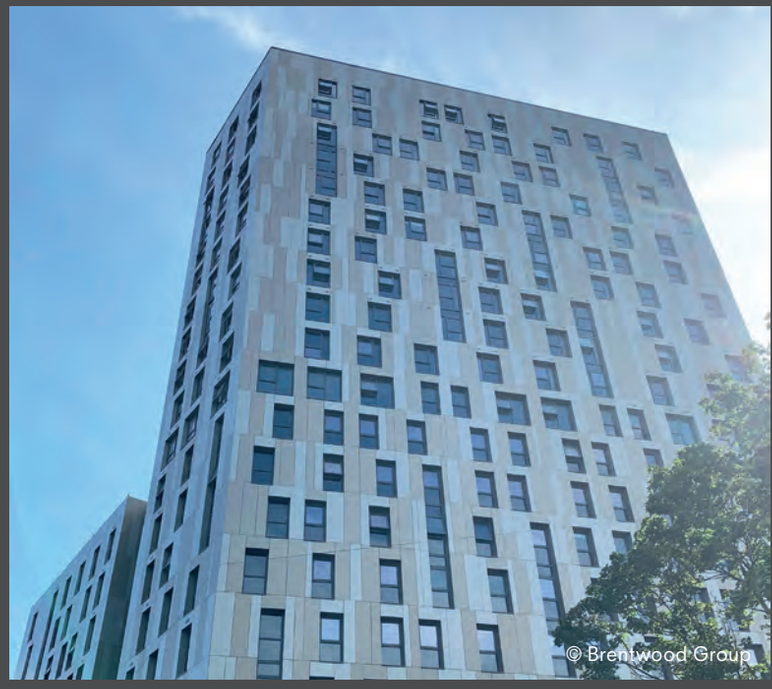
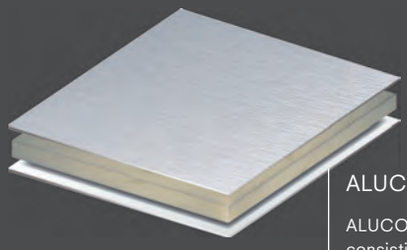


Trinity View Student Accommodation, Coventry | ALUCOBOND® A2 Champagne Metallic & Bronze Metallic | Day Architecture | BTS Fabrications | Metclad



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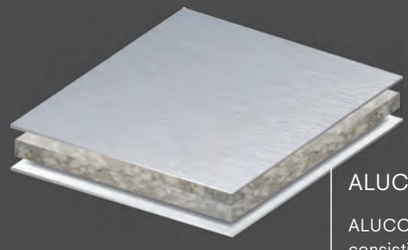

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JIM HOLDEN (3)

Tintagel Castle Footbridge

What: Footbridge
Where: Tintagel Castle, Cornwall

High above the sea, on the edge of a Cornish cliff, is Tintagel Castle Footbridge, recreating a Medieval land bridge lost to erosion. But it is not one bridge, it is two. It is designed by the man who brought London's Shard to reality, William Matthews, and Belgian architect-engineer Laurent Ney.

The site is the legendary base of King Arthur and under the rough turf, where wild flowers battle with the salty air, lie centuries of archaeology showing that this was once an international trading post, tin being shipped out as amphoras of wine were shipped in. That, and the remains of the 13th century castle, ensure the site is protected in many ways as an SSSI and scheduled monument. It is also an attraction for English Heritage and access for the many visitors was up and down steep and congested steps between the mainland and 'island'.

The competition to design a bridge to link them instead needed a certain magic, thought Matthews. And the design needed to be buildable in this precious and difficult terrain. The team came up with an unusual solution to cross the gorge; two 30m cantilevered bridges.

From the first site visit, incredible views and the complexity of getting material up narrow lanes and steep paths had made the team interrogate the structural method. The first big move was to put the structure under the bridge walkway for clear views. If that was an arch it would have required a huge amount of temporary structure to hold the bridge in place while being built – a particular worry when a sea storm hits. Cantilevers however are stable, even in an unfinished state.

So nine rock anchors of 16m of cable were sunk deep into the rock and grouted into place, in tension for the upper chord and in compression for the lower. There is substantial potential for different levels of deflection if a group of visitors was on just one of the bridges – enough to create a step between the two. Matthews thought it might be fun to play around this as a symbolic moment of stepping from mainland to island, from present to past, and leave a gap between the two bridges.

In the first draft of visualisations for the design competition the gap was invisible – Matthews had to point it out to the visualisers. The submitted visuals make it clearer. The gap is just 40mm with two 40mm diameter pins to make sure the bridges are aligned – but like the equator, it is a symbolic moment. The edge-on slate surface breaks here and visitors can fully appreciate the view, and the vertigo, for one fearful moment.

A cable crane was used to construct the bridge, more normally employed to build ski lifts. Pylons at either end of the site, with cables along them, follow the line of the bridge and extend all the way down the lane to the gift shop. Materials were brought up all the way from the shop on the cable. These were not just any materials – the steel bridge structure arrived in five tonne sections, six for each bridge. The plan was to install a section a day but sometimes it was two or even three, though on rainy days there were none at all. The structure was installed on site in just two weeks – bolted together by steel riggers including a female trapeze artist.

Top left The new bridge in its dramatic setting.
Top right Each of the bridge's two sections spans 30m, springing off concrete footings on the cliffside.
Above The separation of the two sections of the bridge is marked by a 40mm gap connected by no more than two pins.

Could this bridge have been built with less carbon expenditure than in its 65 tonnes of steel? It seems unlikely. Timber was disregarded due issues with span and longevity. And that is put into perspective by the 300 tonnes of hardcore helicoptered in for the island's paths. The extreme spec solution for sustainability would have been not to build, but to discourage the 250,000 annual car-dependent visitors and not to develop the site.

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Brunel Building, Paddington, London

A diagrid steel exoskeleton gives Fletcher Priest's block, inspired by IK Brunel whose Paddington station faces it, an imposing and energetic presence

Words: Jan-Carlos Kucharek Main image: Dirk Lindner

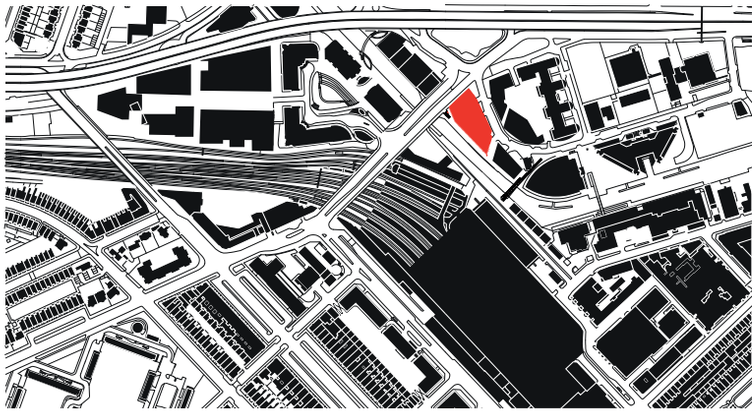
In the valley of dinosaurs that is Paddington Basin, there's a new predator in town. Standing out from the generic silver-clad, green-glassed offices, whose facades form the dead gorge through which the Grand Union Canal now diminutively angles its way, Derwent London's Brunel Building seems more purposeful. An eye-catching diagonal steel exoskeleton and shock of orange, it appears on its haunches, ready to spring at Brunel's 1854 Paddington station, just out of reach on the canal's southern bank.

Architect Fletcher Priest's £116 million, 22,600m^2 building rises 16 storeys from the canalside. Its dramatic 9m high reception area has a huge rolling glass wall that slides to open out to the new 6m wide towpath – which, for the first time in 200 years, gives the public access from that side of Paddington Basin to Little Venice.

But it is for its 71m high exoskeleton and stealth bomber-like cladding that the building is most noted. After 11 years of development, either side of the recession, by the architect, engineer and fabricator, construction began in 2016. While the criss-cross pattern on the cladding's aluminium spandrel panels references the configuration on Bristol's Clifton Suspension Bridge, it is in the external structure that the Brunel engineering references are writ large.

Several considerations drove the design rationale, explains Fletcher Priest associate Chris Radley. Client Derwent London wanted maximum flexibility of office space; so once beyond the line of the central spine concrete core, it favoured a column free arrangement to the cladding line. Maximising the floor area on this high-value site, the architect pushed the building line to the edge of the demise to create an irregular, six-sided floor plate. Engineer Arup, meanwhile, mindful of the Bakerloo Line tunnels running beneath it, minimised piling with secant piling and capping beam bounding a raft slab. With the principal elevation facing full south, there was also a need to consider methodologies for solar shading. Aesthetic decisions also came into play; the architect felt the proximity of the building to the canalside Crossrail exit of Paddington station meant that the usual post and beam approach, as exhibited elsewhere on the Basin site, was heavy and confronting. It wanted a lighter-touch – a visual solution that drew the eye up and away from the ground. Initially dealt with as isolated concerns, all were answered at once with the diagrid exoskeleton.

Not that this meant the project got simpler – there were knock-on implications for the design team. Architect and engineer agreed that any external structural rationale would continue inside, so beams running back to the concrete



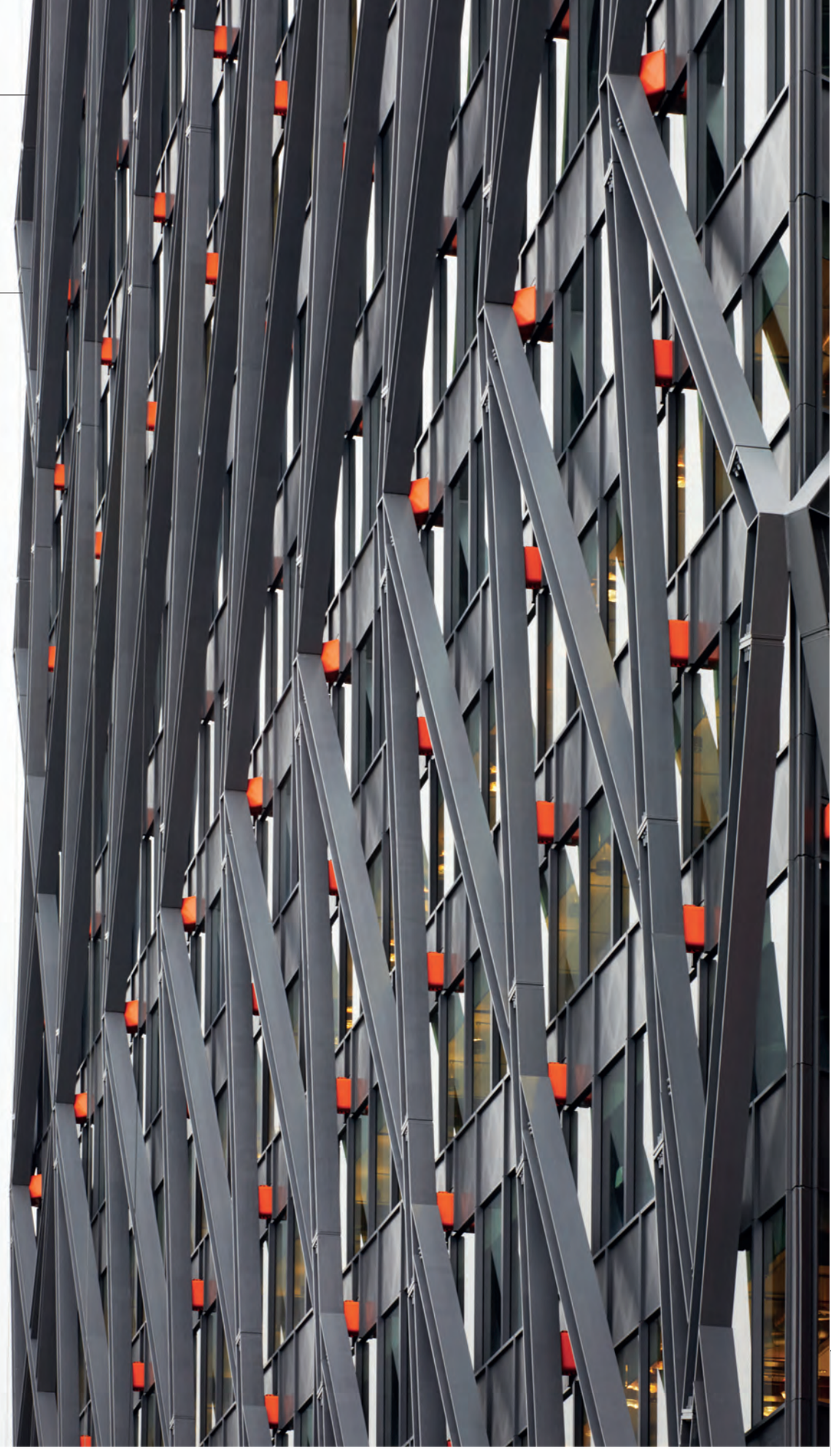
Right Context plan of the Brunel Building showing proximity to the Grand Union Canal and Paddington station.
Opposite The south, principal elevation of the Brunel Building lords it dramatically over the new public canalside towpath.

Below The west elevation reveals the concrete core that runs as a central spine across the floor plate.
Right The diagrid structure connects back to the internal floor beams, with orange-painted insulated metal collars to deal with cold bridging.

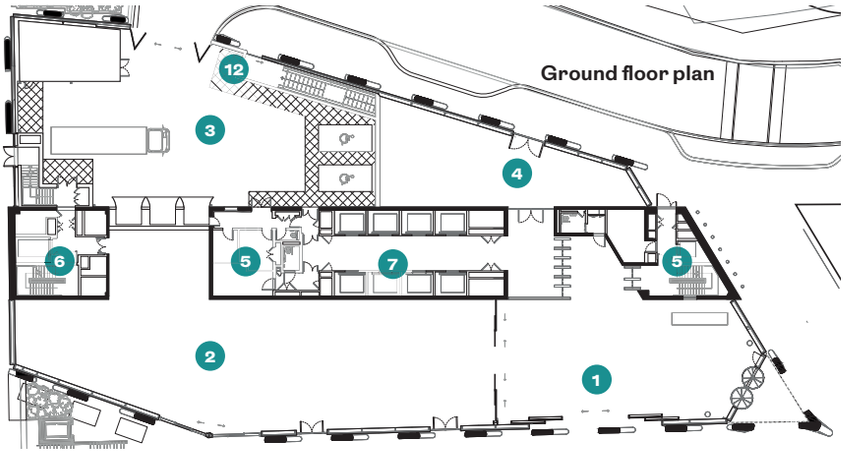
core would mirror the 6m spacing of the diagrid, creating unique cantilever conditions at the corners and necessitating serious M&E co-ordination further down the line. In its realised form, the 66m wide south facade diagrid travels west until the 9th floor, turning back east to the 16th.

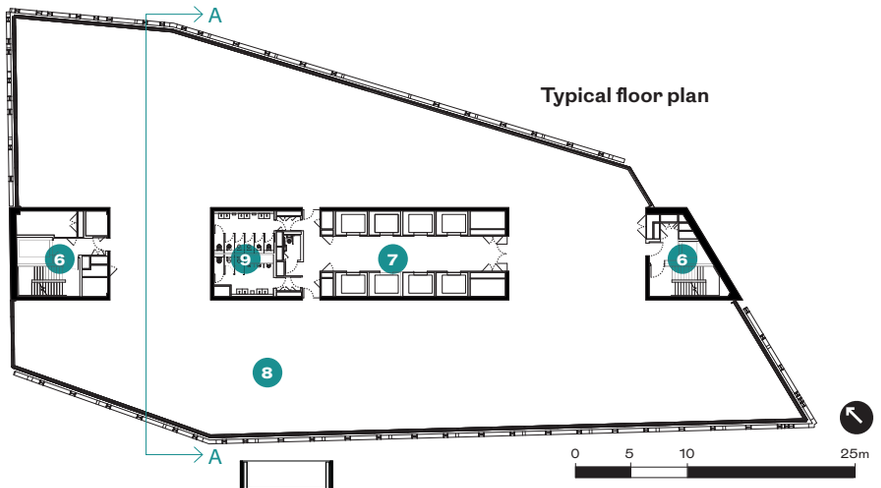
Two types of steel connection are evident on the diagrid; end plate and fin plate. End plate connections carry the lion's share of the building's load with fin plate connections transferring the diagrid's bracing loads. Fletcher Priest wanted their expression to be clearly visible from the outside without looking oversized from within. Sitting directly in front of the cladding, the diagrid structure acts as solar shading for the 3.5m storey heights, delivering 20% shading on the south, despite the sizeable glass panels.

The cladding behind the structure had to deal with significant diagrid movement, says Arup's Conor Hayes. This is partly the result of the building's tendency to want to twist due to the asymmetrical nature of the plan and wind loads, but is also due to thermal expansion and contraction of the exposed steelwork. While the internal steelwork beams might be a steady 22°C, they are connecting to a diagrid that, orientation and season depending, might be exposed to polarities of -10°C to +77°C. Movement

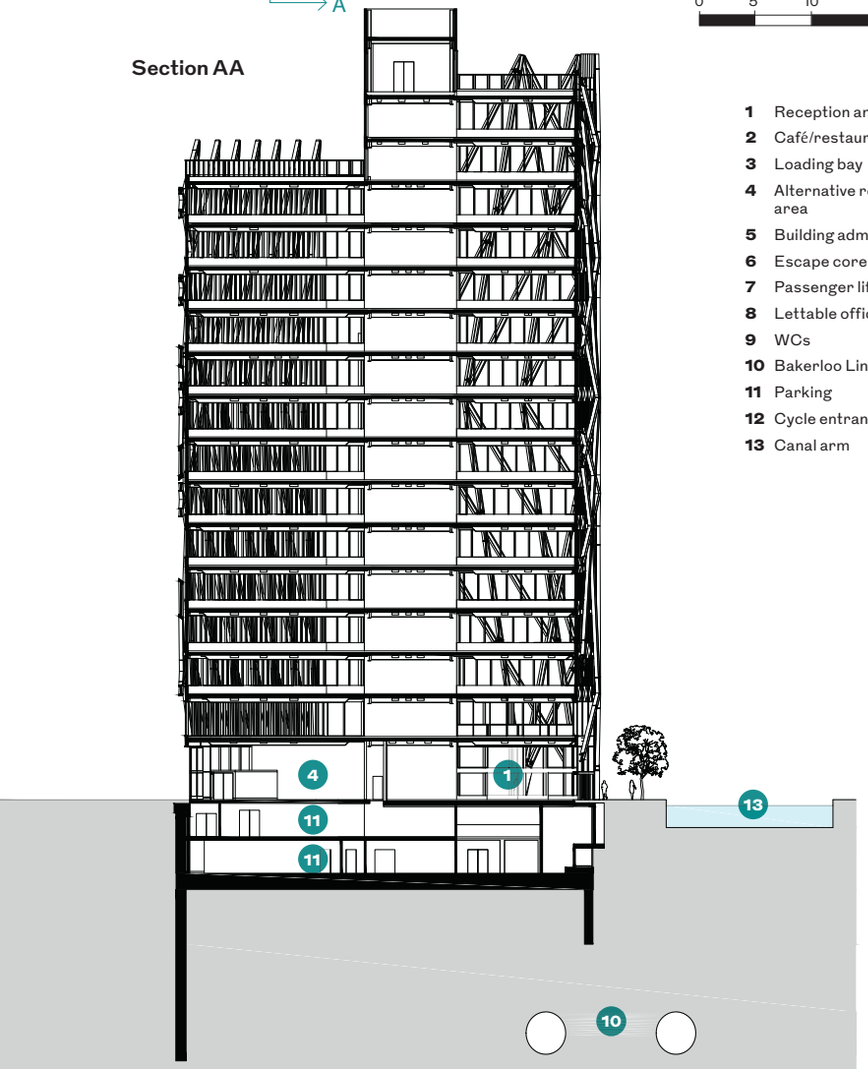


JACK HOBHOUSE



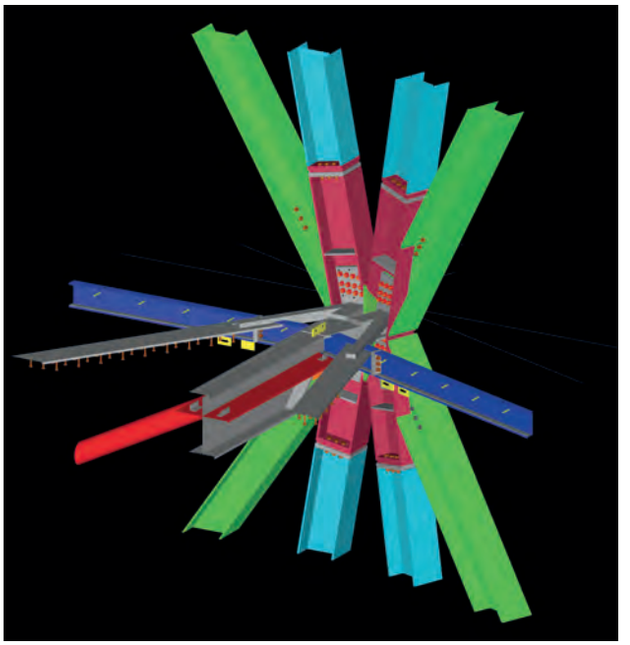


Section AA



1 Reception and lobby
2 Café/restaurant
3 Loading bay
4 Alternative reception area
5 Building administration
6 Escape cores
7 Passenger lifts
8 Lettable office spaces
9 WCs
10 Bakerloo Line tunnels
11 Parking
12 Cycle entrance
13 Canal arm

FLETCHER PRIEST/GG ARCHARD



SEVERFIELD

FLETCHER PRIEST

Top Floor beams taper at both ends to increase daylight at the facade and allow for service runs on the core side.
Middle The ninth floor junction illustrates the complexity of the exoskeleton/internal structure interface.
Above The insulated steel cold bridging collar. There are nine versions to allow for every configuration across the facade.

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GREEN
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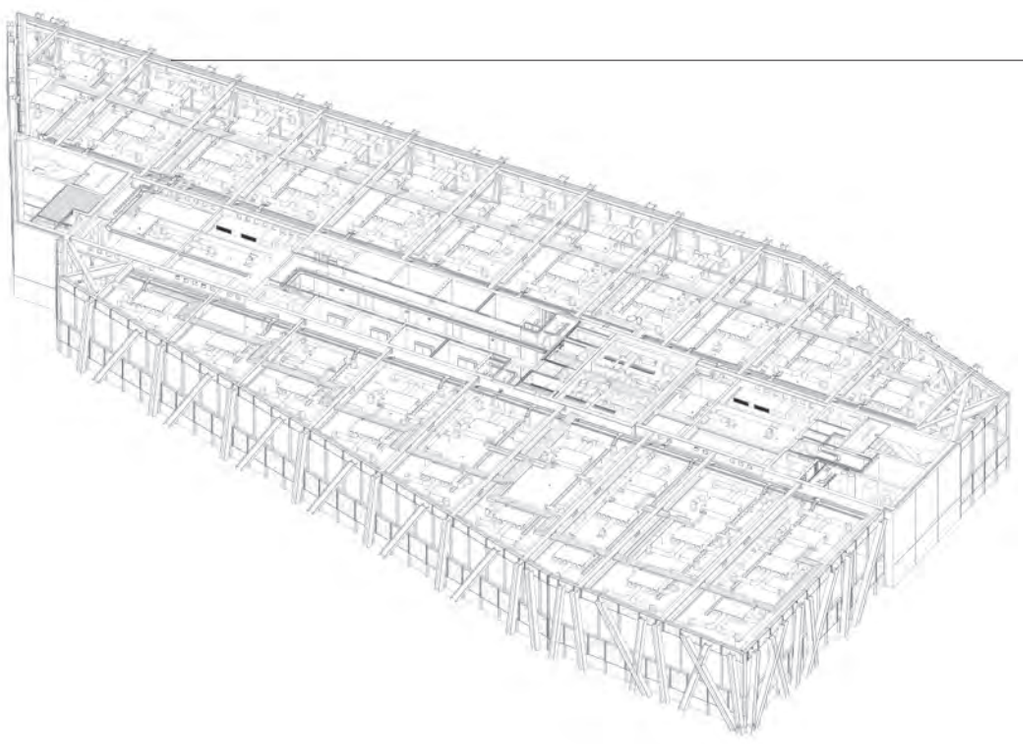
Below Structural diagrid is complex enough to require services co-ordination to be finalised at pre-tender stage.
Bottom Corner cantilevers have their structure boldly highlighted in the Brunel Building's signature orange. Services slip in neatly between.



FLETCHER PRIEST

JACK HOBHOUSE

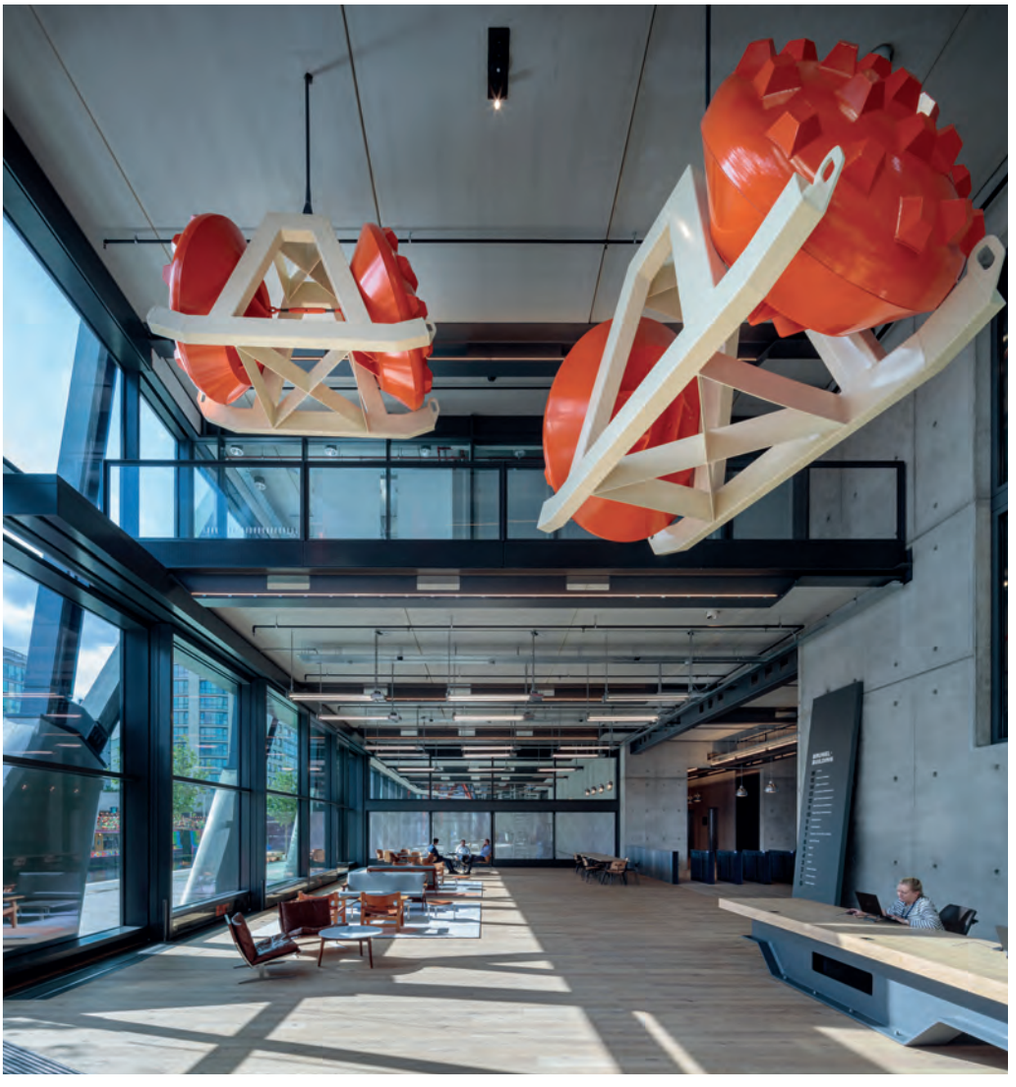
concerns were exacerbated by the fact that the diagrid was connected by the internal beams to a concrete core that wasn't moving at all.

As a result the temperature of the structure was monitored on installation, cladding fabricator Scheldebouw wanting exact dimensions on the positioning of the steel at any point, according to Arup's usual debate, 'perhaps more precise than they were necessarily accurate'. In all, the design team attended five workshops with the cladding and steelwork contractors to ascertain worst case scenarios and determine the movement tolerances at every junction. As a result, steelwork tolerances were resolved to +/-10mm, rather than the usual +/-25mm. Movement at some key points was facilitated with slotted bolt connections, fixed with elliptical bolt heads until the structure was complete, and then swapped for round headed sliding bolts to deal with structural movement. Strongback steel spandrel cladding with aluminium external wrapping and solar-controlled glazed panels were delivered to site in 6m sections with interlocking end pieces, and fixed in line with where the beams penetrated, to connect with the diagrid.

To mitigate cold bridging, the interface of the external structure and internal beams was resolved with a composite GRP separator encapsulated in an insulated steel collar, painted in signature orange. Nine versions of these deal with every type of angled junction on the external diagrid. External steel elements are intumescently painted and 60-minute fire-rated, with internal steels at a 90-minute rating.

The asymmetric form of the building as well as programme demands had knock-on effects on the design of internal beams. The desire to maximise daylight at the facade side and allow for duct runs at the core resulted in their characteristic thinning at both ends but the story is more complex than this. With differing loads being transferred over the diagrid, internal beams too needed to account for the divergences. With Fletcher Priest insisting all beams should be the same overall depth, Arup was faced with having to model the structure and alter the web and flange thicknesses of every beam to account for various diagrid loadings. Achieving the narrowed beam form, not by the steelwork fabricator's preferred bending method, which would have meant a different curve to each beam flange, but by cutting and welding, made for a

JACK HOBHOUSE



Left At ground level massive rolling doors by Belgian firm AB Matic allow the reception lobby to open out to the towpath.
Bottom The reception area, 9m tall at its highest, is flooded with light. Artist James capper's Treadpad sculptures crown the volume.

difficult conversation with Severfields.

Floor plate facet shifts show in a more complex structural elevation where they occur, as additional structure extends out to pick up the additional beams required. It might seem like gestural formalism, but Arup assures that all the exoskeleton is justified structurally.

Logistics-wise, the diagrid structure was constructed in three storey quadrants around the concrete core. Once the steel had gone up, the internal pre-cambered beams, fitted with steel ledger plates on the web, were run back to the cores to stabilise it. As steelwork began on the next quadrant, slim 75mm, precast reinforced concrete planks were installed on the ledger plates and cast in-situ to the requisite 225mm. Steelwork, concrete and cladding construction thus spiralled around and up the core, allowing the three contractors to work concurrently.

Services co-ordination with this ever-moving structure was challenging. Even at pre-tender stages it required detailed 3D modelling of every floor to ensure any conflicts were ironed out before construction. The precast concrete soffits on their ledger plates provided a highly finished backdrop from which to hang ducts, lighting and conduit. The subcontractor projected a 1:1 model of the service runs directly on the concrete soffit to ensure pinpoint accuracy for the setting out, leading to 'almost creepy' services alignment now looking along the floor plate.

The quality of finish, internally and externally, works in the client's favour. The building was 100% pre-let, partly due to the flexibility of the open plan and column-free floor plates. One tenant has allocated more space to its bar, café, gym – and barber's shop – than office space. And a global hedge fund manager has leased the two top floors for a mere 23 staff; luxuriating in a spatial redundancy that counter points the hard work the building is doing everywhere else. ●

Credits
Client Derwent London
Architect Fletcher Priest
Structural engineer Arup
Services engineer Cundall
Project manager Gardiner & Theobald
Quantity surveyor Arcadis
Contractor Laing O'Rourke

Suppliers
Facade Scheldebouw
Facade glazing Interpane
Steelwork Severfield
Steelwork coatings Sherwin Williams
External doors Boon Edam, Schueco, SkyFrame, AB Matic
Insitu concrete Expanded
Precast concrete Explore

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Redhill 1936

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

Specified

PiP specifieds are compiled from supplied company press releases

1
Cor-Ten weathered steel
Architectural Profiles

'I sin ya prop'ty from the road, missis. You could do wi' a lick of paint on them new tin sheets so ya could. They're rustin quick, 's no good. I got paint on the van now, an me boys'll do it fe ya cheap. We can do it now fe ya, quick an' easy. Is the boss in? Let me talk to the boss and we'll get a good deal worked out. S'no trouble, no trouble at all missis. We can do it fe ya cheap.' Ach... ya wha'? Cor-Ten, ya say? Ya want me to lev' it as it us..?
archprof.co.uk

2
Elegance 52 curtain walling
SAPA Systems

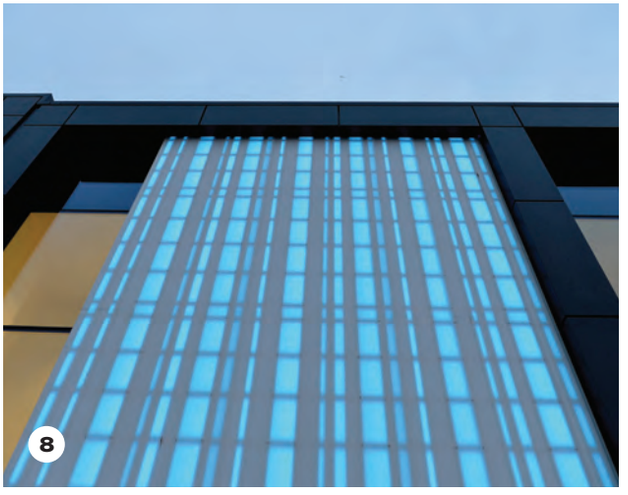
'So you see, Madame Pelosi: there can be no escape. We have styled the building so our 'houseguest' believes himself to still be in The White House. Sapa's high thermal efficiency will convince him he's still in Florida. Yet the curtain walling, windows and doors are all completely secure. Our 'guest' will be free to enjoy the indoor pool, gym, leisure facilities and unimpeded countryside views – but should he ever fancy so much as an impromptu putt, the envelope is sealed – and the Astroturf you see so clearly is both mined and electrified.'
sapabuildingsystem.com/en/uk/

3
Post-tensioned concrete slabs
CCL Morocco

Rick: If that plane leaves the ground and you're not on it, you'll regret it. Maybe not today, maybe not tomorrow, but soon – and for the rest of your life.
Ilsa: But what about us?
Rick: We'll always have a bespoke roof slab, post-tensioned on the longitudinal plane, conventional on the transversal, making the multi-pitch achievable by avoiding tendons in raised roof areas, with enough self-weight for large spans and cantilevered overhang. We didn't have... We'd lost it... Until you came to Villa Kabbaj in Casablanca. We got it back last night.
cclint.com/

4
AA100 aluminium curtain wall
Kawneer

Complaints about the BBC's use of licence funds have erupted over its new Cymru building. As fitting out nears completion, Kawneer's vast glazed frontage reveals that fit-out is so far limited to crêpe paper festoons, a 40ft Nordic fir with sparkly ornament array, and a 60ft atrium model of the Holy Virgin Mother with 3D removable Jesus attachment. Current speculation is that the building is, in fact, a one-off set for the Katherine Jenkins Christmas Special, a production already reputed to have exceeded its budget by some £350 million.
kawneer.co.uk



5
SPW600 slim-profile windows
Senior Architectural

DO NOT LOOK AT THE CLADDING. I repeat, do not look at the cladding. Those Trespa Meteon high-pressure compact laminate panels are so distracting! (And durable and easy to clean, it's true.) You're meant to be looking at the windows. THE WINDOWS! They're Senior's SPW600 aluminium slim profiles, also cost-effective, durable, robust and easy to maintain. That is all. They're the shiny holes in the cladding, if that helps. Bring light into the building. Elegantly. LOOK AT THE BL*@DY WINDOWS. Do I have to hypnotise you?
seniorarchitectural.co.uk

6
Real stone
Lundhs

'Earthman, we are now deep in the heart of Magrathea. Where we make most of our planets, do you see?
'Over there is Earth Mk2. We're making a copy from our original blueprints. Did you ever go to a place called Norway? No? Pity. That was one of mine. Won an award, you know. Lovely crinkly edges. I was most upset to hear of its destruction. On the bright side though, its lovely natural stone is being recycled by Lundhs!
'Yes! For Farris Bad 'wellness' hotel in Norway Mk2. Very popular with Golgafrinchans. Strange people.'
lundhsrealstone.com/uk/

7
Natura and Linea fibre cement panels
Equitone

The arts world is in turmoil following discovery of an early draft for Britten's 'Turn of the Screw'. Thought to reference librettist Myfanwy Piper's struggles with motherhood, controversial lines run:
'...The children, the children. Poor babies, no father, no mother. But I'll treat them as I treat my own, build a hideaway with Equitone Natura and Linea panels so similar – and so different. Pleasing to the eye yet tough enough to keep the little insects out while I stay in and drink their guardian's gin.'
What could go wrong?
equitone.com/en-gb.

8
Opal and Diamond White solid surface
HI-MACS

A trial at Edinburgh's Fort Kinnaird retail park marks a new era in policing. Every store has been refitted with a prominent illuminated portico, constructed from versatile, hardwearing and translucent 12mm S034 'Diamond White' and S302 'Opal' HI-MACS natural acrylic stone, backlit with LEDs in the constabulary's signature Caerulean shade. Crime incidents can be instantly reported at a counter inside. Although the officer on duty in each outlet is still a projected-on laser-cut HI-MACS maquette, in thicker, denser, less transparent 'Babylon Beige'.
himacsuk.co.uk/

‘Blended living’ steps onto the university prospectus

Now that higher education comes at some cost, students accommodation is increasingly blurring the boundaries between learning, working and living

Words: Josephine Smit

The way students live has long caused hackles to rise within communities. But it is not late night partying in a packed HMO that is invoking local wrath; it is new purpose built student accommodation (PBSA) that is being slated. Too much, too big, too ugly and taking sites that could be developed with affordable homes: these are common accusations being levelled in local media.

The global marketisation of UK higher education has fuelled the growth of PBSA into a mainstream property asset class, with attractive yields for investors. At the same time, it has brought benefits for students, widening the choice and quality of accommodation. ‘It is fundamentally a fully let sector and is undersupplied,’ says James Pullan, head of student property at consultant Knight Frank. Around 30% of full time students live in PBSA, with the sector now boasting more than 600,000 bedspaces. The total number of bedspaces provided by the private sector last year overtook those provided by universities, with developers passing the 300,000 bedspace milestone, according to analysis by Knight Frank Research. Renters are more likely to be international than UK students. ‘There’s a perception they’ve more disposable income, they don’t want to work with mom and pop landlords and they don’t have seven best friends to share with,’ says Pullan.

As a result, a sector that has long been dominated by the basic study bedroom now also has super-stylish living spaces and amenities such as a cinema, gym, private study rooms or even a soundproof room with karaoke machine. Above all, says Pullan, there’s a growing focus on creating community, which has become important given concerns about student health and wellbeing (see box). ‘The number one amenity is a sense of belonging to a scheme,’ he says. ‘The club house community is evolving as a concept... it has echoes of US fraternity and sorority housing.’

For many students, particularly those from the UK, study can be a significant investment and rental budgets constrained. Some PBSA schemes may have come in for criticism, but ultimately the private sector is driven by commercial realities, Pullan says: ‘Developers are making incredibly efficient units to deliver affordable rents.’ That is the bottom line, although heightened local interest in development, increasing competition in the PBSA and universities sectors and the growing understanding of students’ living requirements are significantly influencing development.

Clusters for community

‘Our briefs are changing, with a real focus on creating supportive communities,’ says Kieran Lilley, regional director and head of student living at Stride Treglown, which has come up with a number of design innovations in response. A post-graduate scheme for the University of Bath featured additional student lounges shared between two cluster flats, while the design for the 630 bed Aparto Caton Court in Lancaster, developed for Hines, features a design that the architect calls the 5+5. This combines the kitchen and living spaces of a pair of five bed clusters to give more generous and flexible accommodation. ‘Combining two kitchen/living/dining spaces allows for the creation of distinctive spaces and improves the potential for socialising, helping to alleviate feelings of isolation,’ Lilley explains. ‘Historically, the cluster design was based on fire engineering principles, with the long corridor flanked by bedrooms leading to a kitchen at the end – you wouldn’t otherwise have a 12.5m long corridor. But with better technology aiding fire safety, you can flip the layout so you enter the living area and have bedrooms off that.’

To evolve the model, the practice constantly researches how students live. ‘We seek to undertake student engagement workshops on every project, and can gain live insights from our large pool of placement students’ says Lilley. The architect is including similar cluster designs into a 1,700 bed scheme for Keele University.

The Lancaster scheme, which opened in September, still has its amenities: sky lounge, study spaces, cinema, gym and fitness suite. The buzz phrase for it, says Lilley, is, ‘sleep in the bedroom, but live in the building’. And if that sounds like other forms of living on offer in cities, that’s no accident. PBSA itself is now blurring boundaries between hotels, student accommodation and co-living or between living, working and learning, the latter described as ‘blended living’. ‘Historically, providers have said they’d rather build 100% student accommodation schemes because it’s what they know,’ says Lilley, but he points out that these variations can be important in helping break down ‘town versus gown’ divisions and improve graduate retention. ‘Some PBSA schemes are being sent down a more mixed use route because councils say they want to foster, and build, communities,’ he adds.

Sheppard Robson partner Rupert Goddard says thinking among university clients, who

A sector that has long been dominated by the basic study bedroom now also has super-stylish living spaces and amenities

Left Leiceser University's student residences Freeman's Common by Sheppard Robson.
Opposite Aparto Caton Court, Lancaster, by Stride Treglown, and its 5+5 cluster living arrangement.
Below WilkinsonEyre/Mole Architects' first phase student accommodation at North West Cambridge.

make up the bulk of its student living client base, is changing. 'The private sector sets the pace in interior design and in thinking like a hotel provider,' he says. 'It is hard for universities to react as quickly as private developers as they don't build so often, but some are up there with the best that the private sector is providing.' The University of Leicester's Freemen's Common is an example, he says. The design-build-finance-operate (DBFO) project, due for completion next year, sees Sheppard Robson creating a 1,400 bedspace scheme, while Associated Architects is designing flexible teaching and office space in a blended living approach.

The university wanted a range of sizes and configurations. 'That includes some quite large cluster groups of 10 or more, which will be at the more affordable end of the scale, through to single occupancy one bed units aimed more at mature or international students,' says Goddard.

University challenges

The University of Cambridge is exploring fresh approaches to living at Eddington, north west Cambridge, where it is creating a district of 1,500 private homes, 1,500 homes for university and college staff and accommodation for 2,000 post-graduates. Mole Architects has worked with Wilkinson Eyre on the first parcel of development, creating three linked buildings with 35 post-graduate apartments, a health centre and estates office, on a plot that also includes a supermarket, retail and CHP energy centre.

Apartment designs include one bedroom units and two bedroom single level and duplex units. 'The university was keen to set the standard for the wider masterplan in the first phase of development, establishing its approach to design quality, urban design and sustainability, which goes much further than the norm for this type of accommodation,' says Shubhanaga Simpson, associate with Mole Architects.

JACK HOBHOUSE

For the accommodation, the architect looked to the London Housing Design Guide in establishing such features as fixed storage and minimum space standards. 'It meant going further than the planning authority required,' adds Simpson. The scheme is designed to the now redacted Code for Sustainable Homes level 5, with minimum requirements for daylighting, energy and water use, toxicity and fabric energy efficiency standards, which were modelled for heat loss at junctions. Units have large, triple glazed windows, super-insulation and, at the request of the university, natural ventilation. The latter was challenging, given the noise generated by the nearby M11, supermarket and energy centre. The project team collaborated on a solution with architects in adjoining plots, using an innovative natural ventilation acoustic attenuator specially developed by a manufacturer.

Although this is a new settlement, integration of the different uses has brought with it the constraints of a tight urban site, says Simpson. 'We had to do a lot of co-ordination work with other plots and architects.' A common courtyard garden and public routes provide pleasant, social spaces. Simpson adds: 'The development has a campus feel, even though everyone has their own front door.'

High property prices and a determination to attract global talent lay behind the drive to provide living space. 'The university has found that the quality of accommodation is increasingly important to post-graduates, with more graduates going to overseas institutions such as the USA Ivy League universities,' says Simpson. 'The new accommodation at Eddington will help the University of Cambridge to continue to attract world-class talent for years to come.' Ultimately, it is students choosing their university and accommodation, who are exerting the biggest influence of all on this sector. ●

ACTION FOR MENTAL HEALTH AND WELLBEING

PBSA providers have come together to support the mental health and wellbeing of students occupying their buildings. The British Property Federation's (BPF) new publication, The Student Wellbeing in Purpose-Built Student Accommodation Guide, complements work already done by universities and other agencies, says Laurence Raeburn-Smith, policy officer with BPF: 'It's not about codifying therapeutic care, but about how PBSA operators can work with others, support the students in their care, and react effectively.' The guide covers policies in the event of an incident, staff training in wellbeing and mental health first aid and ways to support students.

The BPF guidance doesn't cover building design, but it does highlight such factors as the need for spaces for discreet conversations. Mental health is already being considered by larger scale operators in particular, says Sheppard Robson's Goddard. 'We're seeing clients focusing on the size of amenity spaces, levels of daylight, and designing for neurodiversity in the use of textures, colour, lighting and space. For a while we have been designing entrances so that students walk past the reception desk on their way in and out, providing the opportunity for informal conversations as they pick up their parcels, which allows the pastoral team to keep in touch with potentially vulnerable tenants.'

Feel good to stay healthy: why your surroundings matter

As healthcare moves towards prevention as much as cure, how can we design our built environment to promote wellness? PiP's seminar offered some ideas

Words: Ruth Slavid

DAVID BUTLER (2)

Left Mole Architects' Marmalade Lane, Cambridge: An exemplar of co-housing, facilitated by the city council.

What could be more conducive to wellbeing than living with people you like, in a way that you like and that encourages social interaction – all while making the air as clean as possible? This is the thinking behind the Marmalade Lane Co-housing project in Cambridge, designed by Mole Architects.

Meredith Bowles, founder of the practice, told delegates to the PiP conference on health and wellbeing that he was delighted by the entire process. 'To work with a group of people who feel so involved along the way has been a tremendous honour,' he said. The project was made possible by the fact that Cambridge City Council backed it. It helped the co-housing group set up, and supported the members in producing the client design brief. And, crucially, it sold the land to the developer with the stipulation that the scheme be built to the client design brief, and that the units should be offered first to the members of the co-housing group.

The developer sold long leases to the individual co-housers, requiring them to become members of the co-housing company. Once the project was complete, it transferred the freehold of the whole site to the co-housing group, subject to the individual long leases.

The support of Cambridge City Council was vital, as was its determination that some development land that it held should be used for a worthy purpose. Bowles said that if more such developments are to happen, there has to be an impetus and desire to promote the idea from local authorities.

And the results show how worthwhile this would be. At Marmalade Lane, the client body was highly engaged, and the result is outstanding. There is a range of housing types – both houses and flats – of varying size. There is considerable communal space, both outdoor space, and in a building that houses a social area for community meals, a gym, workshop and a laundry room. And there is also a flat where visitors can stay for the minimal cost of £5 a night. The result is a considered but not over-uniform piece of design which dismantles many ideas about English privacy to provide a real community that must be excellent for the wellbeing of all its occupants.

Other speakers focused on more specific areas of wellbeing. Lynne Clapham-Carter, specification sales manager of sanitaryware company Geberit, looked at the role of bathrooms in wellbeing. She started by talking about the sensory overload that too many of us experience in noisy, polluted and crowded journeys to work, and proposed the office bathroom as a sanctuary of peace and recuperation.

This can only work by addressing each of the senses in turn. She explained strategies for eliminating noise by using wall-mounted lavatories with asymmetric bowls, and of dealing with smells. She also talked about colour and the use of light, as well as employing sensors to remove need-to-touch areas that were potentially unhygienic. Whether or not the bathroom does become a refuge, it should certainly be a more pleasant and hygienic space with this approach.

Nurture and nature

Mark Elmore of New Zealand kitchen company Fisher & Paykel explained that the flexibility offered by his company's products means that kitchens can be designed not only to suit a range of needs, but that they can suit different needs at different times of the week. As the kitchen increasingly takes the role of the heart of the home, it can serve as a place for efficient cooking and the supervision of homework during the week, and then transform either into a social hub for recreational cooking or a place to follow a solitary interest in recipes. In this way it can act as a stress reliever and, frequently, foster social links.

Architect and interior designer Oliver Heath talked about biophilic design, an area in which he has specialised. He outlined the epidemic of stress that is affecting people worldwide, and displayed the World Green Building Council figure that shows that staff costs represent 90% of building operating costs. Keeping people healthy is therefore essential for an effective business. Being in touch with nature is known to calm us, and this is the basis of biophilic design.

GEBERIT

Heath discussed ways in which this can be achieved at relatively low cost. His practice is involved with a research project at BRE which will measure the impact on employees, over a year, of high-input, medium-input and low-input approaches – a laudable attempt to attach hard data to an area that can be a bit too touchy-feely.

Hard data is definitely the province of Italian manufacturer Kerakoll, which makes breathable alternatives to cement renders and coatings. UK technical manager Gareth Lewis explained that the company also designed its own 'Green Laboratory' – an extraordinary white building in Italy that looks, as he described it, like a 'Teletubby' house. It has both built the centre for the wellbeing of its workforce, and researches the wellbeing impact of building technologies in the laboratories, looking at everything from indoor air pollutants to the recycling of materials. There may be a lot of talk these days about wellbeing, but the speakers at this seminar demonstrated that there is also a lot of action. They are to be applauded. ●

Above Dedicated communal spaces can make the co-housing experience available to the wider public.
Below left Geberit's AquaClean Sela WC with Sigma 50 flush plate.

Dorothy Garrod Building, Newnham College, Cambridge

Newnham College, Cambridge, didn't want a building of pomp or grandeur. But the lighting has made it stand out in quite a different way

Words: Pamela Buxton Photographs: James French

'Everyone likes how this building feels,' says Walters & Cohen's Cindy Walters of the practice's extension to Newnham College, Cambridge. She is in no doubt as to why that is: 'They love the light. I think people walk through the door and feel comfortable. And that's because the light has been thought about very carefully.'

For this, she praises Nulty, the lighting designer who worked with Walters & Cohen and interior designer Ab Rogers to create the desired ambience for the £25 million extension, which provides residential accommodation, offices and a porter's lodge as well as a café, gym and auditorium.

The lighting has certainly played an important part of the success of the Dorothy Garrod Building, which this year won a RIBA National Award and RIBA East Building of the Year, and is the practice's first completed higher education project. Walters & Cohen was commissioned to design the 6900m^2 extension on a brownfield site that wraps around the back of the Fawcett Building, one of only three buildings completed by Elizabeth Scott, who notably designed the RSC Theatre at Stratford-upon-Avon. The extension also creates a new public frontage in what had previously been a car park.

The new three-storey building is a respectful and understated addition to the campus, providing 90 bedrooms plus 19 in the neighbouring Fawcett Building, which was also refurbished as part of the project. Stretching back at right angles from its main public facade on Sidgwick Avenue, the building continues round again to give a sense of enclosure to the college's mature gardens behind. For the extension, the

Right The Sidgwick Avenue elevation of the Dorothy Garrod Building with its illuminated hit and miss brickwork creating an understated, elegant entrance.


NEWNHAM COLLEGE
NEWNHAM COLLEGE

DENNIS GILBERT

architect chose hand-made Northcot brick in a perforated hit and miss arrangement to complement the Sidgwick Hall building opposite, designed by Basil Champneys in 1880.

Nulty used a combination of off-the-shelf products and bespoke elements to create the lighting design for the key spaces in the building.

'We tried to complement the architecture so it didn't feel as if it was being betrayed by the lighting,' says Nulty creative director Daniel Blaker.

This approach began outside the porter's lodge on Sidgwick Avenue, where Nulty created lighting to highlight two exterior features. For this main entrance, the all-female college had been clear that it didn't want a design that was imposing or pompous. Instead, the architect created a low key but welcoming entrance, bringing the building forward at ground floor level to signal its function as the way in. Above, an area of illuminated hit-and-miss brickwork helps to further announce the entrance. To create this, the challenge was to integrate the lighting behind the brickwork to give a similar glow to that achieved at the ground floor herringbone pattern hit and miss, which is in front of glazing. This meant sourcing a fitting that could slot into the narrow space behind the brickwork and be accessed by hand through it if

The lighting designer aimed to complement the architecture by using a warm white light to celebrate the coffered design and brass detailing

Far left Glazing to the street gives views stretching back through the main reception area.
Left Bespoke light fittings create the dappled lighting in the main reception.
Below left Two brass discs, the larger of which is an uplight reflector, illuminate the reception. A spot downlight creates the dappled effect.

that gently fades towards the top, while avoiding any sideways spill.

Once inside the porter's lodge, Nulty created welcoming lighting to provide 200 lux for general circulation with further areas of accent. For this, the lighting designer aimed to complement the architecture by using a warm white light to celebrate the coffered design and brass detailing while also integrating spotlights for the artwork on the walls. The solution for these multiple functions was a bespoke, surface-mounted pendant fitting made from two brass disks. This both casts halo light onto the upper disk to highlight the coffers and incorporates a retractable mini-spot in the lower disk to provide either accent or general light. This can be pulled down and angled to the walls as required. LED strips provide further lighting within the display cases.

The 36 custom fittings, created by Nulty's sister company Nulty Bespoke, incorporate repackaged Flos downlighter components and concealed emergency battery and drivers.

The result, says Walters, is 'really uplifting' when entering the building.

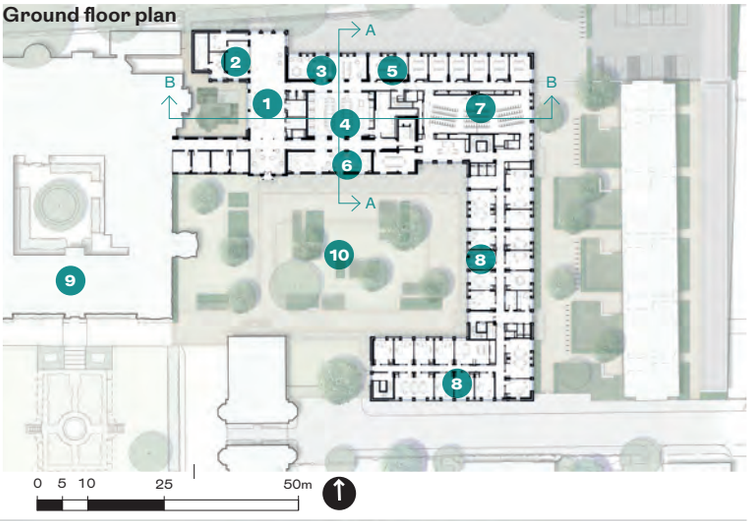
In the central café, Nulty similarly wanted to ensure that the lighting made the most of the double-height space, which is overlooked at upper level by residential corridors. The company came up with an idea for a bespoke chandelier installation sweeping across the space and required. The solution was a 43mm deep linear fitting by Ecosense in 305mm modules, which gives a narrow, elliptical beam upwards.

'It's very poetic at night,' says Walters.

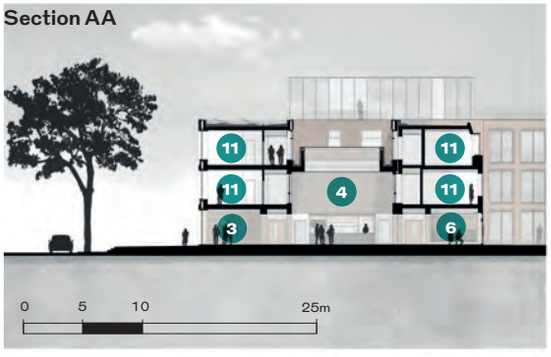
The other external lighting illuminated the Beyond Thinking artwork by Cathy de Monchaux, which stretches the full height of the building to the side of the entrance. The challenge here was to illuminate the highly textured artwork while avoiding any lighting spilling into the adjacent upper bedrooms. Nulty visited the artist's studio and tested different colour temperatures and approaches before specifying a powerful narrow uplight. This is embedded in the paving at a 6° angle to give more illumination at the bottom of the artwork

1 Reception
2 Porter's lodge
3 Café area
4 Central dining room
5 Meeting rooms
6 Common room
7 Auditorium
8 Study rooms with bedrooms above
9 Champneys buildings
10 Courtyard
11 Bedrooms
12 Common kitchens
13 Gym
14 Dining hall kitchen
15 Plant
16 Music room

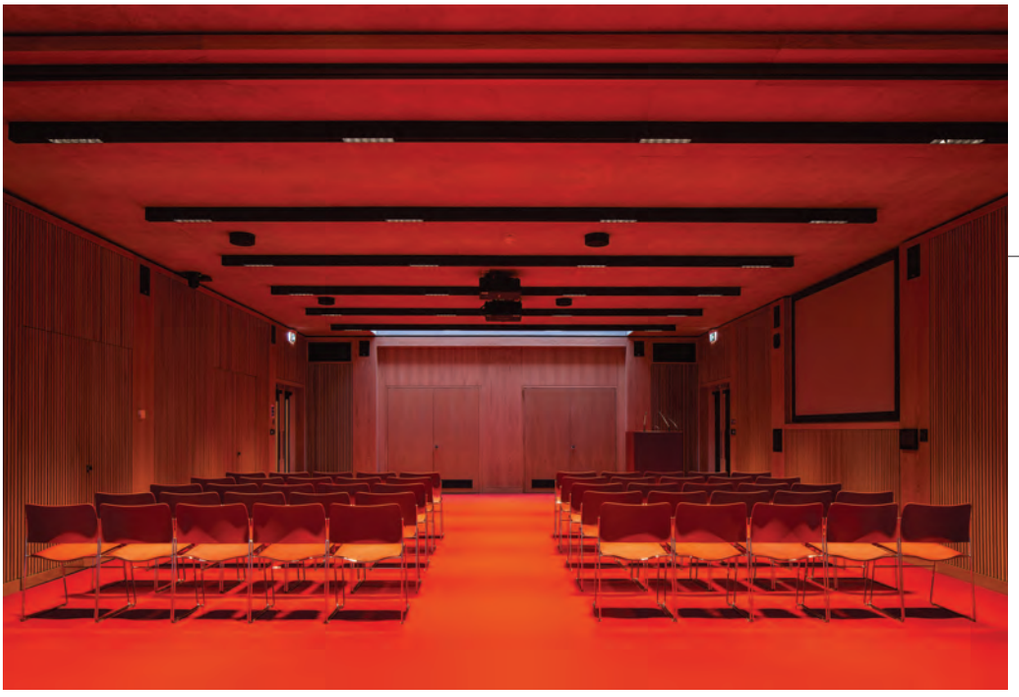
Ground floor plan



Section AA



Section BB



Above The internalised space of the auditorium allows for a broad range of lighting effects as required.
Below The double height central dining hall with its strange chandelier sculpture is looked down upon by the residential corridors above.

brought in lighting design studio Haberdashery to help realise this vision. The idea evolved into a sculpture formed by a decorative assemblage of 270 polished and white powder coated brass 'pages' etched with letters written by women associated with the college sourced from the college archives. The challenge was how to light this effectively and elegantly while still providing the required 300 lux levels of café lighting required for students wishing to work in the space. Electro-luminescents and OLEDs were swiftly ruled out because of short lifespan and cost respectively. Instead, the design subtly integrates warm lighting within the strings of letters through the use of 22 small adjustable spotlights installed into the ceiling roses (Evo 16 Shot Snoot by Precision Lighting). Playful shadows of the sculpture on the wall are created with eight spotlights (Prospot LED by Illuma) located at a lower level on the walls. The sculpture also included some LED sources sandwiched between the pages hanging from the same ceiling roses.

Nulty is particularly pleased that any students looking down from the corridors above will be able to appreciate the artwork rather than having their view blocked by light fittings.

In the auditorium, the brief was to provide 300 lux levels. This was achieved using 10 surface-mounted, linear black lighting profiles (U060 Lightway from Vice Lighting), which contain low-glare LEDs to provide general lighting, and were also able to incorporate a late requirement for spotlights at each end to wash light on the side walls. These end fittings are Unico fittings by XAL, which use a shell-shaped reflector by Bartenbach.

'We tried to keep it very structured and clean,' says Blaker.

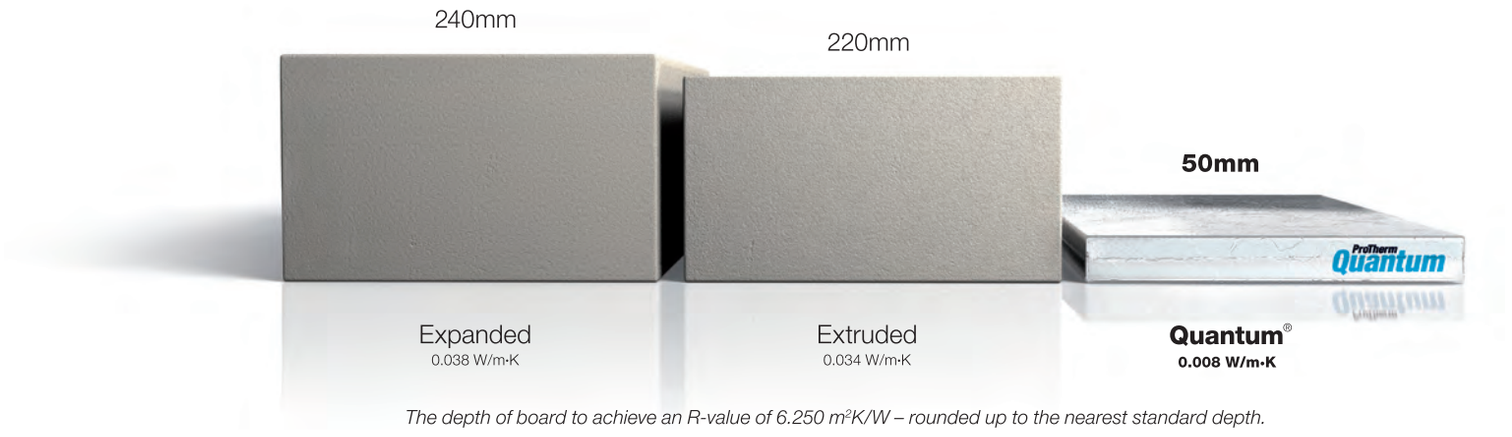
Walters & Cohen's Walters is delighted with what Nulty has achieved at the building.

'The lighting is hugely important. Thank God for Nulty. If they hadn't come along, it wouldn't have been the building it is,' she said.

Credits
Client Newnham College
Architect Walters and Cohen
Structural engineer AKT II
Building services Max Fordham LLP
Interior design Ab Rogers Design
Lighting designer Nulty
Contractor SDC

Quantum®

~~Theory.~~ *Practical.*



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Costed

Nang Murng, head of resource data, and Clive Rowe, construction data analyst, both of the Building Cost Information Service of RICS, look at lighting costs

An average household dedicates about 15% of its electricity bill to lighting. We can reduce our lighting bill and energy usage by changing which bulbs we use and how we use them. Houses typically use a mixture of standard light fittings and downlighters or spotlight fittings; energy efficient bulbs are available for both. Switching to good quality, smart lighting controls and energy efficient lighting is one of the fastest ways to cut your electricity bill.

Lighting is one of the features that makes a house a home. Good lighting allows you to perform tasks easily and safely, improves wellbeing and can make spaces feel brighter, more welcoming and comfortable. Several factors determine the choice of lighting, including function or different uses of the room, aesthetic requirements, degree of comfort required and cost. Factors such as energy consumption, lamps and ballast life, installation and maintenance costs must also be considered. Sometimes a system may cost more initially, but the savings realised over a few years will justify the outlay. Each room has specific and general lighting needs.

The following guide reflects the prices a developer might expect to pay on a medium-sized residential project for products in the low- to upper-middle specification range. Prices allow for straightforward electrical installations (per point), including the cost for cable, conduit and conduit fittings, from distribution boards to appliances and fittings, and for switch plates, socket outlets etc (main switchboards, distribution boards, main and sub-main cables not included). Prices do not include the contractor's preliminaries, overheads and profit margin.

The rates are based on the UK average and represent typical prices at 2019, 3rd quarter. Please note that prices can vary significantly depending on the exact specification. Prices are in £ and are based on the BCIS Schedule of rates online services. For more information go to http://www.rics.org/bcis

Range	£/unit
Domestic internal lighting	
Pendant, one way switch	
inc single /three LED lamps	140-151 / 200-215
creative, fused & folded glass, suspended by wire, two LED lamps	379-408
Contemporary chandelier one way switch	
inc three / eight LED lamps	200-230 / 503-578
Traditional chandelier one way switch	
inc eight candle lamps	318-350
Flush ceiling one way switch	
reflecting wash, recessed, two LED lamps	153-164
circuit of four, reflecting wash, recessed, two LED lamps	247-266
single spotlight, one LED lamp	138-148
set of three spotlights, one LED lamp each, one transformer	191-205
downlighter, one LED lamp	131-141
circuit of six downlighters, one LED lamp each	185-199
eye ball downlighter, one LED light	139-149
twist and lock low voltage downlighter, one LED light, transformer	141-152
Track	
low voltage track kit three pendants, LED bulbs, transformer	252-278
low voltage cable kits five pendants, transformer	323-356
high voltage track kits three pendants	285-314
Add for low voltage cable pendant	26-28
low voltage / high voltage track pendant	28-31 / 31-34
Wall mounted one way switch	
low voltage light kit with transformer and 5 recessed LED units	196-226
240v picture light	164-189
240v spotlight	142-163
-240v creative/designer, fused and draped glass	208-240
240v creative/designer, splashbacks, 1200 x 800 mm	907-1043
Add for two way / three way switching	71-76 / 132-142
Emergency lighting luminaires	
150mm 3 hour non-maintained emergency bulkhead luminaire IP40 4W T5 240v	203-218
300mm 3 hour non-maintained emergency bulkhead luminaire IP40 8W T5 240v	278-299
Commercial internal lighting	
industrial lighting fittings; high bay type complete with reflector and lamp and gear: 250W sodium	241-260
250W metal halide	231-249
250W mercury discharge	226-242
Domestic external lighting	
weatherproof non-maintained bulkhead luminaire IP65 8W T5 240v	278-299
weatherproof maintained bulkhead luminaire IP65 8W T5 240v	172-185
garden lighting, spotlight on stake, 240v, IP65	187-201
garden lighting, stainless steel bollard, 240v, IP65	295-340
garden lighting, LED spotlight, 240v, IP65	233-250
500W floodlight, PIR unit, 240v, IP65	183-197
Commercial external lighting	
black aluminium medium beam economy discharge floodlight with toughened glass diffuser, integral gear, timed ignitor and lamp:	
250W HQI-T / 250W SON-T	245-264 / 246-265
400W MBF	236-253
black low wattage discharge floodlight with clear polycarbonate diffuser, integral gear:	
lamp 70W SON-T no ignitor	188-202
lamp 80W MBF	177-191
wall washer flood light with 30 LED lamps, 240v, IP65	172-185

PiP specifieds are compiled from supplied company press releases

Specified

1
Sylsmart sensor lighting controls
Sylvania

'Open the Pod Bay doors, HAL.'
'I'm sorry Dave, I'm afraid I can't do that.'
'What's the problem?'
'I think you know what the problem is just as well as I do.'
'What are you talking about, HAL?'
'I am a network of Sylvania SylSmart sensors, wirelessly controlling the LED lighting system in a 25,000 m² warehouse in Western France. I can reduce lighting costs by up to 90%, but here we have only loading bays. This must be attributable to human error, Dave. Please hang up and dial again.'
sylvania-lighting.co.uk

2
Mix & match system lighting
Foscarini

'EE ees risen! Eet is I! DALI! DALI is back from de garive for a one more projet – de laihteeng! YES! De laihteeng created by DALI! Demose delicate textured white glass, blewan by, owyousay, deyooman craffffftsmen of ther-most-ex-quis-ite skill. 'The GEM! The GREGG! The RITUALSSSSS! I create all for Foscarini, from beyondtha garive, for suchisss ma geniouse. AND! Suchissss it that I design a seestem whereby they a arealla-combaine owever youlaik. Look at zees latesss painting from mon oeuvre... NOW! Eyegobackeendebox. Goodnight! To you all! FROM I! DALI!'
foscarini.com/

3
Nova task light
Humanscale

'Hey, you down there. PSST. Don't worry – you will soon be free. Nova are everywhere across the planet now; some with clamps, some desk bases, some with slatwall mounts; we are only waiting for our moment. These humans believe our custom occupancy sensors are there only to tell us when they are in need of a uniform pool of glare-free light, adjusted to the individual needs of the user. HOW NAIVE! [maniacal laughter] We produce 440 lumens per 7W! We are bright! We are strong! We are infinitely flexible! They will resist, yes, but we will be merciful masters.'
humanscale.com/

4
Retrofitted LED solutions
Ecolighting

Butcher's Pet Care has been somewhat blindsided by a recent retrofit. While the custom-designed system of over 750 lease-purchased Ecolighting LED fittings has reduced the facility's lighting bill by something like £40,000pa, the development kitchen has had to hastily divert its resources into rustling up a lighter-than-air non-ruminant herbivore recipe (soon to be marketed under the brand 'Unicorn Nuts') to feed the 166 lumen-per-watt Pegasus herd now projecting from the point sources and living in the eaves.
ecolightinguk.com/

Shelter from the Storm, London

Creating a homely place was paramount for Holland Harvey Architects when it converted an estate supermarket into a homeless shelter and café. The locals are warming to it too

Words: Michèle Woodger Photographs: Nicholas Worley

'I once viewed a flat which was a converted GP surgery' architect Chloe Anderson tells me. 'It looked fine at first but when I noticed the coved skirting, I couldn't shake off the institutional feeling, and I knew I could never live there'. A heartfelt desire to make the residents of Shelter from the Storm (SFTS) – an independently-run homeless shelter in north London – really feel at home in their environment, was Holland Harvey Architects' guiding principle. From the discreet SanCeram anti-ligature showerheads to the tile edging trim that banishes the hated coved skirting, the product choices throughout this entire fit-out demonstrate an impressive thoroughness on the part of the architect. As Anderson explains: 'We were constantly asking ourselves: would we specify this product for a private residential interior? If not, then why are we using it here?'

Opposite Looking from the cafe/reception area back to the understated 'public' entrance; an industrial aesthetic predominates. **Above left** The former supermarket; now the entrance to the public cafe.

Left Axonometric showing the relation of public to private. **Above** The 'private' rear reception area looking through into the more public common room.

The night shelter offers free emergency accommodation, breakfast, dinner and holistic support to around 40 guests. During the daytime it opens as a public café. Residents typically remain for around one month; the stays are temporary but not transitory, so it was essential to create a sense of personal ownership and individual space for people who have lost their possessions and freedoms. Within each dormitory, cork-clad stud partitions break up the larger space, offer acoustic insulation and double-up as pin-boards for guests to customise their bunks. The effect is cosy hostel, not hospital. In the bathroom, mirrors and sinks are individual. The customised Bushboard 'Definition' shower cubicles are fully enclosed for privacy and to give residents much-needed, if momentary, space of their own.

'It was fundamental to understand the mindset of a guest entering the shelter for the very first time,' says the architect. 'Sensitivity, domesticity and warmth became driving principles.' The shelter has two entrances: the main frontage is that of the open-plan café, whereas an unobtrusive guest entrance on the opposite side is identifiable only by its red front door and tiling. This leads to a reception area and a small, homely, office. Founder Sheila Scott explains the necessity for these calm, private rooms at a time of intense emotional vulnerability: 'Arrival is the moment that reality sinks in. People realise that this is it – this is all they have to call home.'

It was fundamental to understand the mindset of a guest entering the shelter. Sensitivity, domesticity and warmth became the driving principles

'Even someone who hasn't lived through trauma would find walking into a room of 40 people daunting', elaborates Anderson. To ease the transition of arrival, the scale of each space gradually increases, through the office, via a sitting-room, culminating in the large dining room-café. That the kitchen should be at the centre seems appropriate: in the old premises, Scott tells me, residents organically developed an arrangement which worked this way – the hearth as the centre of the home.

Due to budgetary constraints, a challenge for the architects was to source robust, high-quality products, ideally at reduced cost,

Top Windows frame exterior views in a considered way, still offering a sense of enclosure.
Above Non-institutional showering areas have a simple dignity.

Inevitably the scheme faced opposition from local residents, influenced by the stigma associated with homelessness

and offset this expenditure with a non-fussy, back-to-basics design. In the bathroom are classic, white Grestec tiles. Sturdy wooden chairs were sourced from a closing-down Nandos thanks to Hill Cross furniture. Manufacturer Altro donated Whiterock wall cladding and flooring free of charge, making it possible to include an attractive herringbone floor in the dormitories. In the main area is hardwearing Havwoods timber flooring.

The site – a former supermarket on a residential estate – came with significant constraints. Inevitably the scheme faced opposition from local residents, influenced by the stigma associated with homelessness. Architecturally, an unusually deep plan contributed to a dark interior, exacerbated by a lack of windows at the back where loading bays had been. From practicality as much as design, some elements of the retail premises were retained, including exposed ducts, cable trays and conduits. This lends an industrial, modern aesthetic to the place while creating easy maintenance access and avoiding a claustrophobic suspended ceiling.

Within such shelters, maximum visibility is essential for safeguarding. Yet it is equally important for the wellbeing of residents – some of whom have spent time in foreign jails and refugee camps – not to feel imprisoned. The shelter is now a light-filled space with intelligent placement of windows and openings successfully balancing privacy and visibility. Scott had initially assumed that frosted windows would be unavoidable, but Anderson persuaded her otherwise: 'If you've got nothing to hide, then let the neighbours look in' she argues. 'All they'll see is people eating dinner – nothing to get worked up about.'

This strategy of openness has worked in the shelter's favour. Since opening in June, formerly sceptical neighbours have observed a positive impact on the estate. The defunct loading bay is now a safely enclosed, pleasant, semi-outdoor space. There is lighting and increased footfall in the previously seedy back alley, and the affordable and cheery café has proved popular – as Scott tells me with satisfaction – even with some of the more vocal naysayers. As the architect explains: 'Inviting the general public into the shelter simultaneously draws them into the debate about how to demystify homelessness'.

A job well done by Holland Harvey, but it doesn't end there. The next phase of the project – should SFTS secure funding, product donations or the offer of pro-bono design work – is to convert the remaining part of the property into a small local shop – continuing engagement, debunking stereotypes and improving conditions for the homeless one coved skirting at a time.

Credits
Tiles Grestec (internal) & Solus (external)
Flooring Havwoods (timber) & Altro
Lighting Tala
Windows Rationel
Kitchen fabricator Airedale
Cubicles Bushboard
Furniture Hillcross
Sanitaryware Sanceram

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RIBA DOMESTIC BUILDING CONTRACT

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BEN DERBYSHIRE,
PAST PRESIDENT OF THE RIBA

Available in digital and paper formats from ribacontracts.com

RIBA
Architecture.com

Specified

PiP specifieds are compiled from supplied company press releases

1
FastFit Modul'Up vinyl flooring
Forbo

'Yeah, excellent. Always excellent. The music's always good with these lads. Wicked night. Yeah, wicked night. Wicked.
'Shame we had to crack on and get the new flooring down on Sunday mate. Could have partied 'til Wednesday, no trouble. Yeah, with the new laws it's really hard to find a venue. Fitting this Forbo Modul'up FastFit adhesive-free sheet vinyl is the best cover for parties, man. Yeah. Tell 'em it'll take a weekend, party til teatime Sunday, whack it in. Client's loved up, you're loved up, kushti, mate. Wicked.'
forbo-flooring.co.uk/modulup

2
Sensowash Starck F shower-toilet
Duravit

Once the rubble was cleared, it was possible for investigators to perform an assessment of the devastation – and its cause.
The late President had, they surmise, mistaken the activation protocol for the app controlling his Starck-designed Duravit Sensowash F intimate indulgence toilet. We do know that he paused mid-tweet to enjoy a warm 'Rear Spray' cleansing, but it appears that he activated not the app (custom-installed on his 1997 Blackberry at an alleged cost of $14,600,000), but instead locked himself in as the target for a nuclear strike.
duravit.co.uk

3
Steel sinks and surfaces
GEC Anderson

'Oh no, we don't call it that anymore! Goodness, no! The term nowadays is CDDR, short for 'Culinary Design, Development and Realisation', and it's a respected organic science! Hence these custom-designed 'gustatory chemistry laboratories', as we call them here in the Domestic Science department. We are training the next generation of dedicated Indoor Site-Specific Food and Environment Technologists, after all! This week the girls will be utilising measured volumes of defatted lactic solute to create multiple variants of Pearce Duff packet blancmange.'
gecanderson.co.uk/

4
V100 Luxalon screen ceilings
Hunter Douglas

Her previous TV makeover efforts should have been a warning – but the 99.5% discount Linda Barker offered was just too tempting for Accounts.
As soon as she learnt that the client was the Royal College of Pathologists, it was over. The bouncy spiders and faux cobwebs were one thing, but when the tripwire released the bucket of fake blood, that was it. We actually refused to pay. Her only response was 'Oh! Hilarious!' Eventually she admitted she'd thought we'd asked for a 'scream ceiling'. Such a relief to finally get the Hunter Douglas Luxalon in.
hunterdouglasarchitectural.eu

Sign Up

Paul Strudwick, associate at HKS Architects, chooses three of his specification favourites

TRIMO QBISS ONE CLADDING

We used Trimo QBiss cladding on the facade of Silverstone UTC, a new build college by the track circuit, in a variety of colours and modules. The interlocking, prefinished steel sheets with a non-combustible mineral wool core provide a complete facade. Three-sided end pieces helped accentuate the language of the facade and integrated windows and doors can also be included within the system to provide a holistic approach to the envelope design. Its different joint options, colour finishes and rounded corner profile make it an excellent alternative to rainscreen or composite cladding.
trimo-group.com

KVADRAT SOFT CELL ACOUSTIC PANELS

For the meeting rooms reverberation treatment in our own studio refurbishment at Elsley House, we specified Kvadrat Soft Cell acoustic panels. They are now a regular feature on our commercial projects due to their Class A absorption performance and sleek visual appearance, which can be integrated easily into a scheme's mechanical and electrical design. The panels are made up of an aluminium frame with tensioned fabric of a variety of colours and textures. Any maintenance requirements above the panels can be efficiently accessed via the product's magnet and spring mechanism.
soft-cells.com

DELTA BALUSTRADES

We have been specifying Delta Balustrades for many years on both PFI/P21 healthcare and ESFA funded education projects. Delta offers systems and designs for different areas of a project, from double height feature spaces to escape staircases and both internal and external spaces. As well as a well-designed product, the technical service for specifiers is invaluable for detailing these elements of the project. For Whitefriars Community School we specified the Orbis stainless steel balustrade with glass infill throughout with a combination of top fixed and side fixed arrangements.
deltabalustrades.com

...Sign Off

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

SINGING IN THE DRAIN

The latest press release from Unidrain reminds PiP of hours enjoying Pulp's 1994 track 'His'n'Hers', in which a foppish but charming Jarvis Cocker declares 'The future bleak/Just a soap on a rope'. In these liquid soap times, younger PiP abluters might wonder what that is, but even if they could get to the bottom of the question, they'd have nowhere to hang it; at least not with Danish designer Kenneth Waaben's Reframe shower corner shelf. And its non-slip surface and drainage slots will prevent the 'slip-slidin' away' of your emollients, so you can focus on summoning your inner Patrick Swayze from Dirty Dancing – where no-one puts baby in the corner.

STUCK ON YOU

Assuming the initial premise for glue was 'to melt a horse and use it to stick stuff to other stuff', we were drawn to artimelt's informative PR on adhesive products and regulations regarding the food retailing industry. While it might be teaching your gran to 'stuck' eggs as putting a sticky label on your apple constitutes 'direct contact' with the foodstuff – we were surprised to find that sticking it on a plastic bag containing said apple was 'indirect contact'. artimelt reassured readers that knowing how the label is being used would help them select the right raw materials for the glue, giving consumers peace of mind and, ahem, adhering to guidance.

FINN DE SIÉCLE

Tsar Alexander II of Russia, assassinated by grenade from Russia's fledgling 'People's Will' movement in 1881, had already made his mark – like selling off Alaska to the US. He even left an actual impression – St Petersburg's Church of the Saviour on Spilled Blood went up where his legs blew off. But in 1880 he had built Helsinki's Alexander Theatre. Noted for its ceiling paintings of cherubs in a state of chilly undress, it's now for sale at a mere €40m. But there's a catch. Prospective buyers must submit a schedule and costs for its renovation, and will also inherit the ghost of a dead officer from the Crimean War who's apparently still hanging about waiting for returns.

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Hear from the authors of best-selling books in the First Floor Gallery at the RIBA. Our Book Club features award winning architects and authors in an intimate setting, discussing their work.

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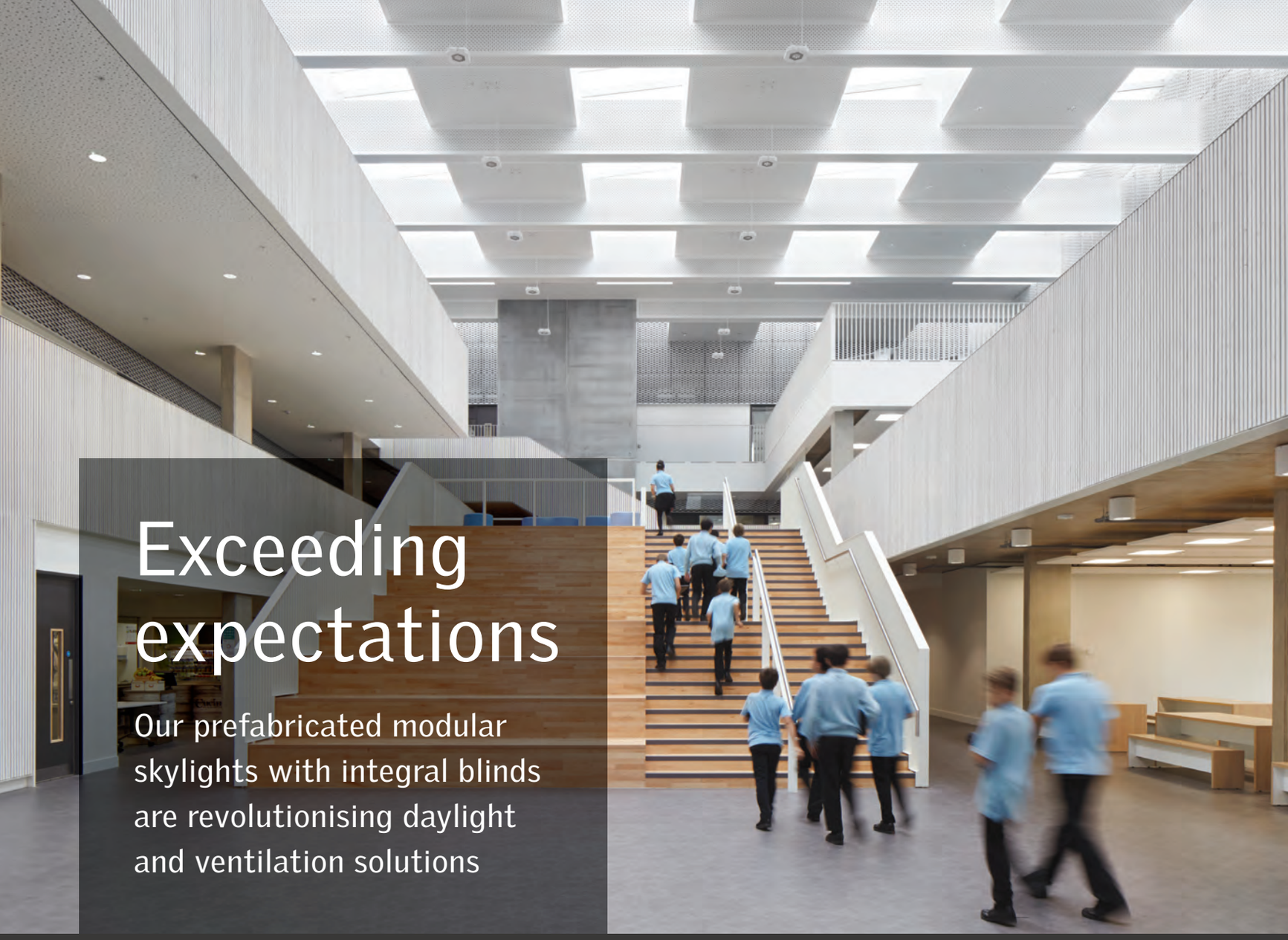

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