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Is there a plan for planning?

The ongoing government shenanigans makes it hard to pen a topical leader, but in mid-October, the latest plan was to stimulate economic growth by further deregulating the planning system; the Guardian reporting that secretary of state for levelling up Simon Clarke planned a 'bonfire of red tape pertaining to aspects of housing development such as EU rules, affordable housing, nutrient pollution and biodiversity improvements.'

That proposed 'planning reset' has already ruffled feathers. Conservative MP Bob Seely of the party's Planning Concern Group said on BBC's Newsnight, just

before Chancellor Kwasi Kwarteng was defenestrated, that a blanket approach to deregulation would serve only powerful developers who are already 'sitting on a million permissions.'

His legitimate concern must be seen in the light of the recent RTPI report highlighting that after a decade of underfunding, local authority spending on planning has dropped by an average of 43%, leaving even fewer resources to deal with application backlogs.

Then there's the environment lobby – not just Extinction Rebellion and anti-frackers. Genteel middle England, the

National Trust, RSPB and the Wildlife & Countryside Link, are considering direct action to prevent policies they feel would put profit over conservation of nature.

And still no home grants sop to the likes of Insulate Britain, meaning a lot of that government energy subsidy is bleeding straight out of your home's walls and roof. XCO2's Ricardo Moreira (p8) explains what he's doing about that; but if you prefer to do nothing, grab a blanket, put your feet up and prepare for Simon Clarke's bonfire of the planning regs in spring 2023. It should be quite a show. ●

Jan-Carlos Kucharek, editor



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

Above The future is fabric! Arkutux UFabrik Eco backlit by CMYUK at Wolverhampton Wanderers' Molineux Stadium.

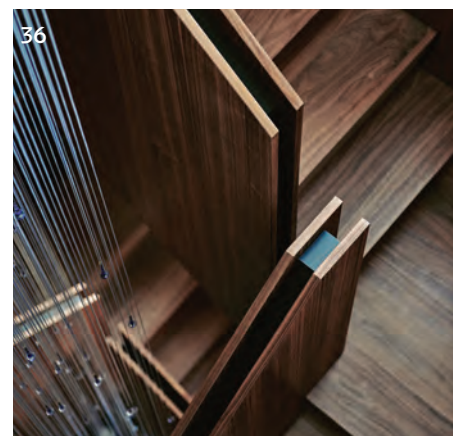
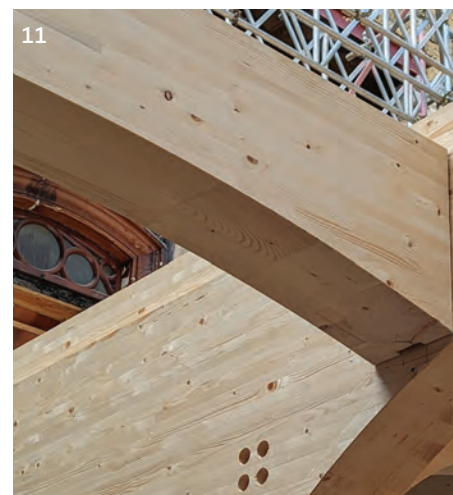
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Compendium



Steamed Broccoli

Funny how times change. The Sassi cave dwellings in the ancient hilltown of Matera in Basilicata, Italy, were – until 1952 when they were evacuated – less famous for their age than their endemic poverty and poor sanitation. But with the caves and nearby Park of Rupestrian churches named a Unesco World Heritage site in 1993, the only way has been up for the ‘underground city’. Being named a European Capital of Culture for 2019 probably put it on the radar for Bond movie producer Barbara Broccoli, who opened ‘No Time to Die’ with a mad bike chase through its narrow streets. Now Grohe is in on the act at the town’s Aquatio Cave Hotel & Spa, set within the famous Sassi, where architect Simone Micheli specified their brassware throughout the boutique hotel’s 35-rooms and pools, adding a little ‘spa’ to the town’s spy credentials.

The clue’s in the name

Engineered timber floor manufacturer Ted Todd is attempting to incentivise commercial clients to buy its products by creating a range specifically for that market. Based on the firm’s woodworks range, Karta has been created by ‘remastering’ a number of its reclaimed and restored floors for universities, hospitality and workplaces. This is born out in the Karta product names, based on the sites that the floors were remastered from – four of the seven designs are called ‘Old War Office’, ‘St George’s’, ‘Vodka Oak’ and ‘Loco Works’. With prices sometimes ruling them out for the retail sector, Ted Todd says Karta is priced in line with synthetic alternatives but is plastic-free and has no VOCs, is biodegradable and is FSC-certified, which allows the firm to lay claim to environmental and health benefits in its use. The range is available as 0.64m² panels and 0.74m² planks.



PETERLANDERS

Copper-top marks for effort

Brits might be traditionalists at heart – look at recent royal events – but even the 16th century Gresham’s School in Norfolk thought it was time to join the 21st, courtesy of former pupil James Dyson. The feted designer of the eponymous bag-free vacuum cleaner dug deep past his pocket lint to fund the school’s new 4000m² STEAM block, designed by WilkinsonEyre. The two-storey exposed steel frame is made of full-height double glazed panels and Nordic Brown Light pre-oxidised panels by Aurubis. Patterns in the panels are intended to mirror the flint detailing of the school’s 1916 chapel opposite.

Compendium



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Way out west

Lamington Group's new Room2 hotel in west London's Chiswick is an eco-friendly 'hometel' aiming to knock the ball out of the park in terms of hospitality sustainability credentials. Room2 claims to use 89% less energy per m² than the average UK hotel. Onsite solar panels and heat pumps convert all the energy for heating, cooking and hot water, with other needs met by off-site renewables. Kaldewei supplied its Cayonoplan shower surface in Alpine white – made of 100% recyclable steel enamel using its 'Bluemint', 'a balance-oriented, CO₂-reduced steel – reducing carbon emissions by 70%'. The ultra-low flow pressure showers above are only part of the story – there's a 200-tonne green roof and a blue roof allowing the slow discharge of 50,000l of water – all contributing to the whole life net zero aim.



Samuel's latest entry

Sitting beside Magdalene College Cambridge's curious Pepys Library – named after the famed alumnus and diarist – Niall McLaughlin Architects' 2022 Stirling Prize-winning library cuts a more restrained presence. Taking its cues from the original east elevation of the Jacobean building rather than the library's oddly-remodelled Classical west face, the red brick and CLT design is characterised by its modular nature, with each of its 12 square modules capped with brick or glazed gables allowing light deep into the plan. Its 45° pitched roofs are covered in VM Zinc's light grey pre-weathered Quartz-Zinc Plus. The 530mm centre to centre standing seam roof sits on top of 90mm of rigid insulation and a VM Zinc breather membrane, keeping the collections beneath it warm and dry.

Queens of the stone age

While Britain might lay claim to having the first humans who chose to create stone circles, natural formations as evidenced in Anatolia and the Middle East really do take some beating. This seems the inspiration for Beirut-based designer Roula Salamoun, whose new 'Archipelago' seats invoke the language of the area's rock formations, left long after ancient seas receded. 'Tapered bases hint at coastal erosion while prominent backrests are reminiscent of mountainous highlands,' runs the PR; but formed of a solid wood base wrapped in thick foam and luxuriously hand upholstered, the only hard place you might find yourself in here is with your credit card provider.



James and the giant peach

Having received physical samples of James Latham's latest MDF-core, premium surface material, Transformad, PiP can confirm that its Tmatt option really does have the curious yet very pleasant texture of a ripe peach. Perhaps it's just that we haven't been touching things too much lately, but it seems 'sensuous' and 'tactile' is now a thing in the surface industry. Complementing its velvety ultra-matt finish is the Crystal option – high gloss and highly durable. Both resistant to 'scratching, abrasion, moisture and heavy impact', it proves that you can have your Melba cake and beat it.



Timely tool helps retrofit the home



As energy costs rise, DesignPH is a useful early-stage design tool to tackle heating demand

I recently moved into a typical Victorian terrace: uninsulated solid walls, floors and roofs, and poor levels of air tightness. In other words, typical UK housing stock. As the house is in urgent need of energy efficient improvements, I decided to put it to test on a retrofit scenario. But complex modelling is usually not justified for a single-dwelling or small project, and common tools like SAP are notoriously inadequate for energy predictions.

An interesting tool, still relatively little-known to architects, is DesignPH, a plug-in for SketchUp that was developed to facilitate entering data into PHPP, the modelling tool for Passivhaus. For a steady-state energy modelling tool, PHPP is surprisingly accurate due to its level of detail but that makes it time-consuming to use. DesignPH not only speeds it up, but allows users to compare changes to fabric specification and systems in terms of the energy savings at an early stage.

The DesignPH process for PHPP input consists of modelling a simplified geometry of the building in SketchUp, adding information to that model by tagging surface types and thermal properties, running an analysis and importing the model into PHPP for final data entry. However, for option appraisal purposes, I'm only interested in the initial analysis step using SketchUp.

Inputting current build-ups to create a baseline, the space heating demand sits at 249 kWh/m²/yr, which is 20% better-performing than a typical pre-1920 mid-terrace, probably due to its decent quality double-glazing. From there, multiple iterations were run, including insulating walls, roofs and floors, reducing thermal bridging, improving air tightness, using triple glazed windows and installing mechanical ventilation with heat recovery (MVHR), a pillar of Passivhaus. Iterations were analysed individually

– so the impact of each measure could be understood – but also collectively, to see how the building might be able to perform. Results can be obtained in real time or recorded in an iteration list.

Of the measures tested, wall insulation showed most potential. Roof and floor insulation also performed well, while more intrusive interventions such as air tightness and thermal bridging improvements yielded lower savings.

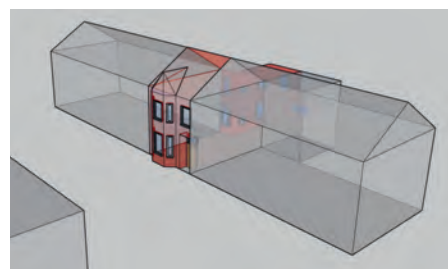
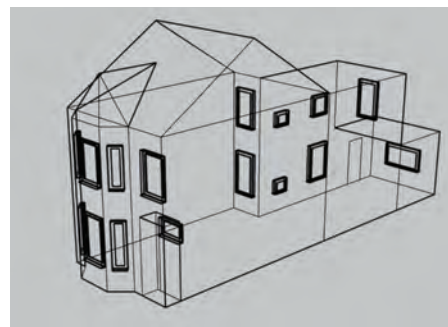
It's important to recognise the limitations of a steady-state tool. For instance, savings from better air tightness and MVHR combined and individually are the same, and do not account for the measures' interaction.

Naturally, an ability to prioritise measures doesn't negate the need to take a whole-building approach, in which all retrofit interventions and interactions are considered in conjunction. However, when financial limitations prevent a deep retrofit in one go, phasing can be used within a long-term, whole-building strategy. Pinpointing 'low-hanging fruit' will help generate immediate savings.

Users can consider not only fabric specification, but physical design aspects like massing, orientation, window sizing and configuration, with a real-time display of resulting form factor and heat demand. This demonstrates the opportunity to use DesignPH as a decision-making tool for both energy efficient retrofits and new build schemes.

In all, it is very helpful to be able to easily comprehend energy performance and the impact of interventions using a modelling tool that is widely familiar to designers. It offers much needed performance feedback and helps educate architects on the impact of their designs.●

Ricardo Moreira is managing director of building performance consultancy XCO2
With contributions by Tom Willis, XCO2



Above Moreira models his own home in SketchUp.

Below He then tagged its surfaces and thermal properties before importing it into the DesignPH to interrogate it.



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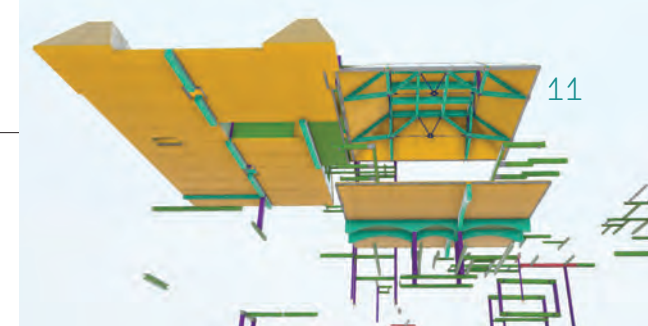
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Left The ground floor café glulam structure before the addition of the CLT floor slab. The structural insertion took just three weeks.

Top Worm's eye view of the 3D model shows glulam and CLT elements of timber insertion.

Middle Longer-run glulam beams connect to column heads with steel flitch plates.

Interstitial beams use SHERPA connections.

Bottom The hybrid roof structure in position.

Below left Section through the council chamber, now with mass timber insertion.

Conservation timber

What Mass timber insertion

Where Walworth Town Hall, London

With mass timber construction making serious inroads for newbuild, it is used less often for conservation. But it is the centrepiece in the restoration of the grade II-listed Victorian Walworth Town Hall in Southwark, which was added to English Heritage's At Risk register after being badly damaged by fire in 2013. Feix & Merlin convinced its client General Projects, which won the bid to restore the former council offices to commercial and community use in 2017, to use it – not least for its sustainability credentials.

Eight months into an 18-month construction programme, those mass timber elements have been craned into the former debating chamber, so the contractor can make the building watertight and proceed with internal works. Because the planners stipulated that the outside of the building must look as it did before the fire, explains senior architect Josh Piddock, Feix & Merlin worked closely with engineer HTS, which had experience of using mass timber in a conservation context.

Sitting in the centre of the plan, the almost square 156m² space now forms the social and circulation hub of the building. A new café and orientation space at ground level sits below the former council chamber, an expanded triple height co-working space reached directly from the refurbished Victorian Town Hall stair. Crowning the insertion, a new mass timber roof follows the original roof line.

Piddock says sensitivity to the original building drove the design. He adds that the timber has a materiality distinct from the original structure but the new glulam beams' gentle arches make subtle reference to cambered arches above the original windows. It also led the firm to set out the structural columns and beams at ground level to follow the original wall lines, leading to an initially curious structural set-out. The 2.7m high, 280mm² glulam columns connect to the beams in different ways. Main spans are connected via steel flitch plates and countersunk bolt holes, while smaller arches spanning longer runs use SHERPA connections, whereby beams slide down and embed in the structure under their own weight. 200mm thick CLT floor slabs register into a 200mm by 50mm rebate cut out of beam edges, bringing the ground floor to soffit height to 3.6m. In a post-modern flourish, large, bare timber cornices are CNC cut, based on original cornice styles found nearby.

Engineered hybrid glulam and the steel roof structure came from a desire



to minimise the thickness of structural elements, but the use of steel here ties in materially with the burnished steel mezzanine balustrade below. This hybrid arrangement reduced timber elements to 240mm square sections. Originally envisaged as a large rooflight, concerns about too much sunlight and glare in a workspace saw this replaced by an illuminated Barrasol ceiling, sub-divided into nine square sections by deep CLT beams lowering the roof height from 7.4m to 10.7m and creating a dramatic focus.

With a tight programme, the café and council chamber timber structure were pre-fabricated, delivered to site and erected in three weeks. Feix & Merlin is now working on its third-floor timber pavilion structure, whose erection should be complete by the start of December. ●

Jedburgh Grammer Campus, Scottish Borders

Stallan-Brand's school is all about its roofs, which provide outdoor shelter, bring in daylight and allow the facades to emerge from the landscape

Words: Mark Cousins Photographs: Andrew Lee



Borderlands are often places of conflict, where politics are contested and allegiances in flux. Today, however, the Scottish Borders region, for example, appears to be the antithesis of this with a network of established settlements that have evolved together – such as Galashiels, Hawick, Melrose and Jedburgh – yet each imbued with a particular independent character. The latter is recognised as an important gateway to Scotland and, until recently, its school provision was located in a number of buildings scattered around the town centre, so children would often

spill out into the streets to play or move from class to class. If you overlook the obvious safety concerns, this ad hoc arrangement generated a real bond with the community which no-one wanted to lose in consolidating facilities into the new learning campus by Glasgow-based Stallan-Brand Architects.

A number of site strategies (such as 'The Cascade' and 'The Wedge') were explored by the architect before settling on 'The Street' which positioned the building in an east-west orientation, with sports facilities to the north and playgrounds to the south. The so-called

Street (a split-level central atrium) is orientated toward the town and in a welcoming gesture to the local community. This is further reinforced by the incorporation of a community library and café, in addition to numerous adult learning activities including community Bake Offs. This is quite a departure from

The new Jedburgh Grammar Campus is open to all, as is evident in its glazed entrance

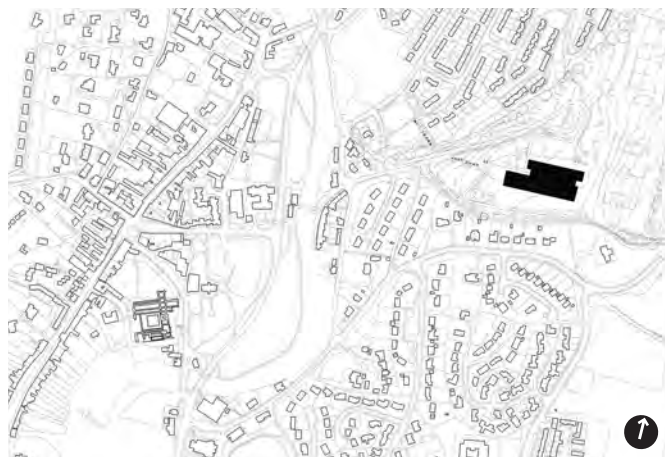


the 'fortress mentality' and restrictive security measures imposed following the 1996 Dunblane Primary School massacre. Certainly the new Jedburgh Grammar Campus is open to all, as is evident in its glazed entrance lobby which also accommodates food bank contributions and gratis pre-loved school uniforms.

The new building is inter-generational and encompasses facilities for 434 nursery and primary school pupils and 550 secondary students. The three-year timetable from initial community consultation to completion was tight and involved a capacity

Above Jedburgh Grammar Campus, south elevation. The covered entrance gives pupils direct access from the playgrounds. The layout recognises the importance of outdoor learning, particularly for younger pupils. Skylights pull light deep into the plan.

Right Location plan of the campus, orientated east west towards the town and abbey.





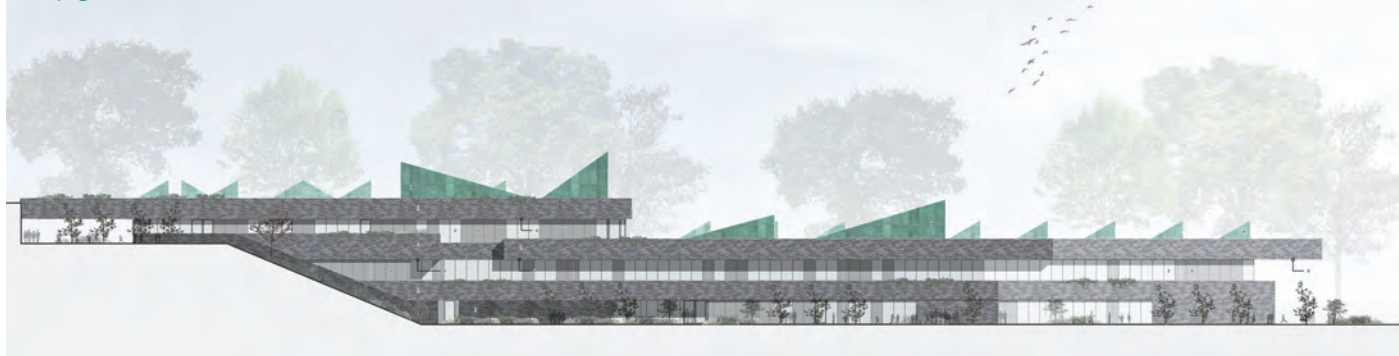
analysis of four potential sites. Each was suitable to accommodate the school's footprint but the selected site offered the bonus of enough space for external playing fields. The favoured location lies to the east of the Jed Water on a sloping site and is just eight minutes' walk from the town centre. Previously the site was open parkland flanked by an avenue of mature trees which the arboricultural assessment identified as a mix of common lime, horse chestnut, fern-leaved beech, sycamore, yew and holly – many dating the mid-19th century.

Added to the need to keep these was a challenging 40m change in level from west to east, which was exploited to facilitate a series of level changes. The architect was also able to conceal some large volume indoor sports halls by digging into the hillside and employing a 12m high retaining wall. Although a sizable intervention in the landscape, the campus is barely visible from the town centre and is discreetly concealed by existing trees. Echoing Frank Lloyd Wright's maxim, Stellan-Brand declares this 'is not a building in the landscape, but rather an extension of the landscape. It does not seek to sit on a hill, but rather emerge from the hill.' Pedestrians approach via a staggered set of steps that ascend from the visitors' car park. There is staff parking and drop-off provision adjacent to the school while a local bridle path facilitates pupils arriving by horse!

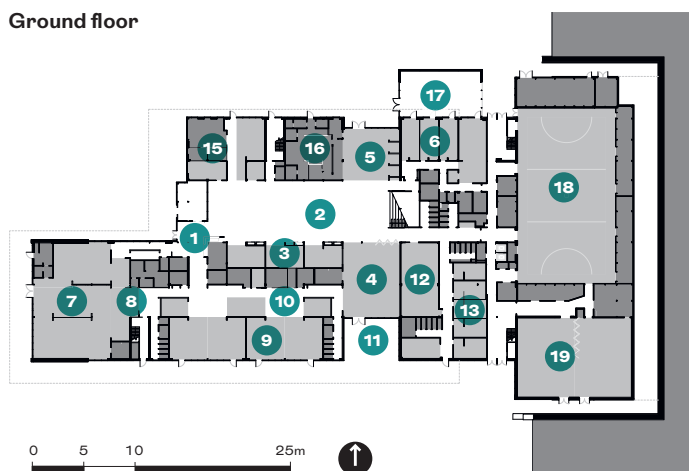
This commission from Scottish Borders Council followed from two small primary schools by Stellan-Brand at Kelso



Below Render of the north elevation, highlighting the sequence of copper-coloured sawtooth skylights.



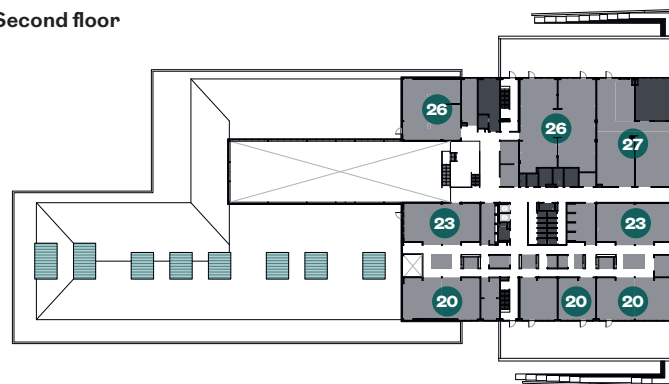
Ground floor



First floor



Second floor



Opposite top North elevation of the campus. Its landscaped embankment helps embed the building further into the landscape.

Left The central space makes use of clerestory and sawtooth rooflights so it is well lit at all times of the day.

- | | | |
|-----------------------------------|--------------------------|----------------------------------|
| 1 Entrance/reception office | 10 Primary support space | 19 Assembly hall/gymnasium |
| 2 Information plaza | 11 Outdoor dining | 20 Secondary teaching spaces |
| 3 Library/enterprise/student café | 12 Fitness suite | 21 Staff/student hub |
| 4 Junior dining | 13 Changing rooms | 22 Art/design/food tech |
| 5 Senior dining | 14 Pupil support spaces | 23 Multi-use rooms |
| 6 ASN classrooms | 15 School admin | 24 Music spaces |
| 7 Nursery spaces | 16 Kitchen | 25 Drama |
| 8 Nursery support space | 17 ASN play space | 26 STEM spaces and science plaza |
| 9 Primary classrooms | 18 Sports hall | 27 Craft workshops |

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Roofing & skylights

and Galashiels. The council's lead client Donna Manson (then service director for children and young people) was determined to reduce societal inequality and asked the architect to radically reimagine the scope and potential of a school project. This invitation to innovate was, in part, a response to perceived shortcomings of the nearby Kelso High School, completed in 2017.

The Scottish government's flagship policy Curriculum for Excellence, launched in 2010, promotes a broad competence-based pedagogy which prioritises classroom clusters, breakout zones and flexible learning spaces, both internally and externally. The ambition at Jedburgh was to overturn outmoded school typologies and instil a sense of ownership in pupils. So rather than serried ranks of defined classrooms linked by a corridor, this school adopts a fluid, open plan approach that can respond to individual learners' abilities. The model is akin to a sixth form common room, where pupils can hang out, gather informally, collaborate on assignments and linger. Jedburgh embodies this doctrine and the layout integrates year groups from age 3-18, harmonising the transition between nursery, primary and secondary education.

Here there are no bells or constant crowding into narrow corridors; instead the teachers circulate to wherever the pupils are based. The school promotes a culture of team teaching with an emphasis on pupil wellbeing with the idea that learning should be an enjoyable experience. The role of the architect was to inculcate a sense of wellness and boost attainment for pupils, most of whom live in the residential areas of Jedburgh, supplemented by a number from Ancrum and other small outlying villages. The school also has a number of pupils with special needs and learning disabilities.

The double height central space acts as the 'heart' of the school and has been named in honour of Mary Somerville

Top right The health + food tech department overlooks the double-height central space.

Middle right The dining area for secondary school pupils is on the ground floor with a ceiling grid of acoustic baffles. There are cross-plan horizontal view corridors to ensure clear lines of sight to the outside.

Right Skylights (left) help to draw daylight into the deep plan but also provide smoke clearance, stack ventilation and heat purging.





Top Science labs are on the north flank of the second floor.

Above First floor breakout space with views over the town centre.

Below Approach to the main entrance. Charcoal-coloured GRC cladding was chosen for its robustness and patination, tying in with the architect's notion of the building as striated rock formations.



(1780-1872), a Jedburgh-born pioneering polymath. This rectangular atrium, filled with light from above, provides a welcoming arrival point for everyone. Its pitched roof kicks up at either end to capture morning and afternoon sun, augmented by clerestory glazing along both flanks which ensures sunlight can animate the space at all times of the day. Larch timber-slat ceilings have acoustic insulation but concerns about disruptive noise have been raised by some pupils with hearing implants, so further noise attenuation measures may be needed.

Externally, the building reads as a series of trays or strata emerging from the hillside. Here the architect cites James Hutton, born in Jedburgh in 1726, as an early influence. Widely regarded as the father of modern geology, Hutton's study of plate tectonics shaped his influential theories regarding the earth's geological evolution. The building features expansive overhanging eaves clad in charcoal-coloured composite panels cut to emphasise the horizontal, mimicking ribbons of masonry. These covered spaces allow pupils to congregate outside when it's raining.

Cresting above these bold horizontal bands are sawtooth skylights picked out in copper-coloured green to contrast with the primarily monochromatic palette. These west-facing skylights (each is 6.3m wide and repeats on plan every 7.5m) bring natural light into the interior and overcome the problem of naturally ventilating any deep plan layout. This daylight illuminates the 'learning plazas' and supports various working patterns and learning environments on the upper floors. They incorporate solar control glass to reduce solar gain and are fitted with internal blinds to combat glare. While they admit fresh air, rainfall sensors avoid water ingress.

This ambitious project is seen as a community resource and addresses not only the town's educational needs but also broader priorities such as enhanced digital connectivity, employment, lifelong learning, culture, tourism, health and well-being. The architect's goal was to create a 'democratic form' and, undoubtedly, Stallan-Brand has given Jedburgh an impressively inclusive and appropriately scaled learning campus which should equip young people with the skills and understanding to meet the many challenges of the 21st century. ●

Credits

Client Scottish Borders Council

Architect Stallan-Brand

Contractor BAM Construction

Civil and structural engineer

Goodson Associates

Building services Davie + McCulloch

Landscape architect TGP Landscape

Architects

Acoustician New Acoustics

Interior design Space Solutions

Fire engineer Atelier Ten

QS and project manager Turner & Townsend

Suppliers

Windows, curtain walling, skylights
Technal UK

Cladding Reider Olo Skin

Roofing Sika Trocal

Standing seam roof/cladding Kalzip/
SFS

Ceilings Ecophon

Internal doors CNN UK

Floor finishes Forbo/ Burmatex
FF&E Thornton



the
Conservation
Rooflight



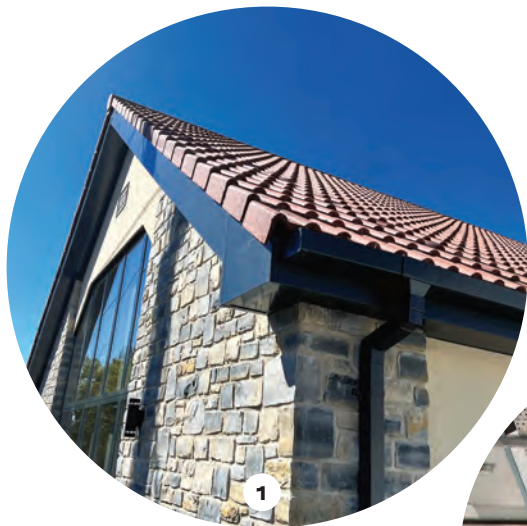
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1
Evolve box gutters
Marley Alutec

'Tis the gutter of God, the
Holiest flow!
The ageless smart channel for
water go to!
Sing praise to box gutters upon
the Church Hall!
Marine aluminium, toughest
of all!
We sing praise to box gutters,
worshippers meek!
Suspended by brackets
invisible, sleek!
Twenty-five – we shall count
them – fast litres per hour
Guided off through pure
channels by Alutec's power!
Alu-lujah, box gutters, in
Anthracite Grey!
Alu-lujah! Low maintenance
catchers of rain!
We shall praise them! Oh
praise them! Regardless, we
say!
A praise regardless of that
heathen name
marleyalutec.co.uk



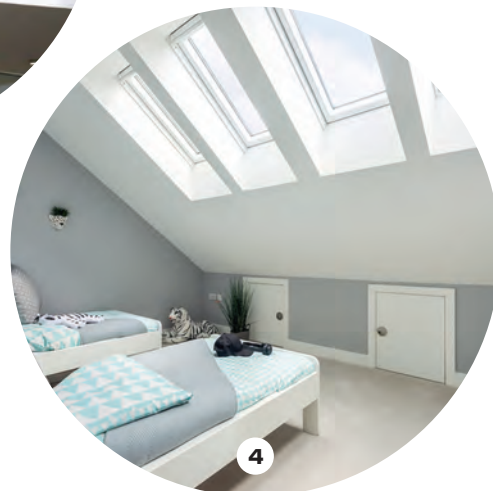
2
Bespoke shaped ARES rooflights
IQ Glass

Students! Picky customers!
We install these bespoke
rooflights with solar control
glass, concealed upstands,
frameless appearance, and
automated multiple-actuation
opening, and they picket the
building because they WANT
to overheat! Massive thought
went into creating that bright
frameless effect – they want it
dark and scary. Hertfordshire
Uni's new Law School building
– not good enough! Apparently,
we're short-changing them
on their Very Expensive
Education by not replicating
the real-world law court
experience, ie: keeping them in
the dark, boiling their brains,
and exhausting them so they're
sent home on stretchers.
iqglassuk.com



3
Bespoke Heritage patent glazing
Howells

'Lifts are for losers. I use
the SAS hatches overhead.
We still use the old urban
explorer entrances, even
though it's been restored and I
work in Sales.'
'It's grade II, so they had to
sink the drained glazing
system flush with the roofline.
It's got powder-coated HG2
glazing bars, and sealed
double-glazing with 6mm
toughened Cool-Lite SKN 176
solar control glass externally,
and 6mm toughened low-
emissivity glass inside.
There's electrical top-hung
ventilation on each one. That's
my door!'
'Oh no, I sell phones. I just
memorise random facts as
part of my chat-up repertoire.'
howellsglazing.co.uk



4
Smartroof rooflight system
Keylite

'Yeah, we're very ancient,
but you move with the times!
When these came onto the
market, we just thought 'Go
for it!'
'Taliesin always says
"Stonehenge is lovely but it's
not very warm!" These "No
Gas" buildings are full of
features that tread lightly on
Our Sacred Mother, like the
integral expanding thermal
collars on the thermal-
glazed centre-pivot skylights
– and when we saw their
orientation, it was a no-
brainer, really.'
'Galadriel was excited to stay
in bed for the Solstice. We've
been night-Druiding since
1972, and usually it's flippin'
brass monkeys.'
keyliteroofwindows.com



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Universities adopt scientific approach to new workspaces

Scientific research and education disciplines have traditionally guarded their individual territories closely. But that's changing as carbon, collaboration and investment interests merge

Words: Josephine Smit

Opening minds to new knowledge and ideas is the business of universities, but it is often done in an environment of closed spaces. Subject departments have lived in separate buildings while research teams define lab territories with 'keep out' stickers on fridges.

That's not the way today's co-working and collaborative office operates, and academia has recognised it's not the way to get the best out of scientists, or the often costly space provided for science, technology, engineering and maths (STEM). Architects designing labs for the new generation of vaccine researchers, computer scientists and nurses are tackling this question head on to create very different workspaces.

Both research and teaching spaces need the right environment for science, but each raises different questions around territory. Keith Papa, head of science, research and technology at BDP, explains the challenges: 'Estates departments want to maintain ownership to use space in the most effective way, but changing research groups' perceived ownership of space is quite a hard task. Without that change, you risk designing something really quite bespoke to match researchers' next five-year programme.'

In teaching, the barriers are often between departments, with physics and chemistry labs, for example, having incompatible needs. That is exacerbated, says Papa, by a shortage of qualified technical support staff, which limits departments' capability to change experiments regularly, meaning labs tend to be set up in a static way.

De-territorialising research space

When professor Hans Stauss, director of the UCL Institute of Immunity and



Above Hopkins Architects designed the Pears Building at London's Royal Free Hospital to be open and un-siloed so scientists can engage more with the outside world — and each other. **Right** The building's central atrium is an open forum for impromptu interaction.

Transplantation (IIT) set out his ambition for the new Pears Building at London's Royal Free Hospital in Hampstead, he asked that the space be de-territorialised, promote interaction and make scientists more visible. 'Hans said that in labs it is often difficult to know if another scientist is in the building. The social model was a big generator of the design,' recalls Ernest Fasanya, director at Hopkins Architects.

The building, which is owned by the Royal Free Charity, constructed on land



AIREY SPACES (2)



STRIDE TREGLOWN/TOMBRIGHT (2)

belonging to Royal Free London NHS Foundation Trust and occupied mainly by IIT, was needed to allow the latter's centre to grow and translate research to treatments more rapidly. That research is now carried out in three floors of wet and dry labs, including CL2 (Containment Level 2) and CL3 facilities, set on a 3.3m grid, with two benches separated by an aisle and often a full height window. Windowless space between the laboratories is reserved for instrument rooms. 'The lives of technical buildings can get baked in, making them difficult to reconfigure when the science changes,' explains Fasanya. 'This modular, loose fit approach sets dimensional parameters that work for science, but could also work later as an office, for example.'

Alongside the lab space is an atrium with central staircase, lined by pod seating for impromptu conversations and surrounded by glazed write-up space and smaller-scale offices largely for senior staff. The focus throughout is on transparency and interaction, with allowances for privacy where needed. Other spaces in the building include a seminar room, public café and patient hotel for those undergoing clinical trials.

The building has an in-situ concrete frame – with at least 50% GGBS cement replacement – to minimise vibration. The exposed concrete surfaces provide



Above Stride Treglown put three biomedical schools in one future-resilient building of shared tech and teaching rooms at University of Reading.

Left Reimagined tech spaces at Stride Treglown's University of Westminster refurbishment allow more flexible and diverse working.

thermal mass, contributing towards a BREEAM Excellent rating, and are central to its robust aesthetic and feeling of space. For the patient hotel on the top two storeys, the structure is steel frame.

More efficient, less carbon

'For decades engineers have said heavy materials need to be used to dampen vibration issues and for that reason these buildings can be carbon monsters,' says John Roycroft, principal and chair of civil and structural engineering at BDP. But conventions are being challenged to reduce carbon, resources and build cost. One way of doing that is through a zoned approach to technical requirements, which BDP first applied at the briefing stage on the University of Cambridge's

Cavendish Laboratory project, after scientists had defined almost all their labs as unique. 'We stepped back and said some of this must be the same,' says Papa. Analysis found 90% of its processes would fit into six lab typologies, with the remaining 10% being bespoke.

'From a building perspective it ensures you're not over-specifying technical requirements,' Papa explains. Space can be optimised, reused or constructed more efficiently, with creative engineering helping to reduce floorplates or drive the hybrid construction that Roycroft believes will be increasingly adopted. 'Where sensitive equipment or particular performance criteria are needed in defined areas, concrete may be used, but write-up space



AHR

and less critical vibration performance areas will have more lightweight timber. We're pushing several projects in that direction,' he says.

Reuse of existing buildings calls for forensic engineering to identify potential. 'Clients increasingly ask how we can re-use parts of the estate, with some newbuild interconnecting; I think that's one of the big opportunities for innovative design,' says Roycroft, naming Manchester Metropolitan University as a client promoting the approach.

A sharing culture

Reconciling scientists' expectations of their space with the broader business aims of a university and its estates team inevitably requires compromise. 'We are mediators bringing different stakeholders together and setting out options to try to find the best fit,' says Cora Kwiatkowski, head of universities at Stride Treglown.

At the University of Reading, the architect and interior design team created a future-resilient building where the Departments of Ecology and Environmental Biology, Biomedical Science and Bioinformatics have come together in a single school with a shared asset culture. In order to design for this interdisciplinarity – which is increasingly being adopted by academia – the team began by speaking to the schools to determine what they needed and, importantly, were prepared to share.

Reuse of existing buildings calls for forensic engineering to identify potential

Above AHR's University of Huddersfield Health Sciences Building has 'simulated' spaces such as an acute ward that offers trainees almost real-life medical experiences.

'They had amazing equipment and all had their own separate freezers, which had maintenance and sustainability implications,' she says.

Students and researchers work across four floors of wet labs, two floors of CL2 labs and a flexible, 280-person super-lab, which can be subdivided into smaller 80 or 60-seat spaces – with shared centralised freezer rooms. 'From an estates perspective it offered efficiencies, but it was important also to focus on providing other facilities so that you are not taking away from users, but are giving something back in different spaces,' Kwiatkowski explains. A second wing includes write-up space and informal space for collaboration.

The latter is also a feature of the firm's refurbishment of part of a 1960s block at the University of Westminster. On the ground floor flexible space has been created for its School of Computer Science and Engineering, while below, its existing workspace has been refreshed to enable more diverse ways of working. 'For computer science and engineering it's important to have spaces that have great tech, but are also creative and inspiring,' says Peter Bonfield, vice-chancellor of the university. There's a need to cater for both technical and creative problem-solving learning, says Kwiatkowski: 'Design is not only about the area per person in a lab'.

Innovation in teaching

While research labs are going through an evolution, the move to immersive

environments in teaching can be seen as revolutionary. AHR's design for the first building in the University of Huddersfield's National Health and Innovation Campus relies not on classrooms but on simulated environments that give trainee paramedics, nurses and other healthcare professionals near real-life experience.

The Human Health Sciences building is part of a planned 75,000m² campus, and sets out the university's stall to attract students and future investment. 'The university wanted the building to represent the patient journey, from start to end of their experience with the health service,' says Robert Hopkins, director and head of sustainability at AHR. There's space for simulated emergencies, including an outdoor area for traffic accidents, an apartment and a room with 360° AV which could be a nightclub, plus a 'Simbulance' simulated ambulance, operating theatres and wards, with haptic simulators to bring patient scenarios and procedures closer to reality.

The university is using the building as a testbed for future thinking on academic workspace, recognising that students' time on campus has reduced post-Covid, but ensuring their experience there is made more worthwhile by facilitating interaction. Traditional spaces like lecture theatres will be smaller and a student kitchen is being provided alongside the café, where they can prepare their own food. This is the first university building designed to the WELL Platinum standard, putting everything from food to furnishings under scrutiny. Climate change and Covid have created an opportunity for universities to reflect, says Hopkins: 'Universities are looking at the purpose labs serve and how they fit with their future vision. They are asking serious questions about the purpose of people on campus and realise they have a raft of facilities where they could be doubling up.' He cites a current project where mathematics is being amalgamated into a natural science faculty to create a material innovation zone, using space more efficiently and increasing attractiveness to industry partners. 'It's a different type of learning, but it's more relevant,' continues Hopkins. 'For universities, it's now a matter of thinking about the value of the facility, rather than the subject area.' ●

Innovation as standard

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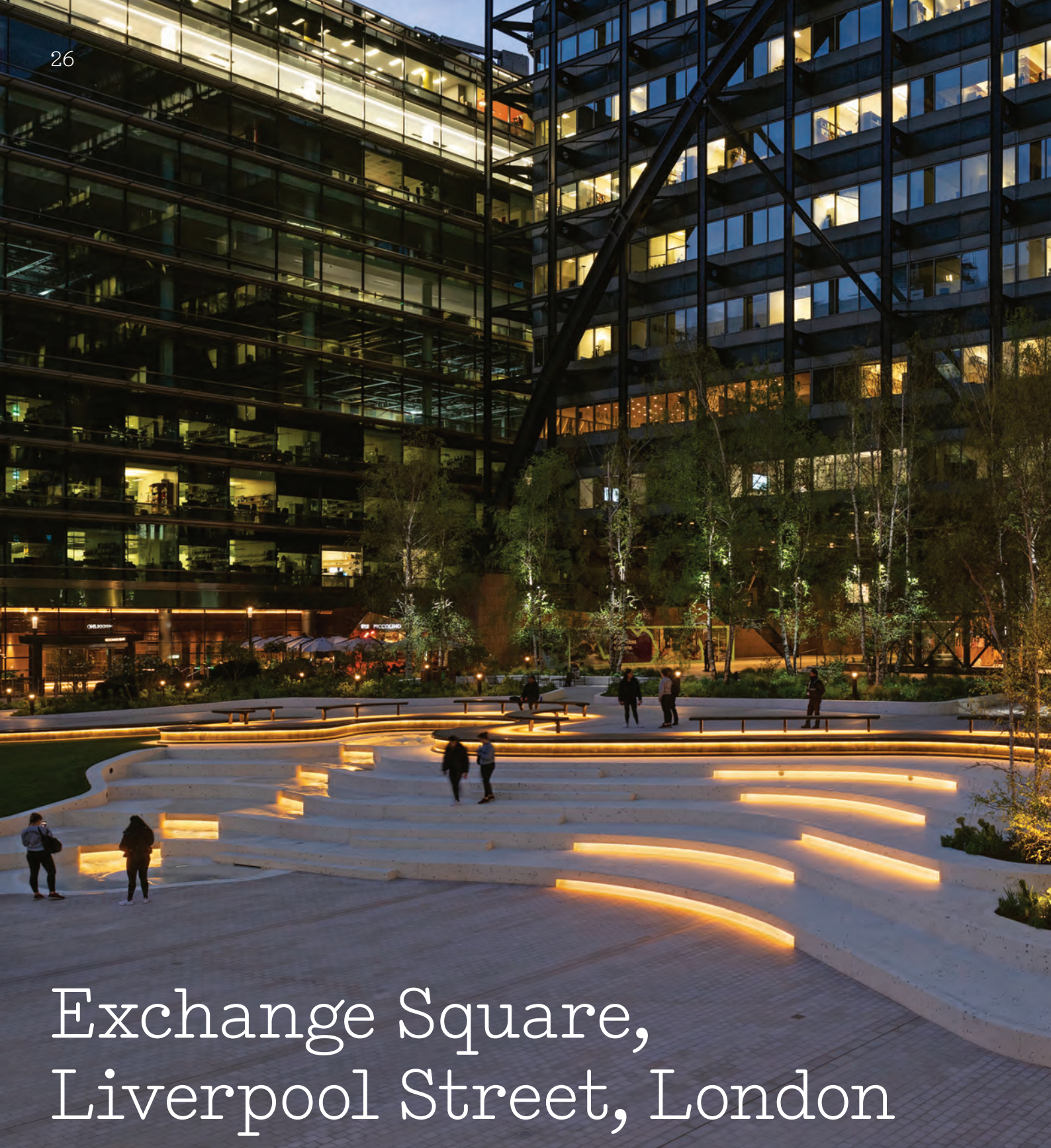
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Exchange Square, Liverpool Street, London

DSDHA and Speirs Major have created a pleasurable place to pause, play and hang out in the heart of the City, using greenery, human scale and clever lighting

Words: Pamela Buxton Photographs: James Newton



Above Concealed lighting accentuates the curving contours at Exchange Square, which has been redesigned by DSDHA with lighting by Speirs Major.

It often seems a little misty first thing in the morning in Exchange Square, the newly redesigned public space around the back of London's Liverpool Street station. This is no quirky microclimate, just one of the atmospheric little touches – courtesy of concealed water jets – in this poetic piece of public realm design by DSDHA. At the other end of the day, meanwhile, the square's curvaceous contours and cascading water feature are accentuated by elegantly-concealed lighting as part of an after-dark lighting scheme designed by Speirs Major.

According to Speirs Major associate partner Benz Roos, the lighting scheme focused on enhancing the many sensory aspects of the square's design, including the textures and colours of the planting and the movement of wind and water.

'By playing up these elements, we aimed to encourage people to slow down, take note of their beautiful surroundings, and enjoy a moment of serenity in the city,' he says.

The 6,000m² project is part of a broader public realm strategy by DSDHA for British Land's Broadgate estate, to encourage more use after office hours and at weekends. Although conceived long before the pandemic, the strategy chimes with new workplace priorities, such as a particular emphasis on wellbeing, by providing a better external environment for workers on the estate and, it is hoped, for an increasing number of visitors.

While the other key public spaces were given relatively light-touch, quick fixes, Exchange Square needed deeper surgery, resulting in a £16 million investment to transform this problematic space into somewhere that people would want to spend time. Positioned on a raft over the tracks between the station and Exchange House, the square was largely hard landscape, except for a small patch of grass that needed replanting several times each year. Its dominant feature was a large water feature to the east. A 3m drop across the site had led to multiple level changes and access issues, with a messy accretion of steps and rails. Signage was poor, and lighting harshly bright.

DSDHA's new landscape is a radical and welcome change, creating an altogether different, more intimate, sociable atmosphere that 'nurtures plants and people' according to the practice.

The square has been re-levelled to



create two principal levels rather than the five it replaced – a complex logistical task given the location – and the big water feature removed. At the rear, the level has been brought up to create a larger flat area on the same level as the undercroft of Exchange House, suitable for temporary events. Clad in French limestone, this overlooks a terrazzo amphitheatre at the station end, with a ramp providing step-free access alongside the amphitheatre down to the bottom – the second main level.

The most eye-catching element is a meandering ridge that flows across the square in a continuous ribbon. This is inspired says DSDHA, by the salt marshes of East Anglia – the region served by the adjacent station. The line is a deliberate device to counter the movement of people through the square by providing a new landscape to dwell. Imagined as a rounded platform edge, this is faced in weathering steel, and is supplemented by a timber boardwalk following the same line, with additional sinuous seating. The ridge – which doubles as seating – continues on and upwards to define the roof of a retail unit alongside the amphitheatre. Amphitheatre seating is provided in bespoke patterned terrazzo (also used for the planters), cut through with a multi-level cascade of water

forming shallow 30mm deep pools. Lush planting is positioned to the top and sides of the square in areas where the loads could be supported by the existing floor slab. These also relate to the movement of pedestrians, with the densest planting and lawn area close to the route from the Sun Street passage down the side of the station.

Speirs Major's nuanced, integrated lighting accentuates the square's distinctive new topography. This was, says DSDHA director Tom Greenall, very much a collaboration, with architect and lighting designer aligned in a shared aspiration for low level lighting both in terms of lux and height to create a more intimate environment. Other priorities included highlighting the planting.

Roos says that the lighting design was a juggle between security considerations and the desire to create a more intimate, sociable ambience for those in the square. Another factor was the appearance of the lighting from above when viewed from the overlooking offices.

With the surrounding buildings already providing so much lighting of their own, the emphasis was on bringing light levels down in the square and then highlighting a few choice design elements including the water features, seating contours, and the planting. This

Key

- 1 Exchange House
- 2 New trees and planting
- 3 Events space
- 4 Dense meadow planting
- 5 Meandering steel ridge line with adjacent timber benches
- 6 Terrazzo auditorium
- 7 Cascade of pools
- 8 Central activity space
- 9 Peninsula retail unit
- 10 Liverpool Street Station

is mostly done at a low height, with a few key exceptions. Lighting columns are kept to the east and west perimeters, including the main thoroughfare through the square from Sun Street, with WE-EF post-top and wall-mounted luminaires providing sufficient light for security purposes. Low-level bollard lights by DW Windsor aid way-finding by marking primary paths through the landscape. These also graze lights over the planting.

To create an intimate atmosphere with no jarring light sources, lighting



Above Lighting is kept at a low level to encourage a more intimate, sociable atmosphere. **Right** LED lighting is integrated beneath the rim of the ridgeline that meanders through the square and under benches. **Below right** Concealed slots in the terrazzo amphitheatre seating give indirect light. **Left** Uplighters and downlighters are positioned among the silver birches to celebrate the bark and foliage.





Indirect lighting highlights the rippling water within the auditorium cascade feature.

was integrated beneath the continuous ridge, and within slatted timber benches and amphitheatre terrazzo seating, giving soft, indirect light. In the case of the cascade, this treatment illuminates the rippling surface of the water. These details required extensive collaboration between DSDHA and Speirs Major, with the lighting designer offering suggestions and sketch details for how lighting could be integrated, and as the design evolved, the architect developing the niches and nooks, says Greenall.

Large mock-ups were commissioned of both the steel ridgeline and the water feature to trial different treatments and ensure the light was sufficiently concealed in the niches while still providing enough of a wash of light. This investment proved invaluable in delivering the final design, with details amended accordingly. The final version of the terrazzo seating has lighting slots in openings two-fifths the height of the total step height. Inside the slots, a concealed niche houses the LED strips.

Architape LED strip lighting was specified and integrated into the steel ridgeline, terrazzo seating and cascade, and benches accordingly. iGuzzini floor washers are used for the steps on the pathways where there are no handrails.

The mature silver birch trees in

Credits

Architect, urban designer, landscape architect and public realm framework DSDHA

Structural and M&E engineer Arup

Lighting designer Speirs Major

Contractor Maylim

Horticulture FFLO

Project manager Stace Project Management

Planning consultant DP9

Cost consultant Gardiner & Theobald

Energy consultant Greengage

Access consultant David Bonnett Associates

Selected lighting suppliers: Architape (integrated amphitheatre seating, water feature, benches; ribbon wall) ● DW Windsor (bollards) ● iGuzzini (floor washers for steps) ● Stoane Lighting (integrated handrail, tree uplighting and projectors, canopy downlighting) ● WE-EF (post-top and wall-mounted luminaires)

the new planting are accentuated with lighting positioned in the foliage with minimally visible cables. Uplighters strapped carefully to branches highlight the silver bark and delicate leaves, while downlighters create dappled lighting effects through the foliage and onto the ground level planting to enhance the

atmosphere of the square. These are supplied by Stoane Lighting, with one uplighter and two downlighters in each tree. The colour of the light is adjusted tonally with each season – in autumn, warmer white light complements the autumn leaves and bare winter branches, while in spring and summer, fresher, cooler light highlights the foliage.

‘The light brings out the colour of the trees. In spring, the leaves are very green and the light is cooler so it looks more vibrant. In autumn, it warms up to bring out the brown of the branches, and because they are silver birch trees, the white bark,’ says Roos.

Thoughtful and atmospheric, the square has clearly been a great asset for workers at Broadgate. Hugely popular at lunchtimes over the summer, in particular in the heatwave, the misting was extended to the delight of park users, with the water feature attracting parents with young families after the word got around on social media, turning the cascade into a children’s splash pool.

The only shame is that, after so much care taken over the design and lighting, the transformed square is not better signposted or accessed from the station or Liverpool Street itself. Hopefully, however this may be addressed in the station’s upcoming refurbishment. ●

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Costed

Gleeds' Nicola Sharkey, UK insights and research lead, and James Garner, global head of data and insights and analytics, look at lighting costs

According to the Energy Saving Trust, lighting makes up 11% of the average UK household's electricity consumption.

Houses typically use a selection of standard light fittings and downlighters or spotlight fittings. Smart lighting controls and energy efficient bulbs are available for both. Replacing all the bulbs in your home with LED lights could reduce carbon dioxide emissions by up to 40kg, as well as lowering your lighting bill.

Suitable lighting improves wellbeing and can make spaces feel brighter and more comfortable.

Your choices in lighting will be influenced by its function,

aesthetic and cost and the different requirements in each room. Factors such as energy efficiency, lamps and ballast life, installation and maintenance costs should also be considered.

In sitting rooms, for example, pendant and chandelier lights are common. With multiple bulbs, chandeliers are more expensive and heavier but give a wider amount of light, while pendant lights are cheaper to run but focus more on a specific area.

The following guide reflects expected prices for a medium-sized project using products in the low-to upper-middle specification range. ●

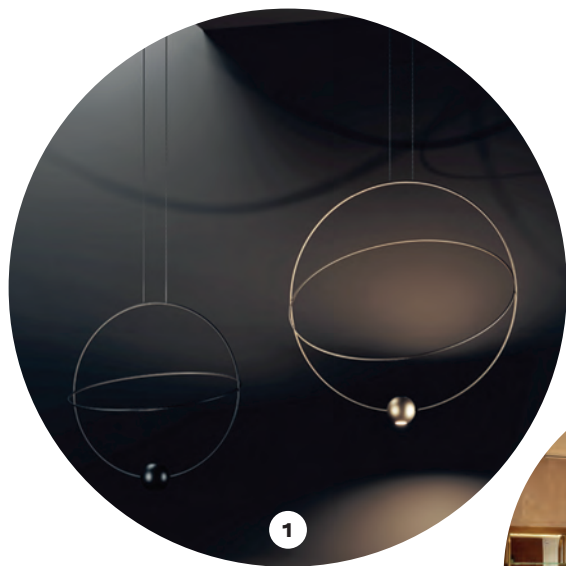
Rates are based on the UK average and represent typical prices at 3Q 2022. Please note that prices can vary significantly depending on the exact specification

Range £/unit		Range £/unit	
Domestic internal lighting		Emergency lighting luminaires	
Pendant, one-way switch inc single/three LED lamps	150-175/225-250	150mm 3-hour non-maintained emergency bulkhead luminaire IP40 4W T5	240v 225-250
Creative, fused and folded glass, suspended by wire, two LED lamps	450-500	300mm 3-hour non-maintained emergency bulkhead luminaire IP40 8W T5 240v	300-350
Contemporary chandelier one-way switch inc three/eight LED lamps	250-300/550-700	Commercial internal lighting	
Traditional chandelier one-way switch inc eight candle lamps	350-400	Industrial lighting fittings; high bay type complete with reflector and lamp and gear: 250W sodium	250-300
Flush ceiling one-way switch reflecting wash, recessed, two LED lamps	175-200	250W metal halide	250-300
Circuit of four, reflecting wash, recessed, two LED lamps	275-300	250W mercury discharge	250-300
Single spotlight, one LED lamp	150-175	Domestic external lighting	
Set of three spotlights, one LED lamp each, one transformer	225-250	Weatherproof non-maintained bulkhead luminaire IP65 8W T5 240v	300-350
Downlighter, one LED lamp	150-175	Weatherproof maintained bulkhead luminaire IP65 8W T5 240v	200-225
Circuit of six downlighters, one LED lamp each	225-250	Garden lighting, spotlight on stake, 240v, IP65	200-225
Eyeball downlighter, one LED light	150-175	Garden lighting, stainless steel bollard, 240v, IP65	325-375
Twist and lock low voltage downlighter, one LED light, transformer	150-175	Garden lighting, LED spotlight, 240v, IP65	250-275
Track		500W floodlight, PIR unit, 240v, IP65	200-225
Low voltage track kit three pendants, LED bulbs, transformer	275-325	Commercial external lighting	
Low voltage cable kits five pendants, transformer	350-400	Black aluminium medium beam economy discharge floodlight with toughened glass diffuser, integral gear, timed ignitor and lamp: 250W HQI-T/250W SON-T	275-300/275-300
High voltage track kits three pendants	325-375	400W MBF	275-300
Add for low voltage cable pendant	25-30	Black low wattage discharge floodlight with clear polycarbonate diffuser, integral gear: lamp 70W SON-T no ignitor	215-225
Low voltage/high voltage track pendant	30-35/35-40	Lamp 80W MBF	200-215
Wall mounted one-way switch		Wall washer flood light with 30 LED lamps, 240v, IP65	190-215
Low voltage light kit with transformer and five recessed LED units	225-275		
240v picture light	175-225		
240v spotlight	150-200		
240v creative/designer, fused and draped glass	225-275		
240v creative/designer, splashbacks, 1200 x 800mm	1,000-1,250		
Add for two way/three way switching	75-100/150-175		

Specified

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NIKA ZUPANC FOR LODES



1
Elara suspension lamp
Nika Zupanc for Lodes

Welcome, boys and girls, to the Flea Cirque du Soleil! Marvel at our Fearless Troupe of Entomological Aerialists! You think you see two lovely astrological lamps, suspended like the planets in the heavens! But the slow rotation of their mystic rings is entirely due to the powerful thighs of our Siphonaptera Superstars!

On the 80cm polished gold, please welcome the lovely Fleacity Kendal! On the 60cm glossy black, the amazing Wayne Fleap! Say ooh! Say ahh! Marvel at the ability of those tiny dimmable bidirectional light sources to illuminate our entire Tremendously Tall Big Top! lodes.com/en



AURELIE LAMBERT AND HOTEL GRAMONT

2
Dino wall light
Gong

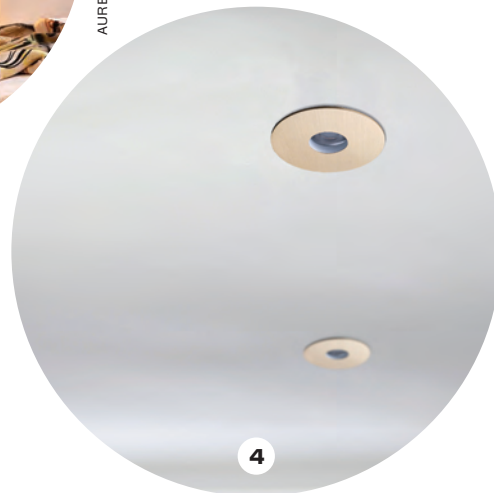
'Darling, it was Paris. Don't you remember?'
'Paris? Oh gosh, yes. Lovely boy.'
'No! The lighting, I mean. The lighting! We first saw these delicious wall lamps at the Gramont in Paris. We must have them for the house. Make a note, darling. They're E14 adjustable single reading lights, available in biscuit, black and white. Called 'Dino'.'
'Ah, Dino. Yes, I remember. Lovely boy. And Peggy was lovely too, wasn't she darling?'
'Oh yes, the dear "Peggy"! A classic beauty. E27 bulb, but younger than she looked. Very bright. We must go back...' gong.co.uk



THOMAS ALEXANDER

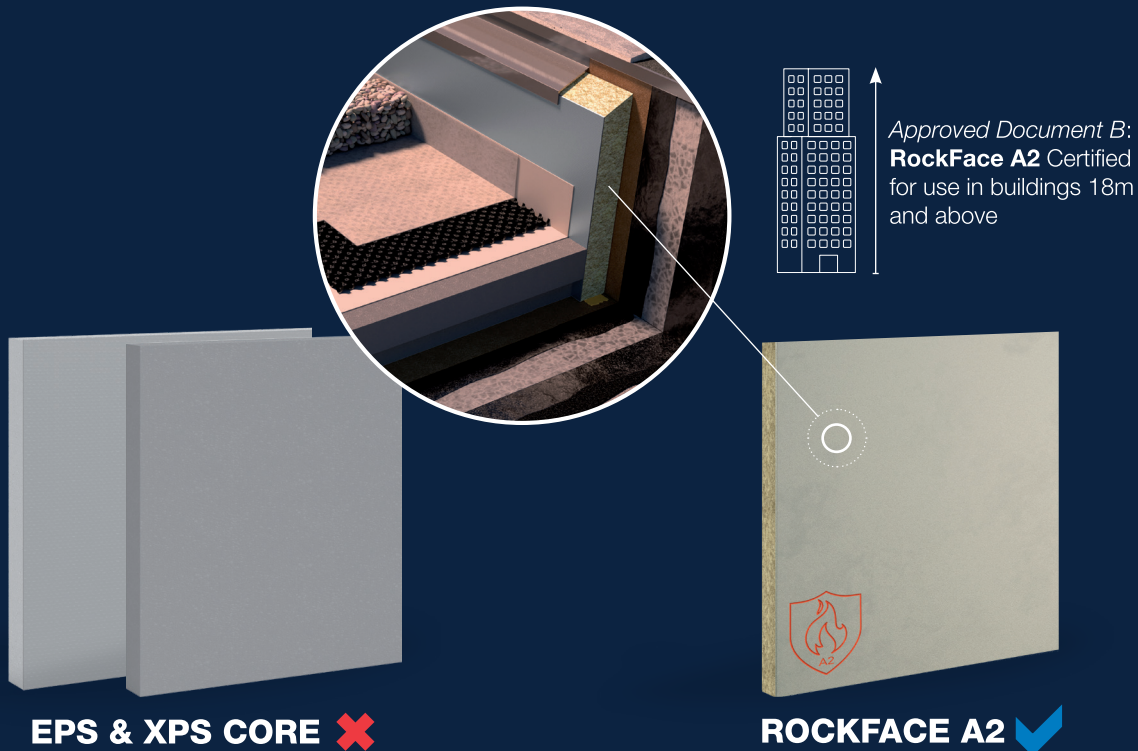
3
UT 57 downlight in bronze
Flos

'What can I get you, sir? No, I'm not going to turn them on.'
'Look at the bar! Don't look around the bar! Look at the bar! This is a bar, we sell drinks: would you like a drink sir?'
'We are leaving the downlights off, sir. They were pulling focus and we are a bar, we sell drinks. Would you like a drink?'
'Alright, yes, they're in a custom brushed bronze finish, they're one of many Flos lighting solutions specified for our refit, and WOULD YOU LIKE TO BUY A DRINK?' professional.flos.com



4
Mini LED downlight
Meljac

'Here at The Quantum Fiction Centre, we pride ourselves on our cutting-edge theoretical research. Overhead, behold the Quantum Eyelets! The doors through which our particle partners enter and leave the building. Two are required, obviously.'
'No they're not, they're downlights!'
'Leave the sciencing to me, please.'
'But I've got them at home! They're Meljac mini LED downlights – IP54 rated, direct or asymmetric, easy to install, and available in 30 finishes to blend with Meljac's other sleek electrical fittings!'
'They're Quantum Eyelets.'
'No they're not.'
'Yes they are.'
'Not they're not.'
'WELL THEY COULD BE!' meljac.com



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Quatrefoil House, Oxford

Hyde + Hyde has turned a run-down Victorian house into a sumptuous, considered home that emphasises fine detail in a quatrefoil-themed finish

Words: Jan-Carlos Kucharek Photographs: Michael Sinclair

It's curious to think that a trope of Christian architecture should constitute the symbolic theme for home of a motor industry executive's family in central Oxford's affluent northern fringes. But when Hyde + Hyde was approached by the client to refurbish and extend a large but dilapidated late Victorian villa, a former student house, it was the quatrefoil form that endured for the architects during their site visits to the city; this and a love of Louis Sullivan's early modernist, symbolism laden work.

Kristian Hyde says the university city's Quatrefoils are 'hidden in plain sight' – and so is the luxury of the home. The refurbishment was a two-year labour of love, with a sizeable, cantilevered kitchen extension making up the fourth 'petal' of the plan's own quatrefoil. And just as the one above the entrance porch inspired the architect, so did the villa's other ornamentation. While the extension's principal street



Top The glazed rear elevation of the extension gives views out over the garden, with a bespoke steel stair for access. Steel C-sections studded in bronze Quatrefoils frame the car port below.

Above The main street elevation of the extension is blank, deferring to the Victorian villa. Its stairwell was the inspiration for the extension's concrete pier.

elevation seems a blank wall of brick, existing mouldings not only form its datum lines but are expressed as concrete indentations across its surface. A great black steel beam transfers the load, studded with quatrefoils of hand-cast bronze, projecting at the corners past the steel to allow the sky to be read through their interface. It is all held up by what appears to be a wilful, sculptural arc of precast concrete, reducing to a point where it hits the ground. But in fact this is a material inversion of the polychromatic brick arch that frames the windows of the villa's main stair.

Interiors are impressive and on occasion excessive. An oversized engineered timber parquet floor reflects not only the scale of the open plan lower-level reception spaces but also the herringbone brick seen on the villa's facade. At the entrance, a new grand staircase of American black walnut winds up and away to transfer you to



the more private family rooms, past a 12m long chandelier hanging in its well. With 437 glass teardrops at the end of each fibre optic wire, the whole thing was hand blown in Wales and runs from the roof to the basement entertainment level. Two large reception rooms with beautiful bespoke, black-painted steel mantelpieces can be seen beyond full-height glass partition walls and floor to ceiling height walnut doors – each inset at handle level with push plates of inlaid carbon fibre, a nod to the car industry.

Over a bridge at the far end and there's a kitchen turbo-charged with more automotive references – units of dark steel panels, knurled steel hob knobs, poured resin floors of your dream mechanic's and floor to ceiling glass walls upgraded with a huge, retractable rooflight that slides back to open the space to the sky – a form of kitchen cabriolet. Tiny fibre optic cat's eyes beneath every wine bottle in

Top left The entrance area, set with herringbone timber floors, opens to the grand stair, down to the entertainment spaces and across to the kitchen.

Top right Two large reception rooms are incorporated into the main body of the house.

Above left A bridge crosses to the kitchen extension. The wine rack is architect-designed.

Above right Reception rooms use a luxurious palette of oak and dark leather, with bespoke steelwork mantelpieces.

- | | |
|------------------|---------------|
| 1 Entrance hall | 7 Bathroom |
| 2 Reception room | 8 Home cinema |
| 3 Kitchen | 9 Kitchenette |
| 4 Study | 10 Boot room |
| 5 Family room | 11 Car port |
| 6 Guest bedroom | |

0 1 3 5m



Lower ground



Ground floor





the architect-designed wine rack glow through the bottles by night – like a dash light assuring you there's plenty in the tank even if your glass is empty.

Hyde + Hyde designed more than 90 bespoke components for the home, from bronze door tabs to the cantilevering beds which, though identical in design, have surrounds that shift in spec – from cute patterns for the young kids to minimalist grey felt for the elder son, and sophisticated midnight blue leather for the parents. The main bedroom's walk-in wardrobe, while run with doors of glass or that rich leather, seems surprisingly parsimonious spatially but leads to a large white marble ensuite

Hyde + Hyde designed more than 90 bespoke components for the home, from bronze door tabs to cantilevering beds

that reflects the specification throughout – a blast of Boffi faucets, TOTO toilets, standalone baths and carwash-sized showers. Some of the ceramic sinks here even glow. But in counterpoint to the reception areas – in particular the lower-level family room, cinema and gym space, which seems indulgently large – bedrooms are, as you would wish, more intimate.

It's a far better driver than me that would negotiate the sports car in the hair-pin manoeuvre from the forecourt down past the upturned concrete gothic arch to the car port below the kitchen extension; and Corb might have seen the move as contra to the ideal of utility – but then Quatrefoil House never was about form follows function. Or was it? Viewed from below, I note that the extension's chamfered projections exactly align with the main roof pitch. 'Well, the chamfer is 45° so the roof pitch must be the same,' surmises Kay Hyde almost instantly. And looking at it, I do believe she's right: a Pythagorean truth hidden in Hyde + Hyde's divine plan. ●



Left The 3D modelled stair, constructed in American black walnut, winds its way to the top of the house. A handmade glass chandelier hangs down the well.

Above The master bedroom continues the palette of oak and luxurious dark blue leather on walls and storage. An opening leads to a narrow dressing room and marble bathroom beyond.

Credits

Lead designer/architect Hyde + Hyde Architects
Contract architect Riach Architects
Client Private
Structural engineer Mann Williams Engineering
M&E Ridge Property & Construction Consultants
Contractor G Dighton & Sons
Quantity surveyor Ridge Property & Construction Consultants
Energy consultant Melin Energy Consultants
Planning consultant Kemp & Kemp
Arboriculture surveyor Lockhart Garratt
Site surveyor MK Surveys

Suppliers

Manufacturers Ad Hoc Designs, Pietersen Fine
Specialist furniture Precast Products
Concrete column specialist Precast Products
Stair (internal and external), quatrefoil sets, etc. Ad Hoc Designs
Cabinets and joinery Pietersen Fine Furniture
Kitchen and bathrooms Boffi
Rain light Neil Wilkin and UFO lighting
Living room light Flos
Kitchen roof light Meia
Desk Walter Knoll
Rug Riviere Rugs
Rug/bedding Larusi

Specified

PiP specifieds are compiled from supplied company press releases



1
Ensowash Starck f toilet
Duravit

'Eh, Dimitri, I'm dying for the bog.'
'Me too, Xi, shouldn't have had that last coffee-like drink product mate.'
'Keep walking, lad. Think about the retractable, self-cleaning shower function.'
'Ladywash for me. Every time. And that warm air, ohh yeah. Heated seat. And the stink sucker. And the internal nightlight. Need those in a Martian bunker, don't ya?''
'Oh yes, you've inspired me. Get it fired up with that remote control. Who cares about the toxic electrostatic dust, the cosmic radiation, and temps of -60°C when you can come home to a SensoWash toilet?'
duravit.co.uk



2
Onirika multi-purpose surfaces
Dekton

'Michelangelo! For the last time! This house is not a quarry!'
'But Mummy! I cannot be constrained by petty concerns such as whether my medium is part of your kitchen or not!'
'But you should have asked before hacking off the corner of mummy's new island!'
'Do you want to deprive posterity of Sinterised Technical Ultracompact Stone? With its carbon-neutrality, durability and limitless versatility, the "Awake" design reimagines Paonazzo stone! Its oxide terracotta and inky blues feed my genius!'
'Ugh. I give up. Why couldn't you have got into Ninja Turtles like your brothers?'
cosentino.com/en-gb



3
Modul'Up Compact fast flooring
Forbo

'Don't worry, madam. Easy mistake to make. Yes, it does look exactly like nougat. No, it's probably not a good idea to numb your mouth with more free gin. Luckily, this is Forbo's Modul'up quick-install adhesive-free sheet flooring, easily removed and replaced, and the bits you've chewed can be recycled. No, madam, I'm sorry but there will be no compensation. Apart from the fact that you've already drunk the equivalent of any potential award in small-batch gin, the signs clearly state that – delicious as it is – this floor is not food!'
forbo.com/flooring/en-uk



4
RAK-Valet bathroom range
RAK Ceramics

'Ollie?'
'Yes, Stanley?'
'Why do they keep calling us Stan and Ollie?'
'Why, because I am shinier than you, handsomer than you, cleverer than you - and I was designed by international designer Patrick Norguet. He's from Paris, France, you know.'
'But Ollie, we're exactly alike! I'm not even in the matt option! Except...'
'What is it, Stanley? Don't be shy!'
'Well... Ah, well...'
'Stanley, I won an award. I'm hygienic and bacteriostatic, I'm lightfast, chemical resistant, heat resistant up to 1400° – and I'm repairable!'
'Alright then Ollie, yes. We are definitely exactly not the same.'
rakceramics.com/uk/en

Lessons in how to aid learning

Some of the lessons learnt in educational buildings are not formally taught in classrooms. Michèle Woodger hears about ways that good design and materials have enhanced learning environments

More than any other typology, begins chair of the latest PiP webinar, Jan-Carlos Kucharek, educational buildings are 'loaded with potentiality for the future', providing exciting environments in which young bodies and minds can flourish. 'Much is to be learned from being open to the scrutiny and curiosity of young minds,' he argues – school buildings can be pedagogical tool for both students and the architects who design them.

Beginning the seminar is James McCosh, partner at vHH/van Heyningen & Hayward Architects. The firm designed Houlton Secondary School which was reconfigured from the listed 1920s Rugby Radio Station, the GPO's first international radio transmitter.

Houlton is a new suburb of Rugby, a joint venture with master-developer Urban and Civic and JTP masterplanning architect. The school anchors the development and connects to it via a green corridor. Naturally such a project has many stakeholders, and fundamental to its success, says McCosh, was a two-day charrette, which included Historic England and the 20th Century Society, and established the parameters of the conversion, balancing its heritage status with the client's energy requirements and budgets.

Externally prestigious, the old building's interior was completely industrial, designed to accommodate huge transmitters and machines. Other notable challenges included insufficient space for the number of students, inappropriately sized rooms, just two small staircases (only four staff had ever manned the site), a prosaic 1940s concrete roof, derelict equipment, no insulation, a diesel spillage, asbestos and lead paint throughout.

Despite these and other constraints, vHH has created a high-performing, sensitive and memorable school. Teaching rooms are in two new blocks, whose language 'holds its own' against the original. The old building now accommodates shared spaces such as the assembly room, sixth form centre, library and canteen, and, reports McCosh, has made for some 'amazing spaces' with elements such as fuel tanks and a crane retained, the introduction of a mezzanine and rooflights



bringing light deep into the interior.

Intrinsic to the many energy performance successes of vHH's project was suitable insulation, and Justin Lewis, business manager of sponsor Rockwool – leading stone wool manufacturer – drills down to specifics with a look at the material's application at Cobham Free School in Surrey. In 2012, a 1990s office block was reconfigured by its former occupier, Willmott Dixon, in collaboration with architect Stride Treglown, as a school for 920 students. Rockwool's Hardrock Multi-Fix (DD) provided thermal and acoustic insulation on two new wings as well as fire protection. The extensions required adherence to different regulatory standards for flat roofs, acoustics and fire safety (BS 6229, BB93 and BB 100) which the Rockwool system provided with over 2,000m² of its product, to safe and cost-saving effect.

In fact another project which made use

System suppliers are good at delivering technical performance at budget without compromising on specification

of Rockwool insulation was Wintringham Primary Academy, at St Neots in Cambridgeshire, recent winner of an RIBA East award. Regina Kertapati, associate at dRMM, discusses this project, which completed in 2020.

The school is the first civic building in a wider development (again led by Urban and Civic). Here too, the client required the school to make a strong statement that would set the tone for the development.

The school accommodates 708 pupils on a 2.7ha site, and is guided by three principles: learning in the round, interaction with nature, and community asset. The headteacher, a strong believer in outdoor learning, was committed to the creation of an inspirational learning environment, which allowed for certain innovative architectural approaches such as an oval structure with a woodland grove at its centre.

This spatial organisation strategy boosts a communal sense of belonging, which strengthens classrooms' interactions with each other and the central space. The classrooms ascend in year group order as they encircle the centre, and are designed to allow fluidity between inside and outside. 'We envisaged the school grounds



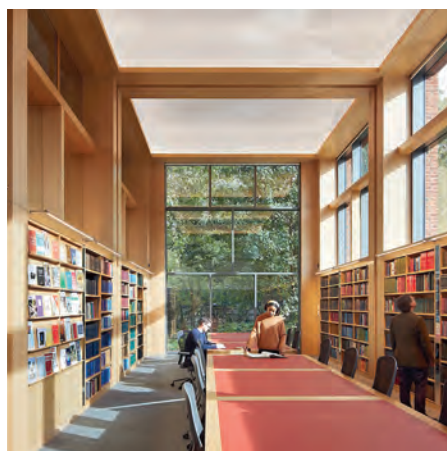
Above dRMM's Wintringham Primary Academy in St Neots is an inspirational learning environment, built around a 'woodland environment' at the project's heart. **Left** vHH's Houlton school is a text book example not only of adaptive re-use, but also how an existing building can effectively steer the design of a whole new urban quarter. **Right** Wright & Wright's Lambeth Palace library presents a defensive face to a busy road while opening to its beautiful gardens.

as a forest with clearings and orchards,' explains Kertapati, and although budgetary constraints limited this, the wider landscaping designs forms part of the longer term strategy for the school, allowing staff and students to be immersed in nature.

CLT was used in the structure and interior finish – a natural choice given the project's ethos. The decision to leave elements of the structure exposed was 'informed by studies showing that timber environments reduce the perceived level of stress in people', explains Kertapati. The distinctive terracotta rainscreen facade is inspired by seasonal colour changes, graduating around the building and helping with navigation while contributing to energy performance.

On the topic of facade engineering, Mark Clemson, sales and marketing director of Kawneer, offers ways to deliver value in the education market at a time of raw material price increases. Kawneer, established 1906, supplies architectural aluminium windows, curtain walling and doors, and 30% of its custom arrives from the educational sector.

'System suppliers are good at delivering technical performance at budget without compromising on specification,' he argues, using the Gateway to the Valley School in Bridgend as an example: 'one of the most



extreme value engineering exercises we have been through'. By collaborating closely, costs were 'driven down by £150,000 on the job without compromising the ethos of the design when it came to U values, aesthetics and so on', he says. Several specific ranges were discussed for their appropriateness – 'doors take a significant hammering, slammed by hurrying school kids keen for the end of the day', he wryly observes.

We have one final lesson to get through however; Stephen Smith, partner at Wright & Wright Architects rounds off the webinar with a fascinating look at his practice's work on the library and archive at Lambeth Palace, London – a collection deemed second only to the Vatican in terms of the importance of some of its theological documents.

Lambeth Palace, the grade I-listed home of the Archbishop of Canterbury, in fact inhabits a somewhat 'hostile environment' in central London, surrounded by heavily traffic roads and the banks of the Thames. Before the intervention, says Smith, 'the building was destroying the books and the

books were destroying then building' – so the new building had to offer the collection safe harbour from pollution and flooding.

The entrance to the complex is via Morton's Tower, a red-brick Tudor gatehouse. Wright & Wright's addition at the other side of the site references this historic building: it takes the form of a central tower with two wings – concrete, for necessary airtightness and to protect the archive, clad in Swanage Ibstock brick with considerable attention to detail. At a similar scale to the surrounding buildings, the tower gives a civic presence, while the wings are conceived as a thickening of the boundary wall, shielding the inner garden from London's fumes.

These gardens offer a rare sanctuary; the building's interior adopts a pared back aesthetic that prioritises the view out to this garden and the enlarged pond, which it now helps by providing cooling and rainwater drainage. At the top of the tower a seminar room and terrace looks out to the Palace of Westminster, 're-establishing the age old relationship between church and state'. The external brick wrap is met by the oak wrap on the inside, creating a peaceful space in the reading room, inspired by Antonello da Messina's 'St Jerome in his study'.

A huge challenge was matching complex archive requirements (working to standard PD454) with sustainability. Through 'a fabric first approach' – which used VOC-free materials with high levels of thermal mass and insulation, introduced onsite renewables and had photovoltaics providing half the electrical load – the building has reached BREEAM excellent standard.

Like a conscientious student, this high-performance building exceeds its client's requirements without needing to shout, and can now be enjoyed by staff and the residents of the neighbouring Evelina Children's Hospital, who relax in the foyer with its restorative garden scenes – evidence of the importance of educational buildings in the social enhancement of our cities. ●

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Vasanth Piyasena, associate at Hoskins Architects, gives three of his specification favourites



DAPPLE PHOTOGRAPHY

Pavatex natural wood fibre insulation

Hoskins Architects has used Pavatex wood fibre insulation on a range of projects from a Victorian school refurbishment in Glasgow to, most recently, Aberdeen Art Gallery. It has allowed us to improve thermal performance while guarding against issues that altering the physics of a building can introduce. The material's natural properties can help regulate moisture, preventing risk of mould or dry rot. Pavatex Woodfibre is natural, so easily recycled or composted. Contractors often say it is nicer to install than many alternatives.



TY MAWR

Sublime insulated limecrete floor by Ty Mawr

This lightweight, breathable, loadbearing floor has good insulation/thermal mass and lower carbon costs than concrete. We used it at the David Livingstone Birthplace project to help remedy fabric erosion caused by historic specification of non-breathable materials when the building was converted into a museum. It consists of two layers of recycled insulating foamed glass gravel (acting as a wicking break and non-capillary draw) under a limecrete slab. Although it is commonly used on conservation projects, we are considering it for newbuilds.



HOSKINS ARCHITECTS

Fossil by Mirrl

Mirrl uses multiple patterned layers of tinted resin typically on a birch plywood substrate. It's highly durable, repairable and suitable for internal and external use. It is custom made in Glasgow using a technique inspired by Japanese lacquerware that co-founder Simon Harlow discovered when working as a carpenter in Japan. Fossil is made from paint chips saved from cleaning the buckets for Mirrl panels. We are using off-cuts of Fossil for workshops with additional learning needs schools. Through the birdhouses students make, we aim to teach them about the design process, biodiversity, sustainability and material intelligence.

Read up

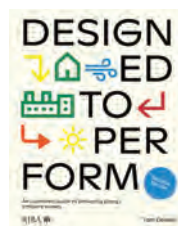
RIBA's assistant editor Shukri Sultan flicks through the latest tech titles. Buy at ribabooks.com



Engineering Nature: Timber structures, detail edition

Editor: Jakob Schoof. De Gruyter. PB, 224pp, £47.50

Timber is enjoying a resurgence as the industry sets out to reduce its carbon emissions. This book documents this change by outlining contemporary technical developments of the material through a series of short articles written by renowned structural engineers, researchers and historians. Beautifully illustrated with photographs and diagrams of successful case studies stretching from Tokyo to Surrey, this book is a treat for designers wishing to learn more about this versatile sustainable material.



Designed to Perform: An illustrated guide to delivering energy efficient homes, Second edition

Tom Dollard. RIBA Publishing. PB, 232pp, £30.00

This timely book shows architects how to keep clients warm at a low cost, with strategies for those working in government and the built environment on how to improve the energy performance of newbuilds. Chapters focus on common thermal enveloping problems of masonry, concrete and timber and natural materials, accompanied by helpful diagrams. This edition has added a chapter on natural building materials. Clearly written, it is relevant to practitioners and students.



Design to Value: The architecture of holistic design and creative technology

Mark Bryden, John Dyson, Jaimie Johnston, Martin Wood. RIBA Publishing 220p £45

Bryden Wood has been an industry trailblazer for BIM since setting up, but this book shows that its agenda extends much further, as the authors apply architectural thinking beyond the design to the whole project. This involves co-designing with the client/user at the outset to evolve design rather than working for prescribed outcomes. The book is highly developed graphically and with a lot of case studies to build its argument, the firm cannily inserts its own projects among those from Aalto, Hopkins, Atelier Bow-Wow, Piano & Rogers.

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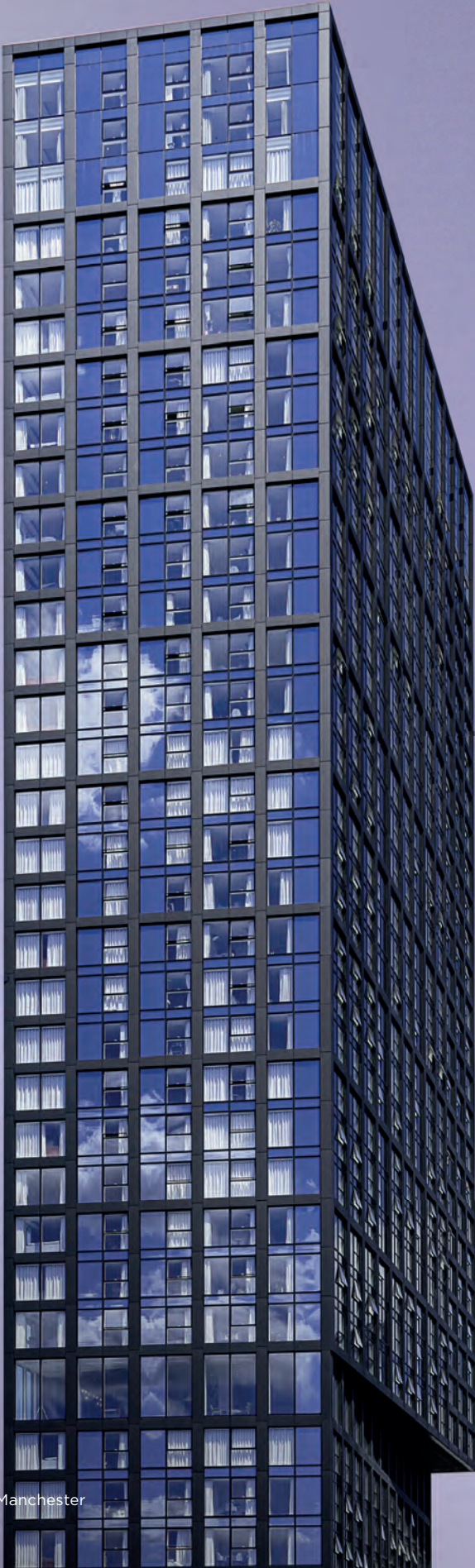
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