

RIBA

2026 ISSUE 8

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COUNT THE COST

What do statistics reveal about the impact of the UK's biggest data centre schemes?

KEY METRICS

The numbers that guide architects and their peers in working life and beyond

NUMBERS

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NUMBERS

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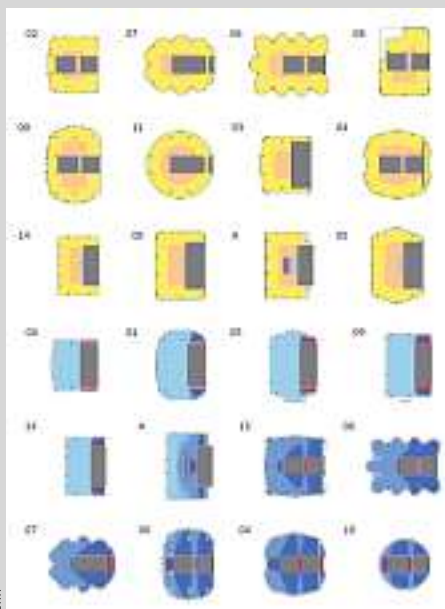
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NUMBERS TO LIVE BY

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HOME TRUTHS
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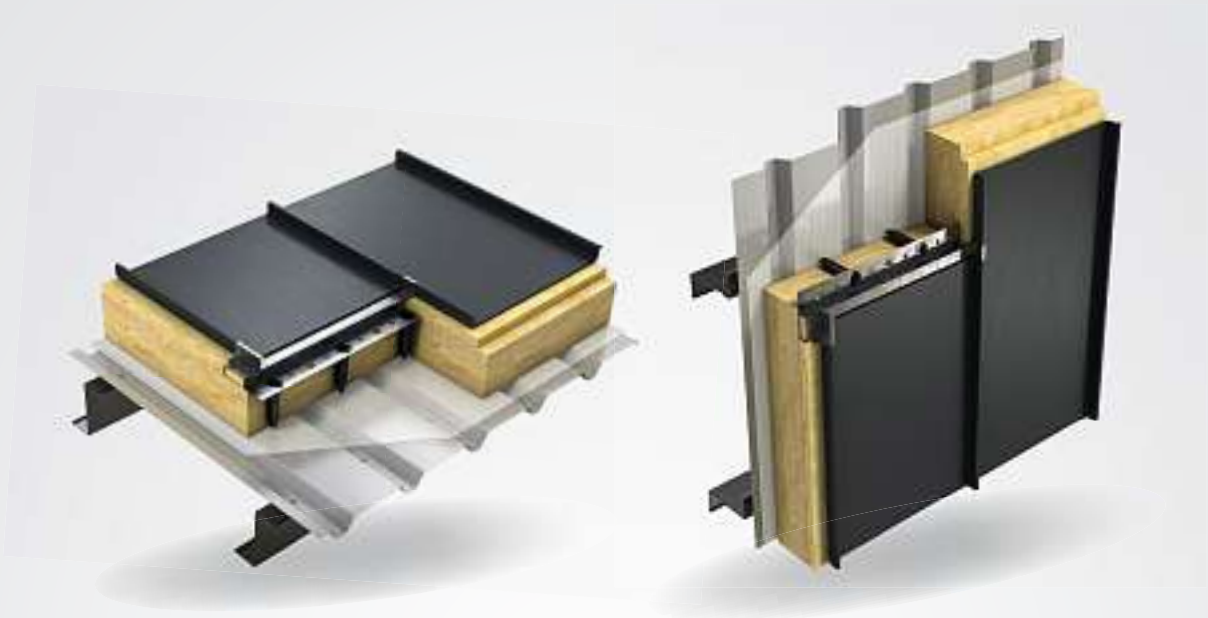
Cover image: Yard Theatre by Takero Shimazaki Architects, photographed by Anton Gorlenko



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NUMBERS

Numbers are foundational building blocks of architectural craft, and their ingenious use has left traces of humanity on buildings through the ages. Even at a time when technology crunches them for us, we should remember that, writes Eleanor Young

The most famous person from the village I grew up in was the “calculating boy”, George Parker Bidder. He had a childhood of being shown off at fairs to make money. But he eventually made it as an engineer, working alongside Robert Stephenson in the age of steam and on railways in east London, Norway, Denmark and India.

In a time before electronic calculators, never mind computers, mathematical ability must have been a highly prized professional skill.

And understanding the dimensions of standard objects has long been a crucial part of architectural knowledge. Think of a 900mm planning module which works with the dimensions of floor tile (300mm) or wall tile (100/150mm), a 2.7m floor-to-ceiling height and a healthy 9m span.

When working on our issue theme of numbers we could see plenty of avenues

to explore, from the way numbers often provide the most persuasive evidence (as Nicholas Boys Smith writes, page 10) to how they are being used by practices to explore space in more interesting and nuanced ways (I am thinking about you, RCKa and ZHA, see page 20).

I was fascinated by the psychology of numbers. What insight might we uncover from the numbers shared from the core of your professional experience? From my limited, informal set of vox pops (page 26), I found out less about how numbers influence design thinking and more about where numbers are now invisible; in the process of design itself.

My amateur, possibly cod-psychology theory is that computers have already relieved architects of many of the measuring and calculating tasks of yesteryear. Even when we hear of obsessive detailing and craft-style

working methods with architects drawing every brick, the actual measures of said bricks are rarely being meted out each time with a ruler and set square.

Scale is distant from the dimensions of every day when shrunk to a 16-inch computer screen which can show a whole airport or an eaves gutter detail. You can snap to grid, or zoom to infinity and beyond on a BIM model. And perhaps the illusion of control over dimensions means that the lessons of Neufert, that bible of data mapping our bodies' needs against space, can get lost as we focus at, perhaps, the wrong scale.

There are many ways of imagining space and form now at our fingertips without the need to be a calculating genius. But, however you work, resist the temptations of abstraction – don't lose touch with numbers that make up human dimensions. ■

DWELLING ON THE PAST

WORDS

Flo Armitage-Hookes

The heyday of council housebuilding was in 1953. Sources dispute the exact number of completions, but social historian and Municipal Dreams blogger John Boughton puts the figure at 229,305 homes. He pulls a worn orange book off the shelf – *State Housing in Britain* by Stephen Merrett – flicks through the dense pages and points out the figure. I'm convinced, and scribble out the internet's various guesstimates.

Either way, the record set 73 years ago is staggering compared with the meagre thousands of council homes built in the last year. In the midst of postwar shortages and austerity, how did Conservative housing minister Harold Macmillan manage it?

Housing was the urgent issue of the day, for both government and people, Boughton says: "The belief that housing needs should be met and wartime sacrifice rewarded was enormous."

The first majority Labour government took to the task with zeal in 1945 but lost the 1951 election to the Conservatives, who pledged to build even more homes.

The legacy of wartime state controls also fast-tracked delivery. "This is a Conservative government which is really applying the full levers and means of state power to build at scale... local councils are forced to prioritise council housing," explains Boughton. The drive was backed by the Treasury, which continued housebuilding subsidies from 1946 into the 1950s.

To hit the big numbers, space standards were relaxed. Under Welsh politician and NHS founder Nye Bevan, three-bed council homes were an average of 1,055ft², reduced to 750-800ft² under Macmillan. Even so, notes Boughton, "it wasn't noticeably inferior housing". The rise of prefabrication was also crucial, with the government keen to transfer

wartime manufacturing capacity into housing. "With an asterisk in terms of its long-term benefit," Boughton cautions, as many prefabs had defects by the 1980s.

So what did a typical 1953 council home look like? No sweeping decks of Sheffield's Park Hill or soaring concrete of Balfron Tower – all that came later. They were polite, low-rise brick buildings. "The English myth of itself is the house with a front door. So there was a degree of resistance to any form of modernist multi-storey housing," says Boughton.

The postwar period has re-entered the political conversation, as a reference point for Labour's current ambitions for council housing. Looking at the homes built in that record year of 1953, it's hard to draw lessons that could apply today; the context is almost incomparable. Yet it's clear that robust political and public willpower and ambition will be needed to make even a dent. ■



Left: Somerford Grove in Hackney, designed by Sir Frederick Gibberd and completed in 1949, typifies the low rise, brick council housing which continued into the early 1950s.

A History of Council Housing in 100 Estates, by John Boughton is available from ribabooks.com

"OUR HERITAGE HAS BEEN STUCK IN THE PAST DUE TO A LACK OF RESOURCES"

VIRTUE OF NECESSITY

WORDS

Charlotte Banks

Out of Tallinn's neglected Soviet architecture, Linnahall attracts the most intrigue. Built as a temporary structure to host the regatta at the 1980 Moscow Olympics, the wide concrete ziggurat later morphed into a brutalist fun palace, hosting an ice rink, concert stage and nightclub. Since pervasive leaks and structural erosion forced its closure in 2010, it spends most of the year cordoned off, left to slowly succumb to its wounds.

This autumn, Linnahall will briefly reopen to host the core exhibition of the 2026 Tallinn Architecture Biennale. The theme, *How Much?*, was inspired by the city's abundance of unloved heritage left uninhabitable for want of funds. "As a young office, [feasibility] and the question of budget is something we think about every day," says Kertu Jõeeste from Stuudio TÄNA, which is co-curating the biennale with Mark Alexander Fischer and Mira Samonig. "We're dealing with this architectural heritage of Estonia that has been stuck in the past because of a lack of resources."

The 14 international practices featuring in the exhibition have interpreted the titular question in diverging ways. Finnish firm Avarrus

Arkkitehdit's installation *Simply Massive* celebrates the economy of the humble brick structure, demonstrating the material's potential for natural ventilation and passive heat storage. Other practices criticised cost-cutting: Swedish practice Secretary offers a life-size recreation of a hallway space, where hanging clothes tangle with phone chargers, protesting their disappearance from new housing developments.

The curators also challenged practices to design an installation exemplifying 'budget bougie', a sense of luxury with limited resources. Picked out of 130 competition entries from around the world, Shanghai and Tokyo's AruMa Architects' winning pavilion, *Resonance*, is described by Jõeeste as "pushing new aesthetics out of really simple materials". A lattice of plywood tied with ropes to a central gabion pillar creates shifting patterns of light and sound. It stands outside the Estonian Museum of Architecture, repurposed from a century-old salt storage unit, putting the drama of its subterranean limestone vaults to effective use as exhibition space – a model, perhaps, of the biennale's ethos of frugal reinvention. ■

Right: The Existing as Opportunity – Circularity as Vision, by baubüro in situ, on display at Linnahall.



THE EYES HAVE IT

WORDS

Nicholas Boys Smith

Surveys that quantify public opinion on design are a powerful tool – the numbers grab attention, demonstrate support, and can improve our buildings, too

Below: Polling the public gave polemical weight to a proposal for Bath rugby stadium by Jakub Ryng and Mark Wilson-Jones of Apollodorus Architecture.





Left: A visual preference survey helped to prove popular support for KPF's Shoreditch Works scheme in east London.

This summer, Deltapoll, commissioned by Create Streets, showed a representative sample of 2,095 British people two pictures of the same Pimlico street. They were identical but for the street's right-hand side. One photo showed the building there today, a quintessential example of recent 'contextual' London design. The other showed Victorian terraced homes of comparable height copied from the street behind. There was no verbal commentary. We asked a simple and neutral question. Which do you find more attractive? The answer was not even close: 83% chose the terrace, 17% the existing building.

The preference was broad as well as strong. Labour, Liberal Democrat, Green, Conservative and Reform voters agreed. People who voted for and against Brexit agreed. Rich and poor, north and south, east and west, young and old agreed. In an age where politics, culture and social media are ripping us apart, place preference can pull us together.

One politician to whom I showed the poll was staggered. But he need not have been: it was the latest in a long run of similar findings. Since the 1990s, around 20 properly sampled and controlled A/B visual preference surveys have been conducted, mostly in Britain, America and the Netherlands. With varying visual precision, others have been run in Canada, Portugal, Norway, Greece and Chile. The results, so far, all point the same way. By strong majorities, the public consistently prefer more traditionally conceived streets and buildings with detail, biomorphic forms, variety within a coherent pattern and more textured building materials.

A 2009 British comparison of medium-rise commercial buildings found 77% preferring more highly textured and

coherent designs over prize-winning modernist ones. A 2020 American comparison of seven US courthouses and federal office buildings found 72% of Americans favoured classical over modernist designs. The preference was true for both Democrats and Republicans.

Create Streets has used visual preference surveys to build support for development, stimulate debate in the media and on podcasts, inform local officials and politicians, and discover public preferences when development proposals prove locally unpopular. Our findings have been remarkably consistent and consistently broad. We found 74% in favour of a classical Bath rugby stadium versus a glass one; 69% for a brick HS2 viaduct over concrete; 71% for a Gothic library at Christ's College, Cambridge; and 79% for retaining and extending a neo-Georgian facade on Oxford Street over the approved, more mechanistic alternative. The preference always cuts across all demographic groups.

Our recent visual preference survey on the recent Shoreditch Works scheme showed people will back higher buildings over shorter ones when they prefer them. A proposed new design by KPF has more detail, texture, and 'coherent complexity' than the existing, much shorter, loveless lump. Despite its much greater height, it was preferred by 78% versus 21%, yet again a preference shared across society. Height is not the problem. Ugliness is.

Our Shoreditch survey also showed visual preference surveys' practical power. Demonstrating broad public support turned the Shoreditch Works scheme into a cause célèbre, attracted press coverage and, we are informed, helped persuade local councillors to vote for the excellent

proposal in the teeth of officials' oddly desperate opposition – and in a chaotic planning meeting.

Although less statistically robust than representative national opinion polls, Create Streets also uses our proprietary online platform, Create Communities, to crowdsource data on people's favourite and least favourite places and buildings. This informs much of our masterplanning and design-code work for landowners, councils, neighbourhood groups and developers. Time after time, we get clear spatial clustering in the types of places people prefer (historic centres, older streets and well-managed parks) versus the ones that they don't (wide roads, oversized and faceless buildings). Having hundreds or even thousands of such data points has helped build the case for street trees and improving street design, for new homes and for 'gentle density' development. It has underpinned masterplans and councils' design codes across the country.

Self-evidently, urban design and architectural judgement require more than counting votes. Serious questions of movement, parking, structure and cost cannot be settled by opinion poll. But nor are the public fools for strongly and consistently liking decoration, warmth, rhythm and local character. Architecture is a public art, which shapes our common home. What people feel about it matters.

Ask the public what they like. Do it clearly, fairly and visually. Count what they tell you. And then be prepared to listen to what they say. ■

Nicholas Boys Smith is the founder and chairman of Create Streets and a visiting professor of architecture at the University of Strathclyde

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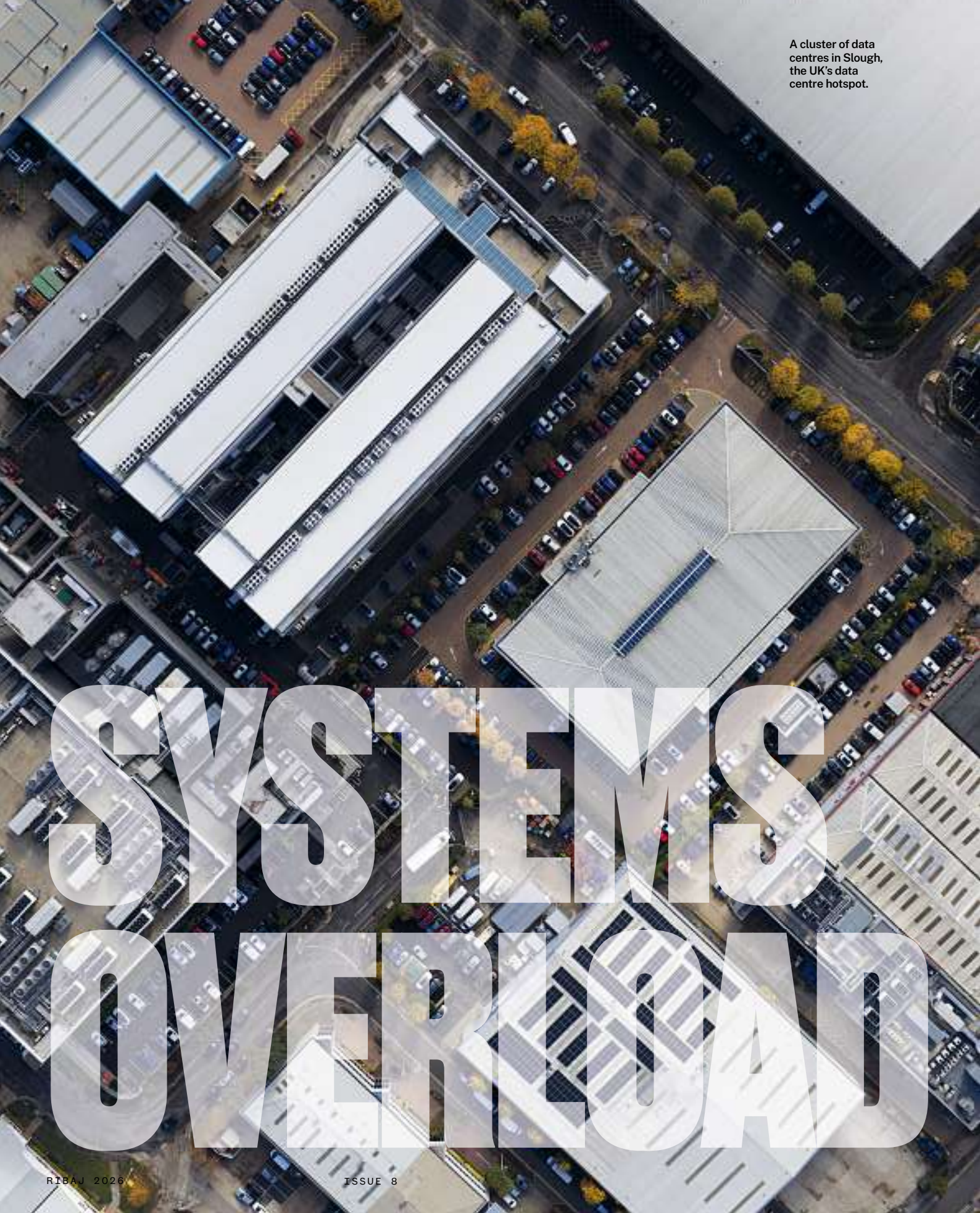
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An aerial photograph of a large industrial and commercial area in Slough, UK. The image shows several large, modern buildings with white roofs, likely data centres, surrounded by extensive parking lots filled with cars. The area is bordered by roads and some trees with autumn foliage. The overall scene depicts a dense cluster of data centres.

A cluster of data centres in Slough, the UK's data centre hotspot.

SYSTEMS OVERLOAD

Numbers around data centres' impact are simply head-spinning. We looked into some of the UK's biggest schemes in an effort to make sense of things

WORDS
Charlotte Banks

For decades, data centres were an almost invisible infrastructure powering our digital lives, secluded within anonymous industrial estates and designed to blend in with their surroundings. No longer.

As AI sends demand for compute power to unprecedented levels, data centres are far outpacing other developments in their size and demand for resources, attracting spending that would make Marie Antoinette blush. To investigate what this might mean for architects, RIBA J looked at the data behind the data centres, using a snapshot of 10 of the biggest such schemes approved for construction in the UK.

For the eight data centre projects with disclosed development values the bill adds up to £37.5 billion, not far off the £39 billion set aside for the government's Social and Affordable Homes Programme 2026 to 2036, for building 70,000 homes across England. The same amount of money could almost buy you two Elizabeth Lines (£18.9 billion, estimated in 2022), or nine or 10 new towns, which

government-commissioned research prices at £3.5 billion to £4 billion a pop.

Sums like that pay for a lot of space: the 10 data centres combined cover around 320ha, about the size of Hyde Park plus Regent's Park. Most of that would be taken up by the planned Elsham Tech Park campus in North Lincolnshire, which proposes 15 hyperscale data halls over 150ha – enough alone to cover four Canary Wharfs.

It's a large footprint for a building type few will ever get to see inside. "Commercial buildings may have some kind of plant or electrical equipment inside, but that's nothing compared with the scale of electrical equipment you have in the data centre," says Mario Iacobacci, head of construction and infrastructure advisory at Oxford Economics. "That's all there is, in fact – it's filled up by it."

Unlike homes or offices, where energy use varies by time of day and season, data centre occupants demand constant uptime. Nine of the approved data centres within RIBA J's sample have

a combined power capacity of 3.7GW – more than 3% of the UK's current electricity generation capacity, 107.5GW. Collectively, these 10 data centres plan to use nearly 13TWh (13 billion kWh) of power each year. The average household used 3,299 kWh of electricity in 2024, meaning nearly four million households' worth of electricity will be needed to power just 10 data centres.

Importantly for architects, many of these data centres are planning to source their electricity from the grid, where their oversized demand for power is already muscling out other types of development from being able to access an electricity supply. This played out dramatically in the data centre hotspot of west London in 2022, when the electricity network in three boroughs reached maximum capacity, leaving new homes with no hope of connecting to the grid until the late 2030s.

"We have an issue at the moment in the UK where there's a demand connections queue that's very, very

large and data centres are making up a good half of all requests to access the grid,” says Tamsyn Lonsdale-Smith, senior energy analyst at consultancy Regen. “So that’s going to be in direct competition with housing developments or the electrification of industrial load.”

Competition for electricity isn’t the only way data centre growth is likely to disrupt the development market. Iacobacci, whose patch is North America, wrote in June that US tradespeople are shifting course towards more lucrative data centre projects as they begin to overtake office construction in value, pushing up labour costs for everyone else. Inkling of a similar dynamic are emerging closer to home: in the same month as Iacobacci’s report, Turner & Townsend reported that the rapid growth of advanced industries such as data centres was “driving up demand

for specialised trades faster than the workforce can adapt”, especially for MEP technicians.

Disclosed water use within our sample varied widely, depending on what kind of cooling systems projects opted for. There seems to be no way of designing around data centres’ heavy resource use, though: a closed-loop cooling system, where the same water is repeatedly recycled, requires far more electricity than mechanisms that consume a lot of fresh water.

That water and electricity demand, combined with the amount of concrete that will be poured to create these megaliths of computing power, leaves a hefty carbon footprint. The average data centre in the sample emits 63,437 CO₂e/m², 104 times more carbon than the average new-build home, according to Future Homes Hub research.



SHUTTERSTOCK/NAKE MORE AERIALS

Above: A data centre near Cardiff.

The data behind 10 of the biggest data centres with planning permission at the time of print

Location	Developer	kWh/year	GDV (£bn)	MW	GEA (m²)	Operational carbon (kg-CO ₂ e/annum)	WLC/m²	WLC (kgCO ₂ e)	(Water m³/ annum)
Hillingdon (Hayes Digital Park campus expansion)	Colt Data Centre Services	1,160,485,801	2.5	250	108,306	Undisclosed	1,741	188,618,582	3,171
Epping Forest	Alphabet	2,011,296,000	Undisclosed	163	Up to 77,148	419,427,000	Undisclosed	Undisclosed	Undisclosed (dry cooling system)
North Lincolnshire	Elsham Tech Park	3,679,200,000	10	1,000	Up to 1,500,000	772,447,046 (nine-year avg Scope 2 emissions)	Undisclosed	Undisclosed	14,416
Hertsmere (South Mimms)	Equinix	505,913	4	250	187,000	6,056,000	Undisclosed	Undisclosed	Undisclosed
Northumberland	QTS	502,102,440	10	1,100	540,000	56,534,740	Undisclosed	3,004,614,000	11,340
Buckinghamshire (Court Lane)	Corscale	3,504,060	1	140	Up to 65,000m²	470,610	Undisclosed	Undisclosed	Undisclosed
Leeds	Microsoft	1,465,854,980	4	Undisclosed	118,206	440,004,680	232,153	27,132,670,863	22,840
North Lincolnshire	Humber Tech Park	1,664,400,000	3	384	Up to 309,000	387,805,000	Undisclosed	Undisclosed	Undisclosed
Newham	Ada Infrastructure	721,150,591	3	210	Up to 213,239	20,916,187	1,845	125,851,000	Undisclosed (dry cooling system)
Ealing	International Trading Estate	1,610,528,040	Undisclosed	205	158,702	Undisclosed	18,008	3,236,394,150	Undisclosed
Total		12,819,027,825	37.5	3,702	Up to 3,276,601	2,103,661,263	253,747	33,688,148,595	51,767
Avg		1,281,902,783	4.7	411	Up to 327,660	262,957,658	63,437	6,737,629,719	12,942

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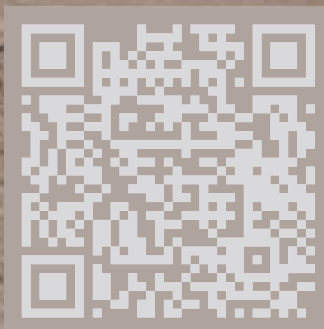
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Data centres' eye-watering carbon impact makes itself clearest when considered cumulatively. Of the five data centres in our sample that reported their expected whole-life carbon emissions, the total added up to 33.7 million tonnes, just under the carbon cost of all flights that took off in the UK in 2024. Just five of the data centres under construction plan to emit more carbon across their lifetimes than Hong Kong, a territory of 7.5 million people, does in a year.

Yet more concerning figures emerge when considering how data centres – which are increasingly edging their way into inner cities – will impact their neighbourhoods. A non-peer-reviewed study published online in April suggested evidence that temperatures rise around 2°C in areas around hyperscale data centres, while a University of Sydney study estimated global temperature changes caused by centres' cumulative CO₂ emissions could result in the loss of 3.5 to 14.1 million Australian bees a year.

Our brief overview of projects may only be a small sliver of what's to come. The sample is limited to data centres with planning permission, but dozens more major projects are in earlier stages of development. Stuart Okin, director of cyber regulation and AI at Ofgem, told a conference in May that 100GW worth of data centres are queuing for a grid connection. NESO, which operates the grid, has a much more modest outlook, estimating the UK will have 8.74GW total connected capacity by 2036.

"I do think the queue is not as large as it seems," says Lonsdale-Smith. "We are in an economic bubble and various players within the industry are very keen to make sure they're the ones involved in the sector as it moves forward. That's why you see a lot of speculation – developers are hedging their bets across several sites."

With so many of these headline figures still uncertain, architects may do well to run their own numbers before venturing into this new frontier. ■

Above: Rows of server racks in a London data centre.

WORDS

Flo Armitage-
Hookes

BIG

DATA

Sector experts explain how architects can get to grips with analysing huge data sets with AI tools, and two ways such techniques are being used



Fani Kostourou, HLM Architects

Tips for working with complex data

Data and analytics are rapidly becoming indispensable to architectural practice, shaping design decisions and helping clients understand the value behind them. But amid the race to adopt new tools, it's important to get the fundamentals right.

We asked Fani Kostourou – spatial data analyst at HLM Architects, architect, and associate lecturer at UAL – how practices can best approach working with complex data.

HLM Place (prototype) is a tool developed by the practice to help clients identify opportunities and prioritise actions on their estate using dashboards.



1. Start with the design question, not the dataset

"It is very easy to get lost in a massive amount of data, spend time cleaning, preparing and transforming it, only to realise that you don't need 80% of it. Before you even submit the bid or at the very early stages, you need to decide exactly what data is important for what you want to measure, check, test, create or design."

2. Agree data standards early

"There can be a lot of back and forth to agree on data formats, standards and capturing methods, so that we make it as smooth as possible between different teams."

3. Question your data sources

"Where does the data come from? Who produced it? Who owns it? Is the data complete? Is there bias in it?"

4. Learn how to clearly communicate analysis

"You need to be able to communicate different levels of insights to different levels of expertise. Provide examples that might be relatable to different teams, give definitions and don't assume that people know acronyms. It will make you a better professional, because if you can say the same thing in different ways, then you really know what you're talking about."

5. Use strong visuals to empower clients

"Instead of a report that nobody uses, give the client a tool to visualise the data and see all the different options so they are able to make the decisions themselves. Dashboards are becoming increasingly popular and I've seen them be very effective with different types of people."

6. Match the investment to the practice

"Investing in digital trends is important. But you need to do it in a way that works for the business, for the type of portfolios and clients you're dealing with and the direction that you see the practice going in. Some offices have the capital to develop their own tools in-house, but a lot of things can be outsourced. Partnering and collaboration can help you look forward and embrace change."

7. Adapt before you build

"HLM offers very bespoke dashboards for each of our projects and clients. But you always have to ask: is it worth building an entirely new application from scratch for this? Or can I just use the software that is out there and create something bespoke that still delivers the result I want and what I've promised to the client? It's always a balance."

8. Validate AI outputs

"AI can help you write code and run analysis faster, but it cannot work alone and cannot think for you. You need to always fact check and do manual validation of the results it produces."

9. Know your data governance

"As a business, we have AI policy guidance and very strict data security protocols and processes. We know where the data come from, where it is stored and how it is processed. It's part of what we sell to the client."



**Arjun Kaicker (left)
and Ulrich Blum (right), ZHA**

Creating AI-driven dynamic workplaces

What if your office reconfigured with the seasons, the number of meetings scheduled, or even your personality? Would it improve how you collaborated, worked and felt? According to Arjun Kaicker and Ulrich Blum, co-heads of ZHA's analytics and insights team, you may not have to wait long to find out.

Founded 10 years ago, the specialist team has been developing rule-based algorithms and AI-driven analytical tools to help design highly user-focused and flexible workspaces. "We're moving away from a world of one size fits all – to lots of sizes fits one," says Kaicker.

First off, interested by the Allen curve (the theory that communication frequency falls with physical distance), they created an algorithm that measured distances between desks to quickly compare the collaborative potential of layouts. With the help of large language models (LLMs), this has become an interactive web app which, as the designer changes the floorplate and position of the core, calculates the impact on visibility, daylight and more, enabling real-time testing and optimisation. "It's kind of like giving architects a third eye, because you can suddenly visualise in ways you weren't able to before," says Kaicker. The latest updates were vibe coded in two weeks. Two years ago, before vibe coding, it would have taken about six months, the co-heads tell me.

Currently, the team is experimenting with automated space-planning tools to devise more tailored and adaptable layouts. Research from their own London studio in 2022-23, using IoT sensors and booking systems, showed that every member of staff needed to work in varied ways, regardless of their role or character.

"To support staff effectively, we need an increasingly dynamic environment – that was a revelation to us," says Kaicker.

At the design stage, ZHA now uses AI agents – fed with known user data, such as job types, calendars and personality assessments – to inhabit floorplans and simulate different kinds of days. "We can learn where there would be more sound, where it's noisy, where people see each other more often during the course of the day," says Blum. "It's almost like doing a post-occupancy evaluation before you've even finished the design," adds Kaicker.

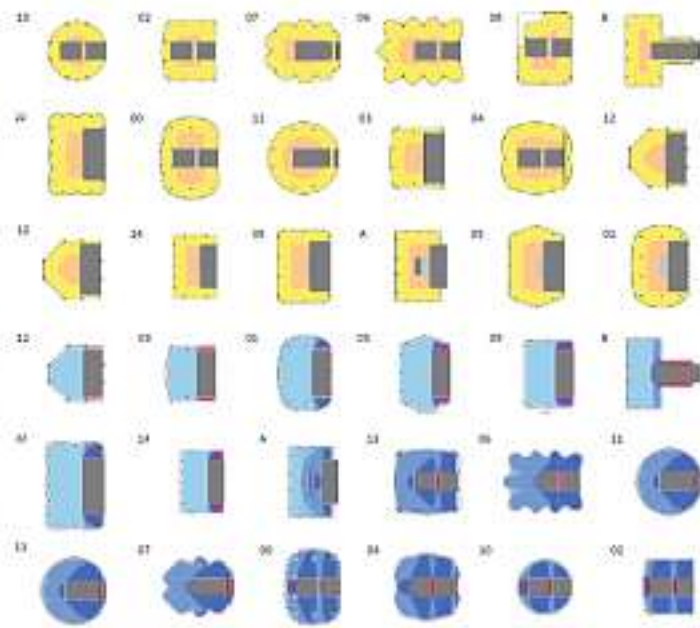
Building in workplace flexibility is more expensive, but clients increasingly value it. In a fast-changing sector, with work from home fluctuating and AI creating uncertainty, they know fit-outs could become outdated quickly. Plus, with sustainability and reuse rising up the agenda, there is pressure to "get more out of the resources we put into these buildings and furniture", says Blum.

This could provide opportunities for architects post-completion, and the co-heads are calling for an industry-wide mindset shift. "Architects step away far too quickly from a design," says Kaicker. "You don't buy a phone and it remains exactly the same forever... this is like software updates in a building." Usage could be monitored, analysed and floorplans fine-tuned every month or even week. For now, this would involve facilities managers lugging furniture. Yet the co-heads don't think we're far off from robotic solutions, with desks auto-shifting at the end of each day.

Overall, AI isn't speeding up architecture. However, Kaicker and Blum believe it's transformed how they can relate to the user – and helps deliver better buildings. "It reveals more complexity, but it also lets us handle more complexity," says Blum.

Opposite above:
An algorithm helped designers assess floorplate options for ZHA's The Henderson tower in Hong Kong, completed in 2025.

Opposite below:
The practice has now developed a simulation tool to conduct post-occupancy-like evaluations on potential floor plans and furniture layouts.



MOVEMENT HISTORY MAP



SOUND MAP



VISION MAP



ENCOUNTERS MAP



Russell Curtis, RCKa

Tools to analyse small sites' potential

Sitting in the public examination of the London Plan in 2020, RCKa director Russell Curtis saw the housing target for small sites crumble. A proposed 245,730 new homes over 10 years, based on historic delivery data, was picked apart by planning authorities and ultimately slashed to 119,250. "It felt like a failure of the evidence. It occurred to me that... surely we can find a way of finding the sites," he recalls.

What started as an intellectual exercise has evolved into a government-funded geospatial AI tool that identifies and assesses small sites. Its analysis informed the next London Plan and first London Small Site Design Code, written by RCKa and published in September 2026. The tool is a game changer for planners and has launched a new revenue stream and area of expertise for the practice.

Initially, Curtis used open-source AI algorithms and open-access data from the Land Registry and Ordnance Survey to build a proof of concept in his spare time. It drew on the practice's taxonomy of small site types, which it established working on a small sites SPD for Lewisham Council in 2021.

However, it wasn't until RCKa was awarded £100,000 from the Ministry of Housing, Communities and Local Government (MHCLG) PropTech Innovation Fund across rounds in 2024 and 2025 that the studio was able to properly develop the tool and dedicate practice time to it. "It gave us access to better quality data, high-resolution mapping data and the resources to build a more effective tool," explains Curtis.

LLMs hitting the mainstream also proved transformative. RCKa had been appointed to work on the London Small Site Design Code and needed to map the

capital and assess more than 2.1 million freeholds. The timing couldn't have been better. "When we first did it, it took us about a month to process an entire borough... with Claude and the new AI tools that we had, it took us a day per borough," says Curtis.

RCKa's work identified the potential for 850,000 new homes on London small sites, and was included in the Strategic Housing Land Availability Assessment (SHLAA) for the new London Plan. With viability, capacity and other factors taken into the account, the plan has set the 10-year housing target at 558,451 units across all sites. Surprisingly, there's no longer a requirement for authorities to deliver a specific proportion of their targets on small sites. "I imagine they think the new design code is enough to push small sites forward," speculates Curtis.

Could the tool be utilised by planners in other areas or even towns? RCKa believes so and has been in discussion with local authorities in Liverpool, Bath, Somerset and Brighton. "It gives you an idea of how many sites are available, what type there are, and what policies you might need to bring in to encourage

development. It makes your evidence base more robust and allows you to focus your efforts on the site types that occur in high frequencies," Curtis says.

From an architect's perspective, the tool can't reliably search for specific sites; there are time lags and key factors, such as ownership, level changes and tree positions, that are not yet incorporated.

However, Curtis believes that architects will benefit from RCKa's London Small Site Design Code. "It reduces the uncertainty over the principle of development of a particular site," he says. "Therefore the effort goes into doing a good job of making sure the application gets a fair hearing and is approved."

He's also already mulling over other issues and opportunities where AI could prove transformative – from identifying previously developed land in the green belt to winning work from planning applications that have failed on design grounds – and is encouraging other architects to do the same. "People are using AI to write documents... but it has far more impact if you're using it to try and solve a problem that you've previously identified," Curtis reflects. ■



Below: RCKa's Small Sites AI tool has identified the potential for 850,000 new homes on small sites in London.

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NUMBERS THAT DRIVE DESIGN

What are the numbers architects and their colleagues keep near at hand, which drive design or just recur in their work? We asked people in and around the sector for one key figure, and got some surprising answers...

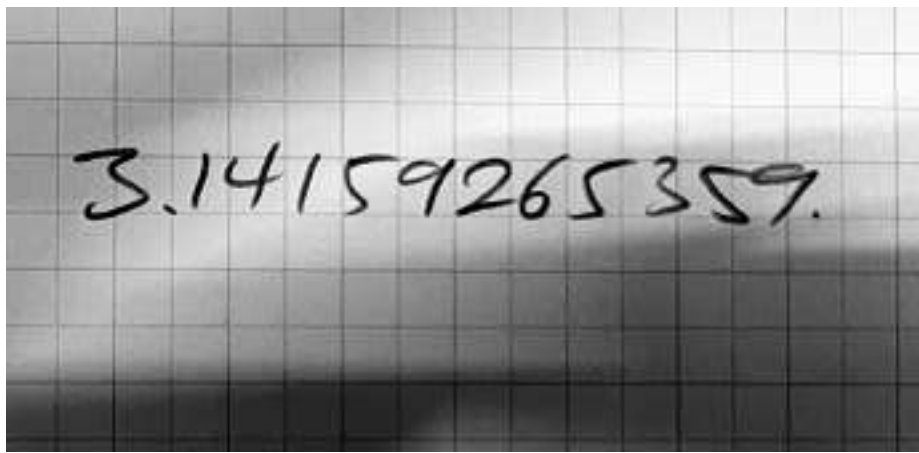


Sadie Morgan: Making a case

When I contacted Sadie Morgan, asking her for a number, she shot back the number six immediately. Why, I asked her? “Reflecting on the work I do now, having stepped back from dRMM, and being active as design principal on the National Infrastructure Commission, six themes has always instinctively felt right. It is as many ideas as anyone can carry round in their head. And there is something very rounded about it. In frameworks we have always relied on that.” Equally, she uses six in the Quality of Life Foundation, which she co-founded in 2019: “It is, for me, about making a case, and being memorable.”

WORDS

Eleanor Young



Steve Webb: Circles and the void

"The number I use all the time is pi," says structural engineer Steve Webb, founder of Webb Yates Engineers and sometime RIBA columnist. "Pi comes up in everything: trigonometry and volumes and areas and reinforcement bars and just, you know, pi, pi, pi all the time."

And then the conversation gets deep. "When I think about pi, it gives me this kind of tingly, weird, feeling all over like a sort of terror of the void," he says. "It's like a circle's circumference related to its diameter is an infinitely long number, 3.142 – it goes on and on; it's like it's from God, you know?"

"I mean, could God have changed that ratio? And you think, no, this is beyond the power of God, because a circle and a straight line, no matter how powerful the god is, you can't change the relationship. So if God isn't in charge of this, well then how can there be a God? I don't know, it just makes my mind explode with thoughts about the universe." Steve is an atheist, so these are unsettling thoughts.

I interrupt to ask when Steve uses pi, looking for solid ground so I don't fall into the void alongside him. "If I want to work out the surface area of a cylindrical object or the cross-sectional area of a round one, like a bar or a bolt, or the shear resistance of a bolt or the tensile resistance of a bar," he says. " πr^2 is a cross-sectional area of a reinforcement bar; multiplied by the strength it gives you the tensile strength. But also it's when you have deflections of beams, they curve radially; you work out the deflection using pi and Pythagoras."

Steve always likes to go back to calculations. "When I'm doing them, I feel that I'm dealing with truths and not lies," he says. "And I think that there's something very purifying, because there's no subjectivity."

Sabrina Klor: Questioning utilisation rates

Architect-trained CEO Sabrina Klor has built one pillar of her executive career on making valuable business decisions by bringing together the right human, fee and project data, first at Broadway Malyan and now at 10 Design. During the interview we speak about a particular utilisation figure. But due to commercial and potentially team sensitivities let's just refer to it as X%.

"Utilisation is a pulse check on the business," she says. Utilisation is the percentage of billable hours worked. So a high utilisation rate should mean the team is running at peak performance, right?

"It is quite a controversial topic," says Sabrina. So this is a number that she is questioning: "I am most interested in the questions behind the number itself. It tells me things like whether our teams are working on the right projects, and if we are delivering within the agreed scope on fees, and it can give a clue to people being under pressure if the utilisation is very high."

But there is one question that is critical for future of the practice. Do the teams have time to do other things, like learning? "Tech is evolving so fast, we will not be able to use it if we don't have the skills. We used to change software every 10 years, now it is like every six months. Are we going to be the bottlenecks?"

"We need to convert our businesses into learning academies; learning must be part of the day-to-day work," she adds. "Otherwise, we are going to be obsolete."

And will tech put the X% target utilisation measure itself out of use? Sabrina speculates it might: "We might not need such a high level of utilisation to deliver the same level of productivity."

Below: 10 Design's Pier Sixty-Six, in Florida.





Tim Callaghan and Nim Attanayake: Beyond binary

Tim Callaghan starts off firm but tongue in cheek: “Three is the magic number.” But soon, the chat is tumbling along between him and Nim Attanayake, the architect-directors of nimtim. “When we think about presenting ideas we do three; it is not overwhelming,” says Tim. “It has more choice than one,” interjects Nim. “Any less and there is not enough choice,” completes Tim. “And it is not binary.”

They use three when talking about their architecture. Tim: “You have thought of so many things in the course of a project... three ensures you boil it down.” They use it when telling stories of projects, and when writing press releases and text for the website. It works for responding to bids too. Nim: “We have not set out to choose three. It just happens naturally, and you notice it.”

Three also matters in practice. There are three leaders: Nim, Tim and studio manager Sarah McIntosh. “Two may disagree, once it’s three you have a way forward,” says Nim. It is a good number for design conversations – “small enough not to get bogged down in opinions, but everyone has a voice”.

The third of three points on three is on composition. Tim: “We are doing quite a lot of landscape work, and you do planting plans in groups of three; from elevations, to buildings in a masterplan, three is the threshold for a group.”

We go off piste when Nim gets to a fourth point and muses: “When we were two we were a couple; we got a dog which made three, and then we were a family.”

Nim and Tim’s Joyful Spaces: Designing Together to Create Meaningful Architecture is published by RIBA Publishing

Anu Sabherwal: Net zero targets

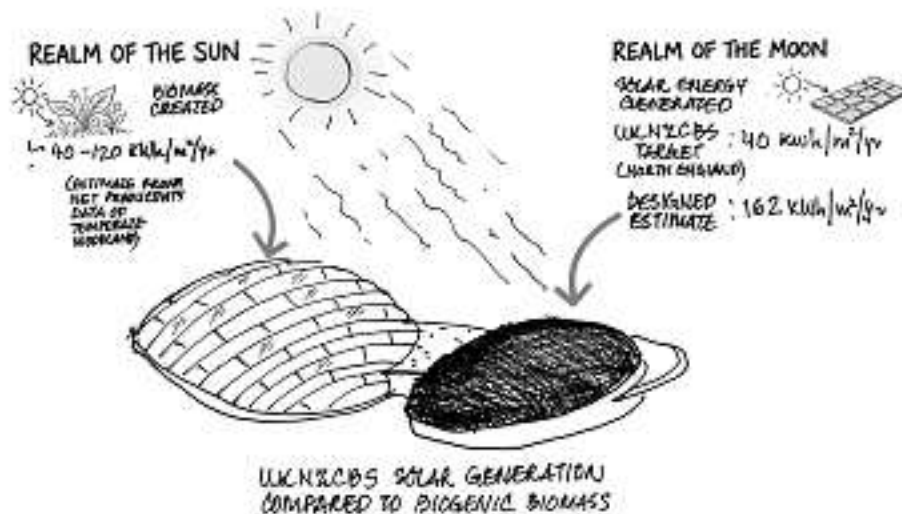
Unsurprisingly, given its reputation, the Eden Project wanted to align fully to the UK Net Zero Carbon Buildings Standard when commissioning a new project in Morecambe from Grimshaw. Its painstakingly calculated targets to keep construction within the limits established at the Paris Agreement have been tested by a series of pilot projects.

Anu Sabherwal, head of sustainability (Europe) at Grimshaw, picks out one particular target that has driven the conversation on Morecambe recently: the target for solar generation of 40 kWh/m²/yr. Microgeneration has been subject to very broad-brush targets up until this point, says Anu. But this is precise, down to the definition of the footprint itself.

Given Eden is more than half biome, allowing light through for the plants inside, this was tricky. “It puts you in a corner,” admits Anu. It was agreed the biome made no sense to include. But on the remaining 3,500m², the rules applied.

And that is where a second target came into play. The target asked for photovoltaics to be less than 1,000 kgCO₂e/kWp. So commenced two months of research with four PV manufacturers. Thin-film PVs had to be explored since they have less embodied carbon – but what happened if there was a failure? The team considered thin-film copper indium gallium selenide; but what about levels of toxicity and the lack of a recycling scheme? In the end, they settled on panels in which the manufacturer swapped out virgin aluminium with 100% recycled material.

“The standard is an absolute pass and fail, but actually it pushes you towards certain technologies,” Anu concludes.



"THE WORLD IS WRONG ABOUT 13 BEING UNLUCKY – MY GRANDMA WAS RIGHT"

13

76

80/20

Stefan Behling: Family fortune

"In the Behling family, 13 is our lucky number," starts Stefan Behling, senior executive partner at Foster + Partners. "It started with my grandma, Hede Behling, who got to 103 years old – she saw that as a good sign. She always did a calculation of any numbers to see if they would get to 13 – even of number plates, then she would wave and explain and people always smiled. So I am mystified by the idea that it is bad luck – that you wouldn't have a floor 13 on a tower or a row 13 on an airplane. The world is wrong, my grandma was right!"

It might seem the Behling family is alone in seeing 13 as good luck, but Stefan has spotted an ally in Taylor Swift. And a strange coincidence, because even before she was famous they were using her figure in visualisations for lots of projects.

But maybe there is a logic to this mathematical positivity. "Just recently we did the Queen Elizabeth Memorial and 'tiara bridge', and we got deep into the rhythms and sequences, and the Fibonacci sequence." Thirteen is in there of course. "When you study proportion and relationships, 13 always appears as a cheeky little number."

Abigail Scott Paul: Mental impact

Heatherwick Studio's Humanise campaign draws on a personal conviction from Thomas Heatherwick, but much of its work has been about gathering evidence on buildings' impact. The north star for its global head, Abigail Scott Paul, has been a figure from an early survey of 2,000 UK citizens: 76% believed the way buildings look affects their mental health. "It's a reminder architecture and buildings are not a neutral backdrop; they have an emotional function," she says. "Architects, developers and others must understand this at the start of a project."

The campaign used it in its recent mayor's guide, which aims to inspire metro mayors and city architects to create a strong story about their area, and to use their influence over investment, land and planning to make the most of housebuilding and regeneration, while building pride in their places.

The 76% figure also sets the backdrop for a newly announced £1.5 million research partnership with the University of Glasgow and UKRI analysing "how human-centred design can improve lives, create lasting public value and support better social and economic outcomes".

Jay Morton: Unseen work

80/20 describes the value of architecture, according to Jay Morton, RIBA president-elect and director at Bell Phillips.

"There is 80% you don't see. And 20% that you see in the final building or final render," she says. "You can't get away from that 80% and the value of slow thinking and slow learning on a building or masterplan." For Jay, the ubiquity of AI makes the argument for both protection of function and "where you need a human to still be part of the conversation".

"AI comes up with thousands of iterations; you need to have that training and knowledge and life experience to analyse and understand that, and a gut instinct for what's the right solution," she adds. "I am always for securing a long time to prepare ideas, and to solve more problems."

And perhaps there are more layers to 80/20, like time measured against profit, and perfect being the enemy of good – which seems to be borne out by the huge amount of time the last 20% of a project can take. And a final one: "The direction of the project can be steered in the first 20% of the work stages." ■

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MONUMENT TO STONE

WORDS

Chris Foges

PHOTOS

Timothy Soar

Petra Heights, Groupwork's 10-storey apartment building in north London, continues the practice's championing of stone as a material that can create a truly zero-carbon building

Opposite: Steel cross-bracing helps stabilise a stone sway frame that carries both vertical and wind loads without an internal core.

Below: The tripartite building marks the station entrance.



We all have some idea about what a rational building might look like. Probably a bit machine-like, with lightweight, industrial components that betoken economy and efficiency. Repetitive, orthogonal and without decoration. Nothing, in other words, like Petra Heights. The 10-storey apartment building on north London's Finchley Road calls to mind some ancient monument – a massive henge of natural stone megaliths, hauled from the earth and stacked in an effusion of craggy textures and pinkish tones, eccentric shapes and seemingly whimsical flourishes. And yet this is a building born out of architect Groupwork's rare determination to resist the false logics of the construction industry and apply reason to a vital question: what would it take to make a true zero carbon building?

Groupwork began its enquiry more than a decade ago as the term was taking hold in the profession. "I was asking, 'What the hell does it actually mean?'," recalls practice founder Amin Taha as we tour Petra Heights. "Because we still build like we did in the 1980s, with concrete frames, steel shelf angles, suspended facades and all that stuff."

Investigation of 'zero-carbon' orthodoxy revealed vague ambitions and reliance on black-box technology or sleight-of-hand, amortising a building's costs over a very long life and ignoring what happens to materials at its end. Groupwork, in contrast, used whole-life assessment and data from the BSRIA to quantify the embodied carbon in conventional construction, and calculate how low that could go.

Biomass is the best option. Construct a building entirely from carbon-sequestering timber, add renewables, and it is carbon negative from day one. But as timber suffers from rot and fire, it's not ideal for external facades, or indeed foundations. So what's next best? Stone is abundant, surprisingly cheap, works as both structure and finish, and comes with a negligible carbon cost.

Taha reels off the numbers: 1m³ of stone produces just 36kg of carbon dioxide, mostly in diesel for quarrying and transport. The same volume of polyester powder-coated aluminium creates 36 tonnes of CO₂ – one thousand times more. For mild steel beams the figure is 11 tonnes. Structural stone is a no-brainer.

Taha backed his conviction by building a mid-rise home for himself and his practice: the Stirling-nominated 15 Clerkenwell Close, which was framed in rough-hewn limestone studded with fossils. He's now upping the ante with a larger self-built scheme in east London.

Acclaim for the Clerkenwell building, and Taha's charismatic advocacy, have also resulted in a welter of commissioned projects using structural stone bricks or frames. They include high-rises in southern Europe and Canary Wharf, and a newly announced residential scheme in New York, faced with CNC-cut sculpture.

Petra Heights is Groupwork's first large stone project for a commercial developer – providing 22 flats above retail – so an important proof of concept. The opportunity came courtesy of Camden Council. When a developer acquired the former dairy site next to the entrance to Finchley Road & Frognal station, the local authority made it clear that it expected real design ambition. Groupwork won the job with the argument that the location called for a landmark, playing a civic role once filled by banks and churches. "Urban node-making," as Taha puts it.

That justified an unusually tall residential building, with the quid pro quo that the developer would commit to high-quality materials. The use of stone was written into the Section 106 agreement when the scheme was consented in 2016.

The building is, in effect, a cluster

of three linked blocks, splayed to form a deep cleft in the street facade, with the upper storeys sloped back to avoid looming over neighbours and passersby. The arrangement does a lot to ease a big building comfortably into its setting. Breaking up the mass picks up the rhythm of Edwardian shopfronts, and reveals a delicate mesh-wrapped open-air stair that counterpoints the imposing weight of stone.

Groupwork was able to persuade the QS that it also made financial sense to choose an intricate form, and not simply extrude upwards from the site boundary. Avoiding a deep plan increases sellable floor area, more than compensating for the cost of additional facade.

Working with engineer Steve Webb of Webb Yates, the architects proposed an evolution of the system developed at Clerkenwell: a loadbearing exoskeleton of unreinforced stone, but this time with floors of cross-laminated timber, and no concrete core. Unfortunately that did not entirely survive a long gestation, during which the scheme was sold on twice as developers cashed in on planning uplift.

Changes that followed the first sale seem mostly beneficial. Two additional storeys below street level look out to an idyllic sunken garden next to the rail line. Splitting a triplex penthouse called for the addition of a quirky stepped bridge between blocks, reminiscent of M Hulot's rooftop walk in the Jacques Tati film *Mon Oncle*. It adds to a collection



Above: Stonecutting scars are retained as architectural detail.

Below left: North view along Finchley Road.

Below right: The lift core is a notable innovation; storey-height sheets of larvikite were made into stackable boxes, with all 13 storeys going up in a day.

Opposite: Stone is coloured employing a technique used in conservation work to produce an aged appearance.





of delightfully idiosyncratic features, including trees that sprout from the tops of stone towers, like the Torre Guinigi in Lucca.

When the scheme was sold for the second time, however, with groundworks already underway, the new owner sought to make a modest saving by swapping CLT for concrete. In fact, says Taha, this pushed up costs – more weight needed a beefier structure – and dramatically slowed work on site as every joint got more complicated. Even so, it's cheaper than conventional construction. Of course there was a big carbon impact too, though Petra Heights still saves an impressive 55% over a typical concrete structure clad in stone. Taha is disappointed, but not disheartened. “Ten years ago, two out of three projects did not work out how we intended,” he says. “Now it tends to be one in three.”

And the experience feeds into a growing body of stone know-how. Material selection for Petra Heights is a good example. Red Scottish sandstone was a good colour but too weak. Limestone fares badly in fire. So at the suggestion of stonemason Ateliers



Above: Stone glimpsed from a double-height penthouse apartment.

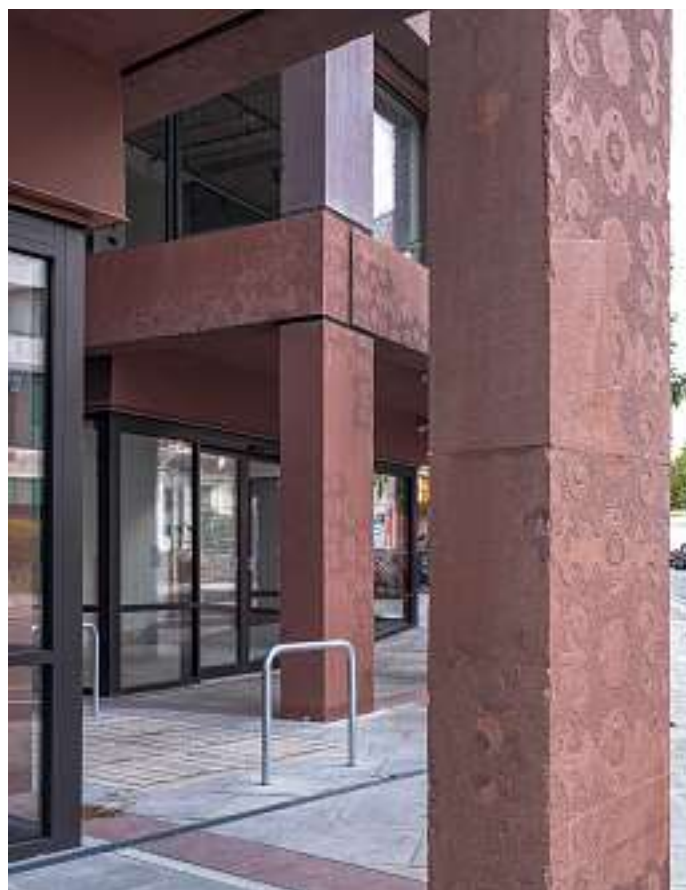
Below left: The project created a new public path next to the rail line.

Below right: An open colonnade could hold café tables.

Romeo, the architects chose Sicilian volcanic basalt, an iron-rich stone that complements the russet brickwork of surrounding streets. The lower floors were already up when Covid interrupted supply. As an alternative, Groupwork sourced grey igneous larvikite from Lundhs in Norway, adding a reddish chemical wash. Variation in the intensity of colour gives the whole building a mottled, almost Venetian appearance.

Smaller components would have made sourcing easier. And it would be possible to make a pre-tensioned frame from pieces a quarter of the size, says Taha. Instead, Groupwork's lattice of three-tonne blocks is held together by gravity and minimal metalwork in the form of steel dowels that stop the sway-frame twisting in the wind. Again, the choice is supported by compelling logic. One advantage is that the main contractor, Ernest Park, could take on the installation – something that is critical if stone construction is to become mainstream.

Equally important is that the outsized posts and beams dominate every view of the building, allowing inexpensive render and windows to sit behind while

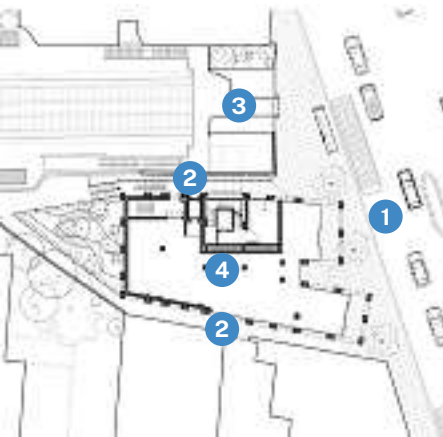


preserving the impression of substance and material quality. “You have to make a decision,” says Taha. “Do I spend more money on widening the stone, so it catches the eye and becomes the elevation, or on whatever system is behind that? More often it’s better to spend money on stone.”

Economy also underpins a broader architectural intention in the details. Blocks were prepared for building with the minimum number of cuts. Some faces are smooth, while others have one natural edge, or reveal drill holes, lending a varied texture and turning the whole facade into a clear evocation of the natural origins and working of stone.

Groupwork has had more fun with surface finishes at ground level, where passersby are drawn through a jinking colonnade that leads towards the station. Some columns are lightly etched with fragments of a Celtic pattern lifted from a nearby Edwardian spandrel. One post is carved with the names of the construction team, including project architect Dominic Kacinskis who did much to drive Groupwork’s exploration of stone, but sadly died earlier this year.

SITE PLAN

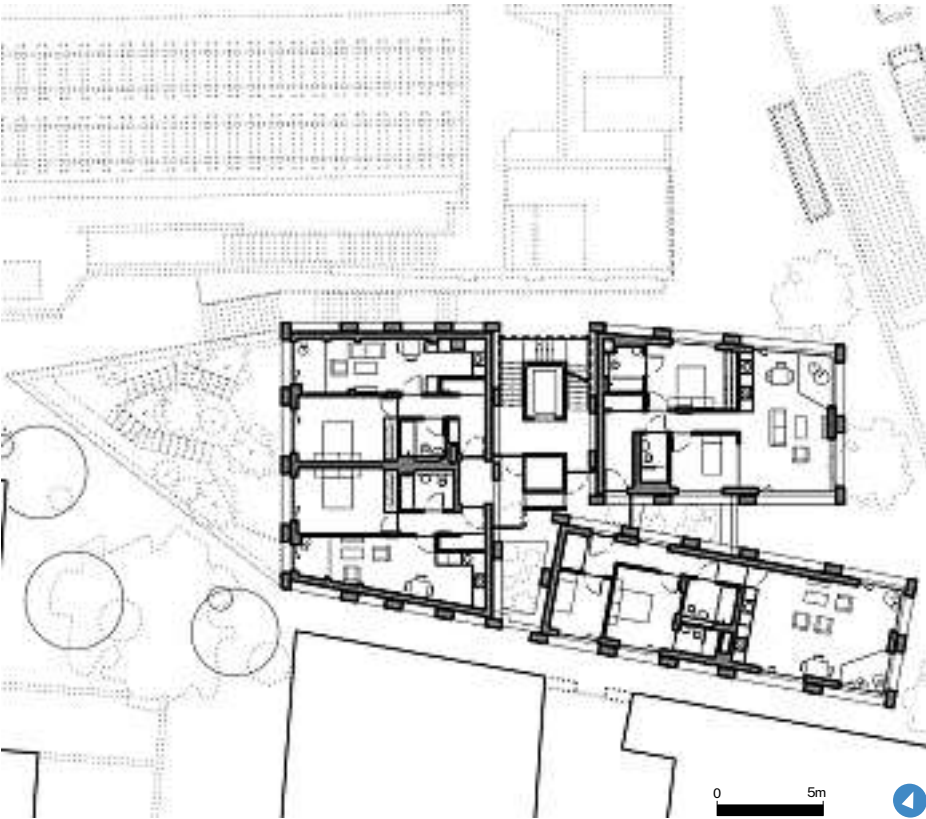


- 1 Finchley Road
- 2 Public route
- 3 Station
- 4 Retail unit

For residents, the sensory pleasures of a mineral environment continue within. The perforated metal stair wraps around a lift enclosure of knobbly, glittering larvikite. From the landings there are views between the close-spaced blocks, where the chipped and grooved stonework of dusty pink walls feels almost like a natural formation. In the flats, exposed concrete lacks the warmth of the intended timber structure, but organic matter remains visible from every window, with massive inclined stone beams framing sheltered balconies, or views of Hampstead’s green hills through walls of canted glass.

Having committed to an idea, Groupwork has followed it through with rigour and enthusiasm. The aesthetics will no doubt divide opinion, but with at least a couple of world-firsts in a building delivered under quite normal conditions, Petra Heights points to huge scope for stone. More than that, it is proof that well-founded argument can still cut through the inertia of an industry governed by rigid spreadsheets and unchallenged assumptions – opening the way for qualities that are harder to count. ■

FIRST FLOOR PLAN



CREDITS

- Architect, principal designer**
Groupwork
- Client**
317 Finchley Road
- Structural engineer, M&E consultant**
Webb Yates
- Main contractor**
Ernest Park
- Stonemasons**
Lundhs, Ateliers Romeo
- QS, project manager**
Pantelli
- Landscape consultants**
Todd Longstaffe-Gowan (pre-planning), LHC Design (post-planning)
- Acoustic consultant**
Syntegra
- Planning consultant**
DP9
- Approved inspector**
BSR
- Interior designer**
MAA

IN NUMBERS

- GROSS INTERNAL FLOOR AREA**
2,481M²
- GROSS (INTERNAL + EXTERNAL) FLOOR AREA**
3,000M²
- STRUCTURAL STONE ELEMENTS**
296 COLUMNS, 278 BEAMS
- WEIGHT OF EXOSKELETON**
1,125 TONNES
- VOLUME OF STONE EXOSKELETON**
434M³

THE PLAY'S THE THING



Hackney Wick is transforming, and with it the Yard Theatre, where Takero Shimazaki Architects has rebooted its temporary warehouse home with a building that revels in its permanence

WORDS
Jan-Carlos
Kucharek

PHOTOS
Anton Gorlenko
and Philip Vile

TAKERO SHIMAZAKI ARCHITECTS



There's a scene change going on in Hackney Wick. Spitting distance west of The Queen Elizabeth Olympic Park and with its vastly improved 2018 Overground station, it was but a matter of time before floodgates would open to soak the low-rise, post-industrial area with mid-rise big money.

It's trendy Hackney after all, and with housing construction now looming, I'm surprised at how Queen's Yard, an industrial site with a couple of 19th-century warehouses, still manages to cling on to the vestiges of the working landscape it once was. It may be down to being in the Fish Island and White Post Lane Conservation Area; on the late summer evening that I visit, on exiting the station and entering the yard gates, I even have a brief flight-or-fight twinge, invoked by a pre-millennial muscle memory of past, random alightment.

Hopefully things felt a little less rough by 2011, when a young Jay Miller, helped by volunteers, set up The Yard as a temporary events space in a warehouse unit there. With just £9,000 and a design by Practice Architecture of reclaimed timber and plastic chairs, it was transformed in three weeks into the amphitheatre and bar space of the nascent Yard Theatre. Beyond its original

six-month lease, it would go on to nurture new local and national theatre talent, despite having no backstage area, the dressing rooms being in a lean-to and basic toilets.

By 2023, its reputation had grown and, with that, an extended 30-year lease from a less wary site owner. With Miller now artistic director, Yard Theatre managed to secure £6.7 million from the Arts Council, London Legacy Development Corporation, the GLA and Tower Hamlets Council. So by the time Takero Shimazaki stood on stage to pitch his practice's proposal for a permanent theatre on the site, one of the board, sat in front of him on a plastic seat, was a former National Theatre executive.

"If the previous theatre played with temporariness, what we've done here is play with permanence," announces Miller, proudly standing in the open space of Queen's Yard as we look out at the brick and corrugated fibre cement panel facade of his new Yard Theatre, where it has burst free of the confines of its old industrial unit. The deeply graffitied old south wall curving along White Post Lane still serves as a boundary. A 23m-high polycarbonate-clad former tower crane structure now performs as a stack-effect ventilation

Above: North elevation with the K-Briq wall of the theatre auditorium and tower behind.

Below: Looking west along White Post Lane as housing springs up around.

Opposite: White Post Lane looking east along the graffiti wall to the tower, Queen's Yard entrance and 19th-century Clarnico Works beyond.



ANTON GORLENKO (2)

shaft for the auditorium below, its supergraphics broadcasting the theatre's presence to the road and wider neighbourhood.

The new iteration's language might be industrial – even temporal – says Shimazaki, but there's a Postmodern play on Classical precedents too. "In terms of the massing," he adds, "we asked ourselves: what if there's a 'pop' version of a church or civic space? How could we create an iconic volume of the auditorium box?"

The mashup of brick-faced portal frame with central plastic-clad campanile seems to have done just that, suggesting a Palladian church, or referencing the 19th-century warehouses around, or just as much, a souped-up MOT test centre. The fact that it might be none of them – or all three – is part of the artifice. But hey, this is theatre, right?

Shimazaki recalls stimulating chats where Miller spoke of Peter Brook's game-changing strip-back of the old 1974 Bouffes du Nord theatre in Paris in

the same hushed tones as ancient Greek amphitheatres – and influences of both will appear here. Yard Theatre executive director Ashleigh Wheeler tells me: "One of Jay's things is that many theatres operate as a black box – an anonymous, alienated space with little relationship to what's going on around it. The Yard's designed differently. Everything, inside and out, is in conversation with its history and industrial nature."

Shimazaki's dialogue with Miller about the site and brief was even more nuanced. "What we were developing here were ideas of permanence and temporality, authenticity and fakery," Shimazaki says, "working with all of them and, if possible, mixing them."

So while the use of corrugated fibre cement cladding, polycarbonate and reused site bricks sends out one message on context and economy, the high-quality, Kenoteq K-Briq wall (pricey but very sustainable) sends another. The existing graffiti wall might speak of time-layered truths, but art



Above: Antony Gormley donated his sculpture, Domain CIII.

Left: Industrial materials, well detailed, form the language of the theatre, keeping things local.

Below: Polychromatic brickwork on the north elevation brings detailing complexity, while magenta rainwater goods add a Postmodern pop.

IN NUMBERS

GROSS INTERNAL AREA
884m²

AUDITORIUM SEATS
225

WASTE SAVED FROM K-BRIQ USE
16.8 tonnes



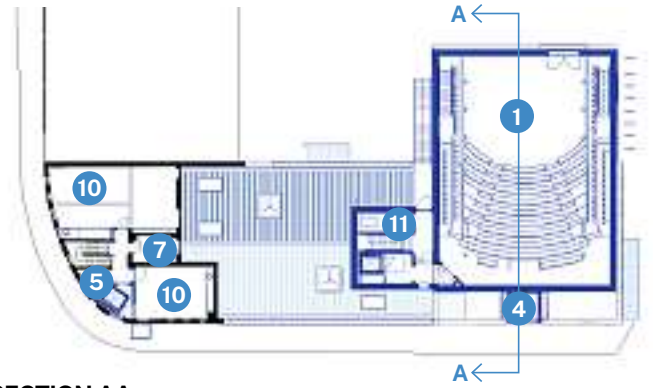
GROUND FLOOR PLAN



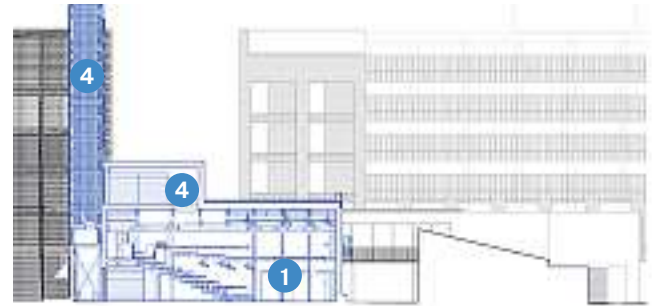
SECOND FLOOR PLAN



FIRST FLOOR PLAN



SECTION AA



■ Existing structure ■ Inserted structure

imitates life elsewhere. Miller enjoyed reflection metaphors, so conscious use of reflections appears over the exterior, with Takero Shimazaki Architects (TSA) playing with them on the facade's narrow openings, from pure mirroring to the polished stainless steel of the stage access door, leaving users and passersby to question whether it's themselves they are seeing, or someone else.

Shimazaki notes that, despite the low construction budget, Miller wanted maximalist approaches to the formerly bare foyer, so it would retain its function as a community space, show or no show. TSA went to town with it, keeping its concrete floors but going full Josef Albers channelling Studio 54, with deep, rich colours on walls and ultramarine denoting the bar. You'll eye your reflection on vastly oversized triangular



- 1 Theatre
- 2 Bar/foyer
- 3 Dressing room
- 4 Air path
- 5 Lift
- 6 Workshop
- 7 WCs
- 8 Food prep
- 9 Plant
- 10 Young Artists' Studio
- 11 Store
- 12 Future extension above foyer



Left: Auditorium access to/from the foyer has mirrored soffits for added theatricality.

Far left: Dark painted WCs with black reflective tiles and brass trims have a nightclub feel.





Above: Viroc CBPB forms the raked seating and auditorium interior, playing on the solidity of cement.

Below: Artistic director Jay Miller got his cherished amphitheatre.

push plates to doors, reflective tiles and brassy trims and fittings in midnight blue loos, and on angled soffits funnelling theatregoers into the auditorium. A pair of gilded steel columns redundantly luxuriating in the foyer are a mannerist intimation of the £1 million funding to build the future studio/hire space above, that will finally put them to work.

Miller's original 100-seat amphitheatre form has been honoured in its new guise in a way that more than doubles the audience, but it's now a stepped timber framework on steroids. And while he loved the Brutalist solidity of TSA's Bloomsbury Curzon, Shimazaki recalls even Jay's eyebrows raising at his idea for cement-bonded timber particle board (CBPB) to line raked seating areas and auditorium walls. The architect managed to argue it as a take on the grounded earthiness of the Greek ancestors Miller so admires. Monolithic in look but all surface, it styles it out as a brazenly epidermal Epidaurus.

The reused brick face of the cavity wall opposite defines the rear of this no-frills stage area, with simple openings stage left and right – and the client is just fine with that. Their form of theatre, they say, was always about being stripped-

Below: The absence of a rear stage area demands imaginative stage direction approaches.



back and embracing the materiality and limitations of the space. “We treat it as a beautiful constraint,” Wheeler says jauntily.

Sustainability was, says Shimazaki, bound into the project. Along with the polychromatic K-Briq, made of almost 100% recycled material, as well as existing brick being reused, it’s more than skin deep. Structural engineer Momentum led on the sourcing of reused steel sections for all new structure and not least for the hefty yet curiously decorative tubular auditorium columns, beams and trusses in blood red oxide. Holding up the exposed LVL roof, they support the repurposed tower crane chimney too, whose easily heated polycarbonate cladding helps to draw air up and away from the audience.

As above, so below. Wandering around the backstage perimeter access corridor under the raked seating reveals not only a substantial timber structure but the sheer simplicity of the auditorium’s passive ventilation system. External air from a single, mechanised attenuated inlet passes into a void dotted with low-temp radiators sat below the rake, before feeding in through at seat

level grille. It all feels quite contingent, almost muddled, but there’s something satisfyingly Heath Robinson about the set-up – the cool feed air kept my beer cool for the duration of the show.

For sure, there have been cost compromises. The first-floor admin office and Young Artists’ Studio feel like an afterthought, but maybe a mooted collaboration with the local primary school and artist Jeremy Deller will see the spaces taken, like the lift shaft position, in an unexpected direction. It’s hoping ultimately for its revenue-generating extension above the foyer, but as it is, the building is a joyful celebration of economy of means.

As I quit a buzzing foyer, it’s night outside and the construction sites’ jarring proximity is shrouded in a darkness that helps mask encroaching gentrification. The theatre’s tower is lit up like a beacon, casting light both here and to White Post Lane where, save for this, you’d be forgiven for thinking nothing had changed. Yet, born of its place, the Yard Theatre offers its strangely benign civic presence for free; an ennobled lock-up dignifying these meanwhile uses, while an absent community assembles.



ANTON GORLENKO (2)

Above: The illuminated tower throws light on what, for now, feels like an unchanged urban scene.

Below: Polychromatic brick, corrugated cement board and graffitied walls set the scene for pink drainage runs and fun with mirrors.



CREDITS

Client
The Yard Theatre
Architect
Takero Shimazaki
Architects (t-sa)
Main contractor
GF Holding
Fit-out contractor
Karnak Developments
Project director and project manager
Plann
Structural engineering
Momentum
M&E engineering
Ritchie+Daffin
Fire consultant
The Fire Surgery
Acoustic consultant
Gillieron Scott
Approved inspector
Salus Approved Inspectors
Theatre design
Polysemic
Theatre technical
Plann

SUPPLIERS

Low carbon recycled brick Kenoteq
Auditorium seating and walls
Investwood
Toilet floors Forbo
Polycarbonate cladding Rodec
Corrugated fibre cement cladding
Eternit
Rainwater goods
Alumasc

A VICTORY LESS HOLLOW

Presented by

MILBANK
CONCRETE PRODUCTS

Hollowcore is increasingly important in construction as environmental credentials take centre stage – and Milbank Concrete Products' new mix cuts cement content by almost 60%

With more than one billion square metres of hollowcore estimated to have been installed across Europe, the system is anything but new. Yet as architects face increasing pressure to design for flexibility, efficiency and lower embodied carbon, hollowcore is taking on a renewed relevance.

Its established material efficiency, combined with continued innovation in concrete mix design, means the case for hollowcore is no longer simply about how quickly a floor can be installed. It is also about how efficiently a building can be designed – and about how the environmental impact of its structural materials can be reduced.

More than a floor

For architects, the appeal of hollowcore lies in what it makes possible. Long spans of up to 10m can increase usable floor area and support bright, open interiors, while reducing the need for intermediate structural supports. The planks require no formwork or propping, creating an immediate working platform and helping simplify construction.

This versatility makes hollowcore suitable for a broad range of building types, from homes and apartment developments to offices, schools, healthcare facilities, retail schemes and industrial buildings.

But its sustainability credentials are equally relevant. Hollowcore can use less concrete, cement, water and steel than cast in-situ floor solutions, with its efficient design helping to minimise material use from the outset. Fewer structural supports can also contribute to more efficient overall building design.

Now, that approach is being taken further. Milbank Concrete Products has developed a brand new hollowcore mix containing almost 60% less cement than its standard mix. Since cement is a significant contributor to the embodied carbon of concrete, reducing its use has the potential to make a meaningful difference to the environmental performance of the floor system.

The environmental product declarations (EPDs) that are being developed in parallel will provide independently verified embodied carbon data which will give architects and specifiers greater clarity when evaluating embodied carbon and comparing material choices at design stage.

For a tried and tested structural solution, hollowcore is continuing to evolve. Its combination of structural efficiency, design flexibility and material innovation demonstrates how established construction systems can play a role in the industry's transition towards lower-carbon buildings. ■



Hollowcore planks can be installed without formwork or propping, helping to simplify construction.



Hollowcore provides a fast, efficient flooring solution across a wide range of building types.

To find out more visit milbank.co.uk

LIGHT AND SHADE

WORDS

Eleanor Young

PHOTOS

Cyrille Weiner

On a tech campus outside Paris with a speciality in the science of photonics, Baumschlager Eberle Architekten's deep timber facades keep things cool



“How can architecture express the challenges of our time?” That is the question Anne Speicher of Baumschlager Eberle Architekten poses as soon as she arrives, late but composed, at the practice’s two new teaching, enterprise and lab buildings. They sit on the IXCampus ‘deeptech’ hub at the end of the suburban RER line in Saint-Germain-en-Laye, 50 minutes from central Paris.

The statement Incubator pavilion at the entrance to the campus, with its cruciform plan, and the linear Grande Orangerie house – and creatively mix up – industry firms and students from the state-run CY Cergy Paris Université. The Incubator is an innovation hub for spinoff companies in the world of photonics, the science of using light to transmit information, in applications from AI to defence. The Grande Orangerie hosts more photonics industry partners as well as the university, bringing through the next generation of experts with its teaching and lab spaces. But to Speicher, the buildings speak of architecture more than the technology they contain.

Baumschlager Eberle has designed these timber-clad structures with deep facades to signal the intent for lower-carbon buildings. Such language could be at home in an age of climate emergency anywhere in Europe – the heartland of Austrian-based Baumschlager Eberle’s worldwide practice.

Speicher is director of the firm’s two French studios and had recently become co-director of the London office when it acquired Curl La Tourelle Head earlier this year. She is well versed in the passive design Baumschlager Eberle has imparted as a core value to its outposts across the globe. It experimented first with its studio in Lustenau, keeping it at a workable temperature of 22 to 26°C without mechanical intervention.

At the IXCampus, load-bearing prefabricated facades of French-sourced timber play around with depths and articulation of what were designed as hybrid structures. At the Grande Orangerie, modules are 3.3m wide and 12m high, and arrived complete with windows and straw insulation. The cornerstone of passive design is in the facade, with that insulation and shading. It is on the latter where the IXCampus buildings speak loudest. Vertical fins mark out the Grande Orangerie, while at the Incubator, a geometric interweaving of Douglas fir members creates a 1.1m-deep facade ‘mesh’ that limits solar gain to interior spaces.

When Baumschlager Eberle won the international competition with its masterplan for the IXCampus, the language spoken by the new buildings was just one of the concerns. The campus had grown up around the small, 19th-century Château Saint-Léger. Its grounds

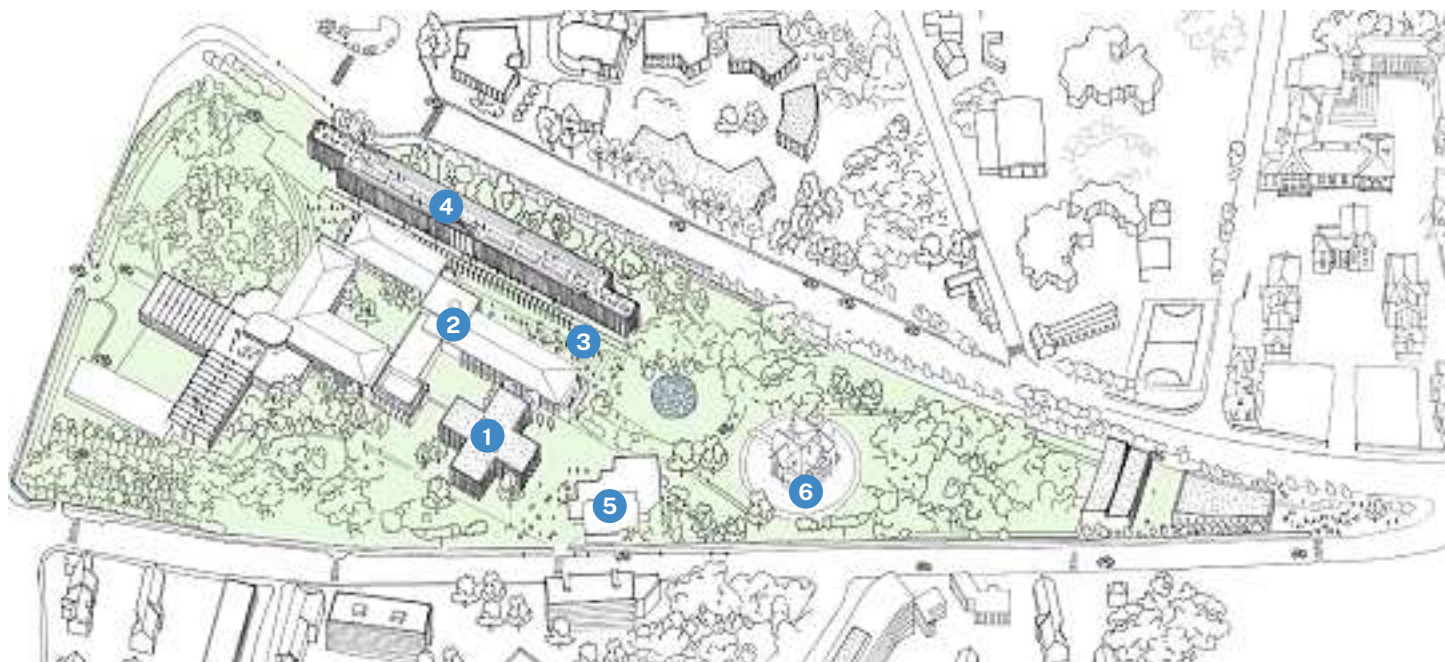


Opposite: The Incubator sits at the entrance to the campus, showing off its timber credentials.

Above: Timber members interweave through the depth of the facade, providing significant shading.

- 1 Incubator
- 2 Existing 1950s buildings
- 3 External amphitheatre
- 4 Grande Orangerie
- 5 Entrance pavilion
- 6 Château Saint-Léger

MASTERPLAN OF IXCAMPUS



later became the French base for Ford, then a space where military capabilities around sonar and radar were developed.

In 2021 the sale of a spinoff released funds for the development of this private campus, allowing it to create a cluster for photonics expertise around two secure facilities on site that continue to develop military capabilities. Pressing concerns for the client were the way existing 1950s buildings did not link, the highly visible car parking (and the need to increase the number of spaces, with an increase of accommodation), a protected building and protected woodland status. Here, Baumschlager Eberle's masterplan for the site has changed the experience of it.

As well as the site issues to be solved there was recent French regulation: what is commonly known as the Décret Tertiaire on progressively reducing operational carbon; and RE2020, which demands new building projects undergo dynamic life-cycle analysis, and provide internal thermal comfort during hot summers. Unsurprisingly the architects were also influenced by the Paris Bioclimatic Local Urban Plan (PLUb),

which restricts concrete construction in favour of biomaterials, despite these buildings being over the city boundary. The influences can be seen in the passive design and materiality.

Another driving force was bringing together 3,000 students and staff on site, beyond their offices and specialist labs. Baumschlager Eberle started with the landscape between a 1950s linear block and the Grande Orangerie. The basement of the 1950s block used to face a retaining wall. Now it looks onto a new dug-down external amphitheatre between the existing block and the social spaces on the lower ground floor of the Orangerie. The latter's hunkering into the ground enabled an increase in area within the site's height restrictions.

It also places the historic château at the heart of the campus by creating a strong visual axis to it. The new lower ground floor café looks out over this space and at lunchtime on the sunny day when I visited, people were spilling into the surrounding landscape.

A big move in the masterplan was to hide the car parking and replace it, using



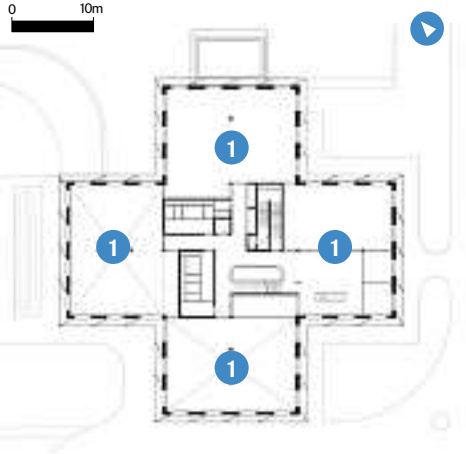
Above: The Incubator's central staircase – a sociable route.

Below: The cruciform plan efficiently allows natural light on three sides of each module.

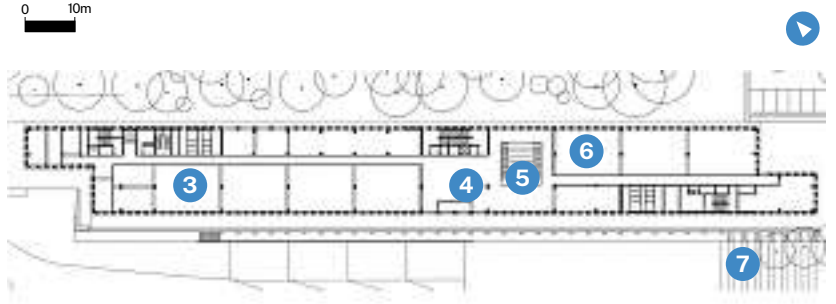
Opposite, below: The Grande Orangerie.



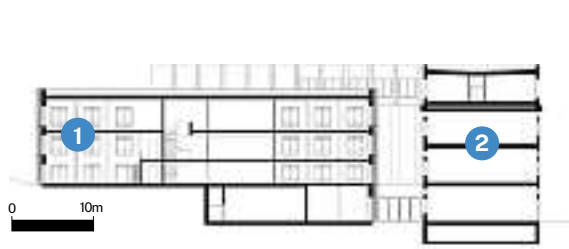
INCUBATOR HUB GROUND FLOOR PLAN



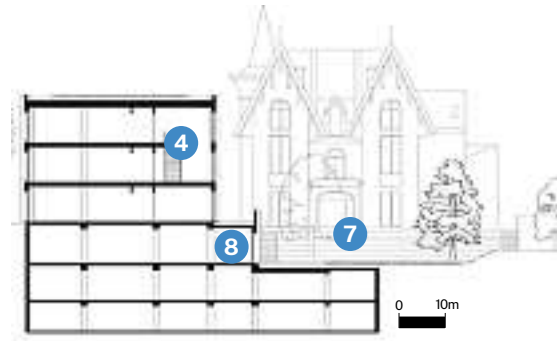
GRANDE ORANGERIE GROUND FLOOR PLAN



INCUBATOR HUB SECTION



GRANDE ORANGERIE SECTION



- 1 Lettable incubator space
- 2 Existing 1950s building
- 3 Teaching spaces
- 4 Social spaces
- 5 Hellerup stair
- 6 Lab spaces
- 7 External amphitheatre
- 8 Canteen

BAUNSCHLAGER EBERLE ARCHITECTEN (4)





Above: Excavating brought a shared social space in the landscape, and a view that is terminated by the château.

Below: Overscaled Hellerup stairs link ground and lower ground floors, building connections between light, landscape and people.



KEY DATA

**TOTAL
CONTRACT COST**
€72 MILLION
(EXCLUDING VAT)

COST PER M²
APPROX €3,700

GIFA
17,685M²

FORM OF CONTRACT
FULL ARCHITECTURAL
SERVICES



CREDITS

Client

Foncière du Château
Saint-Léger

Project management consultant

Because
Architecture Matters

Lead architect and urban design

Baumschlager Eberle
Architects (masterplan,
Grande Orangerie,
Incubator, attics
and belvederes)

Associate architect

SAME Architectes

Landscape architect

Djao Rakitine

Acoustics consultant

Art Acoustique

Sustainability consultant

AIA Environnement

Engineering and cost consultancy

AIA Ingénierie

Facade engineering

Bollinger + Grohmann

Kitchen consultant

BEGC

Main contractor

Bouygues Bâtiment
Ouvrages Fonctionnels

SUPPLIERS

Timber-frame wall

Mathis

Straw insulation panel

Charm'Ossature

Wool insulation,

passive solar shading

Mathis

Glue-laminated

timber post-and-beam

structures, CLT floor

slabs, ribbed CLT

box elements

Stora Enso

Timber cladding

Piveteau

Sanitary equipment,

technical equipment,

lighting fixtures,

carpets, ceramic

tiles (all reused)

Cyneo

the tree-free space to line the site with the 160m-long Grande Orangerie. It is designed as two shifted volumes, for a less imposing nose and tail, and sliced up with more social spaces. This, director and project architect Pierre Floch says, allows for a more nuanced central spine to avoid the curse of the long corridor.

The Grande Orangerie is broken up at its midpoint with another social moment – generous breakout space and stairs – and, linking ground floor and basement, an informal Hellerup stair, dotted with bean bags. The format of large spaces (classrooms, labs) to the south and small ones (offices, toilets) on the corridor's other side also flips at this halfway mark.

Both the Grande Orangerie and the Incubator hub were modelled with Passivhaus software and informed by Baumschlager Eberle's philosophy of avoiding M&E kit. There are, however, chilled beams that enable air to be freshened in the larger rooms. Inside, both buildings are light-filled – with stretches of internal glass that ensure it also reaches the spine circulation.

The buildings' structure and layouts are designed to be flexible. Specification of used fixtures and fittings also seems

well-developed here, with products from sanitaryware to light fittings sourced via specialists who understand the secondary marketplaces that are becoming established in France.

In many ways these new additions do represent our times – both in terms of aspirations and the challenges. The Grande Orangerie was conceived as an entirely timber structure, but the cost drove a shift to concrete. The architects are not unhappy about this – it gives the building thermal mass – and were able to use a lower-carbon concrete that reduces carbon by 25% on typical material.

Equally, the super simple section of the facade panels had to be carefully modelled for fire – and initially did not stop flames spreading from ground floor up as French rules require. Inserting a tiny glass fire break just above head height satisfied regulations, with the full-scale mockups happily passing fire tests.

Such competing considerations are everywhere in our buildings. But the drive to shift the conversation – and perhaps the expression of those issues – is welcome. It will be interesting to see how the dialogue develops on UK Baumschlager Eberle projects. ■

Above: The verticals of the timber emphasise the presence of trees on the campus.

Below: Ground-floor access to the Grande Orangerie.



RAISING THE ROOF



John McAslan + Partners' Global Leadership Centre for Saïd Business School makes clever use of a former power station's towering turbine hall

WORDS
Tim Abrahams

PHOTOS
Hufton + Crow

Although it lacks the grandeur of the Western Concourse at King's Cross and the technical bravura of the Roundhouse, the Global Leadership Centre – in what was Oxford's Osney Power Station – is arguably John McAslan + Partners' best reuse building in the UK. There is certainly no more satisfying restatement and adaptation of an original building's geometries in its oeuvre, and none that exhibit such a mastery of the material palette and structural dynamics of adapting a 19th-century brick building.

It also elevates a building overlooked by architectural historians. Pevsner ignores this unique structure, barely a 500m walk from Oxford railway station, hidden in a residential area on a sliver of land between canalised river and railway. Demolition was not out of the question, although it was designated of special interest by local planners. In capitalising on the original building's 20th-century expansion and the planning authority's deference to that, JMP has created something very special for its client, the Saïd Business School.

The first Ordnance Survey map in 1876 shows the site as a builder's yard, whence no doubt the surrounding area of terraced houses, called New Osney, was constructed. The power station was completed in 1892. It was Oxford's first electricity generating station; a series of late Victorian, Romanesque three-storey bays on the riverside with a simple facade along the streetline to the east. In 1925 it was modernised with new boilers and steam turbines, necessitating the creation of a steel-framed turbine hall within the bounds of the Victorian frontage. Perhaps because authorities cared little

Left: Bedrooms wrapped in a translucent veil rise behind restored brick facades.

Below: Rear elevation of the GLC, which is on a canalised section of the Thames, west of central Oxford. It is within walking distance of Saïd Business School, designed by Dixon Jones, which opened in 2001.



about what happens to the working-class districts to the west of the Thames, this was allowed to a height of 22m, exceeding Oxford's normal 18.2m height restriction in line with the Carfax Tower.

From the 1970s the building was a home for Oxford University's engineering department experiments. Now, it has been converted into a site for short residential courses for executives, 500m from the main Saïd Business School. It offers four classrooms, 12 seminar rooms and 120 hotel-style en-suite bedrooms. Each main classroom on the first floor accommodates around 40 learners; the dining room seats 152. In a building with a site area of 3,500m², JMP has achieved a gross internal area of 8,872m² by exploiting the height of the turbine hall, extending those shed-forms and adding a wing to the south, creating a newly symmetrical version of the old roofline. It has done so while adhering to the planning authority's concern not to have too big a facility in a residential area.

This balance has been achieved with no small élan, and a certain grandeur that seems incongruous in the terraced residential district. A five-storey foyer

space – the Agora – is experienced after entry through a deliberately compressed single-storey reception. Within this industrial-scale volume, at first floor level, is an open breakout meeting space and an elevated glazed courtyard at the heart of the building. This insertion of an outdoor space into the indoor one is particularly clever, subconsciously amplifying scale.

What remains of the original building is the Arthur Street brickwork, riverside and northern elevations, sections of roof truss, and the legs and machinery of the former travelling gantry crane. New structure, floors and accommodation are threaded around and behind them.

The resulting plan fits hotel rooms around the perimeter of the former turbine-hall volume at the western side, with bedrooms on three upper levels. These have external views largely towards the Thames or the newly cut courtyard (a few face the street to the east at the southern end of the building). The deep centre of the old industrial floorplate, unsuitable for bedrooms, becomes an asset. Portions of the original roof trusses have been dismantled, repaired



Above: The existing building stripped out.

Left: Three floors of bedrooms occupy the rebuilt sheds and extensions that echo the historic silhouette.

Below: Historic brick facades were repaired; their colour and texture informs extensions at the building's northern and southern ends.



and reconstructed, with damaged steel replaced and the assembly protected with intumescent coating. Four legs of the gantry crane remain, together with crane equipment, while a new truss appears alongside them. A simple minimalist double-storey extension to the south, clad in brick, houses further bedrooms on the upper floor and gym facilities on ground. Where it meets the original building, a river terrace has been created.

The accommodation is compact, given the executive clients, but this has been made up for with ease of access to the river terrace or Agora space. Concrete floor slabs provide horizontal structure to the inserted programme; in the dining room the concrete soffit is screened acoustically by timber slats and sprayed absorption. At the northwest corner, a substantial roof cantilever allows the space below to remain open-plan.

The relationship with the river, with the west facade hard against the Thames, imposed further structural constraints. Flooding is handled partly via resilience rather than exclusion. Some low-level areas, such as the bin store, are designed with grilles to admit water and internal lobby doors have louvres to allow the free flow of water at 270mm above floor level.

The building communicates the value of efficient, clever work. JMP's experience with Victorian industrial architecture is at its most evident with some inspired material choices. The upper parts of the reconstructed industrial volumes are wrapped in a pleated perforated screen of light grey anodised aluminium, which the practice used previously on Lancaster University's Health Innovation One hub. Here, it works even better as an explicitly industrial counterpart to the retained red-brick structure of the original power station. Its purpose is more sophisticated than simply aping the corrugated iron of the inserted turbine hall volume as it stood when work began, although for planning purposes this task was key to allow the building to retain that space.

The screen also cloaks the regular fenestration demanded by the bedrooms. Left exposed, this grid would have broken down the scale of the building into individual storeys, with the regularity of fenestration creating a telltale Travelodge effect. The perforated aluminium instead restores the reading of the elevation as a single industrial volume and, by allowing some light through, creates a



Left: A courtyard set into one of the former turbine sheds draws daylight into the GLC, and adjoins the glass-walled library.

- 1 Agora
- 2 Teaching
- 3 Dining
- 4 Bar
- 5 Gym
- 6 Plant
- 7 Breakout
- 8 Circulation
- 9 Office
- 10 Courtyard
- 11 Library
- 12 Bedrooms

FIRST FLOOR PLAN



GROUND FLOOR PLAN

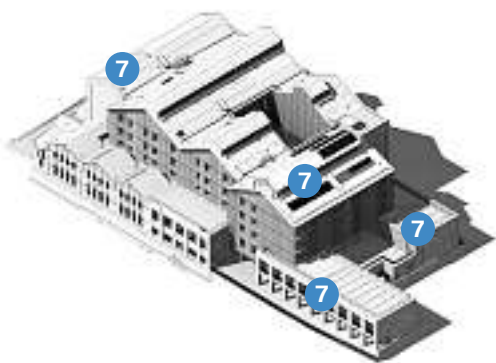


SOUTH-NORTH SECTION

- 1 Library
- 2 Teaching
- 3 Agora
- 4 Entrance
- 5 Breakout
- 6 Bedrooms
- 7 Extension



AXONOMETRIC



lustrous effect floating above the earthy red brick. The screen acts as something of a net curtain, too: from the rooms it lets occupants look west, while externally it cuts overlooking towards neighbouring houses. It also moderates solar gain.

The refurbishment additionally incorporates air-source heat pumps and photovoltaics. The historic shell conceals a remarkable quantity of new construction, including in the Agora automatic opening vents and high-level extract fans for purging smoke in the event of fire. But the semi-industrial architectural language, such as the balustrade detailing and new soffits, elides the mixed typology of hotel/academic institution and business centre.

The decision to regularise and extend the roof forms of the building's 20th-century insertion solved several problems. It has maintained a recognised piece of Oxford's skyline, provided planning justification for a building considerably taller than its predominantly two- and three-storey neighbours, and supplied the depth necessary for a large residential education programme.

John McAslan describes the project as perhaps the most complex reuse by his practice – largely because of the planning constraints on upward extension, and the client's need to make the conversion profitable, which it now surely is. Its ultimate victory is the way in which the programme has been neatly compressed where it needs to be, and space used dramatically where not.

What looks from Oxford's skyline like the preservation of a large industrial shed is, at close quarters, a much more technically demanding operation: a new building of hybrid typology, elegantly engineered and designed to live within the dimensions and memory of the old. ■



Opposite: In the former turbine hall, the Agora is conceived as a collegiate quad – a place for interaction and exchange of ideas.

Above left: Axonometric; the volume of existing sheds was extended west towards the canal, and additions made at north and south ends.

Above right: In the Agora, original trusses, brickwork and the gantry crane are paired with new steel bridges and balconies, and timber staircases.

CREDITS

Architect, landscape architect

John McAslan + Partners

Client

Saïd Business School

Project manager

Ridge and Partners

Main contractor

GRAHAM Construction

Civil & structural engineer

Mann Williams

MEP engineer

Long and Partners

Building services

TClarke

Quantity surveyor

Arcadis

Facade engineer

Arup

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MAKING DOUBLY SURE

Brooke House is a new 15-storey apartment building in Acton, west London, which was designed through the evolving regulatory environment in the wake of the Grenfell Tower fire. In the process, it became among the first generation of designs to incorporate the requirement for a second staircase, ahead of the 2024 update of Approved Document B of the Building Regulations. Developed by Women's Pioneer Housing with support from L&Q, the building contains 102 flats for women, all let at social rent. GRID Architects director Colin Veitch explains how the homes and their fire strategy were designed.



Right: GRID's Brooke House in Acton rises to 15 storeys and has eight homes per floor.

Can you explain the regulatory context?

Right: The site formerly contained 39 flats in a block. This has risen to 102 units.

Bottom left: One of the building's two concrete escape staircases.

Bottom right: Ground-floor plan showing flat arrangements around cores and final escapes on both sides of the building.

CV: We were commissioned in November 2021, at the same time draft BS 9991 was issued, giving guidance that two staircases would be required for buildings over 18m. Part B didn't include this requirement at that time. London Plan Policy D5, published in March 2021, also required a fire evacuation lift to be provided to every staircase in new residential buildings in London.

Draft BS 9991 was subject to a lot of questioning and interpretation. Fire engineers were providing differing advice about what the final document would include and how that might reflect on Building Regulations. This was a transitional period, before the Building Safety Act started to apply, so although the building was going to be over 18m, it didn't have to go through Gateway 2.



Did fire safety feature in early conversations?

CV: The site was owned by Women's Pioneer Housing and contained 39 small flats, which were to be replaced with 100 one-bedroom and two two-bedroom flats, all meeting the nationally described space standard and London Plan minimum sizes.

There was a lot of consultation with residents, who were potentially able to move back into the new development. It's quite rare for us to be designing for very specific possible future residents. Their concerns were around mobility, building height and outdoor space. It was not long after Grenfell, so there were also some fears about living in high-rise buildings.

To address this range of issues, we discussed some of the benefits of living in a taller building, such as the views. We talked about the safety aspects of the two staircases and two lifts, and Women's Pioneer Housing explained the management support that would be provided.

We chose a brick and reconstituted stone facade – the latter was later changed to concrete linear bricks – for architectural reasons. That was very helpful in the end, since people had read press reports about Grenfell and the cladding. We were able to state that there was no combustible insulation and no aluminium cladding.

What were the key design challenges?



CV: In theory, at planning stage we could have had one staircase. The risk we spelled out to the client was that they might get planning consent for one stair; however, if the British Standard and/or the Building Regulations were published with a two-stair requirement, prior to the proposal gaining Building Regulations approval, they'd have to go back to planning. That was the conundrum.

In that period, many developments were on the edge of viability and then suddenly appraisals had to allow for the addition of a second staircase. So, there was discussion around whether the proposals should be taller or take a bit more of the site to get some more flats in. This site had protected trees and a Thames Water sewer running across the middle – and had to have its access point for the fire tender and other vehicles on the north side.

That gave us a very limited developable area, so the main challenge was getting everything to fit: eight flats per floor; two lifts and two stairs; all compliant. We find constrained sites often lead to creative solutions: it generated the building's form, with its steps in height and angled facades.

We went through a lot of floorplan options, which were all costed and discussed. The solution was optimised to be very efficient.



How did you approach the fire design?

CV: Fire design is about getting the chassis of the building right, knowing what will work in practice and what will get approval, and getting that done as early as possible so you have the right core configuration and don't have to unpick things later. Good communication with the fire engineer is essential.

The fire engineer at planning stage was Jensen Hughes, a company we work with across a lot of projects; that's very useful because it means we get consistent advice. Post-planning, we worked with Orion Fire Engineering, with continuity in the fire strategy.

Having agreed the strategy very early with Jensen Hughes, it was a case of making it work. For example, while the principle of a smoke shaft being located in a certain place was agreed, the question became: can we get the exact size needed and coordinate this with services and structure?

Right: One of the building's two 'sterile' exits is the Art Deco-style main entrance.



JACK HOBHOUSE

How far could you respond with passive measures?

CV: The building typically has four flats grouped around either side of the core, with each wing having a slightly different geometry to account for the protected trees. We have common corridors on each side to access each dwelling. The central core has a stair and lift on either side, separated by lobbies and a connecting door.

For a sprinklered building, as required here, travel distances for escape can be up to 15m in one direction. But with Brooke House being mostly one-bedroom flats, they are only 4 to 5m.

Essentially, we have standard passive compliance measures, relying

on the fire resistance of walls and doors. We also have an active smoke control system, which takes in air at roof level to ventilate the lift lobby and extracts air from the common corridor, alongside an automatic opening vent at the head of the stairs and a sprinkler system. The two lifts can be used either for firefighting or for evacuation.

At ground floor, meanwhile, the main entrance and a door on the opposite side of the building provide 'sterile' exits from both staircases/lifts.

The internal fit-out at Brooke House was based on L&Q's well-researched set of specifications.

Right: As homes are fairly small, travel distances from flats to escape stairs are around 5m.



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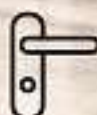
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What are the safeguards for other amenities and features?

CV: There is a roof terrace, which was quite a big part of the brief from the existing residents, and its size was limited by fire regulations to a 50-person capacity. Ultimately fire safety is also down to how the building is managed; in occupation, the building has a Stay Safe policy.

The building was required by planning to be all-electric and has air-source heat pumps, waste heat recovery in bathrooms, and rooftop photovoltaics (PVs), with a switch-off at ground level allowing the PVs to be isolated in an emergency.

Above: The capacity of the communal roof terrace is constrained by fire regulations.

Is there any learning from this project?

CV: In terms of fire design, it was a moment in time when understanding of the requirements and guidance was developing. I think we're on much firmer ground now in our understanding of what is a compliant design, but we always insist on having the fire engineer review proposals at a very early stage. We deliver around 80% of the projects we design at planning stage, so we can apply lessons

learned from technical design stages back into our planning proposals.

The project highlights how the space required for two stairs, lifts, lobbies and everything else needs to be provided efficiently – but not made so tight that there's not enough room for, say, people to bring in furniture. Generating an efficient design is really important, and so too is enabling residents to live easily. ■

AIR TO THE ESTATE

Opposite top left: Winding gravel paths form one of three types of route through Grosvenor Square.

Opposite top right: Screw piles for the pods' floor structure were designed to miss any tree roots.

Opposite bottom: A pair of green-roofed pods also touch the ground lightly.

Below: The wild garden is a doughnut around the existing grass ellipse.

BDP's wild-garden revamp of London's Grosvenor Square used pressurised air to help reverse the impact of rigid 20th century interventions while radically improving drainage

WORDS

Jan-Carlos Kucharek

PHOTOGRAPHS

BDP

Designed as the garden centrepiece of Sir Richard Grosvenor's estate development in London's Mayfair, Grosvenor Square – gardener John Alston's 1725 'wilderness worke' of curated trees, shrubs and flowers in a large oval form – was based on Michaelangelo's Piazza Campidoglio. It was to become quite the contemporary talking (and walking) point.

Architect George Richardson's intervention half a century later wasn't kind. While the square's residents flourished, the original's delicacy was slowly lost, to Richardson's shrubberies and, much later, to a flat ellipse of grass bounded by London planes behind a perimeter oval hedge. Redesignated as a public garden by the 1946 Roosevelt Memorial Act, the WWII president's statue was set at the square's north side between a pair of brusquely formal stone fountains and linking to an RAF memorial on the south edge by a regimented path.

It's likely Alston might recognise something of his original sensibility in the garden's latest £25m iteration. It was won in a 2020 design competition by architect Tonkin Liu and realised by BDP this year for client Grosvenor, to mark the square's 300th anniversary. The project sees the grass oval retained but now nestled within a gentle wilderness of shrubs, perennials

and ponds, sitting in dappled shade below the mighty, perimeter London planes. Characterised by formal stone and serpentine paths of tumbled setts and gravel, Tonkin Liu's idea was well served by input from the late horticulturalist and academic, Professor Nigel Dunnett, who led on planting design. His 'woodland garden' concept helped radically soften the garden's former rigid nature.

BDP's oversight of the project from Stage 2 to completion in July 2026 has seen the introduction of more than 40 new trees to create species diversity, 70,000 new plants and 82,000 bulbs. That takes the planting from its previous 142m² to more than 8,000m²: an increase of over 5,000% across the capital's second-largest public square. But its interesting to discover that all this new planting serves to merely augment the sustainable drainage systems (SuDS) strategy, rather than being an integral part of it.

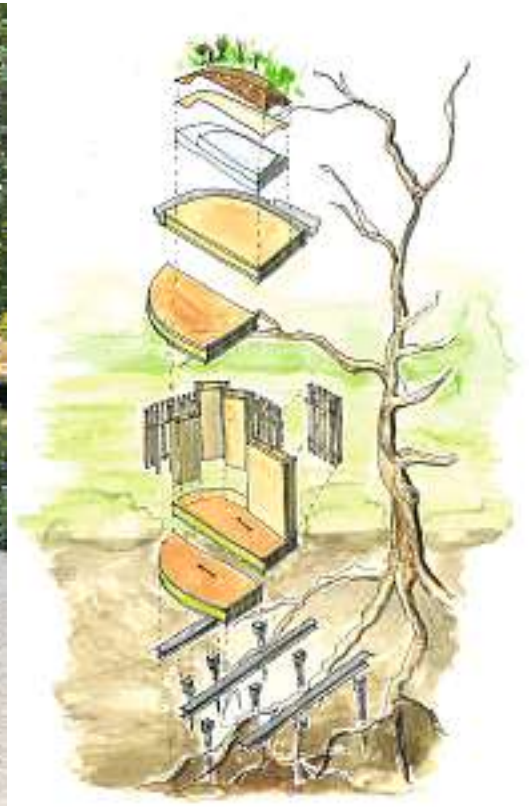
In addressing planners' SuDS concerns – that 1.4 million litres of storm water could need to be mitigated across the 2.5ha site – BDP and civils engineer AKT II (now Tyréns AKT) were also looking to make the scheme lower-carbon, as well as lighter-touch in its approach. "We wanted to challenge [officers'] accepted approach of attenuation tanks

and gullies and digging deep holes to insert a load of plastic kit and pipes," recalls BDP landscape architect director Chris Stanton. "The aim was to prove to Westminster's flood risk department that the runoff volumes they had calculated for the site, we could accommodate using a natural drainage system."

To do this on a piece of land that had undergone decades of neglect and compaction, they worked with hydrology consultant Gary Grant, with the first action being to generate a fully mapped soil profile to see what they had to work with. Stanton notes that the square had endured extensive rubble dumping during WWII. Below the nutrient-poor compacted topsoil was the usual London clay; below that was a porous gravel layer sitting about 1.2m below the surface. It was this they needed to get at, explains Stanton.

"Everything starts with the soil – and the drainage in particular," he continues. "We wanted to see how we could make its upper layers into something more permeable that would both hold water and enable it to drain." BDP was required to prove the garden could absorb the water of a one-in-100-year storm event with a 40% uplift for climate change – yielding the 1.4 million litre figure. Absorbing that much liquid meant

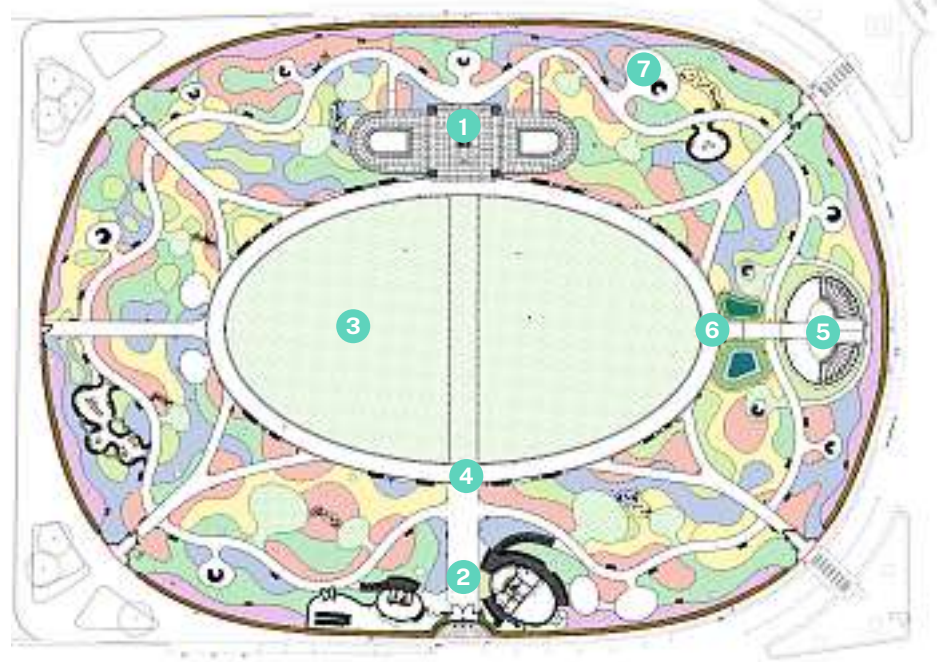




transforming this city block-sized space into a “giant urban sponge”.

Soil scientist Tim O'Hare Associates, brought on to carry out the soil survey (see box, right), put forward the idea of 'terraventing'. This means of rapid soil decompaction had been trialled around Kew Gardens' old trees and soils, but was now commercially available at large scale. “It's effectively a high-pressure jet of air delivered via a thin probe that we ran down to just below the level of the gravel,” Stanton explains. “A quick blast displaces compacted soil and loosens it, allowing air and light – and volume – back into the soil profile.” Probes were inserted more than 30,000 times across 15,000m² of the garden site. Stanton adds the caveat that the process, strong enough to cause visible displacement at ground level, was not carried out within a 2m radius of any existing tree trunk. The process was all carried out manually to ensure the

PATH AND PLANTING LAYOUT, GROSVENOR SQUARE



Below: Two balancing ponds allow for waterside planting and attract water-born insect populations.

- | | | |
|------------------------------|------------------------------------|-----------------------------|
| ■ Native edge mix 874m² | 1 Roosevelt Memorial and fountains | 5 9/11 memorial |
| ■ Yellow +white mix 1,080m² | 2 Café and learning pod, and WCs | 6 New ponds |
| ■ Blue and white mix 1,525m² | 3 Grass oval | 7 Social ovals with seating |
| ■ Pink and white mix 1,615m² | 4 RAF memorial | |
| ■ Evergreen dark mix 1,450m² | | |
| ■ Evergreen light mix 910m² | | |





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terraventing did not impact major root positions directly: "If we hit a significant one, the probe was moved to avoid it."

Soil remediation was not just about loosening it up but feeding it. Stanton recalls the as-found condition, where "soil had been stripped of organic material for decades—even grass clippings were removed from the site". Biochar—a granulated charcoal formed from the pyrolysis of carbon and ash biomass—was injected into boreholes to stop them collapsing in on themselves, and to increase the soil's aeration and fertility, as well as contributing to its ability to retain water. In addition, a liquefied mix of seaweed and organics was injected into holes as a nutrient, to filter into openings created by the terraventing, directly feeding the 600 to 1200mm 'critical zone' for root nourishment. Once completed, the whole site was hand-covered with a new 150mm layer of compost-rich

imported topsoil to be planted into, further protecting existing roots from disturbance. "By revitalising the whole soil profile, it is now able to absorb more water—and that's not just good for the trees and plants, critically, for dealing with flood risk," explains Stanton.

The paving strategy, too, had an effect. BDP was keen to reduce runoff by increasing path permeability while minimising concrete and steel use—not least around the many root protection zones that had to be navigated as paths wound around the site. The firm specified an innovative wide, cellular high-density polyethylene (HDPE) sub-base system called Cellweb, which was stretched out across the paths' width and fixed back to small curved edge sections ground-pinned and forming the path edge.

"Crucially, it disperses the loads across the system in such a way as to avoid point loads on the tree roots under



Above: More than 30,000 terraventing holes were made across the site.

The soil at Grosvenor Square is classic London soil: a sandy clay loam with Lynch Hill periglacial alluvial gravels about 1.2m beneath it. The problem was that, with decades of people trampling all over it, the upper surface had become seriously compacted and plate-like in nature—and had sealed off the lower levels. As a result, it couldn't function as it ought to, either to nourish the trees and plants, or manage rain flows over it.

Terraventing has been around for about 20 years but was initially quite niche, being a manual process that can be time-consuming and fairly expensive. Now though, it is seeing more commercial take-up, not least for the significant improvement in soil porosity it yields. It's used in situations where mechanical digging could damage root structures near the surface. The high-pressure treatment, delivered via a long probe, is great at opening up the soil and getting the fissures and cracks it results in working harder, not only aerating it but creating space for additional treatments like seaweed extract, gravel and pumice. The process works particularly well with dry clay soils, as at Grosvenor Square, but should be avoided for wet, silty soils where it can do more harm than good.



Above: BDP designed the bespoke stone and timber seating benches that run around the oval.

The benefits are significant; the low microbial activity first seen at the site has been reversed. With more air exchange in the soil's depth, significant mycorrhizal colonisation has now been evidenced, which works symbiotically with the tree roots. The biochar we added on the probe holes is a great nutrient, but doesn't work well on its own. It needs to be activated, which occurs in the presence of these microbes. The 230mm or so of composted topsoil we brought in feeds the planting level without affecting the original tree root soil beneath it.

I get frustrated seeing landscape schemes draped in irrigation runs or attenuation tanks. Mother Nature is much better at handling water than we are and if the soil is in optimum condition, it will offer 50% porosity. Ascertaining how the soil can be brought to bear in a SuDS strategy needs to happen early—ideally at Stage 2—so get a soil survey lined up early along with all the other site investigations.

Tim O'Hare, partner, Tim O'Hare Associates, soil and landscape consultancy

it,” continues Stanton. The system was set over a 150mm build-up of load-bearing aggregate, and above it was laid the final path surface finish. This took three forms. For the oval it was a thin-layer specialist mortar substrate onto which was perfectly laid factory-cut Portuguese limestone pavers, flame-finished for slip resistance. Informal paths utilised the same limestone but as tumbled setts with sharp sand joints, while more winding woodland walks got a limestone grit and clay gravel; these last two allowed for greater drainage levels despite the new design adding an extra 200m of linear pathway on the site.

Stanton says these material changes from hard to soft also helped create a subtle hierarchy to the network of routes across the park. The Cellweb solution, installed after terraventing, even avoided soil recompaction, enabling works vehicles to continue to drive over it. “It wasn’t just about touching the earth lightly,” he adds. “131t of embodied carbon was saved in challenging more traditional construction methods.”

The planners’ demand that Grosvenor Square handle all rain falling on it, with no runoff, led to BDP’s natural SuDS strategy – which is now successfully draining a site larger than two football pitches with no attenuation tanks. Nigel Dunnett’s planting serves to augment the strategy for an urban dry-shade landscape that, Stanton observes, is “notably difficult” to design for. Dunnett’s palette of locally sourced native and non-native species were sourced for being climate-adaptive “for resilience to hotter summers and wetter winters”. All were grown for just-in-time delivery to be perfectly sized for the new 150mm topsoil layer they were going to be bedded into.

Given 2026’s brutally hot summer, the garden’s condition tells its own story, with no evident stress to existing trees and only minor effects on new planting, which had minimal watering to help establish it. “The soil was key to unlock the scheme for us; quality and nutrient levels have been transformed,” concludes Stanton. “It’s helped the trees and plants and flood mitigation. The new plant cover cools the soil and works against urban heat island effects.” And for a fully accessible public garden with a new café, learning centre, toilets and nearly 400 more bespoke-designed seats, he reckons that’s a benchmark. ■



Top left: Screw piles were positioned to avoid tree roots.

Top right: The HPDE Cellweb mesh installed above its gravel substrate.

Bottom left: The mesh enabled works vehicles to use paths without recompacting the soil.

Bottom right: Pod foundation trenches were first Lidar scanned and then ‘soil-vacuumed’ to enable screw pile placement.



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Planting design
Professor Nigel Dunnett
Town planning
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From graduate programmes and internships to apprenticeships, mentoring and professional development, we are creating pathways that help aspiring engineers build rewarding careers in fire engineering.



This commitment was recently strengthened through the launch of the Alistair Henderson Bursary, established in partnership with the University of Edinburgh. The bursary honours the legacy of Alistair Henderson, a founding member of the OFR team, whose passion for technical excellence, innovation and education helped shape our business and inspire those around him. It will support students pursuing fire safety-related studies, helping to remove financial barriers and encourage more people to enter a profession that plays a vital role in creating safer buildings and communities.

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The bursary, in partnership with the University of Edinburgh, honours the legacy of Alistair Henderson, a founding member of the OFR team who sadly passed away following a battle with cancer in 2020.



GOOD TO THE LAST DROP

Sustainable drainage systems (SuDS) are an increasingly important part of masterplanning. Martha Alker, director of Townshend Landscape Architects, explains her practice's approach at four recent schemes



At Townshend Landscape Architects, we aim to create places that will thrive and can contribute to a more regenerative future. Our projects must work incredibly hard to manage the many demands placed upon them, weaving together a design vision and sense of place alongside delivering robust, resilient systems for people and nature.

One of the key inputs we aspire to manage is water. We look at the proportions of planting and permeable materials, seeking to reduce pressure on drainage systems. This is underpinned by the updated National Planning Policy Framework (NPPF), published in August, and by the Urban Greening Factor calculation required for planning in the London Plan, alongside explicit sustainable drainage systems (SuDS) requirements.

We have selected four projects that demonstrate a variety of approaches to SuDS, from ponds to tree pits.

Canada Dock, Southwark, London

Ecology and the green-blue environment have been key influences on the landscape masterplan at Canada Water, where 35% of the site will be public realm. SuDS will be incorporated in rain gardens, swales and tree pit storage.

Canada Dock was the first phase of the development and regeneration of the area. The design preserved the vast historic expanse of water while restoring the wetland habitat along its western edge.

Tree pits alongside that edge have been designed to receive surface runoff from the surrounding area and direct it into the dock, helping to maintain the water levels. As part of this process, the pits filter the water to ensure clean liquid enters the wetland environment.

This design has created an attractive, nature-friendly and shaded street providing a welcoming route for people moving into the heart of the scheme and between Surrey Quays and Canada Water stations.

“City-centre land in Nottingham has become a wildlife-rich park with frogs, newts, birds and dragonflies quickly colonising the newly created habitat”



Broad Marsh, Nottingham

The Broad Marsh Public Realm forms part of Nottingham City Council's city centre regeneration plans, alongside the new Nottingham College City Hub and Central Library. The integration of SuDS at Broad Marsh marked a shift from traditional engineered approaches to flood avoidance towards a 'Sponge City' methodology, incorporating permeable, planted surfaces to mimic the natural processes to slow down, store and filter local runoff.

The scheme incorporates sunken rain gardens and subtle regrading of surfaces to direct water into soft landscape areas. At its centre, the Green Heart reintroduces the historic 'marsh' through a wetland that captures rainwater from nearby Collin Street. This has transformed city-centre land into a wildlife-rich park with frogs, newts, birds and dragonflies quickly colonising the newly created habitat.

The cumulative effect has increased the site's biodiversity net gain by 438%, with the inclusion of water and wetland habitat making an important contribution.



Claremont Park, Barnet, London

Claremont Park is a 1.8ha neighbourhood park in the Brent Cross Town development, in the London Borough of Barnet.

The design was guided by a series of placemaking aims, including encouraging social spaces, improving connectivity, creating an accessible and inclusive environment and providing opportunities for play, leisure, exercise and sport.

Alongside these aspirations, the scheme sought to maximise the site's natural qualities through a strong water-based landscape strategy. A large pond, fed by a network of swales, creates a new water habitat that enhances biodiversity within the park while providing a focal point for visitors through the inclusion of a floating viewing pontoon.

The incorporation of SuDS helped shape the form of the park, which was gently graded towards the swale that meanders along its northern boundary. It also informed the location of the pond at the eastern end, where it can collect any residual water from the swale.



Canal Reach, Kings Cross, London

The King's Cross masterplan began more than 25 years ago, when the integration of SuDS into urban regeneration projects was still in its infancy. To reduce the impact of surface runoff on the Regent's Canal and the local drainage network, the initial sitewide infrastructure strategy attenuated water within the pipework on site.

As the design evolved, the scheme became greener and softer, with extensive areas of planting introduced throughout the canalside spaces. These interventions have helped reduce surface runoff across the site, while delivering wider landscape and ecological benefits.

One area to undergo significant change was Canal Reach. Originally conceived as a tree-lined, paved boulevard, the space was reimagined in collaboration with Nigel Dunnett as an immersive rain garden. Water is directed from the pavement into the planting, which was designed with a wild character to create a visual and air-pollution barrier between the pedestrian pavement and the carriageway. ■

PRECIPITATING CHANGE

iMist has become the first company to certify a complete water mist system to a new UK fire safety standard



iMist has helped the Fire Protection Association (FPA) establish the UK's first UKAS-accredited test route for BS EN 14972-17:2025, the standard now governing water mist systems fitted in homes, flats, care homes and hotels. Now, it has become the first company to certify a complete system against it.

The distinction matters: since BS 8458:2015 was withdrawn in July 2025, the industry has lacked a proven, accredited way to test water mist systems against the new standard. iMist's work with the FPA closes that gap, giving every manufacturer in the sector, not just iMist, a credible route to independent testing, while iMist itself becomes the first to use it.

Testing the whole system, rather than pump, pipework, nozzles and controls separately, shows how the parts perform together under real fire test conditions, closer to how the system will actually behave once installed. The system certified is the one iMist designs, manufactures, installs and services in-house.

Alex Pollard, iMist operations director, said: "Working through the transition from

BS 8458 to BS EN 14972-17 has been a significant learning curve for us and for the wider industry. Being able to show the performance of our complete system against the current standard, at a UKAS-accredited facility, gives customers and the industry clear evidence of that work.

"This is just the start," Pollard added. "Having passed Part 17, we're now working through Part 1 and the rest of the series – and we're excited for what that will bring."

The certification builds on iMist's earlier testing record with the FPA. In 2022, iMist became the first company to pass the FPA's UKAS-accredited BS 8458 Annex C test. It has continued testing against each standard as it has changed.

About iMist

iMist is a UK water mist fire suppression company. It designs, manufactures, installs and maintains its systems in-house, supporting projects from initial design through to ongoing servicing, with systems fitted in new-build and retrofit properties across the UK. ■

For more information, visit imist.com

Presented by



Type testing for pattern distribution during fire testing.



Visual of spray pattern distribution.



Please use the QR code to find out more

COSTINGS

FIRE DOORS

WORDS

Archie Spence, cost manager, and Louis Loader, assistant cost manager, Turner & Townsend alinea

Approved Document B of the Building Regulations requires fire doors to be provided where necessary. They are used extensively in buildings of all types to help contain the spread of fire and smoke, protect escape routes, and keep building occupants safe.

The costs outlined here are benchmarked to reflect mid-range supply and installation rates as of Q3 2026 for a single-leaf veneered door, with additional potential costs also shown. The rates given include the door, lining, and basic ironmongery. All rates exclude subcontractor preliminaries, which can vary considerably depending on project-specific factors such as project size, logistics, and programme.

FIRE RATINGS

The required fire resistance rating is the main cost driver for fire doors. Higher ratings require increased door leaf thickness, enhanced core construction, and more robust framing and ironmongery:

- FD30 solid core timber: £900-£1,100
- FD60 solid core timber: £1,050-£1,250
- FD90 specialist door: £1,900-£2,100

Key cost drivers:

- design of door
- door thickness
- materiality

GLAZED VS SOLID FIRE DOORS

Glazing can significantly increase costs, especially at higher FD ratings, due to fire-resistant glass and specialist glazing beads, and extra manufacturing and certification requirements. Even small vision panels can attract a notable premium over solid doors. The items below illustrate these costs:

- FD30 door with vision panel: £1,400-£1,600
- FD60 door with vision panel: £1,700-£1,900
- FD30 half glazed: £1,800-£2,100
- FD60 half glazed: £2,400-£2,700
- FD30 fully glazed: £2,200-£2,600
- FD60 fully glazed: £3,200-£3,600

Key cost drivers:

- size of glazed area
- glazing specification, acoustic specification, and manifestation

DOORS WITH AND WITHOUT SMOKE SEALS

Smoke control requirements are increasingly common across residential, healthcare and commercial developments. Consideration of smoke control is critical to prevent the spread of smoke, improve an evacuation process and reduce the risk of injury. While the cost increase per door is relatively modest, the cumulative impact can be significant on larger schemes.

- FD30S smoke control door: 5-15% uplift
- FD60S smoke control door: 5-15% uplift

DOOR CLOSERS AND DAMPERS

Door hardware can account for a significant proportion of the overall door cost. Closers with hold-open functionality or concealed mechanisms generally attract the largest premiums, because of additional manufacturing and installation requirements.

- surface mounted closer: £25-£75
- heavy duty closer: £75-£150

- concealed closer: £150-£250
- floor spring closer: £160-£280
- electromagnetic hold-open closer: £100-£250
- automatic openers: £750-£1,500
- maglocks: £750-£1,500

Key cost drivers:

- electrical interfaces
- fire alarm integration

COMPLIANCE AND CERTIFICATION

Increasing compliance requirements have placed extra emphasis on certified products, traceability and quality assurance. Specifying complete factory-tested doors can increase initial costs but cut installation risk and support regulatory compliance.

Further item cost considerations:

- third-party certification
- factory testing
- product traceability
- Building Safety Act compliance
- installation quality assurance

These cost drivers increase fire door costs through extra testing, documentation and audit requirements, ensuring compliant products can be evidenced and tracked. The Building Safety Act 2022 emphasises accountability and maintaining accurate safety records, making these measures increasingly important. Installation quality assurance also adds cost through inspections and competency checks, helping to ensure fire doors perform as intended and reducing the risk of future safety failures.

OTHER CONSIDERATIONS

Several project-specific requirements can materially affect fire door costs and should be considered when setting budgets during the early design stages:

- acoustic rated door (35-40 dB): 10-20% uplift
- high acoustic performance (45 dB+): 20-40% uplift
- PAS 24 security-rated door: 10-25% uplift
- leaf and a half door: 30-50%
- double-leaf door: 50-100% uplift
- nonstandard sizes: 10-25% uplift
- material selection: 10-200%

Overall, fire doors are a critical life safety component, with costs driven by fire rating, glazing, smoke control requirements, hardware and compliance obligations. The increased focus on certification, traceability and quality assurance under the Building Safety Act 2022 has contributed to higher costs but helps ensure fire doors perform as intended throughout their service life. ■

PERPETUAL MOTION

Opposite left: BDP's ground-level public forum in MMU's Dalton Building creates a social hub; science-based learning is sited above.

Opposite top right: Sunflower yellow highlights alma-nac's retrofit and extension at Leigh Park School.

Opposite bottom right: Brighton College's Richard Cairns Building is an arts block that integrates into a tight edge of the campus.

Throughout their educational journeys, movement of all kinds is vital for children and young people; a RIBA Spec webinar heard how three projects have put that ethos at the heart of their designs

Education pioneer Maria Montessori once observed that “watching a child makes it obvious the development of his mind comes through his movement”. While the regimented desk formations associated with traditional classrooms are gone, what has taken longer to shift is the idea that pupils in classrooms stay seated and still.

A key takeaway from a RIBA Spec education webinar – sponsored by Markilux, VM Zinc and Bauder – was the importance of active learning. Across three presented projects, movement, flexibility and engagement with spaces went hand in hand with students’ progression.

The clearest expression came from alma-nac’s Leigh Park School near Wigan, a retrofit of a former brick and steel portal frame sports hall on a previously developed green belt site. It is designed for children with autism and social, emotional and mental health (SEMH) needs, and is due to open at the end of 2026.

Briefing workshops with operator Horizon and delivery partner Nine helped architect Adam Shapland and team design spaces adapted to the needs of the 100 or so pupils, through arrival, learning, therapy, play and co-regulation.

“We heard ‘day in the life’ stories of pupils, teachers and parents, and mapped out a complete journey from arrival to drop-off,” he explained. This led to two

key decisions. One: integrating curriculum and therapy within the classroom (rather than needing to move pupils to rooms or corridors). And two: placing reading, storytelling and imaginative play at the heart of the school, since they form a large part of its identity and curriculum ethos.

This inspired the decision to make the two-storey, timber-clad library pod the school’s heart, establishing a circulation route around it with classrooms and teaching spaces pushed to the perimeter.

On 15 September, the National Autistic Society made the definitive announcement: “Autism is genetic, after a robust and comprehensive review of high-quality research into this subject.” It is a groundbreaking statement that captures the scale of the shift in attitudes and understanding, contrasting with the disinformation that unfortunately still persists elsewhere. At Leigh Park School, a bold, proud yellow exterior gives a presence and an expression. Inside the building, colour, materiality and acoustics help mark transitions between calm and activation, responding to research about wellbeing and neurodiversity: a clear departure from the past.

The building’s relationship with its users extends beyond its walls. “From the outset, our task was to transform a disused building into a welcoming, nurturing and

highly legible school, one that now has a new presence in the town that pupils, teachers, parents can be proud to take over and take agency of,” said Shapland.

Importantly, he explained, alma-nac was inspired by Dutch architect Herman Hertzberger. “A theme among a lot of our education projects, was... the idea that a school should be like a small city, with small and large spaces, secluded and semi-secluded spaces and vistas, so young people experience the world through the building itself,” Shapland said.

Half an hour’s drive into Manchester, that idea of progression through space is evident in BDP’s Dalton Building at Manchester Metropolitan University. Its staggered atriums were designed, as architect Mike Riley explained, to “philosophically consider how students move through the building”. Looking upwards, they can “see progressively what the next step in your career would be like”.

A three-storey entrance atrium forms the social heart, leading to a two-storey atrium around the ‘Super Lab’ (which accommodates a cohort of 200) and then a four-storey academic and research workplace. Students considering an academic or research route can literally see the environments they may progress into as they climb the ladder. Between the atriums, meanwhile, are spaces for



tutorials or informal study. “This building is fabulous in section, and this is where it really shines and it really comes to life,” said Riley – because it makes the journey from student to scientist visible.

In a facility where Bunsen burners are de rigueur, openness presented a slight challenge in terms of fire safety; sprinklers and a smoke-ventilation strategy using the interconnected atriums enabled this not to be compromised. “Working with some good fire engineers is always best with these sorts of buildings,” noted Riley.

At the Dalton Building, Bauder roofing has been used and, as technical expert Nigel Blacklock from Bauder was keen to point out, it is important designers get to grips with regulations (including from the Department for Education, and Approved Document B). That’s especially true if roofs are going to become usable and adaptable spaces within education buildings. Fire behaves differently on roofs to facades, and photovoltaics and green roofs add different challenges to the mix.

If Hertzberger viewed the school as a city, these projects also engage with their urban context. In Manchester, the Dalton Building responds to the nearby Mancunian Way – turning its back on the busy elevated motorway, while opening up to the street on the other side. But down on the south coast at Brighton College,

the relationship is more complex, with the Richard Cairns Building negotiating both a historic campus and the wider city.

Founded in 1845 on a sloping site in Kemp Town, Brighton College has spent the past 15 years transforming its campus of Sir George Gilbert Scott buildings. The Richard Cairns Building, by KRFT Architecture Studio and Nicholas Hare Architects (NHA), is the final piece of that masterplan, begun by Eric Parry Architects. According to NHA architect James Taylor, the building is in three layers. Dance and drama studios sit at the base, with a central public forum for gathering, socialising and performing in the middle, and in “the competition-winning move”, a 400-seat theatre raised off the ground so as to fit into the constrained site.

The building draws on its context in terms of materiality, making use of local flint and handmade long-format brick, with curved brick-faced precast panels enabling the complex geometry. At the base of the roof, where the pitch is too low to continue the tiles, a ballasted roof takes over, with river pebbles selected to colour match. This mattered because the roof is visible from above, so is treated as a fifth elevation rather than a hidden surface.

The building’s emphasis on visual connection continues inside: glimpses into studios encourage participation,

while classrooms overlook the campus through “cricket ball-proof” guillotine sash windows. It sits next to the playing field, and the sweeping curved facade offers spectators shelter. The grand stair helps connect the different levels of the campus and there is now a through-route to the front gate, linking the masterplan’s areas. Commendably, despite the challenges of Covid, inflation, site constraints and the design complexity, the project remained within contract value and became a social heart for the campus, supporting 11 major productions each year and community use.

Across these projects, then, movement is crucial. As architecture draws students through spaces, across sites, upwards and around into interactions with one another, so too do the buildings give spatial form to the educational journey – from the day to day, to ultimately life beyond school. ■

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USING AI TO MAKE YOUR PRACTICE MORE EFFICIENT

Panel:
Adrian Malleon
head of research, RIBA
Mohammad Daudi
commercial lead, Asite
for Architects, Asite
Tom Macklin
architecture partner,
Marrons
John Jervis (chair)
contributing editor,
for RIBA J

As regulatory demands increase, keeping track of data across multiple platforms is ever more difficult. A webinar hosted by RIBA J and Asite explored how AI can assist, allowing architects to spend more time on creativity

Opposite top to bottom: Cowdray Farm Shop by Marrons is an example of how architects are now managing and retaining increasingly complex and diverse project information.

Multidisciplinary regeneration projects highlight the value of making practice-wide design information accessible through tools such as Asite.

The iterative design process contributes to the growing volume of information generated as proposals develop.

The sheer quantity of information generated by projects poses huge challenges to architectural practices. In recent years, technology has exacerbated the situation, while dangling tantalising promises of solutions. As profit margins are squeezed and regulatory demands increase, keeping track of data across a multitude of files, formats and platforms is becoming ever more difficult, diverting resources from creative work. Yet there may finally be hope.

RIBA J and Asite – the leading data platform for the construction industry – teamed up to host a webinar exploring the future of AI in architecture. Although AI has been widely adopted as a tool for early-stage image generation, there is a growing recognition that its real benefits may lie in “the business of business”.

RIBA head of research Adrian Malleon kicked off the event with a telling presentation drawing on RIBA’s regular Future Trends, Business Benchmarking and AI reports. Highlighting that over half of architects end up owning a business, either as sole principals or partners, he emphasised the need for sound business practice to underpin design excellence, including long-term planning and cash-flow management.

“It was only in last year’s RIBA

Business Benchmarking report that we saw profits rise to any meaningful extent,” Malleon said, “which speaks to real issues around extracting fee levels that are commensurate with the value architects offer, and converting revenue into profit.”

In this year’s AI Report, practices cited technology as the factor most likely to drive future profitability, while those adopting AI for projects rose from 41% of respondents two years ago to 74% today. Three-quarters of users noted productivity gains, and 57% reported a return on investment. But there was more caution around AI’s impact on creativity, with less than half able to reallocate time to high-value work, and a paltry 7% stating that AI had resulted in increased fees.

Many practices are still struggling to undertake core business processes that sustain profitability, such as recording billable hours and cash-flow forecasting, both areas where AI could have a significant role. Malleon also indicated AI’s potential to leverage data that currently goes unexamined, enabling greater understanding of the environmental, health or societal impacts of design. If upskilling in AI might seem problematic to small practices, Malleon pointed out: “It has a fairly low-skill entry point in that you can use natural language.”

Next, Mohammad Daudi, commercial lead at the newly launched Asite for Architects, explored AI’s capacity to assist in “turning a vision into a built asset without losing control of the evidence”. By facilitating access to the entire chain of decisions made during that process, AI allows architects to track the data behind their professional judgement.

“The common weakness is not that architects are lacking that information,” said Daudi, “it’s that the evidence is split across so many different places, systems, people and partial records.”

From this perspective, AI’s value lies in reducing “low-value friction” rather than replacing architectural judgement: “finding information, checking it, tracing it and acting quickly so that margin isn’t lost”. This extends into locating precedents, with AI assisting in the retrieval of information across multiple projects, reducing the need to reconstruct practice knowledge.

In the context of the Building Safety Act’s “golden thread” of information, Asite for Architects can act as a secure digital record, providing an accessible audit trail that mitigates professional risk. As a cloud-based platform with email integration and browser-based BIM viewing, it also supports collaboration with suppliers and clients, protecting data within a secure



information governance environment.

Finally, Tom Macklin, architecture partner at planning and development consultancy Marrons, described how his firm tested Asite for Architects against a real-world architectural workload, focusing on efficiency, risk and profitability.

“For me,” said Macklin, “the question is simple: can it protect more of the fee and give architects more time to actually be architects?” Having reviewed current approaches to low-value tasks – finding information, reviewing and issuing drawings, checking revisions, reusing precedents – the practice explored whether technology could lessen the friction that accumulated across fixed-fee jobs, “10 minutes here, 20 minutes there”.

Employing AI searches rather than memory and manual efforts proved effective, allowing more value to be drawn from the practice’s existing archive. Control of information also became easier, with AI’s benefits “moving beyond tackling inefficiency into governance, accountability and managing risk ... and from finding a file to understanding the information around it,” said Macklin. “For us, that is where it becomes more meaningful: less time searching, better decisions and less risk of working with the wrong information.”

Macklin also provided some practical recommendations around testing technology incrementally, so administration doesn’t wipe out efficiency gains. Adoption was simplest for internal file search, retrieval and review, but setting up workflows and onboarding external consultants proved trickier. However, as more knowledge sits within the system, and users are more comfortable, “that’s where it starts moving from a project management system into a practice management system.”

He concluded: “For me, protecting profit through technology isn’t producing more and working faster; it’s about reducing the friction that consumes fees, reducing the rework and risk that erodes margins, so that we get more time to do what we do best, which is focus on the design and actually be architects.”

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SWEET SIXTEEN

Opposite: RJA's COP26 house was built to demonstrate the functionality of C16 spruce.

Below: COP26 house was displayed at the UN Climate Change Conference in Glasgow in 2021.

More than 80% of timber used in the UK is imported, despite the nation harvesting millions of tonnes annually – but, a RIBA roundtable heard, better understanding by architects of the domestic C16-grade product could start moving the dial



PETER SMITH

The participants in RIBA's September roundtable with Trust UK C16 Timber could all readily espouse the benefits of building with timber. They could wax lyrical about its tactility and earthiness, and recite studies about how timber-frame building can lower occupants' heart rate and attract less vandalism.

But few had much understanding of building with C16 timber, the most common strength grade produced by UK sawmills. Despite harvesting around 10 million tonnes of roundwood a year, the UK is the second largest net importer of timber in the world, with more than 80% of what we use coming from abroad. Could a lack of understanding of C16 timber be limiting the UK's potential to tap into homegrown timber?

Throughout the conversation, it emerged that a large source of architects' hesitancy around specifying C16 timber stems from uncertainty about its structural qualities. The name C16 refers to the type of wood (coniferous) and the 16N/mm² bending strength. Rob MacKenna, general manager of south Scotland operations at sawmill James Jones & Sons, explained that while C16

is strong enough for many structural elements, in certain applications it spans about 10% less distance than C24, which is much more commonly specified for load-bearing functions. It has very similar properties to C24 when used in vertical applications such as wall studs.

However, C24-grade timber is usually imported from eastern Europe or Scandinavia, raising the cost and carbon impact of building with it. C16 is typically £30 to £40 more cost-effective per cubic metre as it comes out the sawmill.

Mark Kirk, technical director at structural engineering firm Paramount Consulting Engineers, explained that C16 can be suitable for a range of structural uses, especially where shorter spans are required, such as in stud walls. "There's nuances – if you need a long span, C16's probably not going to work – but there's a huge amount of instances where it's completely viable," he said. "It's just a different grade of material, in the same way that you wouldn't specify [high-strength] C50 concrete everywhere."

Exemplifying the utility of C16 timber is Roderick James Architects' (RJA) COP26 House, designed when the global

climate conference came to Glasgow in 2021 to demonstrate the potential for using homegrown timber in construction. Partner Peter Smith recounted how, at the start of the design process, he asked an engineer how one of his firm's standardised house designs could be adapted to enable it to be built with C16 timber. The engineer came back a week later without any changes. The 5 x 10m house was built in 10 weeks using C16 timber for almost every structural element in the floor, walls and roof. Combined with wood-fibre insulation and Scottish larch cladding, it achieved an embodied carbon rate of 490kgCO₂e/m², 22% lower than RIBA's 2030 Climate Challenge target.

While looking into previous timber-frame projects in preparation for the roundtable, Stolon Studio co-founder Jessica Barker found her practice had used C16 studs throughout a recent project, but used C24 posi-joists. "We didn't think to ask if there was a C16 option," she said. "But it's really difficult for architects to start specifying some of these things, especially if they're in composite projects, because of the



ROAR's cork-clad Nina's House in Tottenham, London. UK timber was used throughout, including British Douglas fir joinery and a London plane felled by Camden council reused as a kitchen island.



contractual nature of [the work], in terms of financial implications and time delay.”

Poor knowledge of C16 timber within the construction industry means sourcing the product is currently more difficult, participants agreed. “It would have to be something specified quite early in the project,” added ROAR founder Craig Rosenblatt. “We’d have to flag to contractors that this is what we’re using so they can start their research, understand timeframes from their side if it’s not readily available.”

RJA’s Smith called for more joined-up thinking across project partners to ensure C16 remains a priority. “I’ve had the situation where I’ve specified C16 and then six months later got a phone call from the contractor on site saying, ‘Your drawing says C16, the engineer’s drawing says C24, I’ve got a packet of C24 here, do you want me to send it back?’”

The chat turned to the importance of telling a strong story about the benefits of C16 timber, to encourage stockists to put it on the shelves. “For us to create that pull for people to go to the builder’s merchant and actually ask for C16, we

need to be asking specifiers where you can specify C16,” said James Jones & Sons’ MacKenna. “And then hopefully that then causes the builder’s merchant to start questioning what they’re stocking.”

For Juan Morillas, head of sustainable design at contractor John Sisk & Son, client buy-in is key to overcoming sourcing constraints. “You wouldn’t believe how impactful a client asking for something is,” he said. “With something that looks difficult, if a client asks for it, the supply chain will work something out.”

Kirsten Haggart, associate director at Waugh Thistleton Architects, brought up the firm’s work with the Department for Education’s GenZero project as an example of where an enlightened client has borne the torch for domestic timber. The firm developed a prototype classroom using only UK timber, which the department had specifically requested.

Haggart has also worked on a project with the Irish government researching how procurement policy could accelerate the adoption of mass timber. “An outcome from the Irish research is that the public sector needs to lead the way,” she said.

Steve Wallis, associate director at dRMM, contended that architects can empower themselves with the right knowledge and educate clients, reflecting that on past projects he had lacked understanding to challenge when spotting C24 on engineers’ drawings. “The grading specification is something that’s really coming from engineers, but it’s an opportunity for architects to be upskilled and question and push back,” he said.

Wallis added that the task of getting clients on board with C16 is complicated by risk aversion to combustible materials. “Timber can be a hard sell, [but] it’s not that it’s impossible,” he said, adding that he is currently working with a developer that is making a point of building with timber.

Haggart reached for the term “using a hammer to crack a nut” when describing the strict regulatory framework around timber. “Buildings are nuanced in terms of scale and so we need to get that message across,” she said. Stolon Studio’s Barker added that this overcautiousness is particularly pronounced in public-sector projects: “When you do anything with a



local authority or anything that's backed by government funding, timber frame is just automatically rejected."

Cooke Fawcett co-founder Oliver Cooke suggested using incentives such as taxation might circumvent the "contradiction between encouraging people to use sustainable resources and a regulatory framework making it trickier".

The discussion concluded that the prize for overcoming the barriers towards making C16 a standard choice could be a revolution in lowering the carbon impact of construction. MacKenna highlighted the theory that using timber en masse in construction creates a 'forest pump', where growing trees sequester carbon, which is then stored in building frames once harvested, allowing new trees to be planted in their place which draw more carbon dioxide from the atmosphere. This is especially the case with C16, which is typically harvested after 35 to 45 years, compared with C24, which takes 50 to 60 years to grow to the right strength. "Studies have shown you can lock up more carbon in the fabric of the city than in the growing forest," he said.

Embodied carbon savings have been a key motivator for Waugh Thistleton's pioneering use of timber frame, according to Haggart. She linked potential use of C16 timber with work her firm has been doing into developing the concept of a bioregion. "It's materially efficient, presumably the cheaper solution and offers more security", she said. "It's just how we get that narrative in a clear and concise way that people want to adopt."

Hayatsu Architects architect Ethan Loo called for more science around the embodied carbon impact of using C16. "That would help push that narrative about the UK as a bioregion," he said. ■

Above left: ROAR's Newton Park Place, an oak-framed extension to a Grade II-listed house.

Left: ROAR convinced the client to use timber frame and wood-fibre insulation rather than brick.

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SUSTAINABILITY VERSUS REALITY

Two very different schemes – a university music centre and an Antarctic research station – show how ambitious sustainability targets can survive construction realities, a RIBA conference in partnership with Aluprof heard

WORDS

Michèle Woodger

Architectural briefs increasingly set ambitious sustainability targets. But how can these survive the realities of construction, value engineering and the priority given to a building's central purpose? The recent RIBA conference, *Achieving Ambitious Sustainability Goals*, demonstrated that, yes, it is possible for sustainability to weather all that, and under extreme conditions too.

Such was the case at Flanagan Lawrence's Laidlaw Music Centre at the University of St Andrews, which achieved BREEAM Excellent while balancing site constraints and highly specialised acoustic requirements. The university's first dedicated music facility for 600 years comprises a performance venue, rehearsal space, practice rooms, a recording studio and more. The fundamental requirement is acoustic excellence.

One might think this would force environmental performance to play second fiddle, considering, for instance, the necessity for concrete slabs and steel frames. Yet, as architect Jason Flanagan explained: "There are very similar benefits that you get out of making a building sound tight."

It is remarkably solid: although the

triple-height foyer is glazed on three sides, the remainder of the building has minimal, deeply recessed windows, which (along with shading trees) limits solar exposure. At the same time, glazing around the foyer provides light and views where it matters.

The roof accommodates plant and PVs, keeping noisy equipment away from the performance spaces. Inside, the acoustic demands required highly controlled 'box-in-box' arrangements to prevent sound transmission. Flanagan acknowledges this came with a material cost, but the building also makes considerable use of loadbearing local sandstone.

A very quiet ventilation strategy similarly allows acoustic and environmental concerns to mutually reinforce each other. In the main recital room, cool air is delivered through very long duct runs, allowing it to enter slowly and silently. A plume of heat generated by occupants then causes the air to rise naturally before being extracted at high level, reducing the energy demand. Curtains allow for acoustic tuning, while chilled beam/VRF systems also serve the rooms.

Environmental inspiration

At first glance, too, the site did not help.

The building sits among mature trees and listed historic structures, such as the Dovecote and Bute Building, with the trees' root zones a significant constraint. But preserving them actually aligned the design and environmental needs to shape the building. The architects created a new quadrangle with the arboretum as focal point. The leftover gap then demarcated the available space for the music centre.

Consequently, the building emerges through glimpses. "It becomes quite sylvan, and changes drastically through the year," said Flanagan. Result: an architecture whose environmental, acoustic and aesthetic strategies are unusually symbiotic.

Extreme environments

A very different set of constraints shaped Hugh Broughton Architects' Discovery Building at the British Antarctic Survey's Rothera Research Station. Here, the priorities shift from fitting into an established landscape to literally surviving it. Nevertheless, the building is rated BREEAM Outstanding – something only 1% of new non-domestic buildings in the UK achieve. The station accommodates a digitised central store, an energy centre,



offices, areas for collaborative working and a communications tower. It must also meet the wellbeing needs of staff who spend the winter there, and withstand the nippy conditions of -30°C combined with 150km/h winds.

Cross-disciplinary approaches

Drawing on engineering approaches, the team used MMC and modularisation to manufacture large components in the UK and deliver them, preassembled, to site, making best use of Antarctica's limited construction window.

The building's aerodynamic wind deflector takes inspiration from Formula 1 cars. It captures and accelerates wind down the leeward side to forcibly push snowdrifts away from the building, which otherwise could easily surpass its own height. As architect Luca Rendina explained, this leads to structural damage and considerable energy wastage on diesel-hungry bulldozers. 3D modelling, VR rehearsals and other digital technologies further helped anticipate and resolve problems before they reached the site.

"There are no real design standards for Antarctica," said Rendina. "Climate change and physical conditions throw

up huge challenges, so it all comes down to weighing risk against the impact and finding the most pragmatic solution."

Extreme conditions can make the stakes clearer – perhaps nowhere else on earth is the need to anticipate climate resilience more apparent.

A team effort

For conference speaker Joe Giles of Aluprof, sustainable thinking means looking beyond headline material claims to a product's whole-life journey, as is made possible by Aluprof's vertical integration. At its heart is close client collaboration.

Indeed, this conference reinforced how ambitious targets depend as much on people and process as design. At Rothera, it was critical that the researchers and design and construction crews shared living arrangements, said Rendina, facing challenges with a team ethos.

And perhaps that is the most practical answer to the seminar's question. Ambitious sustainability is not achieved by adding technology to an otherwise conventional project. It comes from establishing clear objectives early, and treating demands as opportunities to collaboratively find better solutions.

Above left: Located on Adelaide Island, the two-storey, $4,500\text{m}^2$ Discovery Building has a high-performance envelope incorporating composite panels and triple-glazed Aluprof windows.

Top right: Laidlaw Music Centre by Flanagan Lawrence is composed as three wings of varying heights, with sandstone walls and deep, vertical windows.

Above: The oak lined McPherson Recital Room is the world's first chamber hall with a reverberation chamber, located above, allowing 'tuning' for diverse styles and performances.

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ALUPROF
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VELUX ARCHITECTURAL COMPETITION 2026/27

Entries are open for the annual awards organised by VELUX in cooperation with RIBA J and DETAIL magazine, celebrating the power of daylight in architecture

Opposite: 2024 award-winner Cabin with Skylights, by Atelier Hajný.

Below: 2025 award-winner Kindergarten Horn, by Lukas Imhof Architecture.

Have you completed a project in which daylight was central to its success? The VELUX Architectural Competition 2026/27, organised by VELUX in cooperation with RIBA J and DETAIL magazine, celebrates buildings whose arrangement, use and enjoyment has been transformed by the introduction of natural light as an integral element of a larger architectural idea.

We are seeking outstanding projects that demonstrate how daylight improves quality of life, enhances the spatial impact of architecture and the sustainability of buildings. Whether it's a new construction, a renovation, or a restoration, we want to highlight design that handles daylight in distinctive and powerful ways.





Completed buildings can be entered for the VELUX Architectural Competition 2026/27 in two categories:

Light.Space.Human.

The Light.Space.Human. category celebrates the use of daylight in the design of domestic environments. Submissions can include both new and remodelled residential buildings.

Projects will be assessed on the intelligent and imaginative use of natural light to establish atmosphere and mood; on the targeted positioning of light sources; on design that establishes optimal lighting conditions for the particular uses of rooms; and as architecture that works with the dynamism and changeability of natural light.

Commercial and Public Buildings – supported by VELUX Commercial

The Commercial and Public Buildings category recognises projects that make exceptional use of VELUX Modular Skylights to enhance the experience of a building. From schools and offices to cultural venues, civic buildings, transport hubs and industrial facilities, successful projects demonstrate how daylight can improve wellbeing, support sustainability goals and elevate architectural design.

Judges will be looking for projects where VELUX Modular Skylights are thoughtfully integrated into the overall architectural concept, delivering measurable impact through innovative daylighting solutions that enhance user experience and building performance.

Who can enter?

The VELUX Architectural Competition 2026/2027 covers two regions, with separate judging processes and prizes for each region. Completed buildings in the United Kingdom are eligible in the UK region, while those in Germany, Austria and Switzerland are eligible in the DACH region.

All submitted buildings must have been completed between 31 August 2023 and 31 December 2026, and use products from VELUX (roof windows, roof window combinations, flat roof windows, and VELUX Modular Skylights) as part of the daylighting concept.

Entrants must register at the competition website to receive login credentials. Competition entries are also submitted via the website. They must include an A2-format project sheet illustrating the project in drawings and photographs, a separate explanatory report, and declarations of consent from architects/participants and photographers.

Full details on competition submissions are given in the Competition Document. Deadline for entries is 28 February 2027.

Judging and prizes

Competition entries will be reviewed by an independent jury: Claudia Lynch, director at Lynch Architects; Nick Hayhurst, co-founder of Hayhurst & Co; Mary Ann Steane, architect, academic and writer; Jakob Schoof, deputy editor-in-chief of DETAIL; Richard Williams, senior architect development manager at VELUX UK; and Chris Foges, contributing editor at RIBA (chair).

Winners will be announced at an awards event in April 2027. Winners and commended entries will be published in RIBA and DETAIL, and on VELUX websites. A total of £16,000 in prize money has been announced for the UK region: £5,000 each for the winners in the two categories, and £1,500 for highly commended entries. ■

Visit the competition website to download the competition document, and to register to enter:
velux.co.uk/professionals/architects/architecture-competition

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YOUR VOICE, YOUR RIBA: ONE YEAR ON

Last autumn we asked our members what they made of the profession, and of us. Nearly 2,000 people replied – this is the first account of what's happened since, and what's still to come

In autumn 2025 we conducted the most significant listening exercise in recent years to ask members – past, present and potential – about the biggest challenges and opportunities facing the profession, what they value most about RIBA, and how we can improve. Close to 2,000 people completed the survey, alongside 42 in-depth interviews, a review of our own documents and a large-scale consultation with staff.

Members were clear that the profession is under strain from fee erosion, economic uncertainty and shifting practice models, and that they need their professional body to protect the conditions that make it viable – and architectural excellence possible. In terms of RIBA, members value three things: how we influence; whether we are relevant to their work; and whether we are straightforward to deal with.

Influence

Members tell us advocacy is one of the most important things we do, and that they want to hear more about our work and the difference it makes.

Influence takes many forms. Some of our work, such as the Repeal, Reserve, Regulate campaign, is highly visible, putting the case for reforming the current regulatory system right to the heart of

the Ministry of Housing, Communities and Local Government. Other advocacy work happens behind the scenes. The one constant is our members' voice. Whether via our expert advisory groups on planning, housing, climate and more, through Council, our global representative body, or through feedback from surveys like this one, our voice starts with you.

Much of the work already underway responds to what you told us in the survey. Towards Tomorrow's Architect sets out our vision for the future of the profession, ensuring that education delivers for all, practices have better business support, regulation is reformed in the right way, and architecture's public profile is strengthened. We're making the case for city architects, and working with partner organisations on the UK Net Zero Carbon Buildings Standard, to create a single framework for what constitutes a net zero carbon building in the UK. We are also doing what we can to defend the commercial value of architecture, ensuring that fairer fees and procurement remain firmly on the agenda. This is only a snapshot, and we are working hard to make our advocacy more visible. In a crowded digital world, you'll start to see more prominence across our channels, wherever you get your news.

“
We've got more and more responsibilities, but our fees don't go up, because there's always a race to the bottom line.”

Chairman of RIBA, Sir John Gledhill

Relevance

Members tell us that they want a simpler membership structure that recognises where they are in their career and where in the world they work.

In response, we've made several changes. Individual membership fees are frozen for the following year, while we've introduced a sliding scale into chartered membership, starting with the first year free, to make the transition from being a student easier. Students will have a broader choice too, with an optional paid-for category offering enhanced support throughout their career journey.

We are supporting schools of architecture to open more flexible pathways into the profession, including a five-year route to registration. With new professional practice experience standards confirmed by ARB this summer and our outcomes-based Education and Professional Development Framework, what counts is the competence students can demonstrate, regardless of the study route they have taken.

On technology, members tell us they want practical help to adopt artificial intelligence and new tools with confidence, and guidance they can apply to live projects. Our annual AI report, published in July, shows how practices are using it and where risks lie. Guidance on responsible use is in development.

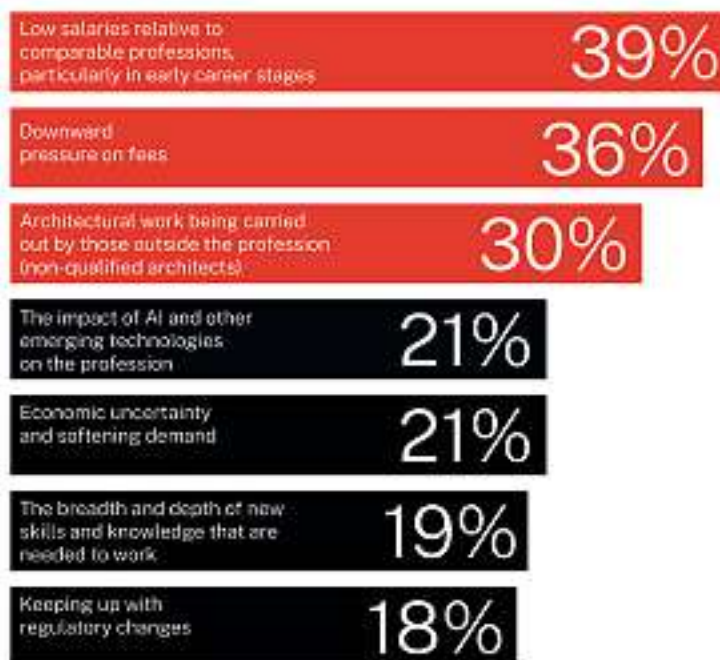
Practice leaders tell us practical tools, from business support to best practice guidance and continued professional development (CPD), are among the things they value most. A new learning platform arrives soon, making CPD easier to find and easier to use, with more tools to shape learning around each member's career to follow. Many of our CPD materials are already free through RIBA Academy and the CPD Providers Network.

Starting 2027, a streamlined core CPD curriculum built on seven themes will give professional development a clearer shape, with more room to follow a specialism.

Experience

Members tell us they want RIBA's resources to be quick and simple to find. We have rebuilt riba.org, and work on navigation and search continues so that what a member needs is quicker to reach. The homepage is being restructured so that policy and advocacy, the work members most often say they cannot see, is visible from the front door. This

Top 3 challenges facing the profession, in % selected



To what extent do you believe the following present a challenge to the profession or profession as a whole?
(Base: Chartered members 84%)

forms part of a wider investment in our digital infrastructure, with key improvements already delivered and further developments through the House of Architecture programme to come over the next couple of years.

Members tell us the strongest connection they feel to RIBA is local, and they value a relationship that grows with them across their career. Our regions run a continuing programme of digital and in-person events, alongside branch networks meeting all year round, and we published our first volunteer handbook since 2011.

Internationally, members tell us the RIBA name carries real weight in their markets, and they want the support behind it shaped around the places they practise. Our chapter network is growing: Canada has just launched, elections are under way in the USA and a member group is forming across Africa.

We are also undertaking a survey on RIBAJ, to capture your feedback on the new look RIBAJ.com and themed issues, and we will be user testing the recently launched RIBA.org and our digital services with members before we finish building them. ■

Raising the profile and value of architects is one of the most valued things RIBA does, according to members.

The Your Voice, Your RIBA membership review was conducted with Truth Consulting, an independent strategic research consultancy. truth.ms



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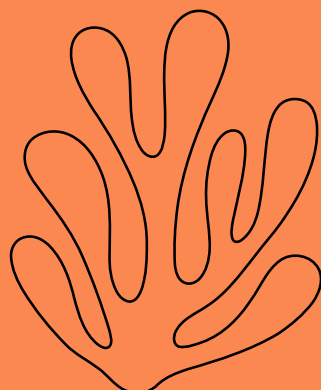
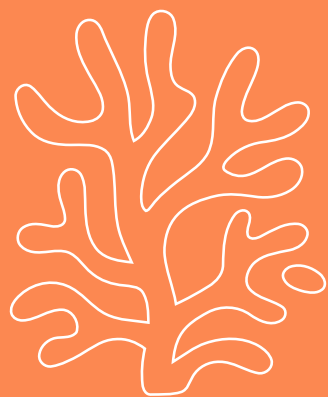
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RISING STARS 2026

STANDING OUT FROM THE CROWD

A POSITIVE COLLISION

One of the words that cropped up most in this year’s entrant submissions for RIBA Rising Stars in association with Origin was “intersection”. In the early working years, this collision of personal convictions, research interests and opportunities starts defining careers. The collision makes for unique individuals with specialist skills across construction, design, conservation, material use, safety and planning – individuals who show many ways of bringing value.

However, in deliberating on which individuals should be included in the shortlist and the winning cohort, the judges were looking for several steps beyond the fascinating career paths and roles that entrants were playing. Often the deciding element was leadership – in the team or in the wider realms of architecture, from colleagues to a group of strangers at a hackathon.

The emphasis on output has never been stronger. The metrics of impact from carbon tonnes saved, upscaling the use of a material based on textile waste, and the uptake of guidance in and out of the practice were the qualities and quantities that excited the judges.

So it is with great admiration that we introduce the 10 individuals who make up the RIBA Rising Stars 2026 cohort. In their intersecting paths they are both leading and delivering. We applaud them for that.

**Eleanor Young, editor,
RIBA and chair of judges**

CREDITS

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FORWARD THINKING

Origin is proud to continue its partnership with RIBA and support the Rising Stars award. The initiative reflects our own commitment to engineering beauty in every detail, driving innovation, sustainability and delivering statement glazing solutions that lead the industry in performance and aesthetics.

This year’s Rising Stars have impressed with their entrepreneurial spirit, sustainable thinking, and the use of natural materials in their craft. They have shown expertise and forward thinking in creating spaces that support today’s way of living, while considering the future and the planet.

Like our products, their designs challenge convention and have reimagined what’s possible, so it’s a privilege to witness such talent and be part of a movement that’s shaping the future of architecture.

Ben Brocklesby, sales and marketing director, Origin



JUDGES



Mimi Barr
Senior development manager, London Borough of Camden, Rising Star 2025



Christopher Blust
Design director, AKTI



Ben Brocklesby
Sales and marketing director, Origin



Helen Fisher
Director of operations, UCL East Campus



Joanna Sutherland
Director, Haworth Tompkins



Eleanor Young
Editor, RIBA (chair)



AHMAD MOHAMMED

ASSOCIATE, CARTWRIGHT PICKARD

PART 1 2013 PART 2 2016

DESIGN LEAD ACROSS THE PRACTICE'S LEEDS AND MANCHESTER STUDIOS, WHILE WORKING TO WIDEN ACCESS TO THE PROFESSION



MARK NEWTON PHOTOGRAPHY

AHMAD MOHAMMED

Ahmad Mohammed combines design leadership at Cartwright Pickard with a commitment to widening access to the profession.

As well as leading design in the practice's two northern studios, Mohammed mentors colleagues through professional qualifications and works with the Muslims in Construction Network to support greater representation and build pathways for future talent.

"My progression is measured not only by personal achievement," he says, "but by the standards I raise, the opportunities I create."

His referee, Cartwright Pickard founding director Peter Cartwright, praised his work on major education and commercial projects, describing him as an "outstanding architect with significant future potential".

Mohammed was project lead on the £50 million Kellstone office building in Leeds, where he championed an MMC-led approach. He recently led a British

Council for Offices tour of Kellstone to share project learnings of the project, which was 65 per cent let before its completion this summer. Mohammed has also led two buildings for Leeds City College's emerging Mabgate campus, and contributes to the practice's design and AI working groups.

"I am interested in humble architecture," he says, "buildings that do not need to shout, but understand their context, serve their users and grow old gracefully."

His achievements both at the practice and beyond impressed the judging panel. "He's clearly a good communicator," said judge Joanna Sutherland. "He wants to encourage and collaborate and have everyone who's part of the team growing and developing and learning new skills."

Judge Helen Fisher welcomed "his commitment to distinctive new buildings, such as Kellstone, that are at the same time demonstrably human centred and well-integrated in large redevelopments".

WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

Royal College of Physicians, London, by Denys Lasdun. I fell in love with this building during my first year of architecture school and it has remained a constant reference throughout my career. I admire its sense of order, hierarchy and quiet confidence, particularly the central stair, which transforms circulation into an architectural experience. More than anything, it embodies what I value most: architecture that is thoughtful, timeless and deeply connected to its users.

Above left: Mohammed championed MMC for Kellstone, in Aire Park, Leeds.

Above right: He also led on University Centre Leeds, including this library.



ANNA CREW

ARCHITECT AND SMALL SITES PROGRAMME MANAGER, EALING COUNCIL

PART 1 2013 PART 2 2016

FURTHERING SMALL SITE DEVELOPMENT IN LONDON
THROUGH THE CREATION OF A FINDER TOOL

"She took an idea, turned it into a tool, found the evidence and turned that into policy," said judge Christopher Blust of Anna Crew's work with geospatial technology to enable greater optimisation of small sites for development.

Crew began this work while at RCKa, working with founding director Russell Curtis on the development of the Small Sites Finder – a Prop-Tech funded tool that identifies small sites for development. Her input enabled the project to expand from two partner boroughs to cover the whole of London.

The machine learning tool subsequently informed the 2026 Strategic Housing Land Availability Assessment and also the London Plan Small Sites Design Code, whose preparation she led for the GLA. For the latter, Crew also ran the engagement programme to test its parameters with other architects, local authority officers, SME developers and interest groups.

"It was clear from the outset that Anna had an extraordinary capability and aptitude for this work," says Curtis, her referee. "Many of the proprietary tools we developed in the early stages of our research were entirely of her design, with Anna finding creative and innovative ways to solve novel problems."

Crew upskilled herself in coding and geographic information tools to support her work, demonstrating "a lot of hard graft", observed judge Christopher Blust.

She subsequently joined Ealing Council through Public Practice to lead a small sites programme, working "with geospatial evidence bases to support housing delivery through a placemaking-led triage methodology and other targeted interventions".

Judge Mimi Barr liked how Crew had developed an interest while in practice and really honed those skills to drive the project further with her practice and beyond. "It will be exciting to see what she will do next," she said. "Can she translate those skills into another challenge that the public sectors has?"

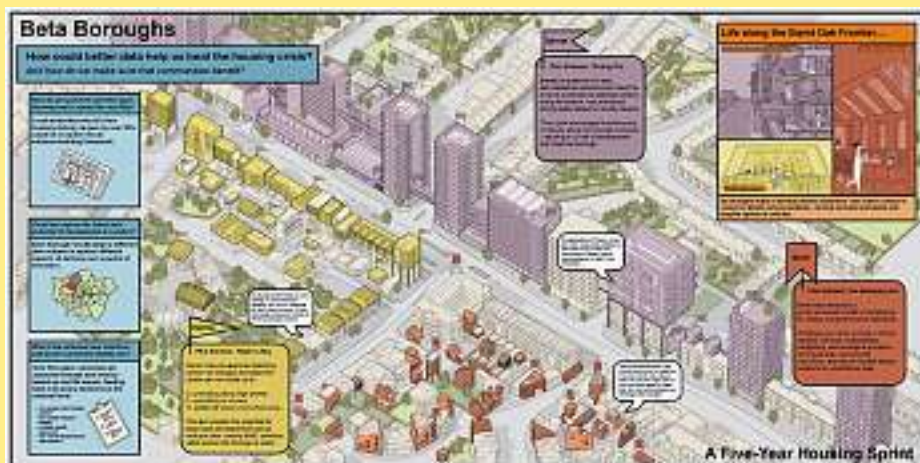


WHAT EXISTING BUILDING, PLACE OR PROBLEM WOULD YOU MOST LIKE TO TACKLE?

Give me every small site in London! We have a moral imperative to optimise land if we want to meet housing need, and small sites are a big part of the answer. And this needs architects: first, to unlock housing capacity through great design; second, to get involved higher up in the process, embedding the practice of good placemaking into decision-making. It's why I moved into the public sector. We need to make doing nothing harder by working to understand the abundant potential in our cities, and the barriers facing delivery. That means better geospatial data to support its release in ways that enrich communities.

Above: Crew worked on RCKa's Padnall Hall Youth Centre in Marks Gate, Chadwell Heath, completed in 2026.

Below: RCKa's 2025 Davidson Prize Entry drawing on better data with the aim of helping beat the housing crisis.





RENEE DOBRE

ASSOCIATE, DESIGN COMPUTATION TEAM LEADER, NBBJ
NAAB-ACCREDITED BACHELOR OF ARCHITECTURE 2019

LEADING DESIGN COMPUTATION ACROSS 20 GLOBAL STUDIOS
AS WELL AS SHAPING PRACTICE USE OF AI

"I've always been fascinated in how to close that big gap between what an architect can picture in their head, and what they can actually get out of a mouse and a keyboard and certain software."

So says Renee Dobre, who is on a mission to do just this through both her work at NBBJ and in the wider profession. Her aim is to remove the friction involved in using software "so that the tools stop being an obstacle and the geometry they produce is genuinely buildable".

Her interest in this began when she started 3D printing her own study models to convey complex geometry for design review. Now based in the US firm's London office, she has a hybrid role leading on design computation and undertaking project work. She is recognised internally as NBBJ mentor of

the year (2025) and innovator of the year (2026), has trained over 50 staff, and has set practice standards for Grasshopper, Rhino and AI-assisted workflows.

"Our approved AI toolkit was going largely untouched because it looked like more corporate software to learn," she says. "I set up firmwide sessions on shared whiteboards where anyone can pin up a workflow, including the ones that failed."

Her research includes hackathon participation to test ideas that can be brought back into the practice and further developed on live projects. At AECtech New York in 2025, her pitch persuaded nine strangers from eight competing practices to join her team and turn hand-drawn sketches into working BIM models, winning Most

Collaborative Hack out of 40 pitches.

Beyond the practice, Dobre spoke at RIBA's AI in Practice summit this year, contributed to The Architect's AI Handbook (RIBA Publishing) and taught a guest masterclass at the Architectural Association.

Judges were impressed with her leadership, including her ability to persuade others to join her team at the hackathon. "These are good business skills and I think architecture needs more of that," said Mimi Barr.

"She's entrepreneurial, looking at real work problems and getting stuff used by practice," added Eleanor Young.

Her referee, NBBJ design technology leader Mona Hashemi, praised her "extraordinary blend of curiosity, technical depth, and creative energy".

Left: Dobre's 2024 conceptual form study, exploring computationally generated geometry and its translation into spatial experience.

WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

Parque Quetzalcóatl, on the edge of Mexico City. Javier Senosiain has been building it for over 20 years and it remains unfinished, which is the part I admire. You cannot fully draw a ferrocement cave or a tunnel finished in broken mosaic in advance. Those decisions are made in the making, by people with their hands on the material. I spend my working life building tools to get an idea out of someone's head and into something that can be constructed. Parque Quetzalcóatl is a useful reminder of where the line sits. The last two per cent is resolved on site, and it should stay that way.





JAMES MAK

DIRECTOR, OF ARCHITECTURE

PART 1 2014 PART 2 2017

ENTREPRENEURIAL LEADER OF A LONDON/SEOUL PRACTICE WITH A STRONG HANDS-ON ETHOS

James Mak's interest in architecture began when he founded a charity to build schools in Cambodia while studying human geography at the LSE. The enterprise, established when he was just 19, built five village schools over ten years, giving Mak a love of the construction process, and sparking his decision to pursue architecture and study at the Architectural Association.

"Being on the building site with craftsmen and really seeing its intricacies gave me a curiosity towards how things are made and come together," he says.

Mak then relocated to Cornwall for two years to work as construction manager on the Pentire Residence, a three-storey new build in Newquay.

Born in Hong Kong, Mak co-founded Of Architecture with Jongwon Na in 2021 with studios in London – where he is based – and Seoul. Its UK projects include Woodbury Residence – a

reinterpretation of an Edwardian house built to Passivhaus standard using reclaimed materials, which has featured on Grand Designs. This summer, the practice created Phantom Tea Room for the Architecture Foundation (AF), using tea as a lens on craft and hospitality.

"He listens, collaborates, and produces work of real originality under real constraints," says his referee, AF director Ellis Woodman.

The practice has had significant success in international competitions, including the Yeonsu Youth Centre, an 8,000m² civic building in Incheon, clad in fluted glass, and the Namhae Local Food Centre, both completed last year in South Korea. The firm is about to start on site on an organic farm in Geochang.

One of the challenges has been scaling up the practice's hands-on ethos as its projects have grown in size. Mak feels it is possible to trace a central thread

of material tactility and honesty, and a desire to create "generative" spaces that are flexible and adaptable for the end user – a lesson learnt from the early village school projects.

Mak's on-site experience particularly impressed the judges. "It demonstrates how hands-on experience of building as well as design has really furthered his ability as an architect," said Joanna Sutherland, while Christopher Blust added: "It's a compelling hands-on leadership story starting in Cambodia, building schools, then being a construction manager in Cornwall."

Looking ahead, the practice is working with an artists' studio provider in London and would also like to design more projects for public use.

Mak is also a studio master on the new AA Transfer, billed as the world's first one-year graduate access programme in architecture.



JOANNA WILSON

SUSTAINABILITY LEAD, FLETCHER PRIEST ARCHITECTS

PART 1 2015 PART 2 2018

DRIVING SYSTEMIC CHANGE, INCLUDING A NEW SUSTAINABILITY STRATEGY AND MATERIAL REUSE GUIDANCE

Below: Fletcher Priest Materials Passport demonstrator app.



Joanna Wilson impressed judges with the impact she has made since joining Fletcher Priest in 2023 as the practice's first ever sustainability lead.

As well as leading B Corp certification, she led and co-authored the practice's Material Reuse Guide and Material Reuse Catalogue. She also delivered a new sustainability strategy, spanning knowledge and skills development, project processes and measurement, and thought leadership.

"She's clearly enabling everyone to work in a stronger way because she's providing the tools to do so," said judge Joanna Sutherland. "Having someone who champions and communicates different sustainability processes – like material reuse – is so important to empower everyone across the practice."



Left: Of Architecture's Yeonsu Youth Centre (2026) in Songdo, Incheon, South Korea.

WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

Fuji Kindergarten in Tokyo, by Tezuka Architects, is the piece of placemaking I admire most. A single oval building with a 200m rooftop deck, which children run laps of all day, it has no walls between classrooms, trees grow through the roof, and a child who doesn't want to stay in the room is allowed to leave, and always returns. The architecture doesn't discipline behaviour, it makes room for it—generative rather than prescriptive. Removing control, not imposing it, is the harder decision, and the one I try hardest to carry into my own work.

Another judge, Ben Brocklesby, was particularly impressed with the “mammoth” task of leading B Corp certification on top of everything else.

Wilson saw scope to drive the sustainability agenda when she joined the practice after previously working at a healthcare practice.

“There were a lot of good things happening at a project level, but I felt like we could tie them into the narrative of the practice a bit better,” she says. “There was an opportunity to share the lessons learned internally, but also externally to play our role as part of the ecosystem driving innovation in the industry.”

Her focus has been on “enabling others to embed sustainability principles into their own work, recognising that lasting impact comes through influencing

people, processes and culture at scale”.

The material reuse initiative was a significant part of this, collaborating with industry partners and drawing on research and project learnings to form a replicable process. In addition, she advocated for an open-source approach to encourage wider industry adoption.

She developed and implemented fee-earning in-house material reuse audits and expanded the practice's material-passporting capability following on from its design of 100 Fetter Lane in the City of London. She also led the development of a web application to engage clients, visitors and students with circular economy principles.

Material reuse is now embedded in all bids and projects, including its own studio fit-out at 100 Fetter Lane.

WHAT EXISTING BUILDING, PLACE OR PROBLEM WOULD YOU MOST LIKE TO TACKLE?

I want to tackle the slow pace of innovation in our industry. As architects we are able to collaborate (I see this regularly in our heads of sustainability group), but we remain reticent as an industry to share our lessons learnt. We need to test, fail, and learn and faster improve traditional project cycles. I would like to create more mechanisms to share ongoing innovation successes, failures and near misses, including their reasons why, to streamline and support project teams with the time and resource it takes to develop and implement innovative solutions on already tight fees.



ARCHONTIA MANOLAKELLI

SENIOR ARCHITECT/ SENIOR DESIGN RESEARCHER, ATKINSRÉALIS

PART 1 2014 PART 2 2018

USING EXPERTISE IN PSYCHOLOGY TO EXPLORE THE SCIENCE OF SPATIAL EXPERIENCE AND DELIVER HUMAN-CENTRED DESIGN

Archontia Manolakelli says she has built her career around one question: “How can we better understand the impact of places on people and use what we learn to design spaces that help us flourish?”

As an architect who also holds a masters in psychology, she is well-placed to do just this in her work at AtkinsRéalis, where she holds dual roles in architecture and behavioural design research.

She is keen to strengthen exchange between environmental psychology and architectural practice as the sole architect on the British Psychological Society’s environmental psychology section committee, and also through her ArchPsych.co.uk knowledge exchange platform, which has attracted more than 9,000 readers across 141 countries.

She is also a visiting researcher at Leeds Business School and a visiting tutor at the University of Manchester.

“The challenge is carrying human insight through the pressures of real-world projects,” she says. “My response is to make its value unquestionable through evidence: learn from people and research, translate insight into tools, test them in live projects, share what works and use it to adapt what comes next.”

Her dual roles enable her to bring an architect’s eye to research and a researcher’s eye to projects. “More and more, it’s becoming just the way I practise architecture,” she says.

She is leading Cardiff Council’s post-occupancy evaluation programme across seven mainstream and SEND schools, with learnings from each project informing the design of the next.

She was also project architect on a recent windowless workplace project for a secure client, created with an approach informed by biophilic design research. A post-occupancy study will test the impact of the environment on employee wellbeing in comparison with that of a standard workplace.

“She turns insight into capability, methods, tools and services others can use,” says her referee, AtkinsRéalis associate director Neil Bowker, who described her as changing how the practice turns knowledge into design.

Judges felt she was making a valuable contribution to design thinking and knowledge-sharing. “I was impressed by her genuine desire to make a difference to wellbeing through architectural design,” said Helen Fisher.

WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

The Kolumba Museum, Cologne, for the way its architect, Peter Zumthor, builds through ruins, fragments and memory. The materiality and craftsmanship are extraordinary, from the brickwork and filtered daylight to the junctions between old and new. The building feels deeply rooted in the city and gives the historic fabric a new spatial life. I admire the calmness of the spaces, the attention given to how materials age and meet, and the way the sequence of rooms, thresholds and views makes you slow down, look closely and discover the building gradually.



Left: The Box, Plymouth. In a three-person architectural team, Manolakelli developed concept and design drawings as an architectural designer. She returned as post-occupancy evaluation lead using surveys, workshops and interviews to evaluate user experience, environmental performance and project delivery.



ANDRADA CALIN

SENIOR URBAN DESIGNER, LONDON BOROUGH OF HACKNEY
AND FOUNDER OF ANDRADA CALIN STUDIO
PART 1 2015 PART 2 2018

BENEFITING LOCAL COMMUNITIES THROUGH BOTH HER PUBLIC SECTOR ROLE
AND CHAMPIONING OF COMMUNITY LAND TRUSTS



Andrada Calin's diverse practice has been built around the belief that design can create meaningful public benefit.

Born in Romania, Calin studied at the Manchester School of Architecture and, since 2020, has worked at Hackney Council where she aims to "shape a more resilient, inclusive and sustainable built environment by advising on planning, regeneration and design policy". Key projects include leading the Stamford Hill Design Guide, which tested housing typologies and engaged residents to explore upward extensions for a growing Charedi Orthodox Jewish community.

As well as her role at Hackney, she is active in the promotion of community land trusts, leading engagement between residents and Southwark Council for the Scylla Road project in Nunhead. The project has now secured a transfer of land for 12 affordable homes.

Calin established her own private studio after winning the London Festival of Architecture's 2025 bench design competition. Her Think Twice design used the Fabreco material, made from waste textiles, working collaboratively with a fashion designer and furniture designer to realise the project in Fitzrovia.

She also has a long track record mentoring young people with InvestIN and the National Saturday Club.

Calin strongly believes in the "powerful" role that architects' design skills can have in making change in the public sector, and is relishing the diversity of her activities and the fresh perspectives these give. "I think they all bring benefit and push boundaries in different ways," she says.

Judges were particularly impressed with both her very strong focus on public interest and her use of recycled waste on the Think Twice bench project.

"It's not a simple thing to take waste and turn it into something usable yet beautiful," said Christopher Blust.

"The breadth of her work stood out from planning to bench design, including her work with a community land trust," added Eleanor Young.

WHAT EXISTING BUILDING, PLACE OR PROBLEM WOULD YOU MOST LIKE TO TACKLE?

I want to dismantle the barriers preventing community land trusts (CLTs) from scaling across London. In our housing crisis, it is unacceptable that so many new homes remain unaffordable and disconnected from the communities they serve. We need systemic change. As an architect and urban designer, I turn advocacy into tangible action, championing planning policies and design principles that recognise CLTs as a distinct delivery route through small-site allocations and clearer pathways to unlock public land. My goal is to enable a people-centred solution, keeping genuinely affordable homes in community hands for generations.

Above: Calin teaching at InvestIN Summer Programme, London.



ALBERTE LAURIDSEN

ARCHITECT / CO-FOUNDER, EDIT
PART 1 2014 PART 2 2018

CHALLENGING EMBEDDED BIASES WITH CREATIVITY
AND COLLABORATIVE DESIGN

In 2018 Alberte Lauridsen co-founded feminist design and research collective Edit “to consider architecture through a feminist lens”. She continues it alongside other practice and project work.

“Feminist architecture isn’t a style; it’s a refusal to let some users and some histories count as design problems while others don’t,” says Lauridsen, who combines this mission with her work as an architect and teaching at the London School of Architecture.

Edit’s projects include Somers Town Stories, a heritage trail in London’s Camden, which celebrates the area’s working-class history and the domestic labour now hidden from the public realm, inspired by 1930s laundry drying yards. In 2022, the Laundry Day project hung a washing line across RIBA’s facade, asking “whether the profession designs for

care work, or just neat facades”.

Lauridsen led the design of the Purchase Street Social Space in Central Somers Town in collaboration with a local youth group. This was commissioned by DSDHA, whose director Deborah Saunt praised Lauridsen for equipping young people “with the language and critical eye to positively contribute”.

Lauridsen is currently co-designing a garden pavilion for Create London and Peabody at the old Holloway Prison site, working with women who have lived experience of the criminal justice system.

Judges were impressed with her feminist design perspective and, in particular, her “innovative” work on Somers Town Stories. “Working between community and creation is very difficult, and Edit has done it with great flair,” said Eleanor Young.

Below: Lauridsen worked across all stages at Greenhill Place, Harrow, while at CarverHaggard, turning a car park into a square and pavilion with food markets, centred around a play space.



FRANCESCO RUSSO



FERGUS KNOX

DIRECTOR, KNOX BHAVAN
PART 1 2012 PART 2 2016

TAILORING ARCHITECTURE TO LIVES AND CONTEXT
WITH A FOCUS ON MAKING

Fergus Knox won RIBA East Project Architect of the Year 2024 for Little Big House, a home designed to cater for the needs of its artist client, who is paralysed.

“What stands out is Fergus’s ability to create a home that is both stunning and accessible, tailored to the way I live,” said Henry Fraser, the client and his referee. “He has shown me how good design can genuinely make everyday life easier.”

This glowing testimony particularly impressed the judges. “He’s clearly a skilled architect who is a great listener and has the ability to take a client’s needs and turn it into something that’s absolutely suitable to them,” said Joanna Sutherland. “I’m sure we’ll see more from him”. Ben Brocklesby added: “He’s listened, he’s delivered – that collaboration is there.”

Knox is now a director of the practice, set up by his parents Simon Knox and Sasha Bhavan in 1995, and also teaches at

the Bartlett School of Architecture.

He has a strong focus on making, material knowledge and detailing, describing his approach as “moving between drawing, making and site, and using the knowledge of craftspeople, contractors, fabricators and consultants to resolve buildings carefully”.

He aims to retain this direct engagement with materials, craftspeople and construction – whether traditional or digital prefabrication – as projects grow in scale and complexity.

Knox was instrumental in the delivery of the 2022 Manser Medal-winning March House, a prefabricated timber-framed home raised above the Thames floodplain. He is currently delivering The Pond, a music and creative studio in Peckham, and hopes to further explore other building types in addition to the houses the practice is known for.

Below: March House, which Knox was instrumental in delivering in its position alongside the Thames, where there is an ever-present flood threat.



EDMUND SUMNER

WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

The Jagonari Asian Women's Education Centre by Matrix (1987) embodies a lot that I aspire to in practice. Created through genuine co-design, it responded precisely to what the women asked for: safety from racist attacks but designed sensitively through decorative grilles, a ground-level cooking sink alongside a European kitchen, accessibility before regulations required it. It shows feminist process isn't generic, but should be specific, intersectional and built through listening, not assumption.

WHAT EXISTING BUILDING, PLACE OR PROBLEM WOULD YOU MOST LIKE TO TACKLE?

I would like to rethink how we live alongside water in the UK. Too often, rivers and coastlines are treated as boundaries to defend against, rather than environments to inhabit, restore and protect. Designing a house above the Thames floodplain sparked my interest in building with water rather than against it. I admire how cities such as Copenhagen have reclaimed former working waterfronts for everyday public life. I would like to explore how architecture can combine flood resilience, ecology and public access to reconnect both urban and rural communities with their waterways.



SOPHIE THOMAS-LACROIX

ASSOCIATE, JTP
PART 1 2017 PART 2 2019

DRAWS ON PERSONAL HOUSING EXPERIENCES TO CREATE
MULTIPHASE REGENERATION THAT UPLIFTS AND EMPOWERS

"Sixteen moves in a decade of turbulent housing taught me what insecurity does, and how rarely those affected are asked what they need. Propelled by that experience, I strive to create exemplary places for all, regardless of income or social circumstance, shaped with the people who will live in them." So says Sophie Thomas-Lacroix, who specialises in large-scale regeneration and masterplanning at JTP and co-leads JTP Engages, the practice's engagement offer.

For the estate regeneration of Chrisp Street in London's Poplar, she pioneered co-design methods now used practice-wide, working with the engagement team to shape a five-week process that involved 2,800 participants. The first report-back indicated that 88 per cent backed the plans, and the process was shortlisted for the 2026 Pineapples awards for place.

She led the team for the Great North Leisure Park, securing approval for 1,486 homes plus leisure facilities, and was lead project architect for the Blackbird Leys social housing scheme in Oxford, now under construction.

Thomas-Lacroix also leads JTP's health and wellbeing group, sits on the board of the YADA networking community for young architects and developers, and strives to be a champion for young women at JTP.

"Her commitment to quality housing for people of all circumstances shows through in her approach to engagement and co-design," said judge Helen Fisher.

"She is a fearless and talented leader and has a very promising career ahead of her," says her referee, JTP partner Nigel Bidwell.



WHAT PIECE OF ARCHITECTURE OR PLACEMAKING DO YOU MOST ADMIRE AND WHY?

Few places are as audacious as the Barbican. Externally, it takes an unapologetic stance on public space and how we live in it. Internally the homes are simple, adaptable and unforgettable. But what I admire most is how, over 50 years, residents have shaped how it is run – and it shows. Gardens tended, routes lit, it proves that high-density urban living thrives when it is well planned, well built and, above all, well cared for by those who live there.

Above: Thomas-Lacroix secured approval for the 1,486 homes at the Great North Leisure Park in Barnet, north London.

THE RISING STARS 2026 SHORTLIST

LUCY GREENHOW

ARCHITECTURAL ASSISTANT \ L7 APPRENTICE,
WRIGHT & WRIGHT ARCHITECTS
ADVOCATE FOR DESIGNING FOR NEURODIVERSE AUDIENCES AND
COORDINATING HERITAGE, ACCESSIBILITY AND SUSTAINABILITY

ALFIE HOPE

DIRECTOR, FOLLY ARCHITECTS
SPECIALIST IN BUILDING SAFETY AND HIGHER-RISK BUILDINGS, WHO
BELIEVES ARCHITECTS SHOULD TAKE A LEADING ROLE WITHIN THE
NEW BUILDING SAFETY REGIME

JAMES HOUSTON

DIRECTOR, STUDIO HOUSTON
ENTREPRENEURIAL ARCHITECT GROWING OWN PRACTICE AFTER A
CHANCE ENCOUNTER DEVELOPED INTO A MAJOR THEATRE PROJECT

NIFRAS KHAN

DESIGN TECHNOLOGY LEAD, CDM SMITH
PROLIFIC MENTOR COMMITTED TO BOTH EASING THE TRANSITION
FROM UNIVERSITY TO PRACTICE AND HARNESSING DIGITAL FLUENCY
TO REDUCE REPETITIVE PRACTICE PROCESSES

JAKIAT JITU

MAJOR PROJECTS OFFICER, SOUTHAMPTON CITY COUNCIL
ADVOCATES COMMUNITY ENGAGEMENT AND CO-DESIGN TO ENSURE
DEVELOPMENT AND REGENERATION IS SHAPED BY THE PEOPLE
WHOSE LIVES IT AFFECTS

MATTHEW KING

ARCHITECT, TIGGCOLL
CHAMPIONS THE USE OF TIMBER DFMA AND RETROFIT STRATEGIES
TO UNLOCK CHALLENGING SITES

OLIVER STURDY

PROJECT ARCHITECT, MAWSON KERR
DRIVING SUSTAINABILITY THROUGH LOW-CARBON, LOW-ENERGY
ARCHITECTURE AND KNOWLEDGE SHARING, BOTH ON SITE AND
IN EDUCATION

ROSY WING NGA TAM

ARCHITECTURAL ASSISTANT, IFDO
COMBINES INDEPENDENT RESEARCH INTO MAINTENANCE AND
REPAIR WITH PRACTICE WORK FOCUSED ON SUSTAINABLE,
COMMUNITY-CENTRED DESIGN

TRISTAN TAYLOR

SENIOR PROJECT ARCHITECT, FLETCHER PRIEST ARCHITECTS
CHAMPIONS DESIGN INNOVATION AND MATERIAL REUSE, USING
COMPELLING ILLUSTRATION TO CONVEY COMPLEX ARCHITECTURAL
NARRATIVES TO CLIENTS AND PLANNERS

KIRSTY WATT

ARCHITECT/ACCESSIBILITY SPECIALIST, GRAS,
PHD CANDIDATE, LEEDS BECKETT UNIVERSITY
WORKS AT THE INTERSECTION OF INCLUSION, UNDERREPRESENTED
COMMUNITIES, CONSERVATION AND PRACTICE TO FURTHER
INCLUSIVITY IN HERITAGE BUILDINGS

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PRESIDENT: YOU SPOKE. THIS IS WHAT WE HEARD

A year after nearly 2,000 members told RIBA what they need, Chris Williamson explains what he heard, what is already changing and why the listening must continue

Below: Local RIBA connections are very important, as seen here at the RIBA South West Awards event.

A RIBA book found in my school library first got me interested in architecture. It made the case that architects are there to make other people's lives better. I have carried that belief ever since, and it is why I stood to be RIBA president.

The Your Voice, Your RIBA survey went out during the autumn I became president. Nearly 2,000 of you answered it, and 42 members and practices gave us hours of their time in interviews. That is a real act of faith in your institute, and we are grateful for every response.

What you told us was direct. The architecture profession is under strain. Responsibilities keep growing while fees are squeezed, and you want RIBA to protect the conditions that make good architecture possible. You look to us for three things: how we have influence, whether we are relevant to the work you do, and whether we are easy to deal with. All this rang true. Before I stepped into the role of president, and now, travelling the country and meeting members overseas, I have heard the same in almost every room I have entered.

Much of what you asked for was already under way. The review has given us a sharper sense of what matters most to you, and a duty to tell you about it. An accompanying article from RIBA (see page 88) sets out where each of those three areas stand, but I wanted to touch on a few areas that are close to my heart.

You will know I have been vocal on regulation. I believe what protects the public is competence, and that work



bearing on safety should be done by people qualified to do it. The Repeal, Reserve, Regulate campaign makes that case to government, and we now sit on the expert group advising on how our professions are regulated.

Lifelong learning has long been a cause of mine, one that I will continue to champion. A new learning platform arrives soon. From 2027, a core CPD curriculum built on seven themes will give professional development a clearer shape, with room to specialise.

You also told us your strongest connection to RIBA is local, and our regions, branches and international chapters are among the best things we

do. Internationally, the RIBA name opens doors, and I have seen that for myself. Our chapter network keeps growing.

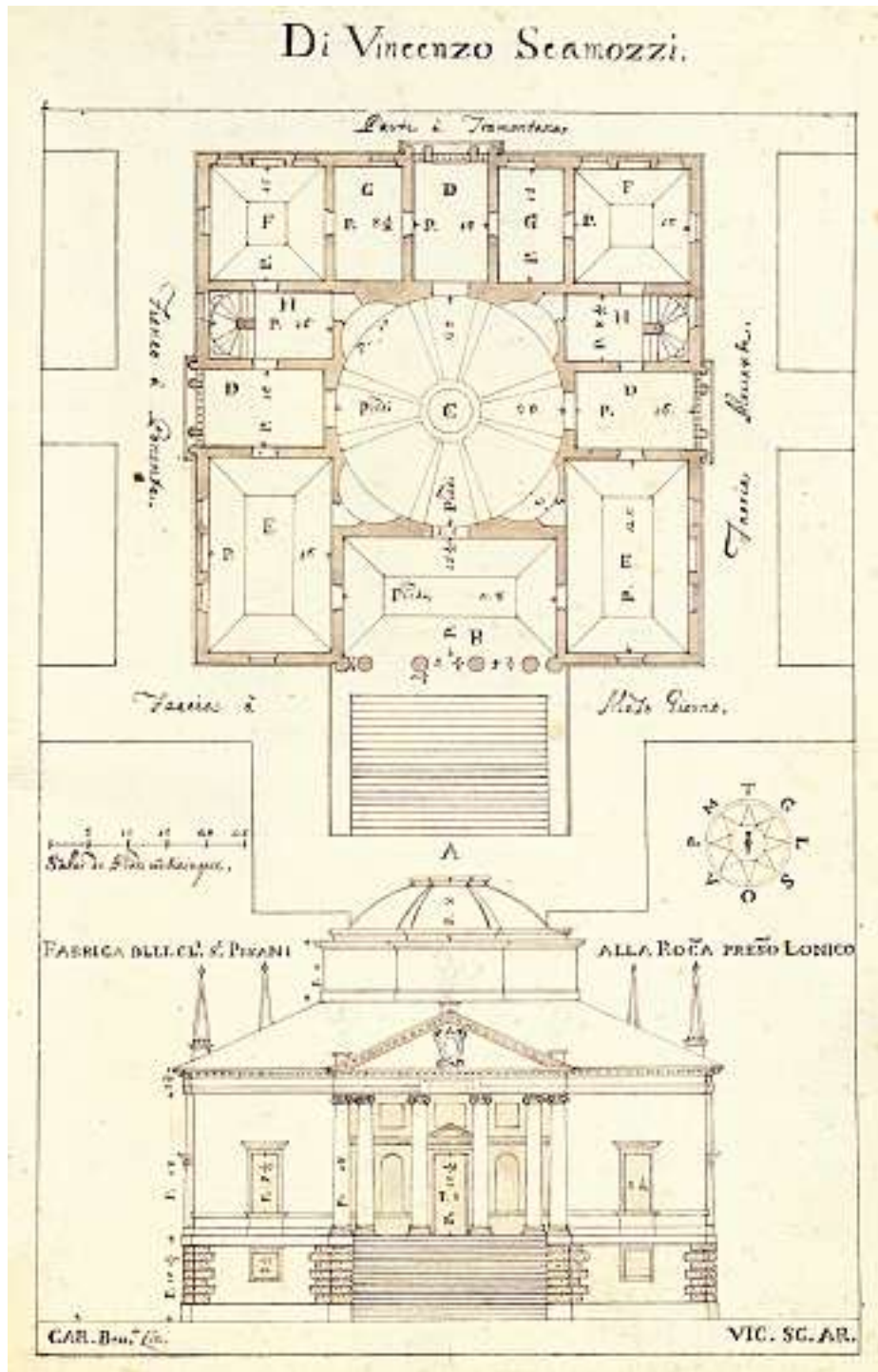
Some of this is delivered, some is in progress, and we will be clear which is which. Fairer fees and fairer procurement remain the hardest challenges, and our Procurement Expert Advisory Group is building the evidence to make that case.

In eight years' time RIBA turns 200. I keep asking what kind of institute we want to be when we get there. Your answers are the best guide we have. Read the full account in this issue, see more at riba.org, and keep telling us what you think. My door is always open. ■

PRECISELY PLANNED: A 16TH-CENTURY ITALIAN VILLA

Design for Villa Rocca Pisani,
Lonigo, Italy
Carlo Bovara (fl. early 17th century)
after Vincenzo Scamozzi (1552-1616)

By Susan Pugh



The little-known draughtsman, Carlo Bovara, produced this manuscript copy of a drawing from Vincenzo Scamozzi's ambitious treatise *Dell'Idea dell'Architettura Universale*, soon after it was first published in 1615. It illustrates Scamozzi's design for the Villa Rocca Pisani, built near Vicenza between 1576 and 1578 for a noble Venetian family.

A general sense of mathematical order, with an emphasis on symmetry and proportion, is very apparent within the design, both with respect to the plan and the elevation. Italian Renaissance architects looked to classical Rome for inspiration, using both surviving Roman antiquities and the ancient treatise by Vitruvius for guidance (*De architectura*, c. 40 BCE). They believed the use of precise mathematical proportions, geometry and musical ratios, all using a unit of a measurement based upon human scale, reflected divine order and harmony.

The Villa Pisani bears many similarities with the near-contemporary Villa Rotunda, designed by Scamozzi's mentor, Andrea Palladio, and begun in 1567. Although Scamozzi's career is overshadowed by that of Palladio, with the huge international influence of Palladio's own treatise *I Quattro Libri dell'Architettura*, Scamozzi's publication far exceeded that of his mentor in terms of mathematical depth. Upon Palladio's death in 1580, he inherited several of his projects for completion. ■

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SonaSpray acoustic ceiling spray in Downstairs at dMFK, ©Ed Reeve.

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