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WWM's scandalously good opera house
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October 2019
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Shawms, by Margaret Justin Blanco White, one of the emerging women of the 1930s

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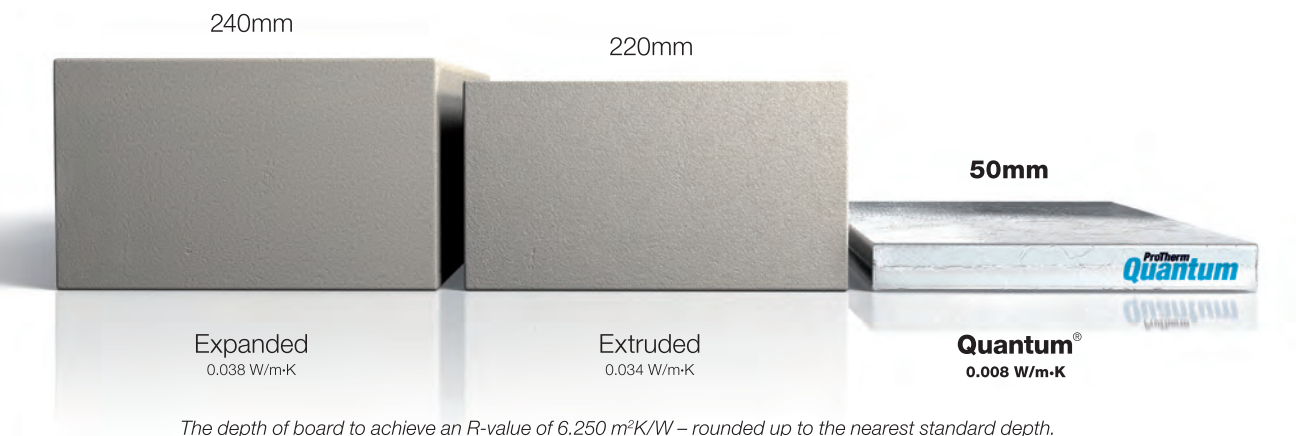
Upview of Belfast's Built: East pavilion by OGU Architects and Donald McCrory. Photograph by Joe Lavery



Now you've declared on the climate emergency we've some ideas of what to do about it. Tell us what you think: letters.ribaj@riba.org


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1: Buildings

We give you Battersea, Belfast and Market Harborough this month. In the case of Battersea, we consider the enormous work-in-progress of the development around and within Giles Gilbert Scott's old upturned-table power station by many architects: with an extension of the Northern Line being built to serve it and the equally hell-for-leather Nine Elms redevelopments on the way there, this for good or ill is the New London. Perhaps in search of relief from that construction frenzy we visit Witherford

Watson Mann's beautifully crafted and Stirling Prize shortlisted Nevill Holt Opera in rural Leicestershire. But we're back in the urban realm for two projects in Belfast: one a small experimental pavilion with big ideas by up-and-coming architects – our cover image – the other a large acute mental unit at the city hospital by a crack team of architects from Edinburgh, Belfast and London which sets out boldly to reinvent that typology through a landscape-led plan. ●

Below

A new London quarter is being created around Battersea Power Station, page 31.



ONLY ON RIBAJ.COM

He designed his sanatorium for simplicity of line both inside and out with large south facing windows and a ban on right angled corners because they collect dirt

Augustus William West's Benenden Sanatorium called on his unbuilt prize winning design for the King: ribaj.com/benenden

Belfast joins the club

Pavilions are getting more and more popular and Belfast's Built:East sits at one with the heritage of its location

Words: Hugh Pearman Photographs: Joe Laverty

The building of summer pavilions as examples of outré temporary architecture has become a familiar thing, to the extent that in London the Serpentine Gallery's original international series is in danger of eclipse from younger homegrown pretenders such as the biennial version at Dulwich Picture Gallery or the Architecture Foundation's east London canalside Antepavilion. But there is original thinking to be found much further afield. An example in Belfast, Built:East, succeeds differently by being unostentatiously rooted in the history of its post-industrial location.

It was designed by three friends otherwise working in various places – OGU Architects (Rachel O'Grady and Chris Upson) in Belfast with London-based Donald McCrory. It won an early-career competition organised by the Royal Society of Ulster Architects with backing from building materials company JP

Corry in 2017. After much to-ing and fro-ing and design development it was finally built this summer, with Maurice Kinhead, chief executive of EastSide Partnership, acting as client. EastSide is an area of regeneration down the Newtonards Road, the centrepiece of which is the recently-established C S Lewis Square (the writer of the Narnia allegories having been born and raised nearby).

The square sits athwart the Connswater Community Greenway, a £40 million new linear park for pedestrians and cyclists following the local rivers. It is anchored by a community centre and café designed by Hall Black Douglas (the practice where Upson works outside of OGU). I take the bus out there from the centre to meet O'Grady in the café; she's sitting at a table with a view straight across to the pavilion, set against (but not touching) the end of a row of shops.

The pavilion is a freestanding barn-like





Opposite bottom

The pavilion acts as a portal on the Greenway pedestrian and cycle route.

Left Belfast trusses unusually configured.

Below Market hall or gateway or industrial memory – the Built East pavilion carries many messages.

structure with no foundations (the client didn't want its expensive existing paving disturbed). Instead it is ballasted with tall concrete boots at the feet of its three timber columns at the front, with the equivalent weight provided by a concrete ground beam running along the back. These are both pinkish, the result of experimenting in using calcined local clay as part of the mix. Similarly, the zigzag roof trusses and the curving Corten roof with its skylights were made locally.

O'Grady calls it the 'Belfast Truss Pavilion' after the hybrid bowspring/lattice timber structural member first developed in the city in the 1860s to create wider column-free spans and familiar to us from early 20th century aircraft hangars and factories, some of them now restored as in the Bristol Aerospace Museum (RIBA, May 2018). They were originally made nearby, and a large ropeworks with Belfast Truss roof structure used to

'We had to get this right so that people would sponsor the next one'

stand opposite the pavilion site. Her version – structurally true to the originals – is made of sustainable Accoya wood.

Unlike those factories and hangars, the Belfast Truss Pavilion is a small, almost delicate, affair. The appeal of the six trusses in their concertina arrangement is of pattern and texture, and the shadows cast through them by the skylights. The plan is chamfered at one end so as to pick up the people-movement pattern and avoid obstruction. It is this angle that sets up the zigzag truss pattern. At the rear more diagonals appear in the bracing members across the widely-spaced boarding – effectively a screen to the shop behind and to the roof-drainage outlet.

It is perhaps a little less structurally pure than it might be – O'Grady points out the little fillets of minimal steel bracing between columns and trusses that had to be added to stiffen the whole structure – but you'd hard-



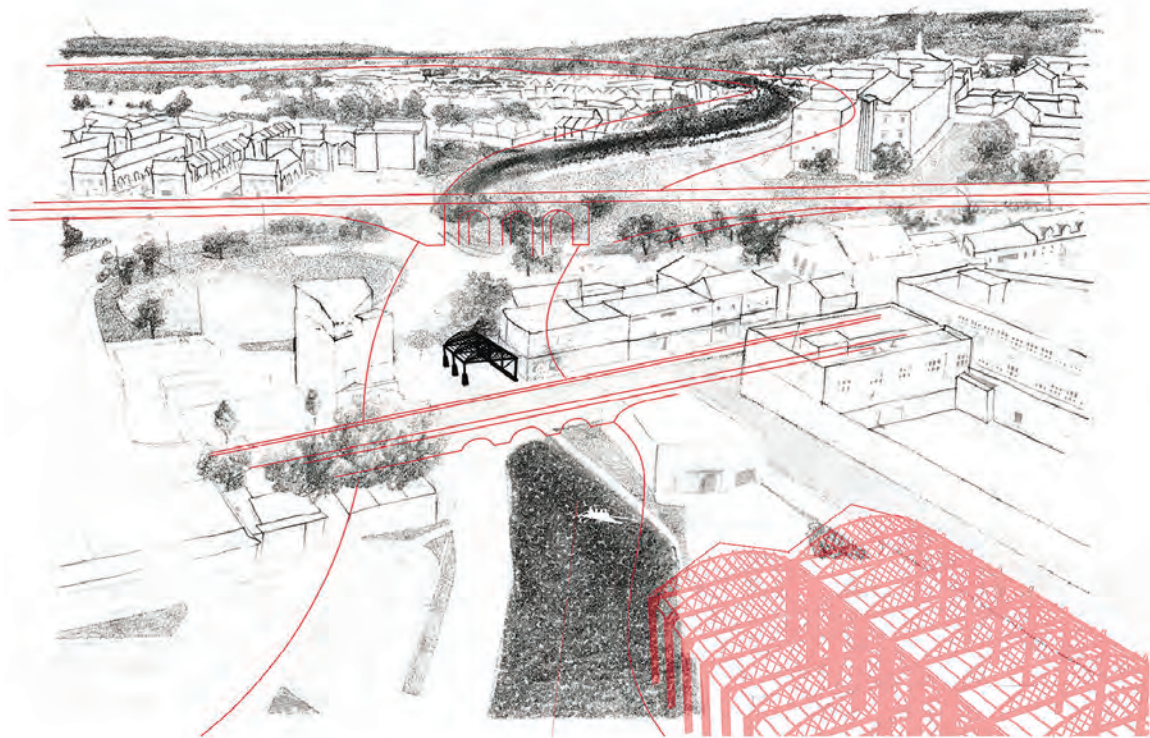


ly notice. Much more important is the way that the space is used: given its position on the Greenway pedestrians saunter through it, cyclists equally whizz through, without giving the place much of a glance: its existence there seems natural, taken for granted. It thus becomes a gateway, but from the side it reminds you of something else: a medieval market hall, perhaps a quayside fishmarket.

Things have changed since the early days when, recounts O'Grady, 'A lot of people referred to it as the bandstand.' But then it was going to be positioned more in the centre of the space. As the design evolved – it had to be made less climbable, for instance – so did the design team's determination. 'We had to get this right so that people would sponsor the next one,' she says.

O'Grady, Upson and McCrory have all previously worked for (different) practices in London where McCrory is now architecture team manager at Tower Hamlets: their joint tally of experience includes architects Wright and Wright, Penoyre and Prasad, Tim Ronalds, Karakusevic Carson, Michaelis Boyd, AHMM, RHWL Arts Team – blue-chip names all. So for a tiny early-career project the Belfast Truss Pavilion has quite a bit of professional experience in it. All three also teach – O'Grady and Upson at Queen's University Belfast, McCrory at Central St Martins in London.

This is no exercise in nostalgia – the three point out that it references the past but is all



Top left Complex skylight arrangement tailored to structural geometry.

Above The ghosts of the 1959 industrial landscape include a large factory with Belfast truss construction.

Bottom left Chris Upson of OGU also works for Hall Black Douglas, architect of the visitor centre.

Below Precast concrete boots and rear ground beam anchor the pavilion without foundations.

Credits

Client EastSide Property

Architect OGU Architects + Donald McCrory Architects

Structural engineer OCSC Belfast

Main contractor Farrans Construction

Joinery and timber structure BPJ Group

Roof manufacturer Fabrite

Precast concrete Moore Concrete Products + Banah UK

about construction innovation using local firms for the three main prefabricated elements – trusses, roof (surprisingly complex with its skylights) and clay-mix precast concrete. Each firm had to make something it had not previously attempted. The all-in cost was £64,000, of which £20,000 came as materials provided by sponsor J P Corry.

All this concentrated design, engineering and manufacturing effort is well worth it. The Belfast Truss Pavilion feels comfortably embedded in its locale. It would be good to see it stay there quite a while, finding various uses. And it sets a high bar for future pavilion projects in Northern Ireland. ●



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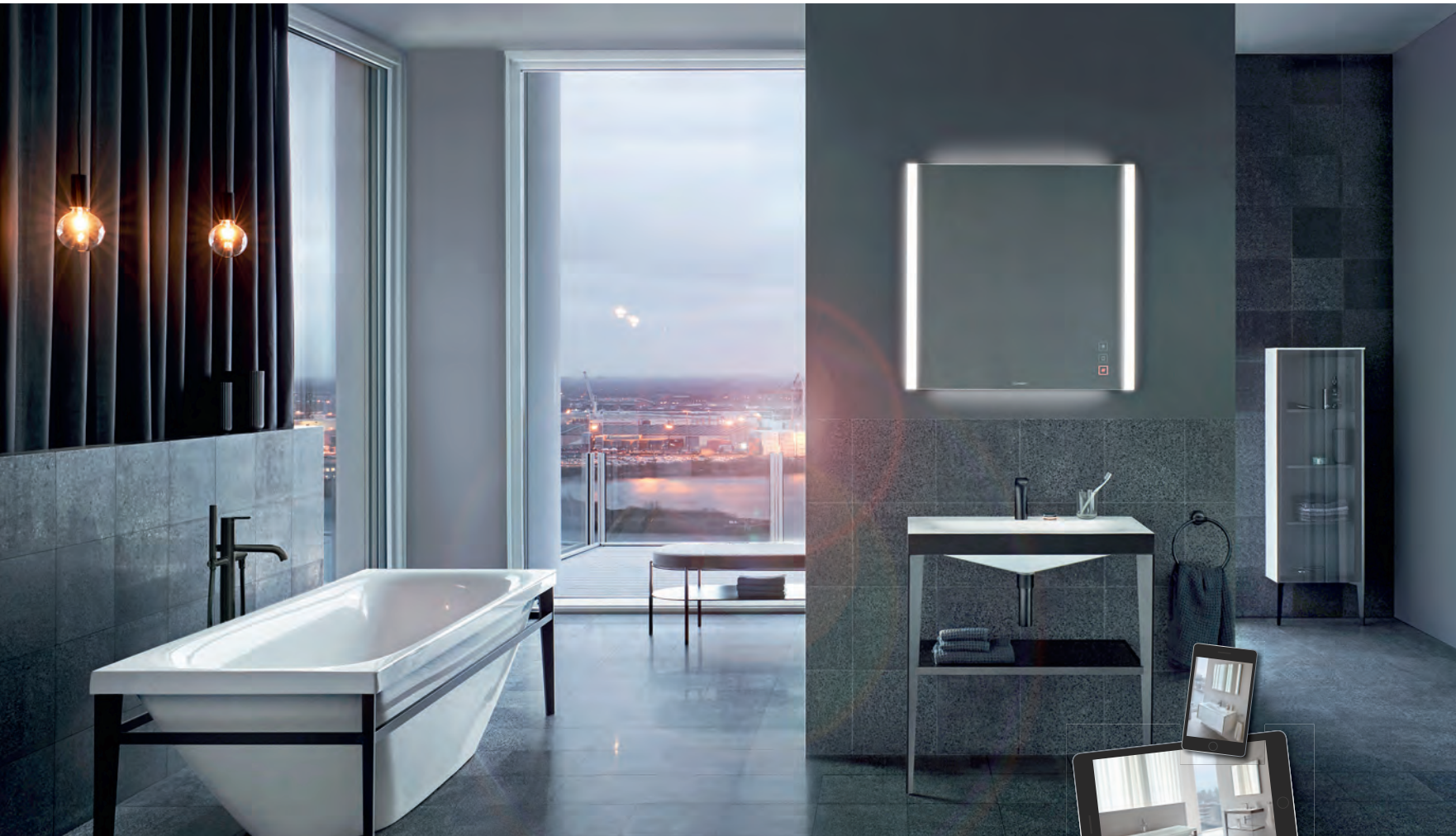
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Ponte delle Torri, Spoleto, Italy

Photograph Agnese Sanvito

Words Jan-Carlos Kucharek

It's no surprise that Umbria's Ponte delle Torri stopped JMW Turner in his tracks on his way to Rome in 1819, to become the subject of a later blurry, heat-hazed oil on canvas. The 230m long medieval aqueduct and bridge rises to a height of 80m above the Tessino Torrent and sits on nine huge piers, curiously separated by arches of differing dimensions, to link two hilltop fortresses.

Perhaps the same view gave American conceptual artist Sol LeWitt pause for thought 150 years later when he set up a studio there, attracting the likes of Henry

Moore, Alexander Calder, Cy Twombly and Isamo Noguchi; some of whose work came to feature in the town's 1962 exhibition 'Scultura nella Citta'. Even the future-gazing Buckminster Fuller proved susceptible to its ancient charms; his 1967 'Spoletofera' geodesic dome still sits like a mischievous kid on the naughty step of the old town's southern fringe.

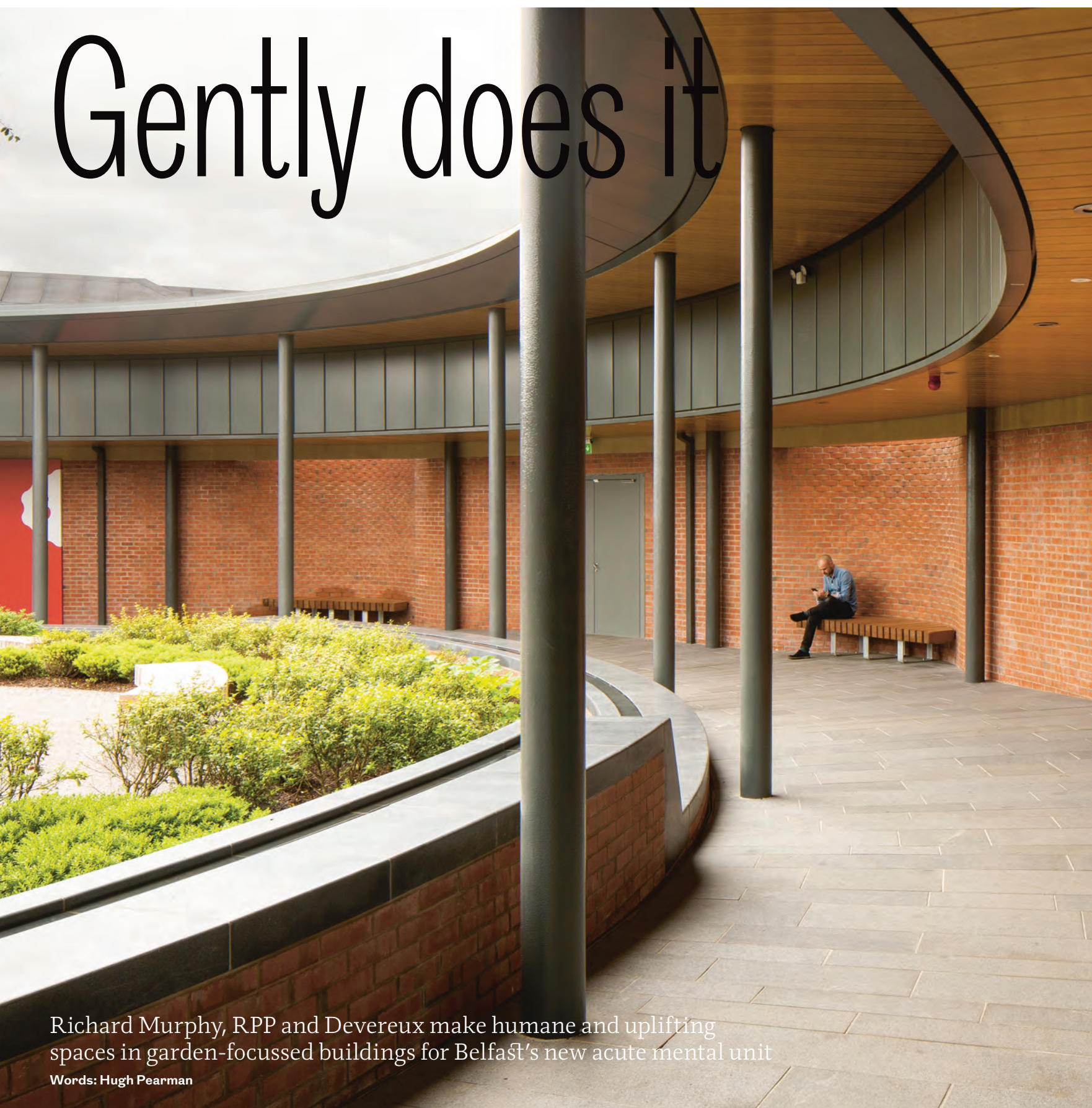
It was documenting some sculptures from that period, like Calder's Teodelapio, that recently drew London-based Agnese Sanvito back to Italy and Spoleto. Overlooked among grander Umbrian hilltop jewels, its relative anonymity appealed to Italian composer Gian Carlo Menotti in 1958. His arts festival here started it all, and continues to this

day. Sanvito chose not to be distracted by the town's Roman ruins and Romanesque Duomo, training her lens instead on the aqueduct, to catch the structure freshly floodlit in the twilight. The bridge appears from, and sinks back into, the Monteluco – 'sacred wood'.

Here, since the third century BC, it has been protected by the Lex Luci Spoletina, a Latin-inscribed cube of stone set on the hill, assigning its evergreen oaks in perpetuity to the god Jupiter, exacting punishment on those who would desecrate it. Sanvito's sodium-tinted view, an evocation of amber flames licking their way up through the ancient trees, proves a timely reminder of the mythological wrath that humans now require no incensed deity to bring upon themselves. ●

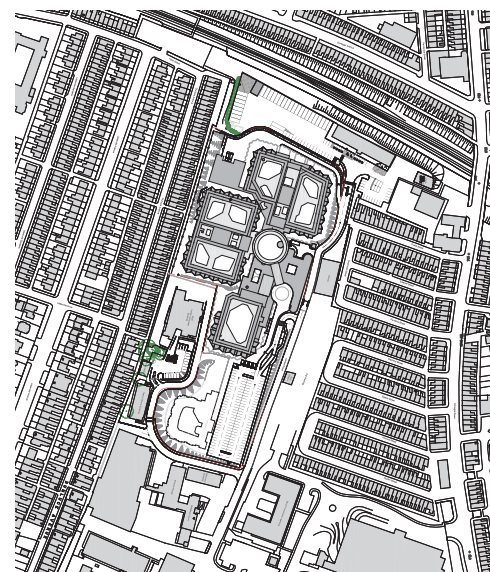


Gently does it



Richard Murphy, RPP and Devereux make humane and uplifting spaces in garden-focussed buildings for Belfast's new acute mental unit

Words: Hugh Pearman



Left The cloistered circular court leading to the ward entrances.

Above Site plan showing surrounding terraced housing and site for extra ward.

As everyone surely knows, getting a halfway decent building commissioned and built by an NHS trust is difficult to achieve, given the normal procurement regime that seems inevitably to lead to the privately-financed design-and-build products of a relatively small roster of big practices. The contrast is stark indeed when a Maggie's Centre, say, lands in the vicinity of a typical large general hospital. But it can be done, given commitment from client and architect. So it has proved at Belfast City Hospital, where a large new acute mental unit by Richard Murphy Architects with RPP Architects breaks the institutional mould with a landscape-led design.

Both Edinburgh-based Murphy and Belfast-based Simon Robinson of RPP doff their hats to their mentor John Cole – an architect himself who was chief estates officer of the Northern Ireland health department, and before that chief executive of the Health Estates Agency. An early advocate of therapeutic environments now retired from his official position, he acts as an independent health buildings adviser and is the RIBA's procurement champion. Without him, you get the strong impression, this building would not have been possible. Joining Murphy and RPP in a three-nations fixture was healthcare specialist Devereux Architects from London – now part of Ryder.

An acute mental inpatient unit has to be



tough and secure, and must deal with the problems of age and infirmity as well. All the more reason, then, to avoid the depressing normal solution: a multi-level building, shunning the outside world, organised around double-loaded corridors. The Murphy/RPP design takes exactly the opposite course. It tries as hard as it can not to be institutional.

Large though it is, with a construction cost of £20 million, this is anything but an assertive building, assuming a redbrick domestic character. In the context of a big hospital its spacious ground-hugging design – single storey with a tall walkable service zone built into the spine roof, all set around generous and very well landscaped courtyards – is a rare use of what is normally much more constrained space. There are details that announce its difference externally, such as the way you approach it through more lush planting, and then see that it is surrounded by a crinkle-crankle (or sinusoidal if you prefer) brick wall rather than a security fence, and that the perimeter rooms respond to the surrounding terraced streets by each having their own expressed pitched roofs. This gives the edges a sawtooth character that – together with the wavy wall – successfully helps to

Above The point of arrival is the first of a sequence of landscaped courts. Chimney of existing building to the rear.

Below A very different ground-hugging architecture in the context of the city hospital.

Credits

Client Belfast Health and Social Care Trust

Architects Richard Murphy Architects, RPP Architects, Devereux Architects

Engineer Aecom

Landscape architect Sturgeon Landscape Architects

Quantity surveyor Sammon Consultants



disguise what a large complex this is.

The plan is the thing. Murphy's idea, as the lead design architect, was to insist on it being single-storey, to therefore occupy the site completely and to make a new set of outside spaces within the overall layout. The biggest of these is the most radical move: having entered the building via one courtyard and passed by reception and café, you then go back outside again, into a larger circular courtyard, in order to access each of the wards which open off it: each of which gets its own front door. Sheltered by a deep roof, this space acts like a cloister (Murphy points out the monastic antecedents of hospitals), and in it you find two things: a rivulet of water running right round its polished-stone balustrade, and a curious hut with no defined purpose for solitary contemplation or private discussion. This sets the tone for what is to follow as you move into the wards, which look onto more private outdoor spaces, each with its own different water-gurgling, reflection-generating device providing a calming background. 'I like to think of the unit as gardens with wards attached,' says Murphy.

His other mantra is: 'I campaign against the corridor'. Well, the double-loaded corridor



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and low temperatures.



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and 100% natural.



HYGENIC
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fungi and bacteria.

Care is taken to make rooms a bit more homely, a bit less like prison cells



SOHAILA MCKEE

for patients, anyway: here the main circulation goes round the edges of the gardens, inside and out. You will see double-loaded corridors on the plan but those are behind-the-scenes staff access routes.

The project went through a rough patch at one point and some changes were imposed such as the servicing spine in the roofs. The idea is that repairs and maintenance to the services can be done without any interaction with patients or staff, a device that neither Murphy nor Robinson regard as strictly necessary, and it certainly makes for a much more lumpen roofscape. But the two architects – who have previously collaborated on two smaller health projects in Belfast – held onto their overall design concept.

Inside the wards you get all the usual kickable hospital materials but care is taken to make rooms a bit more homely, a bit less like prison cells. Little devices like built-in window seats help. Common areas are generous and well daylit, always with views across the gardens. As Robinson points out, there is also an understated security aspect to this: if something concerning happens on the other side of a courtyard, the chances are that staff will see it and act. It's a product of benign design thinking: the hope is that people will

Left Patient rooms have a domestic or hotel feel.

Below 'Living rooms' overlook the garden courts.

Bottom The courtyards are designed to be traversed and used, not just looked at.



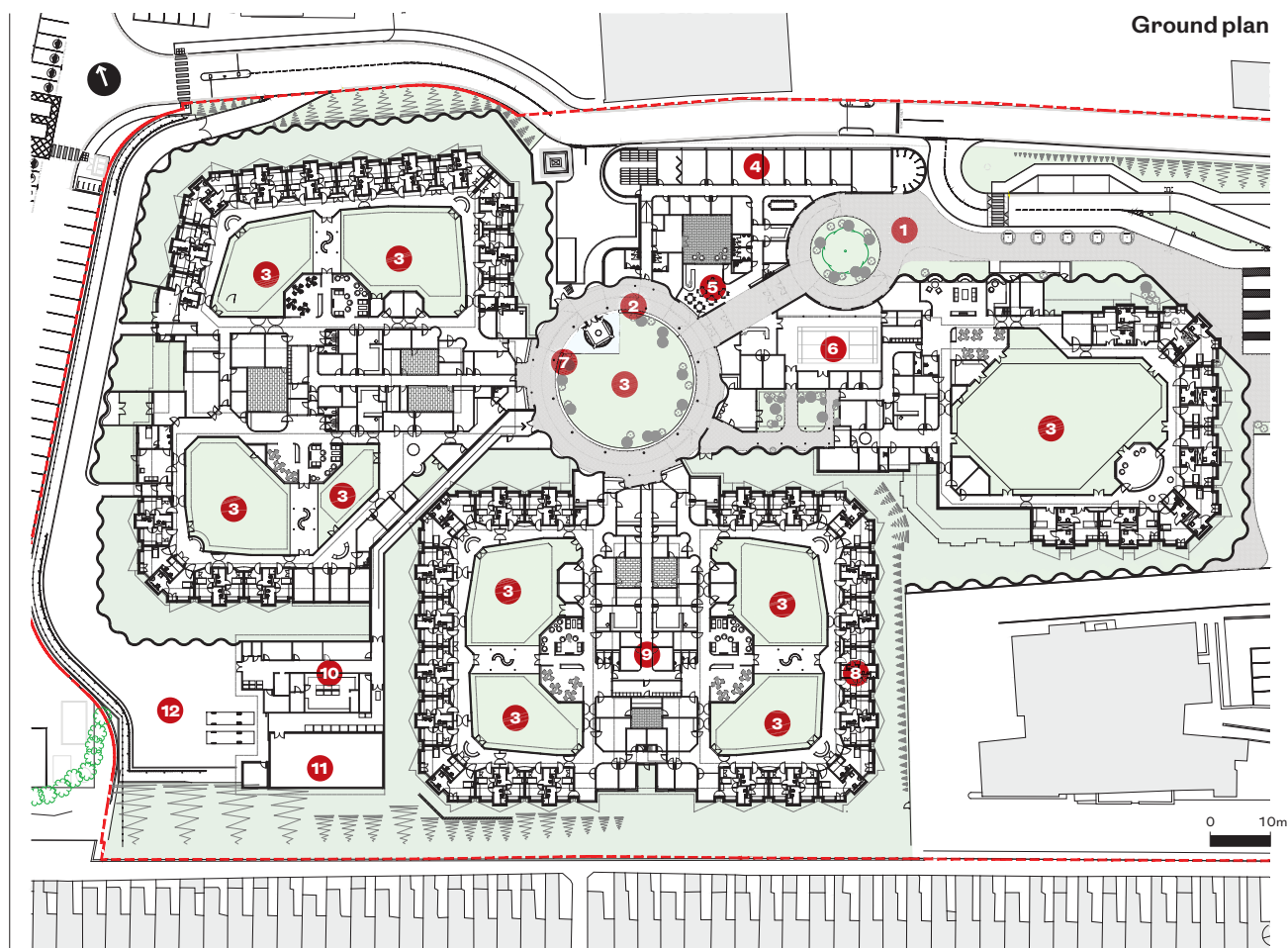
DONAL MCCANN (2)



IN NUMBERS

£20m
construction cost5
wards80
inpatient beds7
courtyards3
architecture practices

- 1 Arrival court
- 2 Ward access cloister court
- 3 Ward garden courts
- 4 Administration wing
- 5 Café and shop
- 6 Gym
- 7 Reflection room
- 8 Typical perimeter patient rooms
- 9 Typical layout of treatment rooms and support spaces
- 10 Catering and laundry
- 11 Plant room
- 12 Service yard



take short cuts across the gardens anyway. They are to use, not just to stare out at. There is even a Petanque pitch in one.

All such buildings are liable to change in use but flexibility is built in. The brief was for wards devoted variously to male, female, mixed, psychiatry of old age and psychiatric intensive care unit: five wards in all. In the longer term the architects have identified the site for a sixth ward on a site just to the east of the new building. The old-age mental unit could move there, so freeing up a ward for other purposes in the first building.

A further aspect of this kind of building is that there is a necessarily high staff-to-patient ratio. Staff facilities, therefore, need to be substantial and here this is achieved both in the form of staff-only spaces throughout the building and in a separate administration wing on the northern side of the complex with all the meeting, conference and changing rooms plus health records storage that such places need.

Walking through the building one gets a sense of calm but also, inevitably, slight war-

iness: staff are primed for quick response in the event of difficulty with patients. There is an 'airlock' entrance arrangement to the wards – one door must close before the next can open, with a pause for checking from a concierge's room alongside. I'd add that privacy considerations did not allow me to see all the wards, just one. Staff were still adjusting to their new workplace as were the patients: there is a well-equipped gym for instance, to the left of the main entrance which at the time of my visit had scarcely been used. In the context of the normal run of such facilities, this is unusual.

This is very complex architecture on plan, a small cityscape of different functions ranging from the public to the intensely private, the general to the clinical. It is a tribute to the design team that here the brief is translated into a succession of intriguing, humane spaces that suggest a better way forward for such buildings. For Murphy and his colleagues and clients, the hope is that this different approach to specialist healthcare design can become the new normal. ●

The hope is that people will use the gardens; there is even a Petanque pitch in one

Below The crinkle-crackle perimeter wall allows for more planting and provides visual variety.



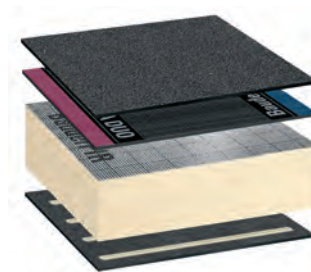
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Words: Jan-Carlos Kucharek Photographs: Hélène Binet



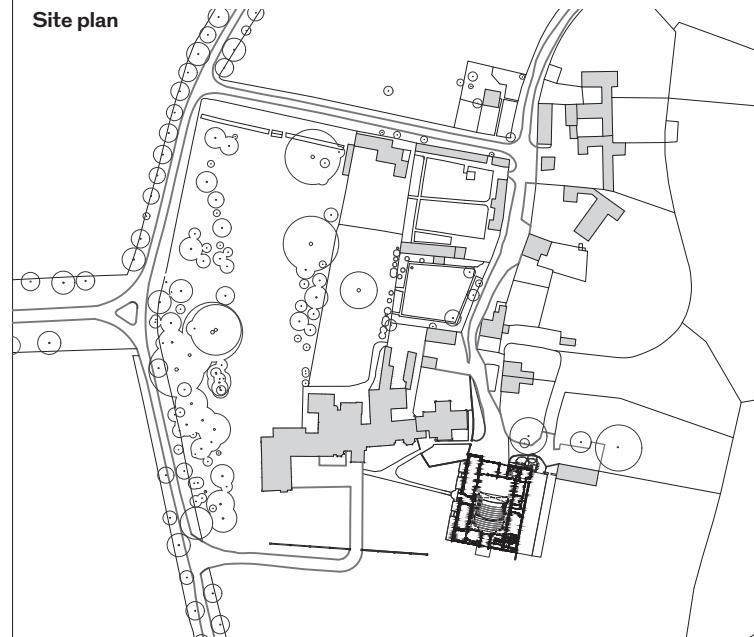
Above The castellated stable block complements the rambling grandeur of the 13th century Nevill Holt Hall.

Left 'The most important view in the House'. Stalls and balcony from the stage.

Below The auditorium forms part of the wider Nevill Holt Hall estate.

If you are wondering what the business case is for a permanent venue for a festival opera that only runs for three weeks a year, perhaps there isn't one. Which seems odd, as the venue in question is owned by former Carphone Warehouse CEO, David Ross – at the 13th century Nevill Holt Hall. According to 2015's Sunday Times Rich List, the year Witherford Watson Mann's discreet insertion moved from a twinkle in Ross' eye to a potential Stirling Prize winner, he had a net worth of £1 billion. A paid-up Conservative 'Leaders' Group' member and friend of Tory grandees and celebrities, the accountant, who made

Site plan



a fortune by getting the sums right, has done so well for himself he doesn't need to care about the numbers anymore. Unless, of course, they're by Mozart, Bizet or Puccini – when he opens his gardens to the hoi polloi for part of the summer for a not-unreasonably-priced operatic day out in rural Leicestershire.

Inspired by the original, brick-faced, upper-middle class idyll of Glyndebourne in Sussex – which paved the way for the high-tech ephemerality of Garsington Opera's pavilion at Getty's Wormsley Park seat outside Oxford – Nevill Holt is an established part of the UK Festival Opera circuit. Founded in 2013, it is modelled on and was initially 'fed' by the repertoire of Surrey's Grange Park Opera – which itself, from humbler beginnings, now has its own dedicated 700-seat theatre. Similarly, since its establishment, Nevill Holt Opera, with only 340 seats, had soldiered on using a temporary

Credits
Client Nevill Holt Opera

Architect WWM

Architects
Structural engineer

Price Myers

M&E consultant Max

Fordham

Quantity surveyor

Gleeds

CDM co-ordinator

David Eagle

Approved building
inspector Oculus

Main contractor

Messenger Bcr

Acoustic and theatre
consultant

Sound Space Vision

Historic architecture
consultant Julian Harrap

Architects

A deep horseshoe plan has Chalmers' requisite intimacy from the stage but also includes the audience in its embrace

Below A muted palette of local stone, board marked concrete, stained Douglas fir, painted steel and sweet chestnut creates visual richness.



tent filling the courtyard of the estate's old stable block, its ground dug out to create a – literal – orchestra pit. But perhaps founder patron Ross wanted to take Nevill Holt's operatic agenda, which promotes new young talent, and align it with those of his charitable Foundation and Education Trust. Together with active local and national outreach work it could make a solid, permanent core for his atomised philanthropy.

And what a core it is. South east of the hall, the crenelated and pedimented early 18th century stable block, replete with bell tower, was a thing of beauty even before Witherford Watson Mann got its hands on it. And although the firm had a budget of over £5 million to create the 800m² space within it, sums like that in less capable hands have been known to produce real turkeys. That said, AHMM refurbished Liverpool's grade II listed Royal Court – a performance venue five times the size – for just shy of £6 million; and FCB Studios' historic Alexandra Palace and Evans Vettori's charming Square Chapel in Halifax (RIBA November 2017) were both realised for less than half of Nevill Holt's £6000/m². So while on entering the 400-seat auditorium's alluring semi-darkness, masked by the heady olfactory blend of Douglas fir and sweet chestnut, you might not be able to actually smell the money, you sure do sense its presence.

Nicholas Chalmers, Nevill Holt's artistic director had, I'm told, dragged the coy architects up on stage in its temporary iteration, pointing out at its makeshift

IN NUMBERS

816m²
gifa

£5.1m
construction cost

£6,263
construction cost per m²

Above Scalloped cut outs in the balcony defer the new structure to the existing.

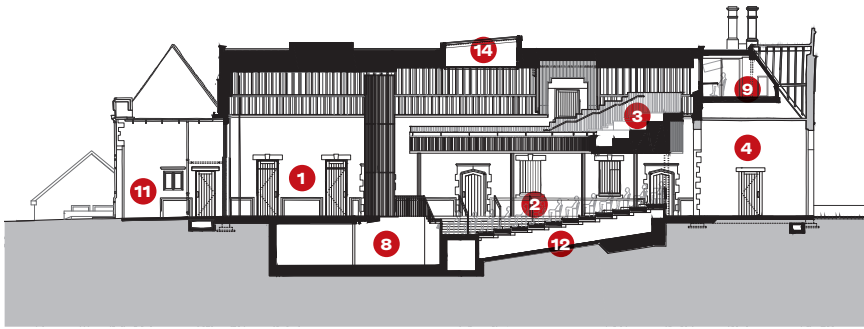
Below The 400-seat auditorium, with its horseshoe relationship to the stage, has real intimacy.



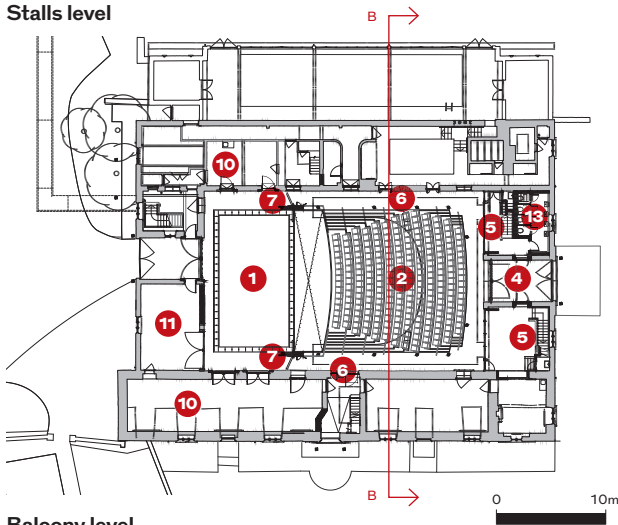
rake of seats and declaring this to be the most important view in the house. Stage fright or not, it's a comment that stayed with them; the urge to create a truly intimate, reciprocal performance space governing their design process. Admittedly, some conditions were givens; there was no possibility of any form of fly tower that would compromise the roof line of the stable block and there was simply no room to create a foyer space from which to disperse assembled opera-goers. But both limitations were to generate a spatial harmonic where the architects felt compelled to treat stage, hall and entrance as a single space; an intention subtly manifested in the proscenium's side walls, huge pivots 'disappearing' the traditional separation between performer and audience.

Nor could Witherford Watson Mann return to a previous architect's proposition to squeeze two tiers of balcony into the 7.5m high space; one that had offered more bums on seats but which had run roughshod across the window and door lines of the stable's courtyard elevation. Instead, a raft of balcony options were investigated and a deep horseshoe plan settled on, that has Chalmers' requisite intimacy from the stage but also manages to include the audience in its embrace. Ten bronze-painted cruciform columns help it hover magically off the walls, its edges just shy of the former courtyard's facade of Great Tew ironstone, the plan shifting differentially where it meets a window or Ketton stone architrave. Far from seeming fussy, these modulations sculpt the volume delicately, carving out space in subtle and surprising ways – not least at the rear of the balcony, where two generous scallops adjacent to the stair halls create a de facto double

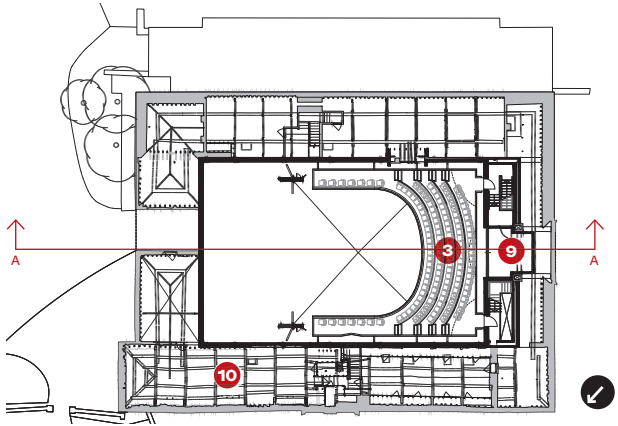
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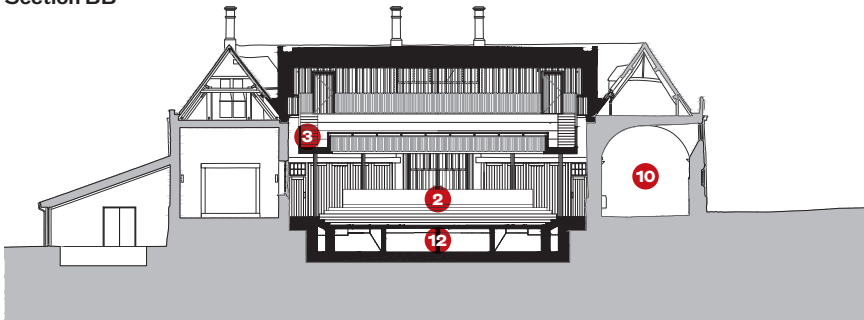
Stalls level



Balcony level



Section BB



Top right The original courtyard with dug-out orchestra pit.

Middle Concrete groundworks created a full sunken level for stalls and orchestra.

Bottom right The new steel and timber roof respected the wall line of the courtyard.



MANUELA BARCZEWSKI



DAVID GRANDORGE (2)

height lobby. Appearing out of the dark, the expansion upwards insinuates itself upon you in a realisation that is almost joyous. Likewise, at the front, stalls seats sink glissando past the stave of the perimeter ground floor to connect not only with the stage but also the sunken orchestra pit below it. All is visible in this inclusive arrangement; and as with the sight lines, with the help of consultant Sound Space and Vision, so too the sound.

The simplicity of the Douglas fir ceiling belies the time and energy taken invested by WWM, Julian Harrap Architects and engineer Price & Myers to create the detail that would allow fine spanning steels to rest their load on the courtyard's inner walls. This 'full contact' (but ultimately removeable) solution involved a steel ring beam on pre-cast concrete pads set between the old rafters atop a new Collyweston stone creasing course on the newly tied wall. An unseen poetry to the roof's direct echo of the courtyard's dimensions is suggested in the staccato lining of grit-blasted Douglas fir timbers, whose batons silently follow the rafters'

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Left Detailing is of a very high standard.

Below Huge pivoting doors on the proscenium line dissolve the traditional stage/ auditorium configuration, creating a single space.

Bottom left With no lobby to speak of, opera-goers enter straight in from the garden.

For the singers then, the experience is far from that of looking out into the darkness of a void. As the lights go down the audience begins to dissolve into the darker hues of the timber seating while the lighter walls and rich stone hues are highlighted in another low wash of light – a visual drama that plays out for the actors, reciprocating that on stage for the viewers. Whether that intimacy made it easier for the players of this year's modern chamber opera, Thomas Adès' 'Powder Her Face', is anyone's guess; but since the story concerns socialite Margaret Campbell, Duchess of Argyll – the subject of a scandalous tabloid 1963 divorce case, after nude Polaroids emerged of her carrying out sex acts on various government ministers and lesser royalty – a couple of its more salacious scenes might have benefited from the typology's more usual cossetting darkness. But as Witherford Watson Mann may have intended in its meticulous, tactile insertion – and as Campbell herself might ruefully concede – at Nevill Holt, it was always going to be as much about the audience as the performers. ●

MASSIMO CURZI

15inch rhythm. And the large central rooflight – its blind purposefully drawn closed to usher opera-goers to their seats – recalls its former exterior condition, letting sunlight linger across the courtyard stones' rich, rusty red before the house lights take over to illuminate it theatrically in a low wash of light.

A minimal, muted material palette lets the original surfaces sing. Bruised Douglas fir is complemented with beautiful board-marked grey concrete marking out the cloister-like perimeter around the stalls and counterpointed by the earthy tones of the Great Tew at its edge, darker fir stains and floor of sweet chestnut. Brass paint on the flats of the balustrade has a patination that works with the textured fabric of the seats; the firm consciously eschewing 'smooth' materials that would have felt too contemporary. All is considered and curated; yet there are contingent strategies at play too. The under-seat plenum feeding low-velocity air to the space is served by temporary plant sited remotely on the estate and drawn away at high level by attenuators hidden behind simple pivoting panels within the Douglas fir lining. The overriding sense is of nothing more than necessary, a notion illuminated by the bare LEDs in the ceiling soffits.



MANUELA BARCZEWSKI



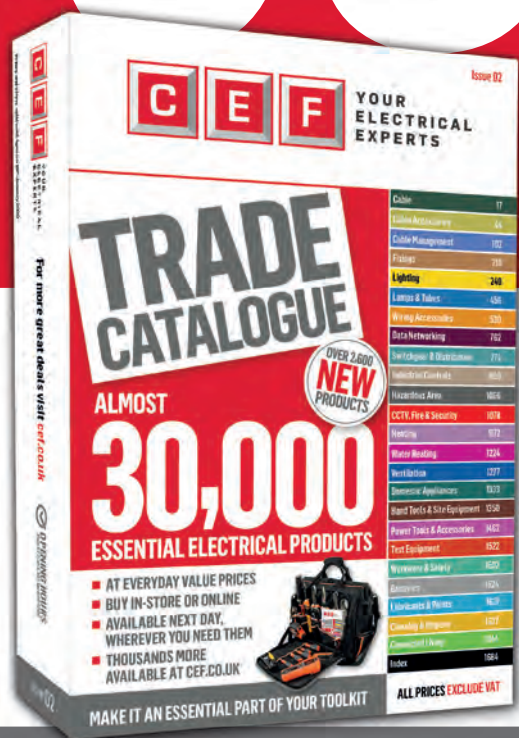
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Electric avenues

Giles Gilbert Scott's Battersea Power Station has become the nucleus of a new town on the south bank of the Thames

Words: Isabelle Priest

Approach to Battersea Power Station from Grosvenor Bridge.



ROUNDTURNVISUALS.COM

KILIAN O'SULLIVAN

Battersea Power Station seemed to be in the headlines every few months a decade ago – such and such owner had pulled out, the south London site was up for sale again. But there haven't been those kind of media flashes since a consortium of Malaysian investors took over the troubled site in 2012 for the sum of £400m. It had been virtually derelict since the power station closed in 1982. Machinery had been stripped out, its floors removed, its walls nothing but a perilous structural shell. There have been occasional protests in response to rumours that the building at the centre of those iconic chimneys might not be replaced, but other than that, if you don't live nearby, you might think nothing is going on. In fact it is a hive of activity.

The area, mostly seen from across the Thames or from trains passing over Grosvenor Bridge out of Victoria Station, is still notoriously difficult to get to. The Northern Line extension here opens in 2021. But people are starting to find it, filtering in under the railway arches to the west, landing at the new river boat pier or arriving via the free shuttle bus laid on by the new owner from Victoria and other local connections. A thousand people already live here in 865 apartments, mainly in the phase 1 blocks by SimpsonHaugh and dRMM completed in 2017.

The grade II listed power station renovation alone has 18 cranes and 3,000 workers on it 24/7. In the office of its architect Wilkinson Eyre, 30 people have been working on the project full-time for six years, led by Sebastien Ricard. Behind that building, the structure and wonky columns of Frank Gehry's first residential building in the UK are done, as is Foster + Partners' multi-stack sandwich

Below The structure is set back to reveal the original brick walls.





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proposal next door, both part of phase 3.

'Battersea Power Station will basically be a new town,' explains Gordon Adams, head of planning at the Battersea Power Station Development Company (BPSDC), which was set up by the Malaysian consortium to handle build out of the Rafael Viñoly masterplan lodged in 2009 before it came on board. Under planning permission granted in 2011, the 17 hectare site will house 26,000 people and effectively become the town centre for the three-mile long Nine Elms area. The many separate schemes by different developers that make up Nine Elms are linked by the 2008 London Plan, which designated this Thames-side location as an opportunity area. There is an 80% net flow of retail spending outside it, so the local authority, Wandsworth council, supported making the power station section a commercial heart in the hope that the right mix of uses could grab some of that back.

Consequently, the masterplan splits 40% commercial to 60% residential (4,239 homes, of which a low 386 are affordable) over 10 million square feet total floor area in eight phases. The key element is, naturally, the power station, to which the rest of the site defers. The SimpsonHaugh and dRMM blocks splay away from it towards the river, creating a 2.5ha park where barges once unloaded coal. The architect for the symmetrical phase 6 site



The 17ha site will house 26,000 people and act as town centre for Nine Elms

- 1 Battersea Power Station being transformed by Wilkinson Eyre
- 2 SimpsonHaugh's Circus West Village
- 3 Frank Gehry's 800-apartment scheme
- 4 Foster + Partners' phase 3 hotel, retail and apartment project
- 5 2.5ha riverside park
- 6 Coaling Jetty
- 7 New riverboat service pier
- 8 Phase 6
- 9 Phase 4
- 10 Crinkle Dock
- 11 Phase 7

Above The railway arches have been converted into restaurants, cafés and an independent cinema.
Below Visualisation of the Battersea Power Station development.

on the other side is not decided yet, but will face similar requirements.

The power station itself will be surrounded by a perimeter road which keeps other buildings at a distance and allows visitors to walk all the way around it. The main vehicular access will be via Pump House Lane, and there will be a buried service road. In terms of massing, everything that replaces the previous hotchpotch of warehouses and old railway buildings must be below the height of the chimney plinths, a level that equals 17 residential storeys. Nothing must be in brick either, which explains the glassiness of SimpsonHaugh's housing as well as the golden cladding of dRMM's. There are exceptions for satellite sites, such as Patel Taylor's phase 4a brick mansion block type residential scheme in which 98% of units will be dual aspect.

Phase 2 is the power station, in fact two stations joined together, both designed by Giles Gilbert Scott. The first, on the western side, was completed in 1934 during the golden age of electricity. It housed the first centralised production spaces for it and is a very high quality building. The second, on the eastern side, was built during the 1950s. Although the rhythms and monumentality of the building are continuous, look closely and you will see the earlier part has intricate art deco detailing whereas the later half is



Residents are due to start moving into the power station next year

British austerity aesthetic – cheaper, utilitarian, with an interior designed by the local authority and, apparently, harder to restore. Wilkinson Eyre won the job through an invited competition where it was asked to prepare a few boards about its attitude to the building rather than a design per se. BPSDC's Adams says the practice was 'an obvious choice' as a result of its work on Gilbert Scott's Weston Library in Oxford, as well as for how it dealt with derelict industrial heritage at its Stirling Prize winning building Magma.

'Everywhere you go you should feel in that building, not a generic office space or flat,' explains Ricard. 'You need to be in tall spaces next to brick. We convinced Battersea Power Station to take out floor space to create more drama.' As for the chimneys, the owner believes they are vital to the heritage and purpose of the place. Each has now been completely replaced, and one will become a viewing platform lift accommodating 30 people.

'The attitude is everything must stay,' says Adams. 'If anything they want to put more back in.'

Visitors will enter a full-height atrium that is already emerging. Floorplates are set away from the exterior walls to give an instant impression of the scale and volume. Two huge tree-shaped columns hold up the new roof and floors. The first three storeys of the two turbine halls will be 35,000m² of shops (about 100) set out as 150m long arcades that will flow out onto the new town square and high street behind. They will also join up with the shops and restaurants already in place along the river and in the railway arches behind phase 1. Above the retail will be a cinema and large entertainment space, topped by three floors of apartments within the original power station walls. There is also 45,000m² of office space, equal to the Gherkin's. Apple has taken all 18,000m² of the former boiler house for its European headquarters. It has floorplates 24m deep and an atrium the width and scale of Regent Street. At roof level, apartments, penthouses and duplex villas will be built in glass additions around an open park



with views across London between the imposing chimneys – a hidden world in the sky.

The site may suggest there is still much to do but residents will start moving into the power station next year and the shops will open in 2021. The power station itself looks promising and the variety of architecture and programme of the masterplan will make an interesting district. However, what is done so far, particularly the residential element, is incredibly compacted. You feel people could stretch out their arms from one apartment block to another, and the huge amount of glass make you wonder about privacy. At ground level, spaces between blocks are filled in, seemingly quite needlessly, with offices and other commercial spaces. Another criticism has been that the Coaling Jetty has achieved very little for a great expense.

There will be time and opportunity to do those kind of things better though, as architects have yet to be decided for some plots. ●

Left New brickwork is set in concrete panels so brickies don't have to work at extreme heights.
Below The 1934 turbine hall when it becomes three levels of retail.



DENNIS GILBERT

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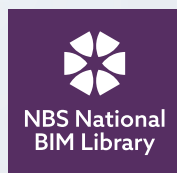
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2: Intelligence



The sight of icebergs calving brings the issues of climate emergency ever closer to home.

Here's the plan

Signatures are not enough – how do we deliver regenerative architecture? We hope you will find inspiration in these pages

Eleanor Young

We all need to be activists. That means more than just putting our name to initiatives during this climate change emergency; it means actively planning and urgently advocating to reduce our destructive effect on the planet. And the RIBA is taking action. The many practices who added their names to Architects Declare, led by 17 RIBA Stirling Prize winners, signed up to 'regenerative' architecture that contributes towards solving the climate emergency. But how?

In this issue the RIBA Journal hears from some of those already fighting to secure our future, who are weighing up the carbon cost of frames, radically re-examining projects to make them carbon zero, protesting on the streets and researching new technologies, materials cycles and design strategies to mitigate the negative human impact on our world. These pages bristle with advice on how to be an activist in business and education, they will send you off to read about waste and wilding and help you understand about negotiation and what it takes to change things.

They also put responsibility firmly on those of us in the construction industry. 'If not you, then who? If not now, then when?' •

Time to stop tinkering with global warming

Style-based design decisions on materials are damning the world to further climate change. Some stark numbers put it in context



Steve Webb

The greenhouse effect was postulated as long ago as 1824. I studied the principles of sustainability and climate change in GCSE geography 1988, then in A level physics, and again at university in an environmental engineering module in 1991. The UN climate change convention came in 1992, the Kyoto Protocol in 1997, the Paris Agreement in 2016. Were we all too busy jealously pawing over the latest El Croquis to recognise these things as important or relevant?

Developers, contractors, architects and engineers and other professionals have been the main part of the problem for a long time. Buildings, under construction or in use – have produced more CO₂ than any other sector. More than cars, more than planes, more than food! If we'd all started insulating properly and building in wood in the 1980s we'd be in a much better position today of course, but we didn't. The construction industry has been incredibly slow to adapt and as a result

Above The steel fabricator reported 15,500 tonnes of steel were used in the RIBA Stirling Prize winning Bloomberg London.



Intelligence is officially approved RIBA CPD. Look out for icons throughout the section indicating core curriculum areas.

climate change is quite squarely our fault.

We've long known that wasting energy is bad economically and environmentally, but we are short-termists. It took regulation from outside, in the form of part L, to get reasonable levels of insulation in buildings or even double glazing.

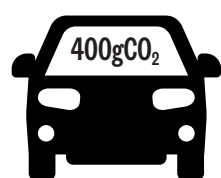
Now the main problem is embodied carbon in the frame, cladding and finishes and that's producing carbon today using gas and coal power, rather than demanding heating – with renewables – in 30 years time. We've known for a long time that aluminium, steel, concrete and ceramics have very high embodied energy. On the other side the negative embodied carbon of timber is well known. What is less well known is that stone is low embodied carbon too, being very strong and hardly processed: a good strength to carbon ratio. For the most part the suggestion of building in timber is greeted with indifference or hostility. Building in stone is considered totally crazy. With a few exceptions we builders have been churning out massive lumps of steel and concrete with complete climate indifference.

Architects frequently disdain timber options offered to them because it is too chunky and steel sections will be finer, slimmer. Concrete is admired for its modernist zeitgeist. These reasons are stylistic. The number of times environmental considerations are eschewed for style is startling. Architects are, for obvious reasons, very unwilling to go out on an environmental limb with their (often more conservative) clients for fear of jeopardising future work. Structural engineers have the same concerns about alienating their clients and are often too much at home with homogenised, highly regulated material such as steel and concrete: Timber and stone are risky and fiddly and their engineering software is built for steel and concrete. At the same time contractors tend to hate the new and the risky. The oil tanker of construction procurement is all set up to churn out steel and concrete and will take a long time to re-direct. But these are all trivial concerns next to the imperative of climate change. It shows that we have really not cared about this with much gusto for a very long time.

There is also a chronic lack of critical numerical thinking. The thermal mass myth: the idea put about by the concrete lobby that buildings have to have 300mm thick concrete slab floors (all thermally hidden behind



If I drive a Range Rover to the supermarket I produce about 400g of CO₂. Should we measure environmental morality in Range Rover Shopping Trips – RSTs?

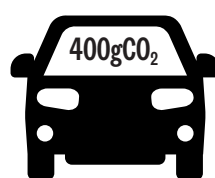
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Range Rover Shopping Trip

plasterboard) to avoid climate change induced overheating is becoming a self fulfilling prophecy. Only a thin layer of high density material at the surface is required. Years of sticking windmills on the tops of buildings that rarely work, and would put no dent in the carbon footprint of the frame even if they did, have distracted us from real progress.

If I drive a Range Rover to the supermarket I produce about 400g of CO₂. Should we measure environmental morality in Range Rover Shopping Trips – RSTs? An RST is an ugly spectacle: me a paunchy middle aged guy, my wrap-around shades, in a 'commanding' driving position, nonchalantly palming my giant car between trolley-pushing pedestrians in the Sainsbury's car park. Meanwhile in a studio nearby, a designer, loving the precision of razor sharp edges, draws a gorgeous slender bookshelf out of steel. It weighs 500kg, making about 1.5t of CO₂, so jot him down for 3,750 RSTs: a daily Range Rover drive to Sainsbury's and back every day for 10 years – and that's just a morning's work for him. An engineer churns out the same old steel picture frame instead of a timber one – that's 2t of steel and 6t of CO₂: she's on 15,000 RSTs. A planner that insists on a brick facade produces 253t of CO₂ – 632,500 RSTs. Bricks are bad. They're baked, doh! If a contractor persuades a client to make a block of flats concrete instead of cross laminated timber that's 2,300t of CO₂. Now we're on 5.76 million

A planner that insists on a brick facade produces 253t of CO₂ – 632,500 RSTs

**632,500**

Range Rover Shopping Trips

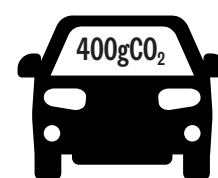
RSTs. No matter that we're peddling around on our Bromptons. We are actually all driving the Range Rover to Sainsbury's... a lot.

It's hard to swallow that we are personally at fault. How can we rightminded modern people be perpetrating such a thing? Another architect told me recently that many buildings are not designed by architects, implying that these 'other' buildings are the problem. Barratt Homes' houses are normally wood-framed! I'm sorry to say the 'new London vernacular' architect-designed end of the housing spectrum is the brick and concrete, carbon-heavy, one. Go Barratt!

Claiming that, for example, Bloomberg London's building is sustainable because of its systems is beyond ridiculous. The structural designers proudly state: 'In the interests of delivering a building of visual impact as well as longevity, steel tonnages were not seen as a limiting factor.' The fabricator boasts: 'The project included 15,500 tonnes of steel installed – 1,000 tonnes more than used on Brooklyn Bridge and more than double the weight of the Eiffel Tower.' Next to these figures its future energy consumption seems utterly trivial; 116 million RSTs to all involved.

The London 2012 Olympics were a steel fest. Consider the unnecessary ArcelorMittal Orbit or Brighton's British Airways i360. How about everyone's enthusiasm to demolish: munching through 1970s concrete frames muttering about ceiling heights and flexibil-

Bloomberg London included 15,500 tonnes of installed steel. Next to this figure its future energy consumption seems utterly trivial; 116 million RSTs to all involved

**116m**

Range Rover Shopping Trips

ity like there's no tomorrow. Terminal 5 roof spanning 165m with mega struts and huge cast nodes... are people playing football in there, or planes manoeuvring? No. So why the big roof move? Style. Column free flexibility, cited in Bloomberg and T5: those buildings have obstructions and partitions everywhere. Could a few columns really not be comfortably incorporated to save half a billion RSTs?

I hope these declarers really mean it but I think many are jumping on the marketing bandwagon. We will keep building steel and concrete until someone regulates us.

If we really care, let's call on the government to require us to submit lifetime carbon figures for all buildings and benchmark them. High carbon frames should be taxed like cigarettes. There should be a presumption in favour of timber and stone. Take the decision out of our hands. Level the competitive playing field for sustainable materials by making them the only option. Level the aesthetic playing field. Offer subsidies for UK forestry for future building materials. Subsidise some UK CLT plants. Research genetically modified trees that grow very straight and very strong! Become a nation of timber and stone building prowess. And most importantly, I suspect, save us the embarrassment of pushing timber ourselves and looking like a bunch of hippies in front of our suited clients. ●

Steve Webb is co-founder of Webb Yates Engineers



What we are doing

Architects Declare published 11 actions to improve the profession's impact in the era of climate change. FCB Studios lays out its response

1. Raise awareness of the climate and biodiversity emergencies and the urgent need for action among our clients and supply chains. FCBStudios is a founder member of Architects Declare. It will support the 20 September climate strike and will be involved in collaborative zero-carbon project workshops through that day.

2. Advocate for faster change in our industry towards regenerative design practices and a higher governmental funding priority to support this. The practice is engaged in design review and local authority planning development initiatives to improve biodiversity and lower carbon performance. It supports the 'Edge' initiative to encourage collaboration between the construction sector professional institutions.

3. Establish climate and biodiversity mitigation principles as the key measure of our industry's success: demonstrated through awards, prizes and listings. FCBStudios sets carbon performance targets for all projects at planning stage to incrementally improve. It is working towards including zero-carbon plans for all projects completed from 2025 to establish achievable operational performance in use by 2030. Detailed post-occupancy evaluations inform our design work.

4. Share knowledge and research to that end on an open-source basis. In 2010 FCBStudios published The Environmental Handbook (downloadable 2014) to share best practice in the application of sustainable design principles. The practice has collated benchmark performance data on a range of building types, and has been involved in the development of open-source data platforms such as 'Carbon Buzz'. We are updating our own data platforms with a view to making



FCBStudios' CLT frame and Passivhaus design at Croft Gardens housing in Cambridge shows how a sustainably minded brief from King's College aimed to reduce embodied and in use carbon.

this information more widely available.

5. Evaluate all new projects against the aspiration to contribute positively to mitigating climate breakdown, and encourage our clients to adopt this approach. We are developing zero-carbon scenarios on all new projects to discuss and evaluate with our clients. The practice is engaged in a series of projects which target zero-carbon in use, and low embodied carbon in construction, potentially leading to overall zero-carbon across their lifecycle. By April 2020 all projects up to RIBA stage 3 will have alternative zero-carbon plans, by 2021 all projects will have One Planet action plans and all projects submitted for planning approval shall include achievable zero-carbon operation plans. By 2025 all projects starting on site will be built to achieve zero operational carbon in use.

6. Upgrade existing buildings for extended use as a more carbon-efficient alternative to demolition and new build whenever there is a viable choice. FCBStudios encourages and facilitates creative re-use of existing buildings, as at Alexandra Palace.

7. Include life cycle costing, whole-life carbon modelling and post-occupancy evaluation as part of our basic scope of work, to reduce both embodied and operational resource use. FCBStudios encourages whole-life carbon and cost modelling alongside the inclusion of operational (soft landings) methodologies into the design process from the start of project briefing to post-occupancy support through the first years of operation.

8. Adopt more regenerative design principles in our studios, with the aim of designing architecture and urbanism that goes beyond the standard of net-zero carbon in use. Since its outset in 1978 FCBStudios has fol-

lowed humanistic social and environmental design principles that aim to improve the culture and character of the lives of people using our buildings. Over the last 15 years, our application of the One Planet Living principles has become a useful tool to help discuss the wider impact of our designs. In 2017 we founded oneplanet.com, a digital platform to help achieve a wider use of these principles. While the climate emergency now demands significant changes in our habits and lifestyle alongside better building performance, we pursue a holistic design approach to prioritise improvements in health and wellbeing, culture, and biodiversity and water, alongside zero-carbon, and waste outcomes.

9. Collaborate with engineers, contractors and clients to further reduce construction waste. FCBStudios is identifying ways to reduce construction waste, for instance through prefabricated design processes, and is committed to supporting contractors in this through considered design and the development of in house BIM tools.

10. Accelerate the shift to low embodied carbon materials in all our work. We are working with engineers to better understand the embodied carbon impact of material choice, maintenance and end of life use and are investigating the material and aesthetic changes resulting from the necessary reduction in consumption of natural resources and our better understanding of carbon impacts.

11. Minimise wasteful use of resources in architecture and urban planning, both in quantum and in detail. Growing awareness of the implications of material choices are influencing strategic design decisions to help reduce overall resource consumption. ●

Edited version of FCBS' working document



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Time to act on waste

Avoid delving further into Earth's resources and use what we have already used

Duncan Baker-Brown

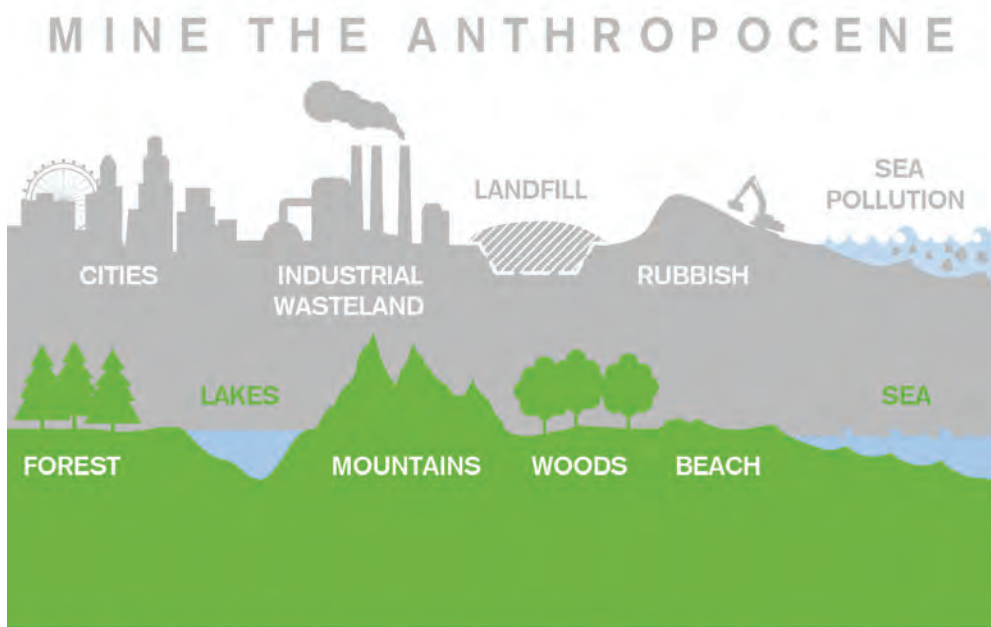
On 1 May MPs returned from their Easter recess and passed a motion declaring an 'environment and climate emergency'. Inspired by Greta Thunberg and then perhaps Extinction Rebellion occupying our streets, this has been followed up by numerous academic institutions, local authorities, NHS trusts, and many others, making not only similar declarations, but also hugely ambitious pledges to become net zero carbon emissions by 2030. How they aim to do this is a lot less clear.

Since this quick change of the political landscape, both practising and academic architects have made their own declarations and on 27 June the RIBA also declared an environment and climate emergency, stating that it would 'urgently pursue a five-year action plan towards a net-zero built environment'. Outgoing RIBA president Ben Derbyshire noted that this was the 'biggest challenge facing our planet and our profession', but also that it was an opportunity for architects to regain some lost ground and become more relevant to society by applying our 'unique skill set' to the huge challenges the climate emergency presents to humankind.

Why should we care?

For a bit of context it's worth remembering that the design, construction, occupation, maintenance and demolition of the world's built environment consumes about 50% of the all raw materials annually. In the UK we consume over 600 million tonnes of new products every year, and generate over 200 tonnes of waste; 125 million tonnes of this is construction waste. Our industry creates

Below We should mine the grey of the manmade layer of the anthropocene while nurturing natural resources.



NURTURE NATURAL RESOURCES

45% of UK CO₂ emissions. So there's no avoiding it, we are part of the problem causing the global climate emergency and mass extinction of species due to loss of habitat.

What can we do?

Perhaps the biggest challenge humankind has is to learn how to responsibly manage Earth's natural resources, and quickly. Architects and designers are in a brilliant position to make a significant impact towards this. During the design of a building we make hundreds, if not thousands, of decisions about what our buildings are made of and how they should be constructed. We are intrinsically connected to the supply chain. Architects are actually 'resource managers'. In effect we decide which of our suppliers' raw materials to work into the built environ-

ment. We know better than most how buildings are put together, so we should be good at de-constructing them – more of that later. So if you agree that drastically reducing the consumption of new stuff (specifically raw materials) is necessary to reduce our negative effect on the planet, then you can see the potential we have for doing this rather quickly.

We need new tools and a new sensibility

We live in a world where you will get more gold from a tonne of discarded smart phones than a tonne of the best gold ore. I've heard people say that there is more copper above ground now than below. So we need to become 'urban miners' and re-work/re-use previously made buildings, components, and material sources. We need to mine the anthropocene (the human-made geological



Left We need to look at buildings as material banks.



Dinesen Oak plank flooring and wallcladding — Studio David Thulstrup. Photo Peter Krasilnikoff / Denmark

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METHODS TO INCORPORATE THE CIRCULAR ECONOMY INTO RIBA PLAN OF WORK STAGES (UK GREEN BUILDING COUNCIL)

STAGE 0/1

- Set broad objectives for circular economy aspirations
- Assess current site – undertake pre-demolition/pre-refurbishment audit (demolition contractor)
- Develop objectives with specific metrics (design team and facility management)
- Identify further information required (eg carbon/ cost consultant, case studies)

STAGE 2/3

- Hold workshop to investigate circular economy alternative approach (contractor, suppliers, design team, facility managers)
- Agree opportunities, commitments and metrics/ targets (contractor, design team)

STAGE 4

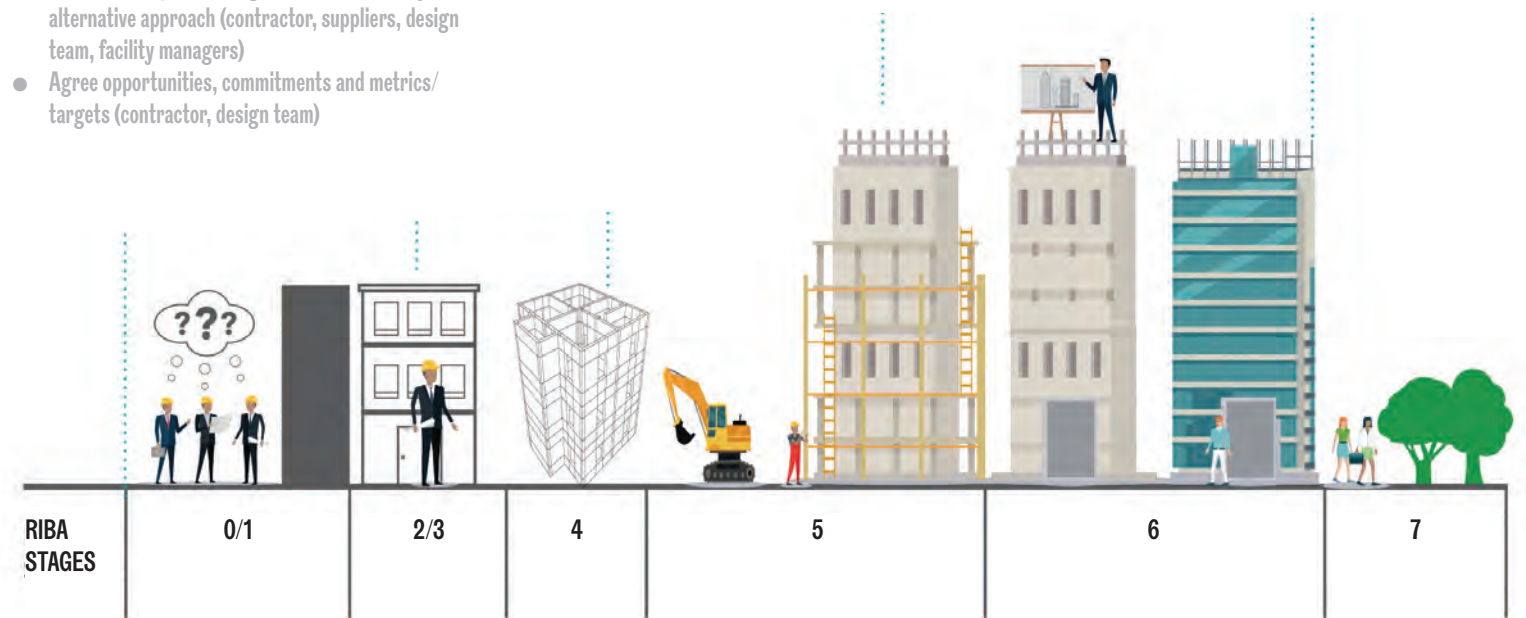
- Include metrics as clauses within procurement packages
- Monitor design against metrics, continue to engage with suppliers

STAGE 5

- Monitor metrics with contractor and supply chain
- Continue to investigate alternative materials/products

STAGE 6/7

- Review success against objectives
- Lessons learned (whole design team, contractor and relevant supply chain)



layer surrounding planet Earth) rather than send humans underground to dig up new material. With this new-found sensibility architects can apply emerging techniques such as resource mapping to understand the opportunities a place has for supplying materials for a new project.

Architects already have the ability and tools to design new buildings that will run as carbon neutral or carbon negative entities, but they can also be material banks for future buildings. This concept simply requires architects to design buildings that can be de-constructed in the future. The Madaster Foundation and others are looking into 'material passports' that will hold a record of all materials, components etc in a building.

Of course this could be part of a BIM model, and allows future owners of a building, say 40 years after it is constructed, to understand its potential to be deconstructed and re-built.

Opportunities and challenges

WRAP, the Waste and Resources Action Programme, estimates that the construction industry is already about 20% circular. This refers to the concept of a circular economy, where there's no such thing as waste, where one system's waste is another's food, just like the natural world. Over the last decade we have nearly halved the amount of waste generated by construction sites.

However, I believe it will be competing cities and regions with ambitious carbon cutting targets that will be the main driver for economic and system change, and which have the potential to power a successful circular economy. Cities, which house over 80% of the UK's, and 50% of the world's, populations, have a huge potential to turn neighbouring disconnected linear systems (food waste, water, energy and myriad other resource flows) into joined up circular ones. In 2017 the London Waste and Recycling

Board (LWARB) published its Circular Economy Route Map for London which outlined 'a vision of a capital city thriving through the adoption of principles of circular economy; an economy which keeps products, components and materials at their highest end value at all times'. The report predicted that by 2036 a circular economy could give London net benefits of up to £7 billion a year, with up to 12,000 new jobs in the areas of re-use, re-manufacturing, and materials innovation.

To meet the numerous net carbon neutral targets that local authorities et al have declared, clients will need to initiate massive retrofit programmes, as most of our existing built environment will still be around in 50 years or so and most of our built environment is way off those targets. So architects must be creative with retrofit projects – perhaps more Lacaton & Vassal-style adaptation than lots of external wall insulation and overheated buildings. However there is a real need for



Below Examples of a resource map for a project, centred on its site. BBM Sustainable Design



UK VAT laws to change here as retrofit projects normally attract VAT at 20% while new builds often pay 0%. This could completely undermine the UK's ability to meet its ambitious net zero carbon targets.

Much of this may sound like future practice, but there are already many examples of consultants being involved in the deconstruction of large commercial buildings to sell for new projects. Rotor DC (Rotor Deconstruction) is deconstructing large parts of the World Trade Centre in Brussels for resale. Bellastock is part of a group carefully removing the facade and interior fixtures of the rather large Montparnasse Tower in Paris. Along with the University of Brighton, Rotor and Bellastock are part of a North-West Europe Interreg FCRBE three year project, funded by the European Regional Development Fund, that will produce both a directory of 1,500 suppliers that contribute towards the de-construction re-construction industry, and a 'toolkit' for clients advising them on how to make this idea work.

I spoke recently to Petran van Heel of the Dutch national bank ABN AMRO as he showed me around the €18 million CIRCL Pavilion in Amsterdam he had just completed. Petran pointed out that, designed to strict circular economy principles, ABN AMRO is

not only a financial bank but also a 'materials bank'. Investing in the development of a building that is a material asset at the end of its life is far more attractive one that is a deficit requiring demolition and incineration.

I believe the door is now ajar for practising architects, students and educators to push open and take decisive action. We will have to change the way we practise, teach and learn, but perhaps not as much as you would think. However, we must learn to share the successes and failures of our future endeavours more openly. In addition, our competitions and awards must put the climate emergency at the top of their requirements for success. In the meantime, keep in mind that whatever situation you find yourself in, you need to consider reducing all new incoming resources and reusing existing ones. Position that attitude with a mission to detail your buildings as material banks for the future and your clients may not even notice a difference. But the natural world will. ●

Duncan Baker-Brown is senior lecturer at the school of architecture and design, University of Brighton and co-founder of BBM Sustainable Design, author of *The Re-Use Atlas*. See his other articles on waste at ribaj.com
Sign the petition demanding zero-rate VAT on retrofit/eco-refurb on all homes at <https://bit.ly/2kGtoQ6>

FIND OUT MORE:

Websites

ABN AMRO CIRCL Pavilion
BRE Buildings As Material Banks (BAMB)
Circular Economy Club
Ellen MacArthur Foundation
EU INTERREG FCRBE research project
Excess Materials Exchange urban miners
London Waste and Recycling Board (LWARB)
Lacaton & Vassal Transformation of Wood Tower Paris 17
Lendager Group – Resource Rows
The Madaster Foundation (Material Passports)
Metabolic – urban miners
UK Green Building Council (UKGBC) –
Urban Mining Collective <https://urbanminingcollective.nl/>
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New assurance scheme for tropical timber

A forest law policy framework combats illegal logging and encourages sustainable timber exports



The role of material specification in helping designers achieve a positive social and environmental impact is something most are now beginning to understand.

From a timber industry point of view, this is good news. Timber already has the lowest carbon footprint of any mainstream building material, and specifiers can look for a range of chain-of-custody and certification schemes to give assurance of the wider social and environmental benefits their products bring.

Certification schemes are familiar across most European forestry production, but their inroads into tropical timber have been less successful. When areas around individual forest concessions are rife with illegal logging, maintaining individual standards to their boundary is difficult, particularly where basic governance and the rule of law is weak, if applied at all.

In many cases, European specifiers have simply turned their backs on tropical timber as too risky, or too difficult to ensure it has come from a responsible source.

This is where FLEGT – Forest Law

FLEGT licences show a country complies with forest management laws

Enforcement Governance and Trade – comes in. It is a policy framework designed to combat illegal logging and deforestation. Supported by the UK Department for International Development (DfID), the EU, UN FAO and others, its action plan improves governance, strengthens sustainable and legal forest management and promotes trade in legally produced timber.

In turn, it provides vital revenues for local people to keep the forests standing.

FLEGT licences show that a country complies with forest management and environment laws, as well as labour and community welfare legislation. They show that logging rights have been granted and that timber is legally harvested. They also confirm that products comply with legal requirements for trade and export, and that

taxes and fees are paid, directing finance back into local communities.

At present, 15 countries are going through voluntary partnership agreements (VPAs) – the process of overhauling the legal, social, business and environmental infrastructure to achieve a FLEGT licence. Together, VPA forests cover an area the size of the EU and account for around 80% of EU tropical timber imports.

VPAs involve engagement with communities and civil society and take years to negotiate. Once the process has been audited by international teams, those countries can export timber under a scheme which gives their timber a ‘green lane’ as legal under the EUTR.

This is why the final letter in FLEGT stands for trade. Trade is a vital component in addressing illegal logging. Establishing a credible system of production and licensing which guarantees the provenance of timber means sustainable use of resources, and makes it easier for businesses in the UK and EU to import legal timber products.

Indonesia is the first country to have completed the FLEGT process: it has seen a 60% drop in tree cover loss in primary forests. This isn't to say that problems do not still exist, but it is a very positive and encouraging sign.

Soon other countries will be completing their VPAs and issuing FLEGT licensed timber and products. The Timber Trade Federation is working with the support of the DfID to raise specifiers' awareness of FLEGT, the products available, how these can be used, and to encourage acceptance in your own procurement frameworks.

That is why we are asking, how important is timber to your business? We need to know what you think:

<https://www.surveymonkey.com/r/TimberProcurementSurvey>

If you want to know more, get in touch. We can help your company learn more about FLEGT and how the materials you choose can have a positive and lasting impact on the fate of the world's forests: lkamall@ttf.co.uk



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Education for climate change

The Centre for Alternative Technology has taught environmentally aware design for decades. What do architecture students gain?

Eleanor Young

The Centre for Alternative Technology (CAT) in Machynlleth, mid Wales, is something of a legend in sustainable design. An eco centre and place of expertise and education, its team has been at the vanguard of designing for climate change across design disciplines. It also teaches architecture.

CAT was set up in the wake of the 1970s oil crisis. Engineers, architects, builders and growers lived off-grid and tested different technologies – from wind power to, more recently, a solar-powered vaccine fridge. John Carter, who now leads the MArch in Sustainable Architecture, fondly describes the founders as a ‘bunch of hippies’, living in this old slate quarry.

CAT’s history is very different from that of most architecture schools. Its activities drew people to the quarry; a visitors’ centre then short courses emerged and eventually a graduate school. In the early days some of those courses drew on Segal self build methods and were taught by architects and sustainable experimenters David Lea and Pat Borer. This spawned an MArch with the continuing input of Lea and Borer. The pair also designed CAT’s Wales Institute for Sustainable Education (WISE) building, which houses the course. It is regularly referenced during the course when discussing the practicalities and pitfalls of sustainable technologies in architecture.

In 2017 Carter was brought in to re-launch the MArch as a two year course. Each month students travel to the centre for an intensive learning week. Carter compares it to going to a monastery, with its air of contemplation and removal, and connection with the light and weather engendered by the WISE building. The first week of the course, nicknamed ‘doom and gloom week’, is devoted to the big picture. Then they must rally the students. ‘We have declared a climate emergency but the question is what now?’ says Carter – echoing the question of many in recent months. He tries to instil a sense of the power of individual and collective action.

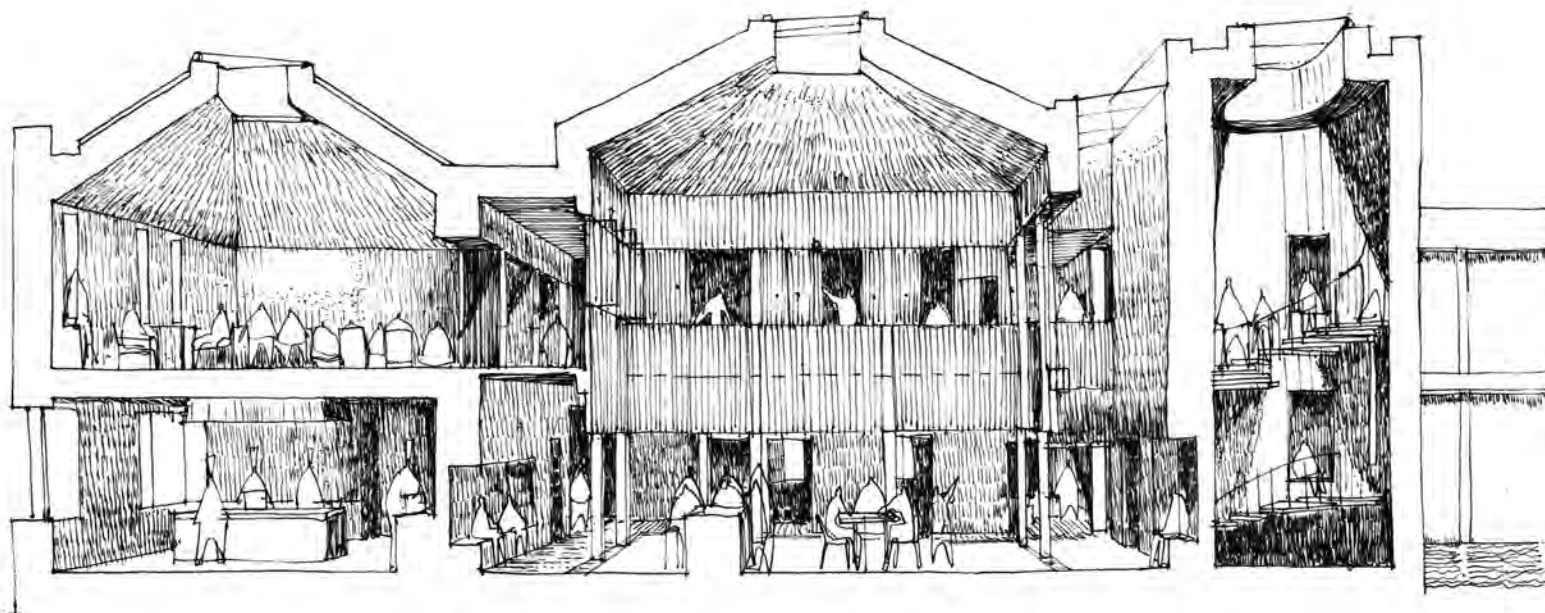
The curriculum is deeply informed by the wider work of CAT, not just WISE. In 2013 CAT published *Zero Carbon Britain: Rethinking the Future*, showing how that goal was possible by 2030 using known

Some schools are paying lip service to sustainability

technologies – if society powered down and made moderate lifestyle changes. A more recent publication included 100 examples of what is being done globally, and a major revision to it due out this autumn. It is a great research resource. But what is missing in students, Carter finds, is an understanding of the fundamental science of designing low energy buildings. He sees it spelt out in the ARB’s part 1 criteria, but the students he takes on are ignorant about embodied energy or where materials come from and are vague even about CO₂ in use. ‘Some schools are paying lip service to sustainability,’ says Carter, ‘Often students come here because they are not getting what they wanted on sustainability, it varies from tutor to tutor.’

He expects students completing the course to be equipped to talk to other professions such as service engineers – not to be ready-made experts in sustainability (though they might take on that role in practice) but to know where to look. And getting under the skin of projects is also important. Students working with local groups go from

Student Jacob Long explores how his Urban Hospice set in Bristol (2019) can be sustainable through linking to sustainable urban transport systems, low embodied-energy materials such as rammed earth and natural ventilation with heat recovery.



JACOB LONG

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research and identification of needs through to consultation. Three years ago in Harlech one of the two groups of students converted a van to a 'van with a plan' to take their ideas around; another persuaded the owner of a café that was closed for the season to open up and provide tea and scones alongside the consultation. Last year a couple came to CAT with plans to build a home under the Welsh Well-being of Future Generations Act (2015) which promises planning approval to schemes exhibiting 65% self-sufficiency. Students visited the site and prepared One Planet Living feasibility studies for the client to discuss.

Hands on building fits with the early experimentation ethos of CAT and student self-build projects are often designed for the CAT site. Typically these are in timber, sometimes rammed earth or straw bale. Carter gets his hands dirty too and for one build drove to Norfolk twice to get the right sort of long wheat straw. It turns out that 'Hairy Hut', a 1.8m by 1.8m structure, required eight tonnes of straw. This year one group smelted iron ore, using a traditional furnace. But after two days alight it was still not hot enough for smelting. Written follow-ups reflect on these lessons.

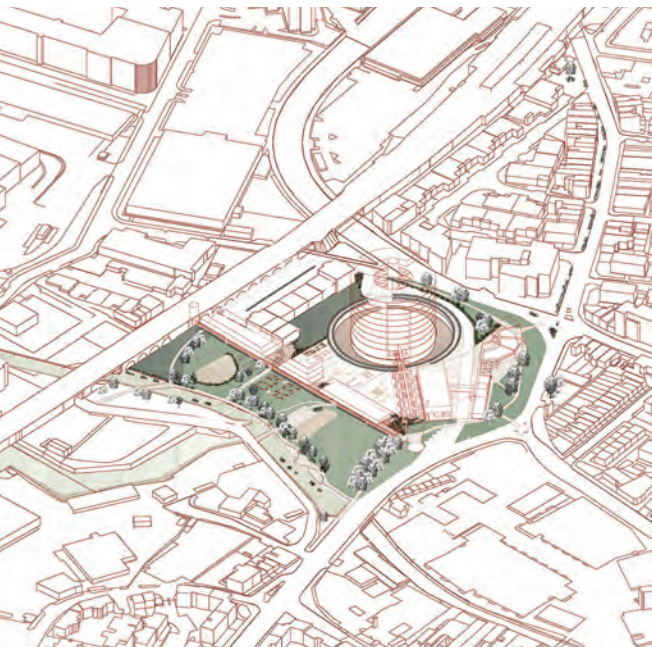
Final design projects are underpinned by teaching that explores appropriate – not just alternative – building technology. Borer's rule of thumb is to aim for 80% of materials with low embodied energy and 20% industrial vitamins, such as aluminium or concrete, used where they work hardest – say on



JOSIE TURNER

Above Re-use of a redundant building, with heated spaces in super-insulated 'pods'; the new-build element to Passivhaus standard in a design for a community centre and local history archive in the Rhondda Valley, Wales by Josie Turner 2019.

Below Aerial view of Tiziana Di Ronco's recycling and re-use centre design in Wandsworth (2019). The project re-uses waste materials within the new buildings as well as re-using existing buildings and structures. At a larger scale the creation of a local, inner-city re-cycling/up-cycling centre reduces transport miles and urban pollution.



TIZIANA DI RONCO

METRICS

Number of Part 2 full-time equivalent students

15 students in Fifth Year (2018-19)

17 students in Fourth Year (2018-19)

Fourth Year

25 approx (2019-21)

Floor area of architectural design studios

6m² in WISE building

Tutors per MArch student

1 to 14.5

Studio opening times

During the weeks that students are resident at CAT the facilities are open 24/7

a heavily exposed sill. Recent projects include the design of a hospice in a very public location in Bristol, raising issues of public and private around dying and how to bring sustainability to a city centre, in this case using a timber frame, hemp, lime and rammed earth.

Tutor support outside the intense learning weeks of the course takes the form of meet ups where clusters of students are living and working, normally in London and the Midlands, and one to ones in person or over Skype. CAT has a small cohort of 15-20 a year which has included a Spanish student who each month made the journey by train and ferry from San Sebastian. It is a full time course but most students work part time – Carter advises working a maximum of six to nine days a month. Many also have volunteering experience, though funding criteria preclude that now. The independent spirit that leads students here, and which Carter aims to foster, is seen in the large proportion who are drawn to collectives such as Assemble rather than traditional practice. Looking at different modes of practice is often at the heart of visits too. Carter values conventional practice and getting on with a Part 3 but for those that choose not to – and most years so far form collectives for projects – he suggests getting a mentor.

There are three unusual things to note, the course is awarded by the University of East London and is only ARB prescribed, RIBA validation being uneconomic given the small numbers of students. And lastly this is one of the very few architecture courses that charge £6000/year (£12,000 for a two year course) rather than the standard £9000/year. Perhaps making it a little more sustainable personally for students. ●



How to plug holes in the curriculum

Direct action and a new sort of education are the only way to really tackle the climate emergency – patching up the old ways is not enough

Scott McAulay

To list what is missing in architectural education would take too long. It is why I founded the Anthropocene Architecture School, which advocates immediate direct action from practitioners, staff and students to force climate emergency compliance from university level through to CPD: we haven't time to wait for our archaic curriculum to be updated.

An education system that encourages students to focus on aesthetics and buzzwords over resilience is effectively obsolete in the face of climate breakdown and unravelling global systems – as the Greenland ice sheets start disappearing 70 years earlier than predicted.

Within this system, an understanding of 'sustainability' is not mandatory for staff or students, nor is even a basic understanding of the fact that buildings are never built in isolation; that they are placed into existing eco-systems, governed by three global systems: air, water and soil (Commoner, 1976). A restorative overhaul is long overdue.

While watching city after city declare climate emergency with no follow-through nor plan, I realised that what we needed was not a (new) building typology – as primarily demanded in academic design studios. It goes far beyond that. The disconnection that exists between the silos of city infrastructure actively inhibits the necessary holistic response. So, I designed a workshop based on

hackathon principles and activist facilitation techniques to address that disconnect.

The Climate Emergency Compliant Cities hackathon was tested in Edinburgh, as part of Extinction Rebellion Scotland's artistic residency at Summerhall during the Edinburgh Fringe. Participants from various backgrounds – activists, architects, concerned citizens, engineers, NGO campaigners, the president of the RIAS, sustainability champions and youth strikers alike, gathered in small working groups, each focused on an element of city infrastructure – built

Direct action with Extinction Rebellion Scotland's blockade of the Trongate in Glasgow with a 25-foot-long purple boat (15 July 2019). And (below) Scott McAulay's diagram of how the busy junction was transformed into a public space as XR demanded that governments treat the Climate Emergency like an emergency, and halt biodiversity loss and reduce greenhouse gas emissions to net zero by 2025.



DOUGIE GRAHAM

environment, infrastructure, public realm and transportation – where a facilitator would ensure no individual dominated the floor and that processes were followed. The process was: issue identification, solution storming and action pointing.

This enabled each group to rapidly identify what was stopping Edinburgh from being climate emergency ready, what potential solutions would be, who should be contacted to catalyse this, and who would take the action. After the workshop this was digitised and made available to the group, and volunteers stepped up to host a future meeting.

Alongside these guerrilla tactics, we still have to go back to the core of the profession. We must interrogate the architectural curriculum, its methods of delivery and reasons behind its inertia in the face of two earth-shattering IPCC reports and more than 50 years of scientists' warnings. Business-as-usual cannot be salvaged, made 'sustainable', or upcycled; we must leave it behind.

We need a moonshot with far-reaching change. Perpetuating business-as-usual is to be complacent in damaging human and planetary health by default; the only solution is civil disobedience and disruption. The only rational response in the face of the climate emergency is to rebel – in our cities, on the streets; in our architecture schools and offices; in any sphere we can influence. ●

Scott McAulay is co-ordinator of the Anthropocene Architecture School

SCOTT MCAULAY



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What is regenerative architecture?

Signing up to Architects Declare signed you up to this – but what is it and how do you achieve it?



Bosco Verticale by Stefano Boeri, which takes some lessons from nature.

MICHAEL PAWLYN

Michael Pawlyn

Sustainability hasn't made enough headway to save our planet. We need to start doing more. We need to design regeneratively. More than half of humanity's total historical fossil fuel emissions (since records began in 1751) have occurred since 1987 – the year when the idea of sustainability was launched into the mainstream with the UN report 'Our common future'. In the last 50 years we have lost more than half the world's wildlife and an even higher percentage of insects (many of which are crucial to how ecosystems function and our food is produced). For those of us who have been involved in sustainable design for 30 years or more, it is painful to accept how badly sustainability has failed to prevent the multiple environmental crises from worsening. The implication, and all too often the reality, has been that fully sustainable simply meant '100% less bad' as Bill McDonough, architect and cradle-to-cradle thinker, characterised it. We urgently need to shift to optimise positives and repair the damage done to our life support systems.

Architect Bill Reed, of Regenesys Group, captures the shortcomings of the old paradigm and the potential of the new mindset in a diagram which will surely become as ubiquitous as the 'three overlapping circles' diagram was in the early days of sustainability. It is clear from his analysis that anything less than 100% sustainable – which means the vast majority of completed buildings – is inevitably part of a downward, degenerative cycle. We need to set our sights much higher and find ways to design the built environment to deliver an upward, regenerative cycle.

So, what are the implications of this new paradigm? How does an architect design regeneratively? How is this change going to come about? Many of the same questions were asked about sustainable design 30 years ago and in the scope of this article it will only be possible to give some general pointers, and some more practical tips at the end.

First, there is a philosophical dimension: We need to change how we see humans in the world. In his brilliant book *The Patterning Instinct*, Jeremy Lent uses the discipline of cognitive neuroscience to argue that the paths civilisations take are driven substantially by the metaphors they hold, particularly regarding our relationship with the living world. Francis Bacon's view of 'nature as a

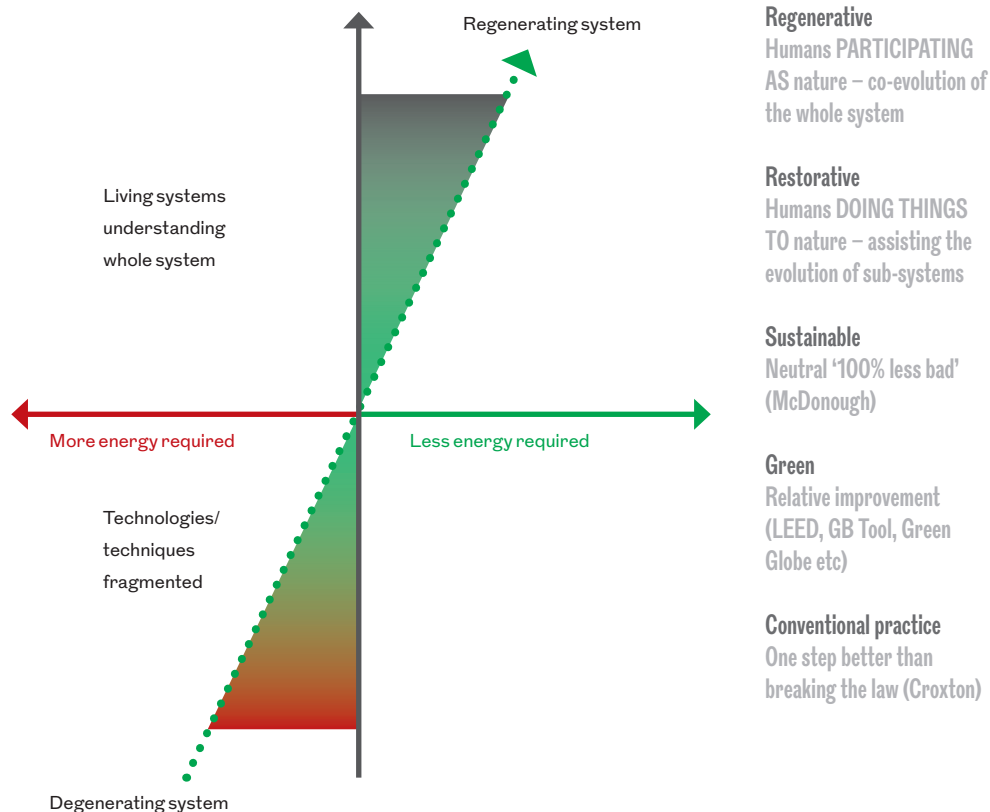


machine' and subsequently Rene Descartes' philosophy that promoted a 'conquest of nature' metaphor have come to dominate the global economy. Lent argues persuasively that, if humanity is to have anything other than a dystopian future, we will need to cultivate a metaphor of humans as embedded within a web of systems.

Secondly, biologically inspired design approaches such as biomimicry – currently regarded as peripheral – need to be urgently integrated into mainstream thinking. Biology has evolved solutions to many challenges that are directly equivalent to those faced by architects. The closest thing to concrete in biology is arguably coral – a large scale mineral structure. The contrast between the two is profound: concrete production releases carbon dioxide whereas coral grows by taking carbon out of its environment. Glass manufacturing demonstrates what Biomimicry Institute co-founder Janine Benyus refers to as a 'heat, beat and treat' mentality: materials are energy intensively excavated, processed and formed. In biology, organisms such as glass sponges show the possibility of making glass with higher optical quality using many orders of magnitude less energy.

While some of the adaptations in biology are beyond our current capabilities, there are straightforward approaches that can be implemented immediately, such as building with materials made from atmospheric carbon (wood is the obvious example but others are coming to the market, for instance BioMason bricks). There are countless adaptations in biology that can inspire us (with existing technology) to design structures that use a fraction of the material of conventional approaches, to develop more efficient processes for heating, cooling, lighting and many other aspects of the built environment. Similarly, many of the solutions we need to make the circular economy a reality can be found by studying the characteristics of ecosystems. We already have the solutions we need to design out 99% of the waste that we produce.

Thirdly, we will need to design with a broader and deeper idea of place that embraces not just cultural dimensions but a full range of ecological, climatic, geological and hydrological issues. Design rating systems such as LEED and BREEAM are woefully inadequate in this respect – generally requiring only a cursory understanding of the site's ecology and a modest degree of improve-



Above Trajectory of environmentally responsible design. Showing how environmental design improves not just with technology but also with a change in attitudes.

When designing a new piece of city we should start by analysing how a pristine ecosystem in that part of the world would function

ment against that baseline. US-based consultancy Biomimicry 3.8 argues that when designing a new piece of city we should start by analysing how a pristine ecosystem in that part of the world functions (or would have): how much carbon does it sequester, how much wildlife does it accommodate, how much oxygen does it produce, how much water does it store, filter or evaporate? These 'ecological performance criteria' then set the standards for what is to be built so that the city can also be a stable entity within a larger system. A full realisation of this approach has yet to be built but there are many examples like Stefano Boreri's Torre Del Bosco in Milan and Seoul's Cheonggyecheon River Restoration Project that show the feasibility of key elements.

Some may argue that architects simply need to implement sustainable design more comprehensively. But the degree of change required to meet CO₂ reduction targets set by the Intergovernmental Panel on Climate Change will never be achieved by just tightening up the knobs on the current way we work. To borrow a phrase from social activist

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Left Biomimicry can lead to some beautiful structures that work with their ecosystem.

REGENERATIVE DESIGN ACTION POINTS FOR ARCHITECTS

- Seek project opportunities in which there is likely to be client commitment to regenerative principles so that you can transition your portfolio. Don't take on unpromising projects simply to grow your practice.
- Develop skills in making a persuasive case for regenerative design. Push for adopting standards that go well beyond LEED and BREEAM, such as The Living Building Challenge
- Assemble teams that are diverse, polymathic and knowledgeable about regenerative design.
- Consider involving an ecologist or biologist to help develop a broader and deeper understanding of place. Aim to restore as much of the ecosystem that would have existed on the site.
- Strive to be 'carbon positive' – using materials that take carbon out of the atmosphere and aiming for a building that generates more energy than it consumes
- Strive to be 'water positive' – understand how water moves through the site and how you can use water to maximise benefits to living systems
- Use biomimicry to achieve radical increases in resource efficiency and apply ecosystem principles to integrate the building's nutrient flows into its context (all building materials should be considered as nutrients).
- Use biophilia to provide regenerative benefits to building users in terms of enhanced wellbeing.
- Design out all toxins and 'monstrous hybrids' (see McDonough and Braungart's Cradle to Cradle) that will frustrate end of use recycling. All materials need an information strategy.
- Use whole-system-thinking to create integrated ideal solutions. Compromise as little as necessary.
- If the ideal solution is prevented by the brief then apply a lever higher up in the chain of influence (see Donella Meadows' essay Leverage Points)

Naomi Klein, 'this changes everything' – from the way we teach architecture, to the way it is covered in the media and the way it is practised, regulated and celebrated. We urgently need a broader conception of economics that is aligned with planetary limits. It will also change the values that we live by. With the increasingly real possibility of societal collapse, would any parent do a short-term cost benefit analysis on whether it's worth maintaining their children's respect?

That is where we now find ourselves. There will be no innocent bystanders in the decades ahead – we all need to get involved in tackling a planetary emergency. We have all the solutions we need to make rapid progress on the major challenges we face but it will not be achieved without radical system change. Donella Meadows – one of the greatest systems thinkers of all time – commented on the way to change paradigms as follows:

'You keep pointing at the anomalies and failures in the old paradigm.

'You keep speaking and acting, loudly and with assurance, from the new one.

'You insert people with the new paradigm in places of public visibility and power.

'You don't waste time with reactionaries; rather you work with active change agents and with the vast middle ground of people who are open-minded.' ●

There will be no innocent bystanders in the decades ahead – we all need to get involved in tackling a planetary emergency

Michael Pawlyn is a director of Exploration Architecture, speaker, and author of Biomimicry in Architecture. He is on the steering group of Architects Declare and is writing a book with Sarah Ichioka about the need for paradigm shifts in the design of the built environment.

The choice of beauty

Everything happens in the kitchen nowadays, and Fisher & Paykel's design ethos can make it a welcoming, flexible space to suit a range of tastes



Fisher & Paykel designs appliances in a range of beautiful styles to give consumers more choice when it comes to their kitchen. Today's kitchen is no longer a pure utility area, it's a well-considered, cohesively designed space for creation. It's a place where family and friends come together to cook, eat and socialise. It's the heart of the home.

With a unique approach to appliance design and strong working relationships with architects and interior designers around the world, Fisher & Paykel has built its range of kitchen appliances to fit an individual's kitchen and to suit their lifestyle. Products are available in four main styles: Integrated, Contemporary, Minimal & Classic.

Above All new black steel appliances from Fisher & Paykel

The kitchen is where family and friends come together to cook, eat and socialise. It's the heart of the home

Integrated style

The Integrated style allows Fisher & Paykel appliances to be tastefully understated, to provide complete design freedom, and to allow their superior functionality and performance to speak for themselves. Fitting flush, with minimal gaps, the appliances disappear into the kitchen. It's the perfect option for those who want a social kitchen, where the focus is as much on entertaining as it is on cooking.

Classic style

Classic style blends nostalgic aesthetics with modern functionality. These products are designed to have presence, and to bring a warm touch of tradition to any kitchen. The Classic freestanding Range cooker is the perfect statement piece, with craftsmanship in every detail. It's not just beautiful to look at, it's also beautiful to use.

Contemporary style

Fisher & Paykel has always been a leader in contemporary appliance design. These products are designed to the principles of material quality, textural contrasts and refined geometry. The beauty of contemporary appliances is that the function matches the form. Cutting edge technology ensures the incredible performance from each appliance.

Minimal style

Customers and designers are looking for products that blend into the kitchen – that have a reduction or absence of detail and contrast. The minimal style has been developed to address this. It's focused on clean lines, tight gaps and beautiful materiality. It's all about simplicity of form, developing products that deliver powerful modern functionality, but with a singular aesthetic treatment. Sophisticated and uncomplicated.

Why Fisher & Paykel is a natural partner for architects and designers

Curating a collection of kitchen appliances that can adapt to the physical, architectural, sociological and psychological changes happening in today's and tomorrow's kitchens can only be done by working closely with the architects and designers who are responsible for bringing these spaces to life.

'Fisher & Paykel collaborates closely with

Everybody deserves good design, because good design is all about making life better

architects, developers, interior designers and specifiers worldwide to integrate its appliances seamlessly into the design process,' says Mark Elmore, F&P's general manager, design. 'These partnerships have led us to create our Kitchen Tools website for architects and designers, which houses a wealth of case studies detailing the inspirational design outcomes produced by some of these collaborations as well as appliance CAD files for use in the design process.'

Fisher & Paykel has also initiated a series of future design workshops in its Experience Centres, hosting leading architects and designers to engage in conversations with senior designers and the whole industry. These workshops ensure F&P is on the same page as the architects and designers who face the challenges that today's changing kitchens bring.

'We complement this with a strong presence at key global shows, from EuroCucina in Milan to the Kitchen & Bath Industry Show and International Builders' Show which took place in Las Vegas in February this year,' explains Elmore. 'At these events, alongside a specially curated selection of premium built-in appliances, our senior industrial designers meet the design community to share insights, discuss social kitchen experiences and design philosophy and to share views on trends.'

Design trends have brought elements of the professional kitchen into the domestic arena but some of the design parameters can be quite different. The professional kitchen is often simple, built around reliability and efficiency of use, whereas the domestic kitchen has to be quite flexible, doing many things well.

The design team at F&P works tirelessly to identify weaknesses in conventional kitchen and laundry design and resolve them in innovative ways that solve problems for the design community. 'Our kitchen products are consciously designed to match each other across the range, with



Above Kitchen Perfection with Fisher & Paykel's new built-in appliances

stainless steel surrounds and black glass touch-control panels that complement modern, uncluttered design trends,' points out Elmore. 'Design and construction professionals can specify Fisher & Paykel appliances throughout their projects without compromising on quality, functionality or aesthetic considerations.'

He continues: 'The Social Kitchen philosophy remains at the forefront of the trends influencing modern interior design and construction, and we maintain our active collaboration with architects, developers, designers, and specifiers to ensure our products continue to meet their needs as well as those of our customers.'

About Fisher & Paykel Appliances

Fisher & Paykel, New Zealand's award-winning appliance brand, has been selling products to change the way people live since 1934. Over time the company has grown into a global organisation, now operating in 30 countries with over 4,000 employees and manufacturing in Italy, Thailand and Mexico.

Fisher & Paykel's design heritage is founded on a pioneering spirit and a culture of curiosity that has challenged conventional

appliance design to consistently deliver products tailored to human needs. The company is committed to continuing research and development with a culture of open innovation, which allows people to work collaboratively to find insights and ideas that connect with customers and respect the planet.

Fisher & Paykel believes everybody deserves good design, because good design is all about making life better. It has built its success on understanding its consumers and designing innovative products such as the award-winning DishDrawer Dishwasher – the world's first dishwasher in a drawer – and the class-leading CoolDrawer multi-temperature drawer.

A part of the wider Haier Group since 2012, Fisher & Paykel has strengthened its presence as a premium home appliance brand. Fisher & Paykel's New Zealand Design Centres, based at two locations in Auckland and Dunedin, have been recognised as one of the wider Haier Group's five global research and development centres of excellence. ●

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Hard lessons for fracking?

Winy Maas and other Dutch architects are repairing widespread damage caused by earthquakes in Groningen. It's meant rethinking how buildings are commissioned and designed

Kirsten Hannema

For half a century the province of Groningen in the north-east of the Netherlands was seen as the gold coast. After the Dutch Petroleum Society, Nederlandse Aardolie Maatschappij (NAM), discovered a huge gas bubble on the territory in 1948, hundreds of billions euros worth of gas was extracted there.

But at the beginning of the 1990s the earthquakes started, caused by prolapses in the ground as a result of the gas extraction. Relatively small at first, they caused cracks in walls and roads, and then their frequency and gravity increased. To date, more than 1,100 earthquakes have been reported, the largest on 16 August 2012 at the village of Huizinge, 18km north east from Groningen. It reached 3.6 on the Richter scale and caused 80,000 notifications of damage. And yet extraction continues.

Gradually Groningen and the surrounding area has become a disaster zone, where farmhouses are propped up with temporary wall bracing and inhabitants can't sleep for

fear of new tremors. For decades, local resistance to the gas extraction wasn't taken seriously by politicians 235km away in The Hague. But when another heavy quake of 3.4 on the Richter scale hit the village of Zeerijp in January 2018, something had to be done.

After months of haggling between the parties, the economic affairs minister Eric Wiebes announced a new damage protocol that would force a breakthrough in the endless legal procedures being launched in the battle against earthquake damage. One promise was that the gas extraction from the area would be slowed from 20 to 12 billion cubic metres a year, and an end date when the drilling will finish has been set to 2030.

With this, at last, the earthquake-proof reconstruction of buildings and villages has been able to start. Multiple measures are afoot and architects from all over the Netherlands are being recruited to the cause. To help the inhabitants and clients in Groningen, the royal institute of Dutch architects, Branchevereniging Nederlandse Architectenbureaus (BNA), has set up an online

Buildings being propped up are a familiar sight in the region because of gas drilling.



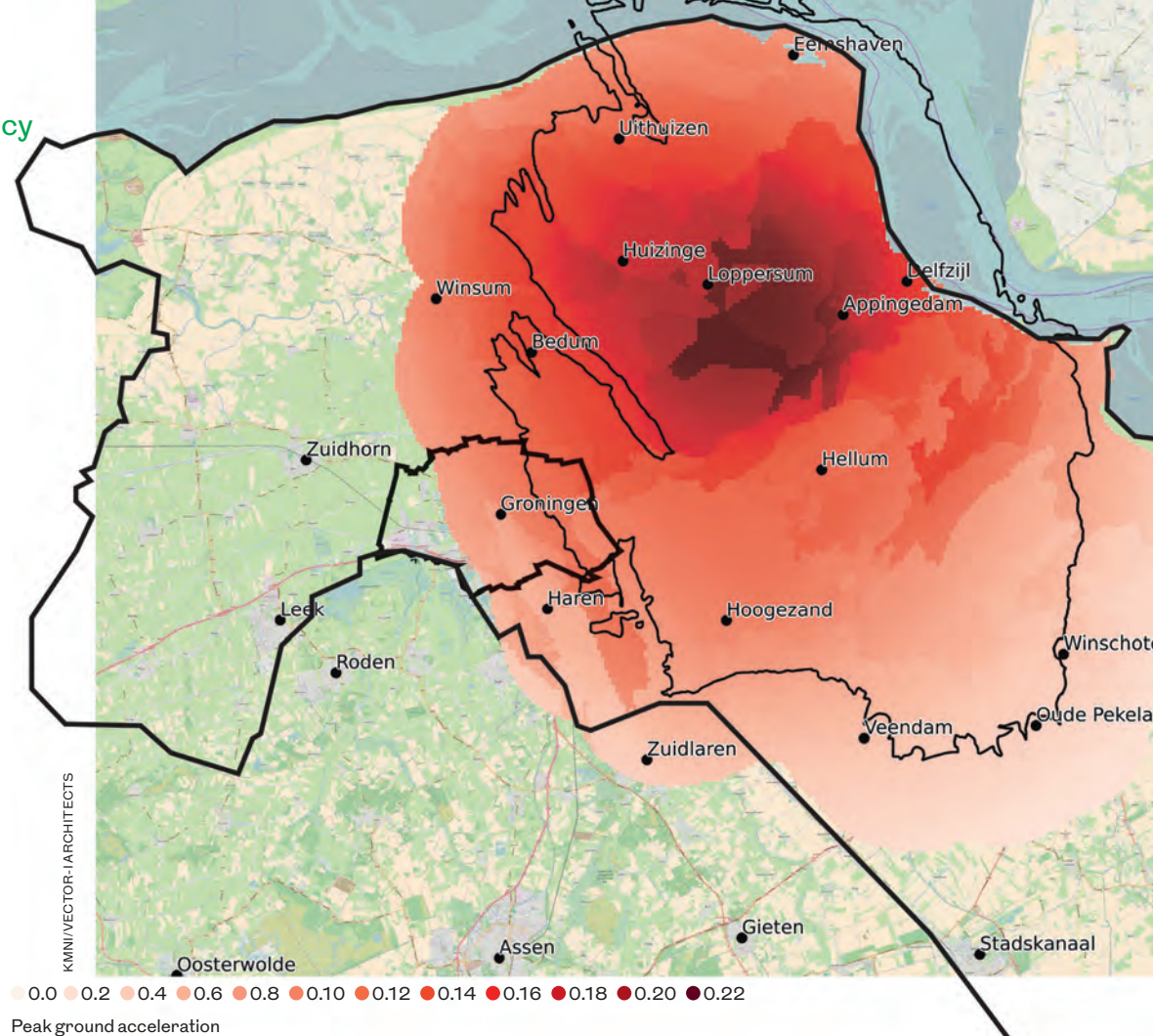
KEES VAN DER VEEN

'Whitebook' of 50 example projects in the earthquake area that are high quality and sustainable, and a pool of architects for residents and organisations in search of professional help.

The village of Overschild asked architect Winy Maas from MVRDV to come up with a vision for the restoration of the village, designed in consultation with its inhabitants. Together with the Groningen based urban designer Enno Zuidema (now head of MVRDV's urban design department) and the local designers collective De Toeverlaat ('The reliance'), this vision has been elaborated. And the city of Groningen itself hopes to set a new earthquake-proof building standard when its new culture centre, the Groninger Forum, opens its doors this winter.

These are pioneer projects and a positive leap forward for the region's inhabitants whose lives have been on hold. They create work for architects, but are, essentially, about finding emergency and long-term man-made solutions to a man-made problem. At a time when people in the UK fear that the new government under Boris Johnson will row back on regulations that bring immediate halt to shale gas extraction if tremors of 0.5 on the Richter scale are recorded, they are issues Britain may also need to face. Here too shale gas is being extracted, causing minor earthquakes; there are protests by local residents, calls for new legislation and falling property prices – all while the latest research suggests that the whole strongly contested exercise may only deliver a fraction of the gas promised by fracking firms and government ministers. A 2.9 magnitude quake was recorded near Cuadrilla's site near Blackpool in August. So, if the worst happens, what can be learnt from Groningen?

First, get the government in charge. In Groningen, thousands of people with damaged houses initially had to negotiate with the petroleum company NAM about whether or not it was earthquake-related and the amount of compensation. This caused a conflict of interests, a lot of irritation and delays. In June minister Wiebes decided to hand over these tasks to the National Coordinator Groningen (NCG), which consists of 10 local municipalities, the province of Groningen and the Dutch government. The NCG now decides which houses need reinforcement and coordinates the rebuilding process as part of village and city renewal plans. Min-



Above Map showing the impact of earthquakes in the Groningen region.

ister for internal affairs Kajsa Ollongren is responsible for the execution, while Wiebes is responsible for safety in the area. The government will pay for the costs. In order to process the 19,000 requests for compensation more quickly, Wiebes has offered a fixed amount of €5,000 to anyone still waiting. This amounts to the average payout per damage report. To date 6,152 damage reports have been sustained, equalling around €32.8 million.

For some architects working in the region, the earthquakes have created the opportunity to review the area's built environment as a whole, touching every aspect from demographics to the thermal performance of buildings or removal of asbestos.


Rob Hendriks, co-founder of local design

These are issues that Britain may also need to face – here too shale gas is being extracted

collective De Toeverlaat, thinks the most important thing right now is to acknowledge that the mega-project is 'more than a technical task'. 'The spatial consequences of making structures earthquake proof are immense, at the level of buildings as well as the urban scale,' he says. 'There lies the opportunity for designers, just because they are capable to connect different aspects.' He and his colleague Enno Zuidema, who moved from Rotterdam to Groningen to start an office specialising in 'shrinkage' and ageing, want to link solutions for quake-related issues to other themes that play a major role in this area to improve quality of life.

At Overschild, Zuidema was a moderator of two evenings where residents could express their worries about compensation, mortgages and where they could or could not rebuild. He helped them to set up a Whitebook Overschild, noting that residents want to be involved, but don't feel equipped to execute plans. His work there has been about creating a vision for the village which bundles together their wishes and ideas and supervising individual building plans.

Through the joint organisation of NCG, De Toeverlaat helped individuals with ques-



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Start on a small scale to quickly find out what works

tions about exchange houses, sustainability and construction systems. Hendriks says: 'In this way they can make an informed choice of reinforcement, renovation or rebuilding, either with a contractor or the help of an architect. At the same time, we want to forge new collectives. The NAM treats every house as an individual case, which puts social networks under pressure. This is why we proposed to work on collective interests, like working with the same contractor, or living together during the construction.' From the first 18 houses – one of the four streets in this so-called cross village – 12 inhabitants have chosen De Toeverlaat as their architect. For the renovation of the next 90 houses, the municipality organised a tender, won by De Toeverlaat.

Meanwhile, at the village of Krewerd, 15km north-east of Overschild, a rebuilding 'experiment' has been set up by the architect



Above An unsalvageable farmhouse in the Groningen region being demolished because of safety concerns.

Below Construction of the new Forum cultural building was halted midway through to make the structure earthquake proof.

Fons Verheijen. He is known for designing the Naturalis museum in Leiden, which was renovated recently and found itself at the centre of a legal case. Verheijen claimed the renovation was an infringement of his creation and eventually settled for €1.5 million. With this money he started a foundation for 'urgent' architecture matters. One of the beneficiaries for the fund has become the Groningen earthquake area.

Verheijen wants to empower residents by providing everyone with the assistance of an architect, and wants to encourage experimentation too. 'My point,' he explains, 'is that you should start on a small scale, where you can quickly realise plans to get an idea of what works.' This is how he came to Krewerd, a village of 85 people. As in Overschild he involved the villagers to create a village vision, which serves as a framework for people to rebuild their houses with help of an architect.

However, the earthquakes haven't only raised issues about how to reconstruct damaged villages, but also how new structures are built and to what standards. The municipality of Groningen, for example, now realises that new buildings need to be earthquake proof. The city decided to set an example with the Groninger Forum, a cultural mega-building that will complete in November. Construction of it started in 2008, but after the severe quake in 2012 construction was halted in order to adapt the plan.

Knowledge of earthquake-proof techniques is limited in the Netherlands. 'Luckily our construction advisor ABT has a sister company in New Zealand,' explains project architect Pieter Bannenberg from NL Architects. 'There earthquakes are a fact of life and they could get advice. People should be able to



KEES VAN DER VEEN

NL ARCHITECTS

New Zealand, where earthquakes are a fact of life, offered valuable advice

leave the building, which has a theatre hall for 500, safely, but there may be damage.'

The previous design was far from ideal. 'Usually, you either work with a tree construction in steel, which moves along, or a concrete "bunker" which can take any blow. Our design comprises two concrete cores from which loads of steel has been hung.' With the help of advanced computer programs ABT manages to calculate where extra steel should be added. 'In the end you hardly see the adaptations.'

In recent years several pilot projects for earthquake proof building have been realised, including a conservatoire in Groningen by BDG architecten, which is a 'seismic' construction with floors and bearing walls that move along each other during quakes. The concert halls and practice rooms are insulated boxes. NCG has also set up a programme for the renovation and reconstruction of 102 schools, using the opportunity to incorporate educational renewal and create zero emission (all electric) buildings. The first earthquake proof schools were opened in 2018 in Bedum and Middelstum; the whole project should be completed by 2021.

The flooding disaster that hit the Netherlands in 1953 resulted in the famous Delta Works, which boosted numerous initiatives to rebuild the country's infrastructure to ensure people would be safe. Do the Groningen earthquakes provide a similar opportunity?

'I once made the mistake during an information evening with villagers of speaking about how they would build the "house of their dreams",' says Hendriks. 'People got pissed [off] and walked out of the door. But they will get an earthquake-proof and building compliant decree, sustainable and hopefully typical Groningen house. No one is happy about it, but by now they feel we have to drag the best out of this.' ●

Kirsten Hannema is an architecture critic, writing for, among others, the Dutch newspaper *De Volkskrant*. She is also editor in chief of the *Yearbook Architecture in the Netherlands*.

This Side Up, designed by vector-i architects, is mainly constructed from timber to allow for movement in the structure.

CASE STUDY

This Side Up house, Meerstad, the Netherlands, designed by vector-i architects

This Side Up is a 180m² house for a clinical pathologist and broadcast video editor/teacher in the new district of Meerstad, 7km from the centre of Groningen. The clients approached vector-i architects in 2016. North-east of the city, the location is within the earthquake zone on hazard line 0.17 peak ground acceleration (PGA). PGAs are the amplitude of the largest acceleration recorded during an earthquake. Hazard lines determine the standards designers must adopt, as well as the funds available from NAM towards the additional costs of building because of the earthquake threat.

The refund was calculated as a percentage of the clients' total budget, resulting in a design based on the two. Traditionally housebuilding in the region was done by piling with masonry on top, but during an earthquake this can cause floors to slide away from walls. Regulations now require movement and flexibility to be designed into the structure.

For This Side Up, timber was the most logical material. But vector-i also had to adhere to Meerstad's design guide, which predates the earthquakes and is based on a culture of brick. Consequently, the house keeps brick to a minimum 'solid base' and maximises wood, creating a 'flexible top'.

To prioritise movement, vector-i also minimised traditional piling in favour of connecting in different ways – for example, using metal anchor plates at almost every joint between foundation and floors/walls/roofs, resulting in a lightweight, light-footed structure.

There were many complications however. As part of new standards, distances between the nails/screws

used for timber frame had to be calculated and proved. Engineers differed on the thickness of the timber board required, so the architect had to amend the technical drawings from 11mm to 18mm. Consultants would not take responsibility for simple adjustments, causing further delays.

And as more research takes place in the region and more earthquakes happen, the PGAs change and the standards with them, making construction particularly complex and necessitating extra design flexibility.

Ben van der Meer, director, vector-i architects, and Isabelle Priest

Below The name of the house, This Side Up, refers to the fragile, breakable nature of the setting.



HARRY COOK (2)

Batimat is back – with new offsite and digital areas

Dedicated areas for offsite and for digital and BIM join 1,700 international exhibitors at Paris' mega-show



The leading European event for the architecture, building and construction industries returns to Paris from 4-8 November 2019 with more than 1,700 international exhibitors, including a high number of leading companies.

Bosch, Leica, Schüco Bieber, Simonin, Stanley Black & Decker, Jouanel, SFS, Jansen, Würth, KS Tools, IMER Group... they all answered the call to join the next Batimat.

Every two years, Batimat becomes the one-stop-shop in Europe, the Middle East and Africa for construction professionals looking for innovative products, inspirations and solutions that will shape tomorrow's buildings.

Over five days, the trade-only exhibition will address key subjects and issues affecting the construction industry: buildings of the future and changes in urban mobility, designing construction sites with a low or zero carbon footprint, increased connectivity and interactive buildings, modernising construction and

Construction Tech sector will host the largest gathering of sector-specific start-ups

renovation processes, energy efficiency and sustainability, digitisation of the construction industry and most innovative solutions and processes, boosting skills and improving working conditions.

These themes will be covered throughout the six sectors of the show:

In Halls 1 and 2, INTERCLIMA is dedicated to energy and ventilation and air conditioning. It will display renewable, innovative and power solutions for the built environment.

In Hall 3, IDÉOBAIN – the bathroom show – will connect directly to the interior design area of Batimat, for easy access to all products and services for bathrooms,

including wet rooms.

Batimat will occupy four halls. In Hall 4, interior and outdoor fittings will take centre stage, while the surface and materials section will display new products from cladding to coatings, panels to plumbing and flooring to finishes.

Hall 5A will host a section dedicated to doors, windows and glass, while Hall 5B will be home to worksite equipment, tools and utility vehicles.

Set up between Halls 5A and 6, the new Construction Tech sector will present digital and BIM solutions for buildings and will host the largest gathering of sector-specific start-ups.

Finally, in Hall 6 visitors will find the 'building structure and envelope solutions' area together with a section for timber and wood. For the first time, Batimat will dedicate an area to off-site building.

Batimat will also offer the opportunity to hear from prominent professionals as part of its conference programme, including Bouygues International's head of modular construction Aurélie Clereaux, British architect Andrew Waugh, and an awaited conversation on 'High-tech vs low tech: which scenario for sustainable cities?' between acclaimed architects Amin Taha from GroupWork, Carmen Santana from Archikubik and Traumnovelle Architects.

Whether you are an architect, interior designer, fit-out contractor, a builder's merchant or a building project manager looking for the latest trends in the built environment, Batimat is the must-attend exhibition to source new products and understand the new challenges faced by the industry.

Batimat will take place from 4 to 8 November 2019 at the Paris Nord Villepinte exhibition centre – a 20 minute train journey from the Eurostar terminal or a 5 minute journey from Charles de Gaulle airport. Entrance is free to international visitors. ●

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Happiness gets harder to find

The optimum income for contentment moves further away as salaries fall, despite rising recruitment

Aziz Mirza

Nobel Laureates Professor Sir Angus Deaton and Daniel Kahneman have studied the link between earnings and happiness. They found that happiness increases as we earn more but found a point at which happiness rises so slowly that barely any improvement is perceptible. They concluded that a salary of \$75,000 is what you need to be happy in the US. Earn more and happiness doesn't increase significantly. Adjusting for inflation and exchange rates since the study was published, the Deaton-Kahneman happiness figure equates to about £66,000 in today's prices.

Just 19% of architects earn £66,000 or more. That's about one in every five architects. If you are older you are more likely to have reached this nirvana figure. For those aged over 50, the proportion rises to one in three. That figure of £66,000 is close to the average earnings of architects who work for private in-house departments, and just a little higher than the average for partners and directors in private practice. But salaried architects in private practice, sole principals and those in government have a little way to go before they reach financial happiness. And overall average salaries are falling.

But it is not just about money. We haven't measured happiness in this survey, but for the first time this year we've looked at another factor which affects satisfaction and lifestyle; the ability to work from home and how

Average earnings by field of employment

Employment field (£)	2018			2019			Change of median
	Lower quartile	Median quartile	Upper quartile	Lower quartile	Median quartile	Upper quartile	
Sole principals	24,000	40,000	57,813	24,000	37,000	55,000	-7.5
Principals in partnership	38,500	55,000	85,500	42,250	60,000	94,200	9.1
ALL PRINCIPALS	30,000	48,000	75,000	30,347	49,700	79,000	3.5
Private practice salaried	35,000	41,000	50,000	34,000	39,536	47,000	-3.6
Private in-house	40,500	60,000	94,000	43,750	68,500	93,000	14.2
Local authorities	36,500	40,439	45,688	39,602	43,750	47,549	8.2
Central government	41,209	52,000	59,250	42,934	51,000	59,625	-1.9
ALL SALARIED	35,000	42,000	55,000	34,900	40,000	50,000	-4.8
TOTAL	34,000	45,000	60,000	34,000	42,395	58,250	-5.8

* the size of these sub-samples is small; figures should be treated with caution

HEADLINE FIGURES

£42,395

architects' average earnings

6%

average earnings down

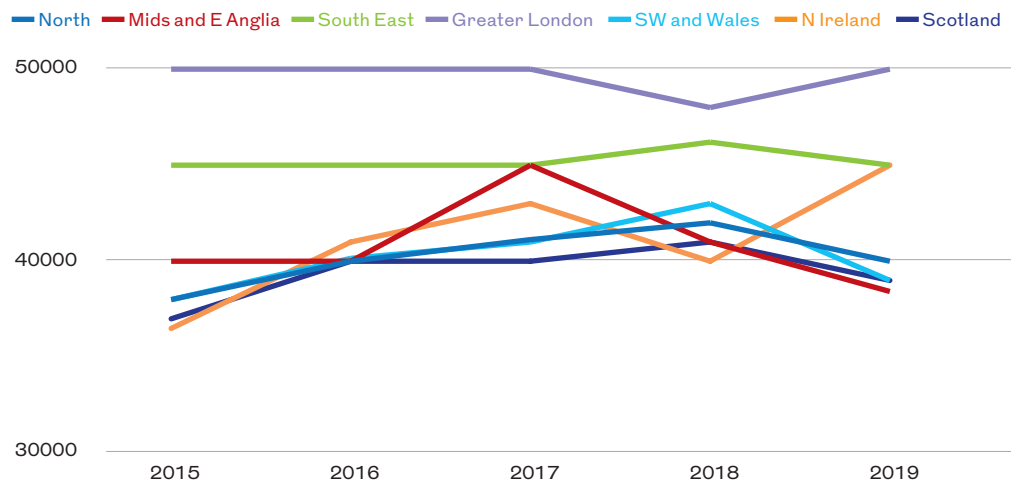
1,200

increase in number of architects

48%

age pay gap inequality up (30-34 year old compared to 50-54)

Average earnings trends by region – last five years



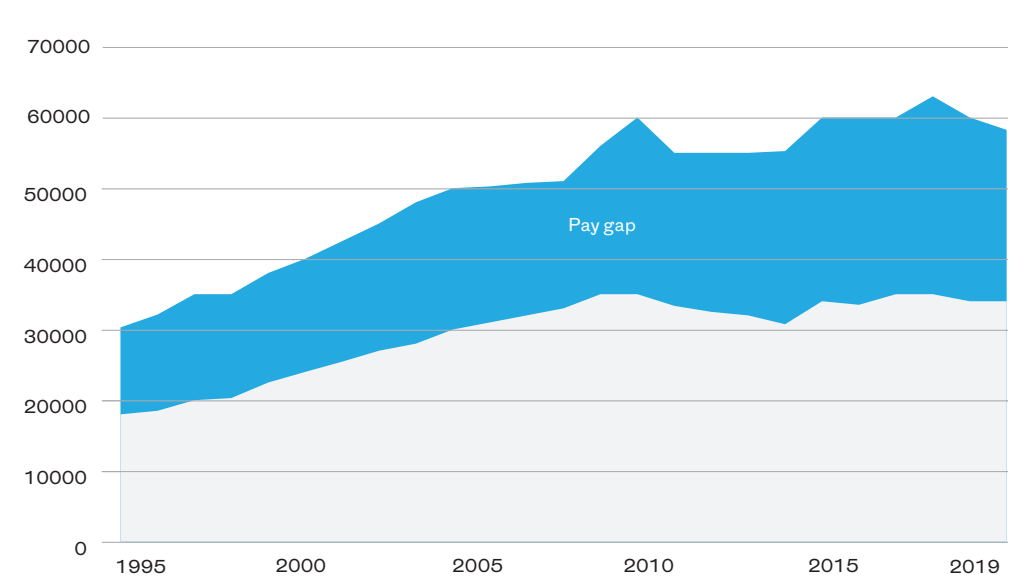
Equality has barely changed in the earnings of different quartiles of the profession

long architects spend travelling to work. The proportion of architects who regularly work from home is 21% – a similar proportion, although not the same individuals, as those earning above that magic figure of £66,000. These homeworkers are defined as those who regularly work from home as part of their normal working week. They include one in three local authority architects, one in four private in-house architects, but only one in eight salaried private practice staff. The largest numbers of architects ‘regularly’ working from home are partners and directors (36%) and sole principals (80%). While architecture is flexible enough to permit home working, most regular home workers also need to work in the office. Only 7% of all architects work full-time from home, rising to 13% of sole principals and 23% of partners and directors.

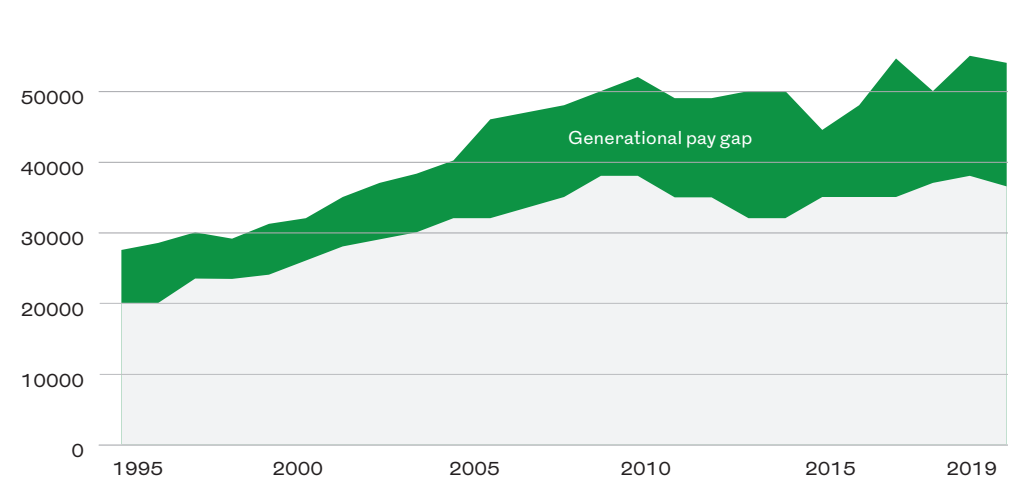
While we don’t collect any data that would allow us to correlate happiness and earnings for the profession, we can look at how average earnings have trended over time and, in particular, look at whether there are any pay gaps between different groups. First, let’s look at the gap between the top quarter of earners (upper quartile) and the bottom quarter (lower quartile). That’s a broad measure of income equality between the higher and lower earners. The gap has remained fairly constant over a long period. In 1995, the upper quartile earnings were 68% higher than the lower quartile; in 2019 they are 71% higher. This suggests that equality within the profession has barely changed over the period and that there has been no significant divergence or convergence in the earnings of different quartiles – broadly in line with what’s happened in the overall economy.

Next, there’s the generational pay gap. We measured the average pay for an architect aged between 30 and 34 and compared with an architect aged between 50 and 54. This shows more of a change – for these specific age groups, in 1995 the older architects earned 37% more than the younger ones. By 2019 the pay gap between the two age groups has increased to 48%.

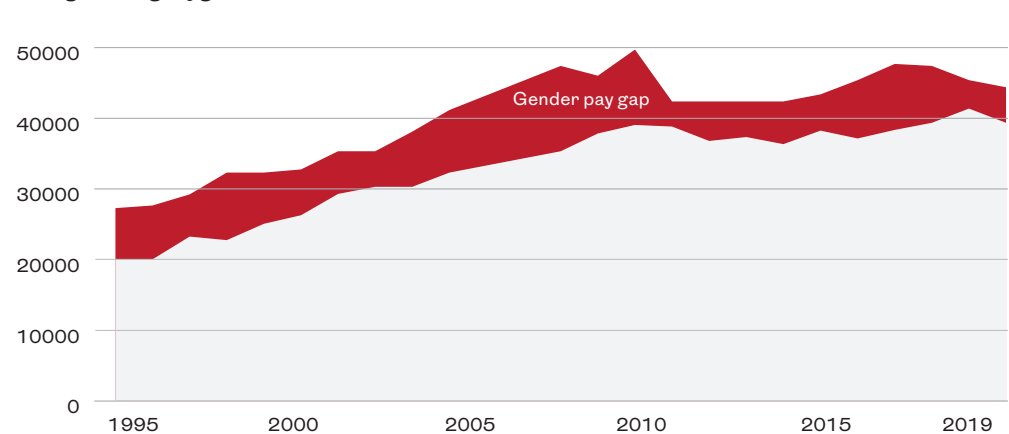
Average earnings by equality: lower and upper quartile earnings



Average earnings by age



Average earnings by gender



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And then there's the gender pay gap. Despite it reducing a little last year it still persists, this year average male architects' earnings exceed those of females by 13%. But back in 1995, the gender pay gap was 35%. At this rate, it will take another 14 years to eliminate the gender pay gap.

The bad news from this year's survey is that it may take even longer; given that average earnings growth has gone into reverse. Last year, this survey recorded zero change in average earnings, and we commented then that it was remarkable earnings had not actually fallen, given the huge growth in the number of architects. Well, average earnings have fallen now, by 6%. We've seen another massive increase in the number of architects, another 1,200, taking it to 41,200. So over the last two years, the number of architects has increased by 2,900. That's a rise of 8% over two years, and the elementary economic law of supply and demand has been felt this year.

Two groups have experienced falling salaries this year; salaried architects working in private practice, and sole principals. These are two quite different groups of architects. The fall in average earnings among private practice salaried architects is entirely logical as practices have continued to recruit young, less experienced architects. This is where the main growth in total numbers has been and is the most likely explanation for falling salaries. The fall in average earnings of sole principals is less easily explained. It might be due to there being less work, although under-employment among sole principals has only increased slightly this year, from 12 to 14%. One concern we often hear is that fees (and so incomes) continue to be pushed down by competition from other providers of architectural services. So this year's fall may be due not so much to a lack of work as to smaller profits coming from each project.

Other groups of architects have seen earnings increase; by 9% for partners and directors and 14% for private in-house architects. Local authority architects' average salaries are higher by 8%, although their central government colleagues record a slight fall of 2%.

Falling salaries make it harder to reach that optimal figure of £66,000. This year, around 5,500 architects earn at least this and, according to the Nobel Laureate economists, earn enough to maximise their potential for happiness. ●

Aziz Mirza is a director of The Fees Bureau

Work regularly from home

Sole principals



Principals in partnership



Private practice salaried



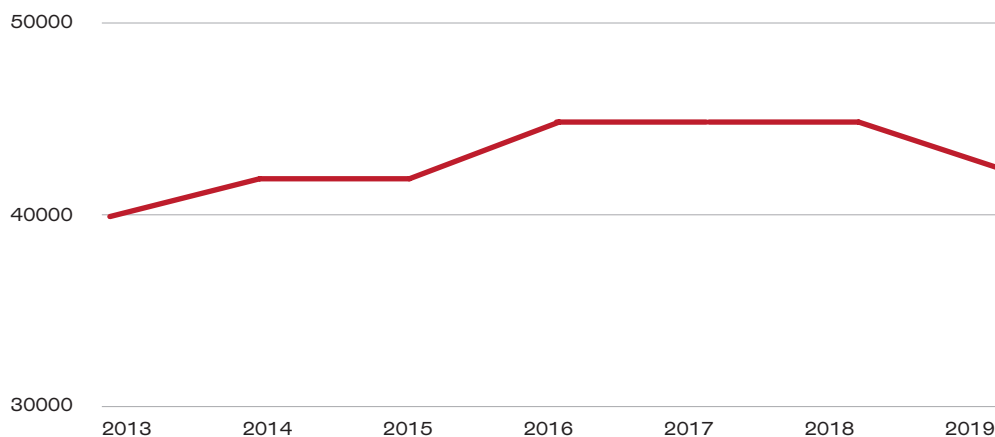
All architects



0% 50% 100%

■ Always ■ Most of the time ■ More than half of the time ■ Less than half of the time ■ Occasionally

Earnings last five years, average for all architects



The annual RIBA/The Fees Bureau Architects Employment and Earnings Survey is conducted The Fees Bureau among RIBA members and excludes members based overseas. A sample of members was invited by email to complete an online questionnaire in May to July 2019. Around 1,170 architects responded; we are very grateful for these members' willingness to provide their information. The profile of the sample by age and region is broadly consistent with previous years. Buy the report or read summary statistics (RIBA members) at feesbureau.co.uk/data

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Welcome to RIBA J Meets

Our podcasts let you be a fly on the wall in conversations with noted architects

Eleanor Young

Imagine being in a room with that architect you really admire... or who won the job you wanted... or designed that interesting building... or is just older than you and has seen it all before. What would you ask them? What stories would they tell?

As journalists we have the privilege of these sort of conversations, on the train, over lunch, in the studio. Their answers reveal – intentionally or otherwise – the pain as well as the joy of making buildings. They show how architects' view of themselves can differ from the common perception. Now we are sharing these insights with you through our RIBA J Meets podcast series. Follow the links or find us on your podcast app.

I went to meet Rachel Haugh and Ian Simpson with great admiration for the clarity of the vision and execution on their super-tall glass towers but a nagging fear of all they represent in housing and the cityscape. Will you be convinced that the way they live in their own buildings is a testament to city living?

Conversations like these challenge lazy characterisations. In the UK Caruso St John is known for its ground breaking galleries from Walsall through the Tate Britain to Newport Street Gallery for Damien Hirst. But its ever-wider range of work now includes sports stadia, so you can hear Peter St John talk seriously about ice hockey.

In others you can hear why clients might want to work with a practice. Ease of conversation, laughter and clarity of thinking make Andrew Waugh and Anthony Thistleton good to listen to. Their honesty about what makes a good project, as much as the way they talk movingly about their Bushey Cem-



Above Anthony Thistleton (left) and Andrew Waugh of Waugh Thistleton.

Right The timbery insides of Waugh Thistleton's Murray Grove.

Imagine being in a room with an architect you really admire. What would you ask them? What stories would they tell?



AGNESE SANVITO

WILL PRYCE

JENNY JACOBY

JAMES BROOME PHOTOGRAPHY



etery, shortlisted for the Stirling in 2018, makes for a fascinating trip into a practice.

In RIBA J Meets you can listen to some of those stories and hear how other architects tick, how they have come to lead a sector – and perhaps how they have broken out of it – won clients and fallen into jobs, eyed up the competition, balanced work and life at a human level and felt the growing pains of practice. We get under the skin of the everyday workings of practice, place and people, on subjects from dodging recessions to proving yourself. Listen in, you might be surprised at what you learn. ●

See ribaj.com/meets or search RIBA J Meets on your podcast app

We get under the skin of the everyday workings of practice, place and people

Above right Hardturm Areal's football stadium and towers in Zurich by Caruso St John.

Above Peter St John of Caruso St John.

Below right No.1 Spinningfields in Manchester by SimpsonHaugh – reaching for the sky.

Below Ian Simpson and Rachel Haugh of SimpsonHaugh.



DAN HOPKINSON

LISTEN IN, WHAT WILL YOU LEARN?

Ice-cool with Caruso St John

Hugh Pearman meets Peter St John. Hugely admired gallery designers and committed teachers, but where is Caruso St John going next? Peter talks galleries, ice hockey and awards.

City living with SimpsonHaugh and Partners

Eleanor Young meets Rachel Haugh and Ian Simpson, visits Docklands' Dollar Bay and talks pulling pints, rebuilding Manchester after the IRA bomb and living high rise in Manchester.

Growing up in practice with Waugh Thistleton Architects

Eleanor Young meets Andrew Waugh and Anthony Thistleton and explores the quiet virtues of timber, and discusses clubs, artists and bringing up kids in Hoxton – and the need for a construction revolution.

Let us know who you would like to hear from next – and your questions for them @RIBAJ, or RIBA Journal on facebook and linkedin.



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3: Culture

Psst, over here...

There's a lot to be said for the slightly transgressive feeling you get using the side door



Hugh Pearman Editor

You don't see the side entrance to the RIBA building – the way into 68 rather than 66 Portland Place – open very often. It's not nearly so grand as the huge main formal entrance but not bad either, a competently designed pair of what look like teak panelled doors with bronze details. They have something of the air of an interwar bank building: you half expect to find that long-obsolete facility, a night safe, in the wall alongside. Instead you get a slightly mysterious old entryphone panel with 10 bell-pushes. For what, or whom? Did people once live there? Do they still? The buttons are clearly unused. But attached to the plate is a modern electronic escutcheon. Those with the requisite open-sesame (I am not one of this elite band) can go in and out there when the great sculptural gates of No 66 are shut. Security guards use it, and contractors.

Fascinating detail, you may or may not say, but why are you telling us this? It's because we are now seeing the doors

The people behind Architects Underground know the value of the slightly transgressive

to No 68 flung open once every week, Wednesday evenings, for the experiment in cultural fusion known as the Architects Underground. It is early days for that ambitious programme and having previewed it (RIBA, September 2019, p80) I'm not going to review it here except to say this: using the side entrance is a masterstroke.

With their music industry background the people behind the Underground know the value of the slightly transgressive. Since their whole schtick is non-institutional, to enter via the main doors would be all wrong. Queuing to get into a little lobby with a pink neon logo on the rear wall is much better. And it leads directly into the RIBA's new bar which up to now has been somewhat underused. The visual message, reinforced by the music, lighting and furniture, is clear: this is a club. It carries on downstairs. By no means Studio 54 in Manhattan, but there's the sense of a speakeasy, or one of those secret afternoon dens for the louche habitués of post-war Soho. The whole point is for the experience to feel a bit furtive, as director Stephen Daldry once said of London theatre.

Over the years I've taken part in a number of the 'immersive' productions of theatre company RIFT, which always chooses to occupy non-theatre spaces, sometimes widely spaced and unexpected: for its production of Kafka's *The Trial* a few years back, at one point you found yourself in a distinctly threatening situation in a lock-up garage on a Hackney council estate. Most recently they did a *Midsummer Night's Dream* at London's Alexandra Palace. Not in the recently restored Victorian theatre there, oh no: in the dank, echoing basements. I think the great director Peter Brook would have approved.

Hurrah, then, for the side door and the overlooked space and the culturally tangential. All buildings carry this potential within them. As building users, you just have to see the potential. ●

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An engrossing and often sad story, told through the lens of Minnette De Silva's affair with Le Corbusier... depicted as an intense connection underpinned by passion and a mutual respect for each other's work

Pamela Buxton on the fascinating world of an unsung female Sri Lankan architect brought to life in fiction: ribaj.com/minnettedesilva



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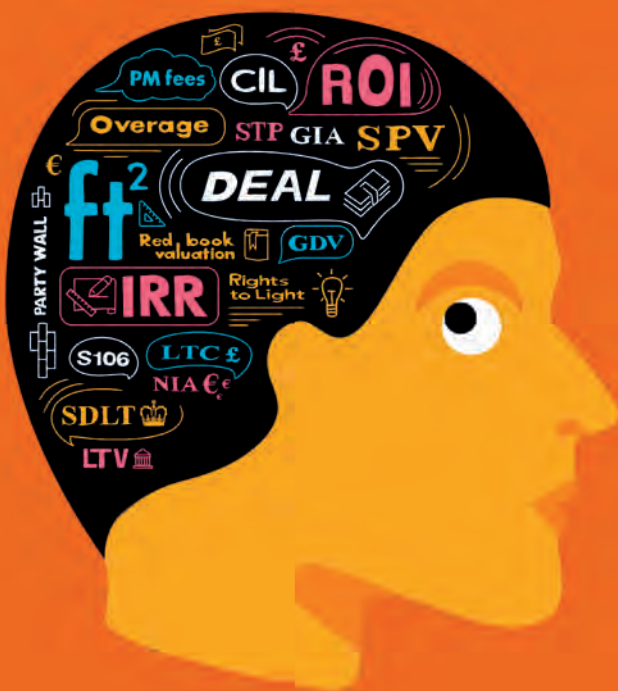
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Welcome by Creative Directors Amanda Baillieu and Gus Zogolitch.

The morning will focus on winning new business through *Finding the Client*, *Winning the Pitch* and *Understanding the Opportunity You've Got*.

Speakers include George Ferguson, Past President RIBA; Selina Mason, Lendlease; David Tigg, Tigg + Coll Architects; and Lou Dawson, Rome.

CREATING YOUR OWN OPPORTUNITIES

The afternoon will explore how to create your own opportunities by learning *How I Found Land*, *How to do a Development Appraisal* and *How to Buy Land*, showcasing *Alternative Routes to Development*.

Speakers include Meredith Bowles, Mole Architects; Sophie Goldhill, Partner, Liddicoat & Goldhill; and John Kinsley, John Kinsley Architects.

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Plunge in

Urban waterways are calling out to be swum in. Europe has cleaned up its act, why can't the UK get on board?



Oliver Wainwright

A grand processional stair leads down the waterfront facade of David Chipperfield's James Simon Gallery on Berlin's Museum Island, to a platform where the Kupfergraben canal laps against the sharply-hewn white stone plinth. It recalls the romantic canalside entrance of a Venetian palazzo, awaiting gondola-borne visitors, but sadly no boats may stop here. 'It's an affectation,' Chipperfield told me at the opening. 'A human gesture to suggest the building dipping its toe in the water.'

But one enthusiastic local group is already eyeing the tempting steps and they plan to arrive not in a boat, but in their bathing suits.

Architect brothers Jan and Tim Edler began the Flussbad (River Pool) campaign in the 1990s – a utopian idea to transform this 2km side arm of the River Spree into a swimmable route through the city. For years Berlin's waterways were peppered with swimming spots, but by 1925 the putrid water closed the last one. 'Kot d'Azur' was its nickname – a play on the German word for excrement.

The Edlers' campaign has gathered such momentum that the group won €4 million from the government and city authorities to pursue the idea, including developing plans for a plant-based filtration system upstream. After heavy rainfall, sewerage can still flow into the river, but generally the water quality is already good enough to swim in, classified as 'excellent' by the standards of an EU directive. Last summer, more than 500 swimmers joined the fourth annual Flussbad Cup, when the water was a balmy 20°C. The sea of yellow

Pack your clothes into a Wickelfisch rubber bag, plunge in from one of the many riverside steps and let the current sweep you down the Rhine in a 2km panorama of the city

Below River swimming, Zurich



bathing caps bobbing past the rusticated base of the Pergamon Museum and Chipperfield's slender white colonnade resembled a dreamy student Photoshop collage. But the Flussbad swimmers want to make this permanent, pledging to complete the project by 2025, a century after the last swimming spot closed.

Bronzed bodies drifting down city-centre rivers is already commonplace across neighbouring Switzerland, where Basel, Bern, Zurich and Geneva have long embraced their aquatic urban arteries as places to cool off, exercise and generally lounge around along the riverbanks, as a recent exhibition at the Swiss Architecture Museum showed. In Bern, the centuries-old tradition of swimming in the Aare is enjoying unprecedented popularity, while in Zurich the historical bathhouses along the Limmat turn into waterside bars by night. But nothing beats the tradition of Rheinschwimmen in Basel. Pack your clothes into a Wickelfisch rubber bag, plunge in from one of the many riverside steps and let the current sweep you down the Rhine in a 2km panorama of the city.

It was a chemical disaster in 1986 that provided the catalyst for Basel to clean up its river, and see the banks fitted with long expanses of steps for sunbathing and getting in and out. A nationwide ban on phosphates in cleaning agents has significantly improved river water quality – and the torrents of fresh water from the Alps don't hurt either.

So why don't British cities follow suit? As temperatures soared to 39°C this summer, the prospect of a dip in the murky brown Thames had never been more appealing. Architecture practice Studio Octopi has been peddling its elegant Thames Baths proposal since 2014, but it hit the buffers of the Port of London Authority, which says swimming in the Thames is about as sensible as rambling on the M25, due to the extent of river traffic. Undeterred, the architect has shifted its proposal to the Royal Docks, where wetsuited triathletes already plough the loops in summer. The Studio has an enthusiastic backer, but again seems to be struggling against the wall of health and safety. With temperatures only set to get hotter, it's time our authorities caught up, cleaned up and started to appreciate urban waterways as the refreshing free amenity they could be. ●

Oliver Wainwright is architecture critic at the Guardian. Read him here every other month and at ribaj.com

BIT OF A DAMPENER

Those contemplating a riverine plunge should beware the perils of waterborne microbes – David Walliams was stricken with 'Thames Tummy' after his 140-mile charity swim in 2011, while this summer's Flussbad Cup had to be cancelled after an outbreak of blue-green algae in the canal.

Architects, together, delivering

As the only regulated profession in an industry facing huge responsibilities, architects must be more expert



Alan Jones

The next six to twelve months will involve dramatic change on many fronts. How can architects as a collective profession, in practice and in education, be resilient and deliver actual, realised, positive change?

The RIBA has highlighted the risks of a no deal Brexit loud and clear. It has negotiated protections for our profession in that event and provides regular updates with information and advice for members and practices. But as I write my first column as your president, with the Halloween deadline looming, uncertainty is everywhere. In preparing for the worst while hoping for the best, I will ensure the RIBA continues to help members prepare and be stronger, deal or no deal.

Looking beyond leaving the EU, climate change will be towards the top of all agendas. In the UK, the new prime minister used his first House of Commons speech to renew the commitment to meeting the UK's Net Zero target. The creation and running of the built environment is such a significant proportion of the environmental problem that architects have to be central to addressing this target.

The death of architects' expertise is, in my mind, exaggerated. Recent events demonstrate what happens when expertise is made

Duty and responsibility are converging in the construction sector and we architects have a vital and unique role

silent, or ignored, at the peril of quality, value and the well-being of society. The tragedy of Grenfell Tower and the construction horrors of the Edinburgh schools, for example, highlight the urgent need for new ways of operating. Worryingly, post-Hackitt, the Building Safety Industry Safety Steering Group has reported resistance to change.

A new era of professionalism, duty and responsibility are converging in the construction sector and as the only regulated profession in the built environment, we architects have a vital and unique role. We must be prepared to be more expert, deliver more and carry a greater duty. This will involve greater expectations for our initial education and continuing professional development. We will have to better manage innovation, knowledge, experience and risk, to maintain our businesses and satisfy insurers.

RIBA can and will lead and support. Its new Code of Conduct increases the environmental responsibility of every chartered member and practice. Council agreed a declaration of a climate emergency; 17 Stirling Prize winners have jointly declared the same. The RIBA's Ethics and Sustainable Development Commission report recommended how the built environment can best reflect and engage with the 2030 UN Sustainable Development Goals. The Institute's CPD online delivery and recording platform is a powerful mechanism to confirm the expertise and development of architects. Our expert advisory group on fire safety has been a strong and influential advocate for change to provide clarity to the industry and protect the public in the wake of the Grenfell Tower tragedy.

Increasing responsibility will surely bring greater relevance, but it must also be reflected by government-led reform. Increasing responsibility needs to be reflected with lower outward costs in securing commissions, the golden thread of continued involvement, procurement and planning, POE, and moving fee calculations away from construction cost to acknowledge architects' greatest value is at the start, with briefing, ideas and strategy. Reforming and funding architects' education appropriately is essential too.

Architects are a society, within an industry. We must focus, together, on our primary, common goal: to make our world a better place. We have this opportunity, an opportunity for all. ●

president@riba.org @alanjones2008

AGE-FRIENDLY DESIGN

Over the summer the RIBA and Centre for Towns published a joint report, *A Home for the Ages: Planning for the Future with Age-Friendly Design*. The report challenges the current failure in England to meet the need for housing suitable for older people. It highlights best practice in age-friendly design and makes the case to policymakers as to how increasing age-friendly housing provision could play an important role in tackling national problems in both housing and social care. Read the full report at architecture.com

PROFESSIONAL CONDUCT

Following a Professional Conduct hearing on 3 May 2019, Christopher McCauley received a nine month suspension for breaching the Code of Professional Conduct.



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Harriet Harriss, multi-skilled advocate of social architecture, brought no prepared vision to her deanship of New York's Pratt Institute. For her, leadership starts with her community

Words: Beatrice Galilee Portrait: Daniel Dorsa

Harriss' creed

Are academics typically a practical people? In my interactions with the world of architectural education, it does seem to be notable, bordering on exceptional, for anyone to have the intellectual and functional elasticity to hold a deanship, an embarrassment of qualifications, teaching awards and scholarships, lead a successful advocacy group for women in architecture and also, say, have been ankle-deep in an abandoned Mancunian abattoir, built medical centres by hand and have masters-level training in restoration treatments for medieval belfries.

Yet as well as being able to put her hand up to all of that, possibly the most interesting thing that the incoming dean of architecture at New York's Pratt Institute – our very own British architect, Dr Harriet Harriss – is that she is an assured and compelling campaigner and advocate for the civic and social scope of

architecture. She has an attitude and world view that will intrigue and hopefully impress her new colleagues in New York.

'I'd always thought of architecture as a civic project,' she tells me, one a late August morning in Williamsburg, Brooklyn. 'Perhaps spending a lot of my early years in council housing in the north, architecture wasn't theoretical for me. I got an education, I got space for healthcare, I got space to live. So I'd only ever seen architecture as heroic.'

We are meeting just a few days before Harriss starts her role as dean at the school's gleaming Steven Holl-designed campus. I try to share some things I know about being British in New York. (Never order tea in public. Always bring a credit card to the doctors. Radically lower your expectations of the subway), and learn more than the little I know about Harriss. As head of





postgraduate studies at the Royal College of Art, she had persuaded, encouraged and ushered through my application to take on a long-distance PhD under her supervision. I remember meeting her – long blonde hair, sharp brown eyes, crisp white t-shirt, black leather trousers with stacked doctor martin boots – cheerfully detailing her own doctorate which she undertook while working full-time as the head of the graduate programme at Oxford Brooks University. Her commitment to supporting and creating space for women in architecture shone through then just as it does now. Although what is easy for Harriss – who as a student was a qualified youth worker, organising rock-climbing and kayaking training classes in her spare time while her friends were probably slumped over a pint in the student union – may not be easy for everyone else.

Harriss took up her studies in Manchester in the midst of Thatcher's Britain. One of the advantages of studying as an undergraduate in a northern city was the vast biopolitical divide between the north and the south, giving her a sense of autonomy from the pre-occupation of the London-centric architecture world. She says the separation generated a more community-oriented way of working and engaging with building.

In the post-recession era in the north of England, there was not much work for architects. Harriss joined CTAC (Community Technical Aid Centres) where she helped community groups or minority religious groups who operated in substandard conditions to find and refurbish spaces. 'These centres were created with a commitment to work with communities. We'd find the most unlikely spaces and turn them into usable functional places for these groups. In those days, abattoirs were quite a common sight. I still remember walking on a strangely spongy floor. It looked a bit like black pudding.'

As we chat, the bare-brick-wall Brooklyn aesthetic that surrounds us seems non-ironically appropriate to her history of working on low-budget community projects. 'One of the great things about coming from a community like Manchester was there wasn't any money. We reused. Recycling, upcycling, refurbishing, industrial chic. It wasn't an aesthetic choice. They're painting the patina in now, which is a bitter irony.'

And not only patina – now reuse has an ambiguous social role in New York, one of



There is a diversity crisis and an equality crisis that Harriss seems uniquely suited to addressing

the most expensive places in the world to live and work and where there is a true and deep tension between civic improvement and gentrification, rising house prices and pushing communities to the fringes.

After Manchester, she took on a postgraduate course at the Royal College of Art, a place famous for experimental and lateral thinking designers where she produced the architectural magazine Pollen between 2002-2003, then her doctorate at Oxford Brooks, a place that at that time had secured itself with a reputation for the environment. She now laments that few schools now have such a distinctive focus and renown.

Meanwhile she started her own practice, working mainly on civic projects, designing 'schools for the future'. Harriss moved quickly and easily through the architectural teaching system as many in practice do, though is very active in academic life in Britain: board member of the London School of Architecture and external examiner for the AA, for instance. She is also an active member of the Part W collective founded by Zoë

Berman in 2018 to fight gender inequality in the built environment.

Harriss applied for the position at Pratt as a matter of principle rather than ambition. 'I spent my life campaigning for equality for women, not just in our country but more generally, and I think that one of the problems we have is that many of us will fight for equality, but when jobs come up we don't apply.' Most women, she reminds me and looks up sharply to make sure I am also taking notes, 'only apply for jobs when they're overqualified and most men will apply when they're under-qualified.' Point taken.

The position she took at the interview stage with Pratt was to bring her political and equality agenda to the school, but she said the idea of an overarching vision for the school was itself a design problem, to be solved using her own community-led principles. 'I presented a slide at the interview that simply said, 'I don't have a vision for the school, the vision I want for the school is one I'll co-design with the faculty, and the students, and the administrators. I want the school to connect itself more profoundly to some of the most emergent and pressing concerns within society and the world at large, and to not answer the question about preparing students for architectural practice as is, but start thinking about what architecture has the potential to be and to do.'

The reputation America has for output in contemporary architectural education is internationally excellent, yet there is a diversity crisis and an equality crisis that Harriss with her personal background and balance of accomplishments in strategic and disciplinary thinking seems uniquely suited to addressing. For Harriss, that is a fundamental issue with the expectations for the profession itself. 'I think we're obsessed with producing architecture students to serve an existing practice model that, in my view, is unsustainable, and the reason we know this is because it's economically in decline. If it can't pay people properly, if it can't reward people equally independent of gender or race or LGBTQ status, then it's not a profession that will survive.' She reflects on her role in shaping that future. 'I want to explore the potential of this school,' she says.

Given her achievements so far, there seems little doubt that the energetic Harriss will find a great deal of potential worth exploring as dean. ●

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SHAPING THE FUTURE IN METAL

There is another way to Essex

There's more to Essex than Gemma Collins, as Gillian Darley's paean to a overlooked county shows

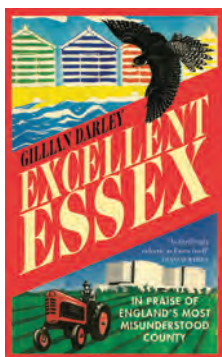
Michèle Woodger

Like Boudicca of the Iceni, Gillian Darley vigorously defends her native homeland, Essex: 'England's most misunderstood county'.

I'm cynical of the title, but Darley pre-empted me. 'When I began telling people that I was writing a positive book on the county I got plenty of flak', she writes. 'This is an upbeat book about Essex, somewhere many people would prefer to overlook, or demean with a handful of tired clichés'.

Broadly thematic chapters transport us via lesser travelled byways and by-the-byes. 'Over-growne and sudainly moneyed: spending it in Essex' debunks the stereotype of Essex man as 'young, industrious and culturally barren', giving him more balanced treatment in economic history. 'All the fun and most of the sun: playing in Essex' covers leisure pursuits, including cycling, cricket and dog racing. Arthur Leggett unsuccessfully raced cheetahs at Romford track in 1937. The cats were uninterested in the mechanical lure; we are not told what became of the greyhounds.

If the Essex terrain is flat, Darley's writing certainly isn't. Darting back and forth between decades and districts, it left me reaching for a map. This seems apt, given Essex's shifting boundaries and changing geographies. In particular, it has been physically shaped by its relationship with London, not only due to infrastructure. Both there and in Colchester, an archaeological layer marks the destruction wrought by the Celts. Later, Colchester fed oysters to London which shipped waste back, creating a place called Mucking.



Cut off from its neighbours on four sides, large parts of Essex feel remote. To the south is the Thames, and to the north, the Stour. To the west is London with its encroaching suburbs and the M25. In 1965, London County Council took over several Essex boroughs, including Barking and Dagenham and Waltham Forest, resulting in a sense of 'severed identity'. To the east is yet more water – a marshy, tidal landscape and the North Sea.

Despite this, 'outsiders' have always flocked here: East-enders abandoning city slums, political dissenters, minority religious groups (Quakers, Puritans and now Sephardic Jews from Stamford Hill), Roman, Saxon and Viking invaders, Huguenots, immigrant Dutch engineers, refugees from eastern European pogroms and children from the Kindertransport. Yet Essex's EU referendum results were resoundingly euro-sceptic, suggesting an insular position. As Darley writes, 'perhaps geography is fate. Perched on the eastern edge of the nation, Essex people have long felt marginalised; a sense of being out of step which has sometimes led to extremes.'

The material culture legacy of these 'peculiar peoples' (Darley's words) includes a varied architecture. Ove Arup's modernist café at Canvey Island (1933), Foster's high-tech Stansted Airport (1991), 17th century Dutch cottages and Napoleonic-era Martello Towers compete for attention among ubiquitous post-war housing-developments.

Another recent addition to Essex's architectural catalogue is Grayson Perry's and FAT Architecture's *A House for Essex* (2015), an idiosyncratic structure resembling 'a cottage for Rapunzel, illustrated by Arthur Rackham'. Other notable design histories include the Great Barfield set, started by Edward Bawden and Eric Ravilious in 1925. William Morris (born 1834) was a Walthamstow boy.

Darley brings us from the built environment into the wild with poetic observations: 'Go deeper into Essex, as the year progresses,' she says, 'and you find cornfields shading from soft chalky green to pale ash blonde. Add a harvest moon and the world turns upside down, the ground paler by far than the sky.' These glimpses of a remote and rural Essex are a world away from industrial Dagenham or the decommissioned nuclear Bradwell A.

Is Essex excellent? My Kentish origins prevent me from agreeing. But Darley's account of an eccentric, eclectic and extreme county is excellently delivered. ●

Arthur Leggett unsuccessfully raced cheetahs at Romford track in 1937. The cats were uninterested in the mechanical lure; we are not told what became of the greyhounds

Excellent Essex by
Gillian Darley, Old Street
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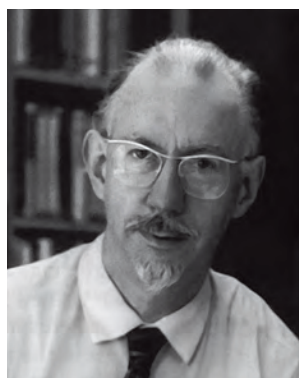
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Kerry John Downes

1930 – 2019

Architectural historian whose ground-breaking publications on the English Baroque helped save buildings and secure the reputation of Wren's assistant of genius, Nicholas Hawksmoor



GRAHAM MELLANBY, YORK

Kerry Downes, who has died at the age of 88, was the ground-breaking historian of English Baroque Architecture (the title of his comprehensive survey, 1966). He wrote two books and authoritative Oxford Dictionary of National Biography entries on each of its principal protagonists: Wren, Vanbrugh and

Hawksmoor. He also curated exhibitions on the drawings of Wren and Hawksmoor. All this may suggest repetition but these publications are successive and complementary, representing different approaches and evolving ideas: reading one does not exclude the need to read another. It is however for his first major monograph, the prize-winning Hawksmoor (1959), that Kerry will be best remembered. This was his PhD thesis, minus the catalogue of drawings, published the year before the award of the degree (Courtauld, 1960). The book elevated this lesser known pupil of Wren to architecture's Parnassus, stimulating not only further scholarship but also the preservation of such neglected major monuments as Christ Church Spitalfields and St George-in-the-East.

Kerry was the only child of Agnes and the organist Ralph, who were drawn together by a shared love of music which their son inherited, along with a strong commitment to the Church. He was educated at St Benedict's, Ealing where he developed a passion for the history of art and architecture, tramping all over London looking at buildings. This enthusiasm helped him to secure a place at the Courtauld Institute where he had wonderful teaching and developed a reputation as a meticulous note taker. After graduation in art history in 1952 he spent two years of National Service as a hospital porter which allowed time for part-time study. By this time embarked

on his PhD under the direction of Margaret Whinney, he returned to the Courtauld as library assistant before securing the post in 1958 of art librarian at the Barber Institute, Birmingham University, where he met and subsequently married (in 1962) the music librarian, Margaret Walton, a fine contralto. They remained devoted to each other until her death in 2003.

Kerry had always considered teaching and research to be mutually stimulating so in 1966 he became the second full-time art historian at the University of Reading where as lecturer, reader and finally professor (retiring emeritus in 1991), he helped to create an art history department of national significance, offering degrees in the history of art and architecture which enabled students to study both with a chosen emphasis on one or the other. He was a gifted teacher with a dry wit and a great capacity for judicious silences who inspired great loyalty in his students. He did not confine his writing to the great triumvirate of the English Baroque – there was also a book on Rubens (1980) and most memorably, written in 'retirement', a monumental study of Borromini's Roman Oratory (Borromini's Book, 2009) – a translation of the architect's own description of the building together with a commentary, some 350 pages long, informed by Kerry's profound understanding of architecture and religious practice.

Beyond academia, Kerry was a commissioner with the Royal Commission on the Historical Monuments of England (1981-93) and president (1984-88) and hon patron (2017) of the Society of Architectural Historians (GB). He was awarded the OBE in 1994 and an Hon D Litt (Birmingham) in 1995. It was notable also that he joined the campaign for the Mies van der Rohe proposal in the Mansion House Square inquiry (1984). This invited the strong criticism of doctrinaire conservationists but it came as no surprise at all to those students, colleagues and friends who had long admired Kerry's morally scrupulous, principled support for architectural excellence. ●

John Bold

IN MEMORIAM

D E F Mayhew
ELECTED 1954, EASTBOURNE

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RIBA **Raise the Roof**



Room at the top



Above Rooftop extension on the grade II listed Shaftesbury Theatre by Bennetts Associates in London's West End.

This is the fifth year that Norbord Europe Ltd has teamed up with the RIBA Journal for a competition that challenges architects to use Norbord's flagship OSB brand, SterlingOSB Zero. Faced with the increasing need to use building materials that are environmentally friendly and/or add value, architects look to specify the very best products which are fit for purpose and ethically sourced. This year's Raise the Roof competition provoked some deep thinking about how SterlingOSB Zero could transform roof spaces into useful, usable areas. The continued demand for inner city housing combined with rising land prices means rooftops present a golden opportunity to create new space by building up rather than out. We looked for creative responses to unlocking the potential of these untapped resources. The result was a variety of innovative, quirky and contemporary designs ranging from relaxing getaways and places for creativity to spaces that help those less fortunate in our society.

The judging process was a very engaging one as ever. I hope you enjoy the supplement.

**David Connacher, marketing manager
Norbord Europe**



Stimulating brief elicits imaginative responses



Pamela Buxton
Supplement
editor

From a soy sauce factory to a parliament for planning, and a homeless refuge to a flower market, there was no shortage of imaginative responses to Raise the Roof, a competition for innovative new rooftop uses sponsored by Norbord.

The brief offered plenty of scope for invention. Architects were challenged to design a rooftop space of up to three storeys on an existing urban building of their choice. While location and programme of use were completely up to each entrant, all submissions needed to use Norbord's SterlingOSB Zero product, a precision-engineered board with no added formaldehyde, as a key part of the design's structural integrity.

Judges were looking for imaginative uses that demonstrated SterlingOSB Zero's qualities of high strength and workability in tandem with visually exciting and spatially innovative proposals. Since the design needed to be weatherproof, part of the challenge was using the product in collaboration with other materials for cladding or fitting out – one particularly unusual idea proposed cladding made from seaweed (Gordon Duffy). The speculative nature of the designs meant that entrants didn't need to adhere to current building guidance.

Raise the Roof proved to be a stimulating brief, with applicants demonstrating a willingness to engage with key topical issues such as homelessness, urban food production and bees. Many entrants saw the potential of roof spaces to be utilised for housing, while others imagined rooftop performances, factories, restaurants or co-working spaces. The type of rooftop location chosen varied hugely, from humble garages

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SterlingOSB

Supplement editor
Pamela Buxton
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Sub editor
Gail Novelle
Cover image
**Temple Heights/
Music with a View,**
commended entry by
Soraya Somarathne,
Studio Soraya

Judges

David Connacher, marketing manager,
Norbord Europe

Tom Gregory, 2018 Norbord competition winner

Jan Kattein, founder Jan Kattein Architects

Alfonso Padro, director of education,
London principal, HKS

Linda Thiel, partner, White Arkitekter

Chair: **Jan-Carlos Kucharek**, senior editor,
RIBA Journal

extended upwards into Amsterdam-style narrow houses (Julian Kashdan-Brown) to a car-park roof repurposed as a drone-assisted factory for OSB box building blocks (Hannah Towler). A smattering of well-known London buildings were also appropriated, including the Tate Modern, envisaged with a new top level to house the homeless (Dom Cox) and Patrick Hodgkinson's Brunswick Centre with allotments on the roof (Richard Faith).

Judges were drawn to schemes that had a compelling programme in combination with a concept in which the OSB product was central rather than incidental to the design.

The clear winner was Reed Watts Architects, which picks up the £2,500 first prize for Rooftop Refuge, a dual use roof extension that operates as a bar in the summer to fund its use as a homeless shelter in the winter (p04). Judges appreciated both the experimental concept and the clarity of the submission.

'It feels very well considered. There's a nice scale to it and it sits very comfortably on its site. There's a delicacy to it that has often been lacking in other schemes,' said

Tom Gregory, winner of last year's RIBA Journal Norbord competition.

'I like the duality of the summer use, with people enjoying the rooftop bar and then the change into its winter iteration of a hostel for the homeless. The programme is really good,' said judging panel chair Jan-Carlos Kucharek, who also commended its 'beguiling', almost Japanese character.

Alfonso Padro of HKS liked both the way the programme addressed the problem of homelessness and the flexibility of the demountable design, which he said 'shows how versatile the material can be'. While there was some concern about the robustness of the scheme for its winter hostel use, judges felt that it would be possible to resolve this by exploring different wall and cladding types.

'It seems to be a real response to the opportunities that sheet material provides and the form is inspired by that,' said Jan Kattein.

Three further schemes were given £250 commendations. Sterling Boarder (p06), by Nina Antin, Claire Chabrol and Sibylle Metge-Toppin, addresses the provision of housing in Paris for older residents who might otherwise be priced out by gentrification when seeking to relocate.

'It really embraces the materiality and shape of OSB,' said judge Linda Thiel of White Arkitekter. Kucharek particularly liked the 'well-considered' use of long walkways: 'How it intervenes in an urban way is most interesting,' he says.

Alessandro Tessari's In Season – House (p08) charmed the judges with both the presentation of the drawings and the strength of the concept, which proposes an OSB DIY micro home with built-in growing space.

'It's the best considered of the living space entries. It has a human scale to it and is very credible as a DIY project,' said Kattein,

adding that the economical design feels appropriate to the nature of the material.

'There is a simplicity to it but it does meet the brief,' added David Connacher of Norbord.

Soraya Somarathne's Temple Heights/Music with a View auditorium (p07) was praised for its promising and bold concept of a performance space on top of Temple underground station, although there were some misgivings over the noisy location.

'It is a most innovative use. It's not entirely resolved but is very believable,' said Kattein.

'It's a really considered use of material in a very dramatic form that conveys a real sense of joy,' said Kucharek.

Several other entries were given honourable mentions: Peckham Parliament by Kennedy Woods, Brian Ditchburn's Anywhere in the Universe concept for the roof of a Nissan car showroom and Brett Mahon's The Hide workspace on top of a former leather market in Bermondsey, London. ●

Judges were drawn to schemes that had a compelling programme in combination with a concept in which the OSB product was central rather than incidental to the design

Winner Rooftop Refuge

Reed Watts Architects

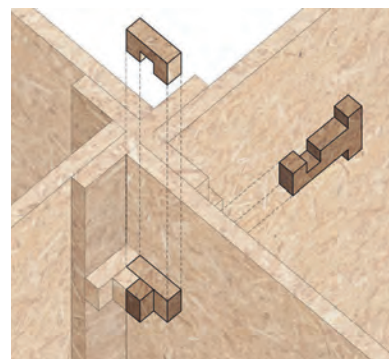
The winning design addresses the challenges of homelessness through an innovative dual-use intervention. The site is the flat roof at Bishop's Palace House, a mixed-use riverside building at Kingston-upon-Thames.

Reed Watts proposes a lightweight structure with contrasting seasonal uses that make the most of its Thameside location. In summer it is a revenue-generating bar; in winter it converts into a shelter and advice centre for rough sleepers, subsidised by the income from its summer incarnation.

With its bright pink colour and saw-tooth roof, the building is intended to have a distinctive identity on the Kingston skyline. The structure is formed from a combination of SterlingOSB Zero roof trusses and panels supported by cruciform OSB columns with a skin of rigid insulation covered by polycarbonate, while the floor is tongue and groove OSB. It has been designed for demountability and recycling with the help of easily disassembled peg joints. Access is via an OSB walkway from an independent stair.

Booths line either side of the interior with a kitchen, bar and toilets at the rear and large swing doors opening onto a riverfront terrace. In the project's winter mode, the booths become private bed spaces and additional sleeping pods are inserted in the central area. Part of the main bar is retained as a social and dining space with counselling rooms to either side. Surplus food from the restaurants below will help provide meals.

According to the entrant, the bar's prominent location is intended to serve as a reminder, especially when illuminated at night, that homelessness is not a problem that can be ignored but should be tackled with understanding and creativity.



Main image opposite Axonometric showing Rooftop Refuge's structure, which combines SterlingOSB Zero roof trusses, panels and decking with polycarbonate roof panels.

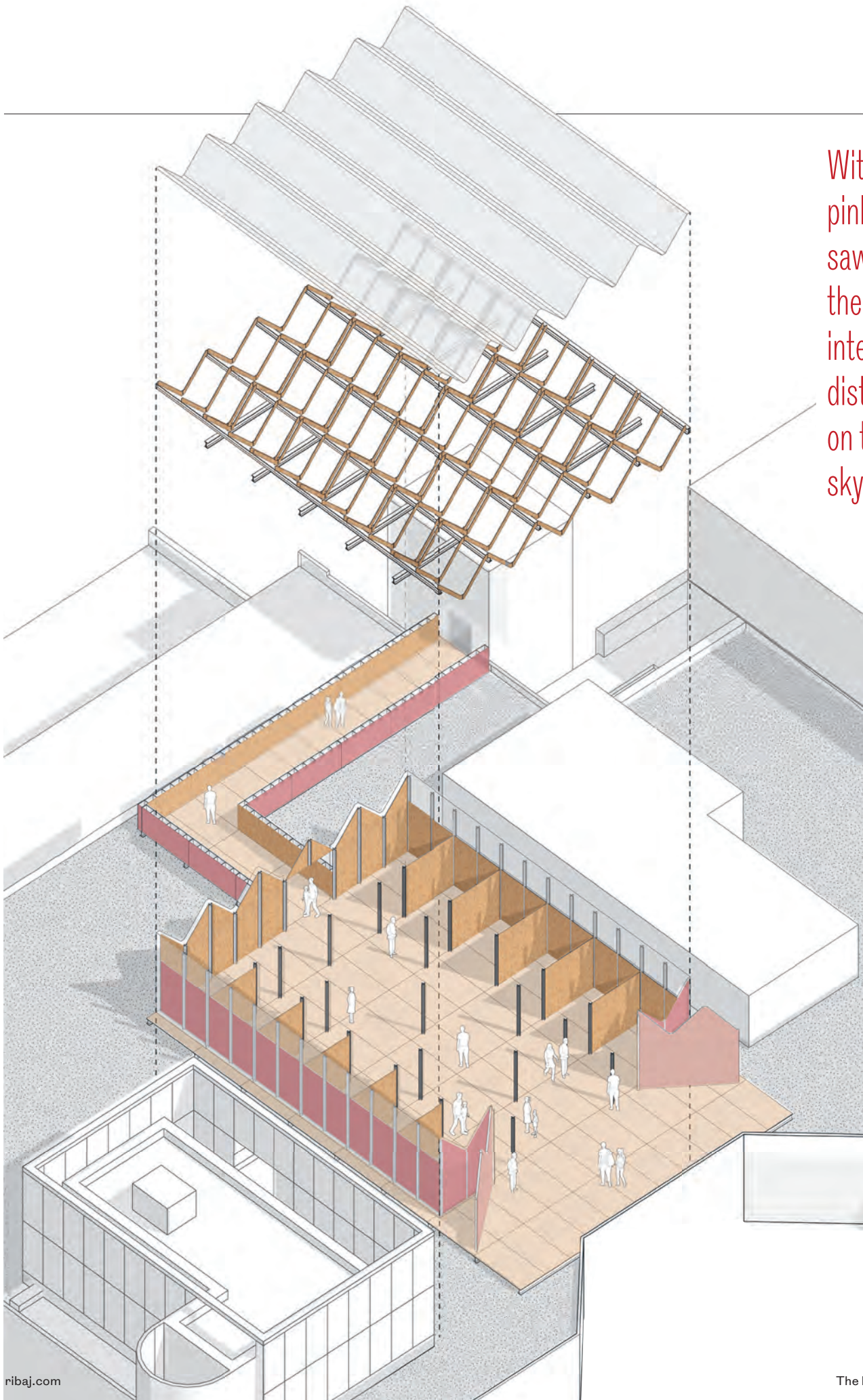
Top The refuge is proposed for the top of Bishop's Palace House on the banks of the River Thames in Kingston.

Above left In winter, the building is a shelter for the homeless.

Above right In summer, the building is a bar.

Right Typical peg joint for SterlingOSB Zero panels.

With its bright pink colour and saw-tooth roof, the building is intended to have a distinctive identity on the Kingston skyline



Commended Sterling Boarder

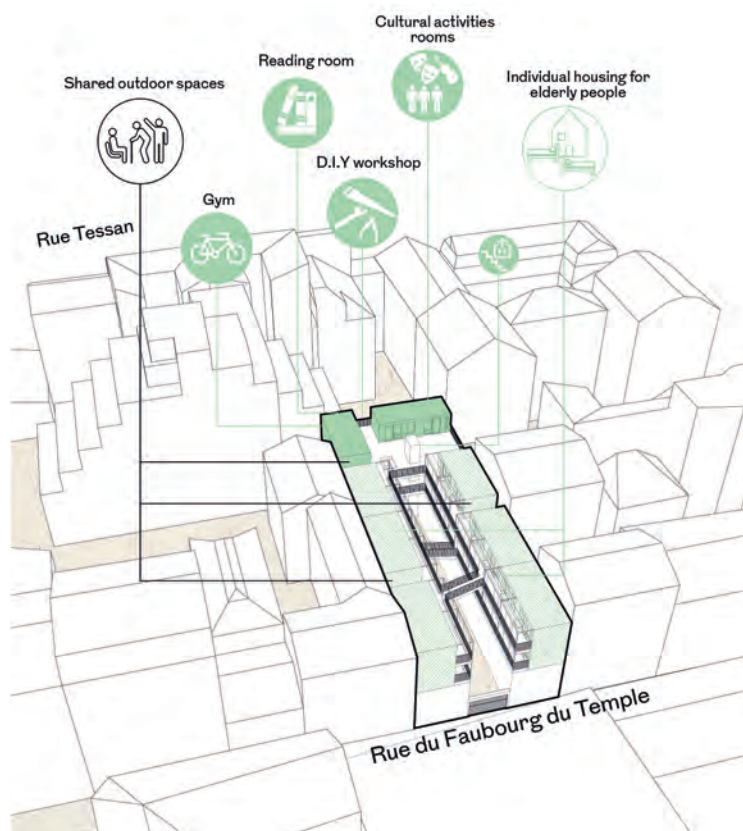
Nina Antin, Claire Chabrol and
Sibylle Metge-Toppin

This project proposes a community of new rooftop homes for older Parisians who want to live independently in the heart of the city but whose needs can't be met by their current accommodation. As an alternative to moving to the edges of the city, the Sterling Boarder concept creates housing on a rooftop extension to an existing low-rise building.

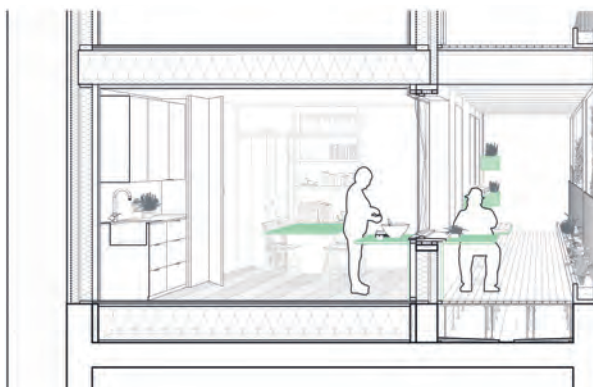
The development is set back from the facade and looks inwards with two rows of flats stretching back towards the rear of the site overlooking a courtyard. Each faces onto a generous balcony walkway, with bridges linking the two. This passageway is envisaged as a key space for boarders to interact with their neighbours, and will be populated by plant boxes, climbing plants and seating. At the far end of the site, the development incorporates a vegetable garden and community spaces.

SterlingOSB Zero is used throughout as the main roof and wall structure, kitchen units, mobile walls and floor finishes, with the spatial dimensions driven by those of the sheet product. The simple plan can be adapted to suit residents with a movable, insulated partition OSB stud wall and bi-folding OSB doors to the kitchen. A fold-out bed is integrated into storage cupboards. The facade of each flat can be opened up to the communal balcony walkway. Solar panels power electricity and underfloor heating.

The simple construction process means the structure can be dismantled and reconfigured into another building should the need arise. The entrants think this modular living could be replicated elsewhere in Paris and in other cities as well, with scope for the new accommodation to provide facilities that could be used by residents of the rest of the building too.



The simple construction process means the structure can be dismantled and used elsewhere



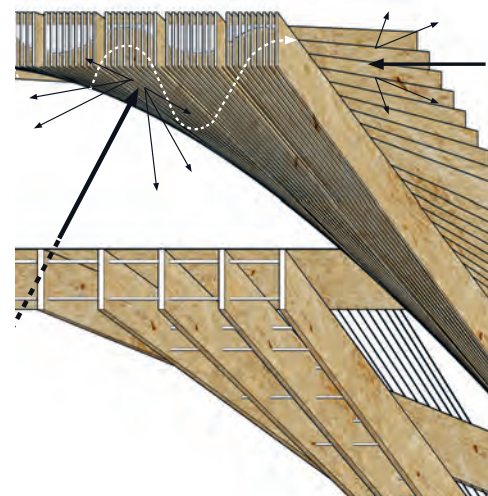
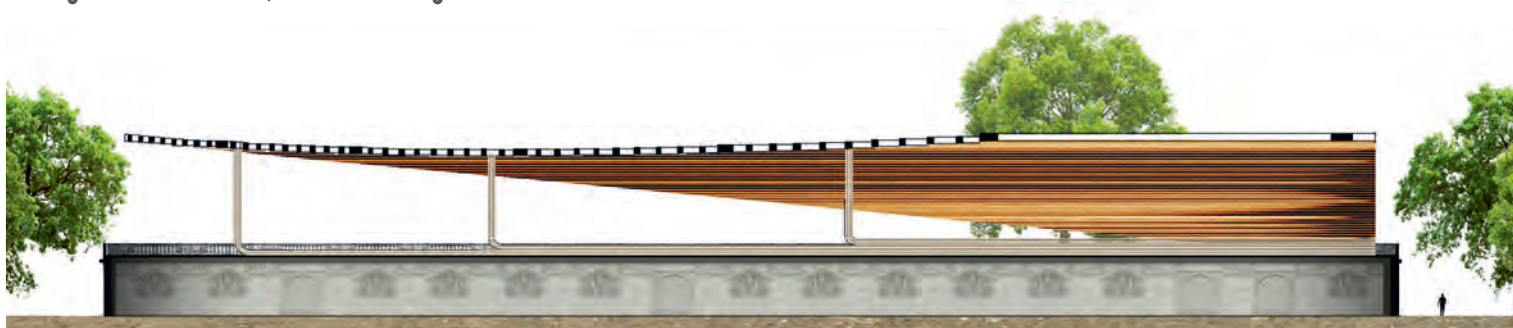
Top Sterling Boarder combines new rooftop housing with communal facilities such as gym, workshop and reading rooms.

Middle The facade opens up onto the balcony.

Bottom Perspective section showing apartment kitchen (left) and communal balcony.

Commended Temple Heights/Music with a View

Soraya Somarathne, Studio Soraya



Top The Temple Heights concept proposes a tapering canopy over a rooftop stage, seating and bar.

Above View from the bar towards the stage with acoustic canopy above.

Above right Detail showing the SterlingOSB Zero main frame and acoustic diffusers.

Set on the roof of the Temple underground station in London, the Temple Heights/Music with a View concept is an open-air performance space and bar that uses SterlingOSB Zero to form an acoustic canopy.

Soraya Somarathne aimed to create an acoustically sound performance space that is 'dramatic and uplifting in form'. She proposes a tapering building envelope that starts off wide above the stage at the Victoria Embankment Gardens end of the site and narrows upwards towards the western end. Paid seating is arranged closest to the stage, with free seating behind that

and standing room towards the bar at the rear. The audience will be able to enjoy the performance with a view of the musicians set against a background of trees in the adjacent public gardens.

The main structural frame is made of metal-braced SterlingOSB Zero, making use of the board's high strength properties. The 84m long roof is comprised of OSB strips of different depths tailored to create a large acoustic diffuser that reduces echo and reflections of the music. The external face of the canopy is designed to diffuse noise from the traffic below.

Somarathne proposes finishing all OSB members in a protective coating to provide long-term defences against the outdoor elements. Two existing stairs will provide access to the rooftop auditorium.

In this busy riverside area she envisages this as a new public space that can be used for lunchtime and evening performances of classical music and for practice sessions by students of the nearby Department of Music, King's College London.

'The vision is a space which elevates its visitors to new heights musically, spatially and spiritually,' she says.

Commended In Season – House

Alessandro Tessari, RPW Design

This micro-home is a lightweight, DIY-buildable dwelling that incorporates space for growing vegetables. The pitched roof structure is created from insulated, 800mm x 600mm SterlingOSB Zero space frame modules covered in water proofing cladding and with a prefinished inner face. At either end, a micro perforated stretch fabric reduces the wind impact on the modest structure.

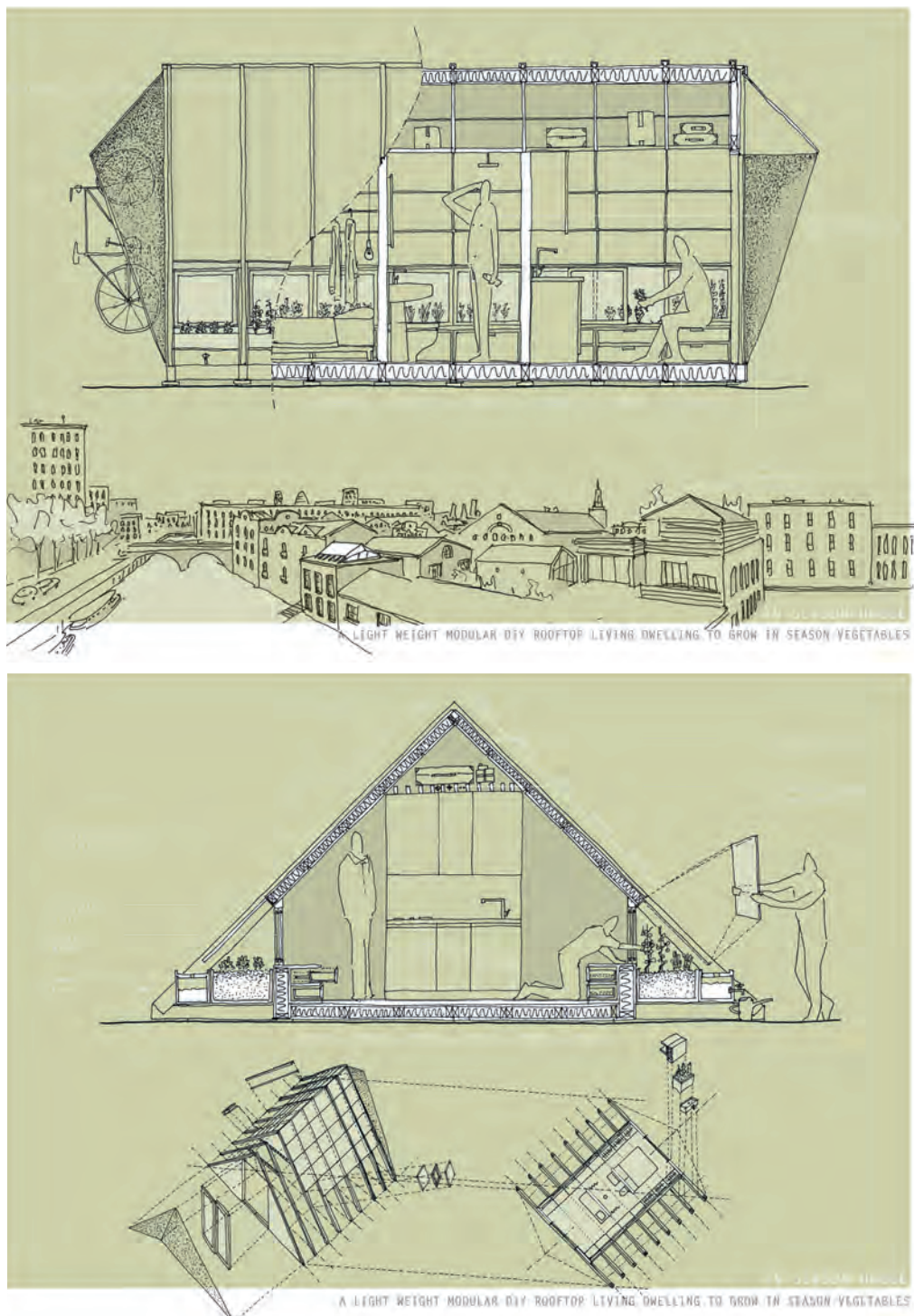
The design is planned in modules to minimise waste from each sheet, with a 5mm shadow gap between each on the inner face to emphasise the modular character of the construction.

Planters are located between the trusses with the weight of the pots contributing to the stability of the house. They are protected from the elements by a glass panel that can be removed in summer. There is easy access to them through a window, allowing occupants to tend their plants without going out onto the roof. The plants benefit from a warm interior in winter and provide solar shading in summer. Vegetables can be watered using rainwater collected from the pitched roof in tanks positioned beyond the planters.

The flooring is cork. Services are incorporated at high level to enable easy access and maintenance, with the drainpipes located under the raised house structure.

According to Alessandro Tessari, the In Season lightweight homes could be installed side by side on a roof and would help to improve the quality of the host building by adding green components and providing affordable new accommodation.

Planters are located between the trusses with the weight of the pots contributing to the stability of the house



Top In-Season – House is conceived as a lightweight, modular rooftop dwelling that incorporates planters for growing seasonal produce.

Above Residents can tend their vegetable garden from within the house.

Longlisted

P1. Any where in the universe

An enigma inhabiting the autopia between motorways, slip-roads, power and train lines on the northern rural fringes of London. Admired by many, few could say where they actually first saw it. Perhaps from an uber sitting in stationary traffic one hot afternoon on the A1 Mill Hill trunk road, or cruising past late one summer night in a Citroen DX heading north out of the city on the M1, or glimpsed through a rain spattered train window, looking up from a copy of J G Ballard's 'the atrocity exhibition'.

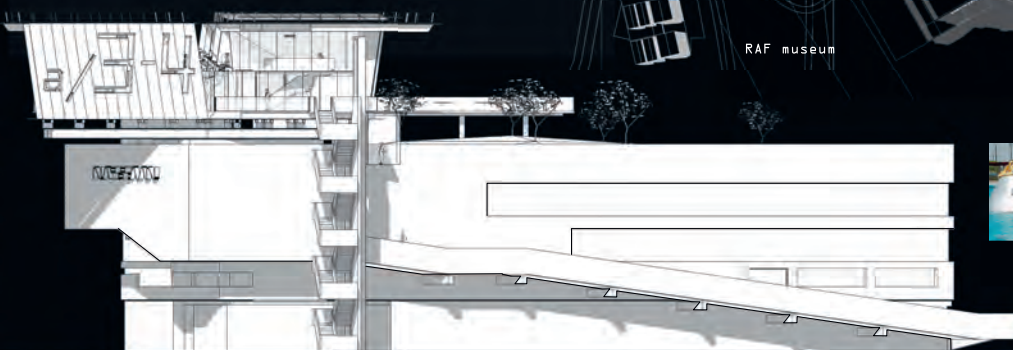
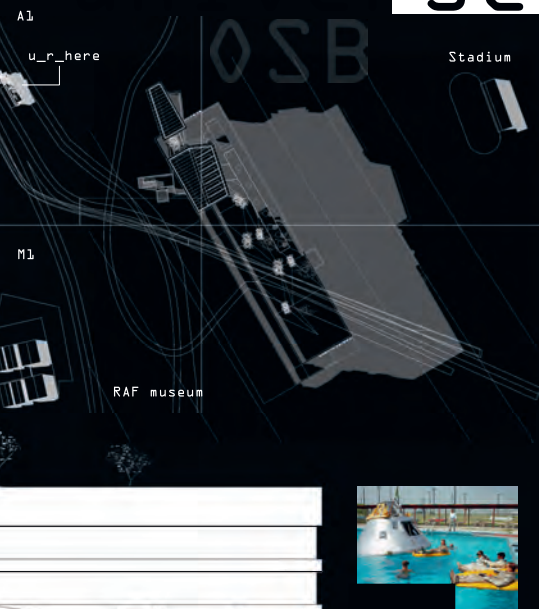
Beneath layers of pollution stained plastic signage and redundant electronics the west London Nissan car showroom, is a near perfect essay in glass and concrete of functional brutalism, with its gable end and west elevation articulating the necessary ramp for moving stock between floors and its horizontal cast glass windows emphasising speed broken only by a projecting vitrine to display the iconic micra - as an object of desire. Marooned between congested roads its celebration of speed and modernity ever more anachronistic.

Little can be found about its origins or designers. A 2006 local government master plan for a defunct business park to the north profunctly refers to this landmark on this featureless incline, defined more by infrastructure than human presence as "the Nissan showroom".

I pressed the fire control...and...WHAM



The nissan showroom



Folded



A3&A4

Vanishing_point



A10-WTHC

Brian Ditchburn – Anywhere in the Universe – the Nowhere Building

This imaginative proposal for a dramatic cantilevering restaurant over a Nissan car showroom in north London appealed to judges for its early 90s retro aesthetic and its integration of SterlingOSB Zero into a bold material palette. They also enjoyed the commitment that the entrant demonstrated to the narrative of the concept, which includes a VR terrace where diners would watch immersive films wearing headsets showing faces of their avatars. 'It really comes across that they have had some fun designing this,' says Jan Kattein.

Above Entry panel showing the Nowhere Building rooftop intervention at the redundant Nissan car showroom building on the outskirts of London.

Longlisted



Kennedy Woods – Peckham Parliament

Judges commended the novelty of this project, which proposes a Planning Parliament at Peckham Rye station to encourage the local community to engage in the way the area is changing. The design uses SterlingOSB Zero to form the exposed lattice structure, columns and flooring with seating around the perimeter. There were some concerns, however, about the suitability of the location, in particular its impact on the acoustics of the parliament.



Top The Peckham Parliament is located above Rye Lane Market close to Peckham Rye station in south east London.

Left Public planning hearing in the Parliament building, which can be used for other community activities when the Parliament is not in action.

Longlisted

Brett Mahon – The Hide

Judges were drawn to the 'innovative' form of this project, which creates a new working environment on top of the grade II listed former Leather Market in London's Bermondsey. 'I like the straightness on the outside and the cut-out inside,' says Linda Thiel. However, jurors wanted more detail on the external cladding and the way the new space would be used.



Top Inside The Hide, conceived as a dynamic new workspace for craft and fabrication.

Left The project is situated on top of a former leather market and wool exchange.

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Exchange

Climate emergency and transport

I congratulate Council on declaring a climate and environment emergency (RIBA August 2019 p49 and 97). But while it is vital that architects reduce the carbon footprint of buildings, it is equally important to consider where they are. The transport sector is the largest emitter in the UK. As the recent Centre for Research into Energy Demand report points out, it has increased its energy use since 1990 by 16% while the rest of the economy has decreased its energy use by 4% in the same period.

The occupants of even the most efficient buildings will consume unacceptable amounts of energy and greatly increase traffic congestion if they have to use private cars for everyday journeys, so the first of the many sustainability criteria for new homes and workplaces must be rail-based public transport.

New infrastructure costs billions and takes years to build, so it is essential to make full use of the existing networks to provide spines to serve the necessary growth, and to locate large-scale development in walking distance of transport hubs, existing or new.

The 'Connected Cities' methodology launched at the Houses of Parliament last year offers a solution based on Ebenezer Howard's vision for groups of towns linked by rail combining to create Social Cities. See ConnectedCities.co.uk.

Brian Q Love, Lambeth

Climate emergency – what took us so long?

Those of us who have been AECB/Green Register/Passivhaus Trust as well as RIBA members for many years can only wonder why it has taken our institute so long to wake up. Does it really take a 16 year old Swedish schoolgirl to shame us into action?

There are Passivhaus exemplars in



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education, commercial and residential sectors, and interesting retail innovations (German ones for over 30 years), so there is established practice to follow. Frustratingly RIBA awards have continued to favour energy profligate solutions and often fail to look beneath the skin. We need to be ahead of the curve not lag behind it; look at the impact of Grand Designs (some eco-friendly solutions among the best) and George Clarke's recent impassioned and welcome plea for high quality new council housing.

Architects surely don't need to wait for Building Regulations to change. These were always intended as a minimum standard, and surely part of our quality offer should always be to exceed the minimum.

Energy and pollution have together been the twin elephants in the room since I trained in the 1970s – few practitioners are older, so no excuses please.

Richard Haig, Newark

Not so grand designs

I watched the first episode of the new series of Grand Designs (the 19th) with dismay and a familiar sense of irritation. It was the one about the couple who bought a former military listening station on a cliff-top off the west coast of Scotland and replaced it with the kind of semi-buried 'bunker' house that could be hidden away in any field. Their opening boast that they were proceeding without seeing any need for an architect was followed by Kevin McCloud's apparent obliviousness to the glaring shortcomings of the end result.

They had missed the opportunity for delight at almost every turn: to mark the cliff edge with a beautiful structure that enhanced its setting; to exploit the spatial possibilities for a combination of release and intimacy that an all-encompassing flat ceiling can never achieve; to use the chimney to symbolise the heart of the home and act as a sculptural pin or anchor to the building form. The moves that could have given the house a soul and strongly engaged with the place are endless – and any decent architect could have seen them a mile off.

While we can recognise the presenting skills of the show's host, we need to drop the misguided perception of him as a champion or spokesperson for the profession.

Phil O'Dwyer, Manchester

Energy and pollution have together been the twin elephants in the room since I trained in the 1970s

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JOHN MALTBY / RIBA COLLECTIONS

Shawms Cambridge, 1938

The inter-war years saw female architects finally being given access to the profession and contributing significant projects to the development of British architecture. Remarkable is the case of Elizabeth Scott, who led the design team of the Shakespeare Memorial Theatre in Stratford-upon-Avon in 1932. The generation of young architects that embraced the modern movement included a number of women, such as Sadie Speight, who designed houses and furniture units with her husband Leslie Martin, and Mary Crowley, who after the war went on to work on the pioneering school programme of Hertfordshire County Council.

Less well known is Margaret Justin Blanco White,

who studied at the Architectural Association between 1929 and 1934. Here she was awarded travelling scholarships that allowed her to visit Austria, Germany, Russia and France. 'Shawms', the house she built in Cambridge in 1938, was first designed in reinforced concrete but, due to the material's shortage in the lead-up to the war, was realised instead with a timber structure. 'Shawms' was also one of the few timber-clad modern houses of the 1930s. ●

Valeria Carullo

Beyond Bauhaus: Modernism in Britain 1933-1966 is open at the RIBA Architecture Gallery between 1 October 2019 and 1 February 2020

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