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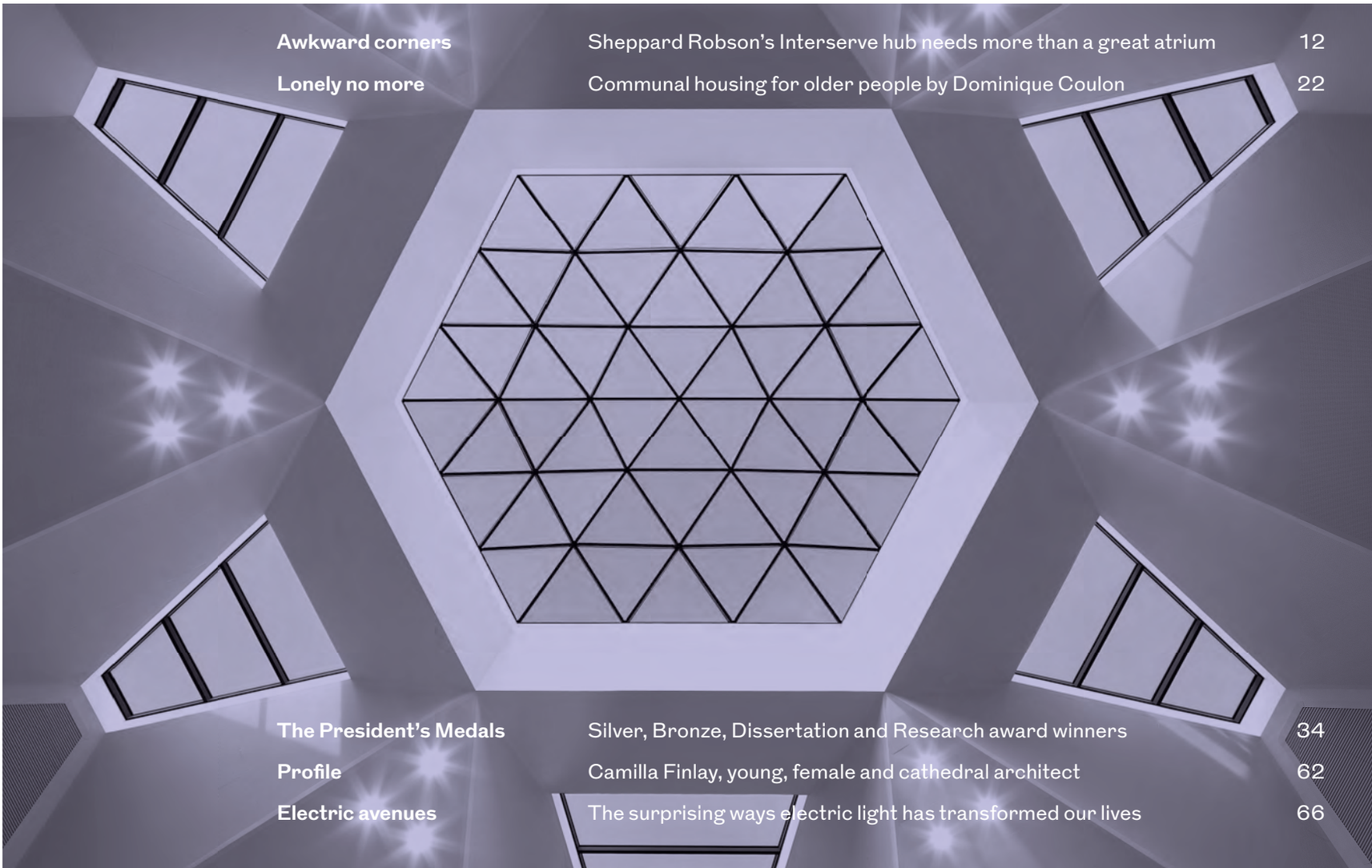

1 Buildings

BOTHERTON LOCK

On the cover
Interserve's Birmingham hub by Sheppard Robson, photographed by Hufton + Crow

2 Intelligence

ANDY MARSHALL

3 Culture

PEFC
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1: Buildings

From a small and emotionally-charged London community centre to an exemplary French riverside old people's home by way of additions to a venerable school in Kent and a large corporate HQ on a Midlands urban periphery: we've been getting around the place this month and, as ever, we take care to visit all the buildings in person. What you have in this sequence is something of an object lesson in the differing nature of clients and how they choose to commission and to express themselves through their buildings and their users.

We are by no means uncritical and we know you are just the same. And we'd like to hear your views on these and on all the material in the magazine: write to us at letters.ribaj@riba.org.

ONLY ON RIBAJ.COM

Obsolescence was considered an economic good; an accessory to, even necessity for, the ceaseless cycle of capitalist consumption

Suzannah Lear reviews Daniel M Abramson's book on obsolescence: ribaj.com/obsolescence

The atrium is the selling point for Sheppard Robson's Interserve building (page 12).

JACK HOBHOUSE

New heart for Grenfell

How a limbo space was returned to the community

Words: Isabelle Priest Photographs: Brotherton Lock

Above The community centre (left) is clad in multi-coloured metal and protrudes out from below the Westway to cantilever over the park at first floor level. The interior has been slightly 'prettified' but is well-used with a similar purpose to a village hall.

Left The social street was conceived as 'baggy space' – a flexible area where all sorts of activities can crop up, spill out and take place, including parties.

Bay 20, as it is known to the Westway Trust in North Kensington, has had a contentious history. It is one of the leftover plots between the huge concrete columns that rose up in the 1960s to support the 5.6km-long elevated section of the A40 to Paddington that was built to draw Britain into the modern high-speed age. The motorway's construction demolished hundreds of Victorian homes and left a corridor of compartmentalised wasteland beneath, including Bay 20.

But this plot's particular story got worse. After local activism led to the entire stretch of land below the flyover being handed over to community use in the early 1970s, the bay was used by the Caribbean community for workshops to make steel drums until the Westway Trust looking after the area decided to develop a car park there instead. The workshops were removed, but the car

park never happened. It was left in limbo for decades, eventually fenced off, and became the site of a number of failed regeneration attempts using art installation.

This was how Bay 20 remained when the fire at Grenfell Tower broke out last year. Immediately afterwards other open spaces under the Westway were appropriated by the community in the absence of genuine and formal public gathering spaces (RIBAJ February 2018), but this one was locked up and empty, continuing to make Maxilla Walk, which runs along the underside of the flyover, a dark and threatening space at night.

Meanwhile, very quickly after the fire, the directors of the BBC's show The Big Build (formerly DIY SOS) decided that it would help build something for the community left behind. Unusually in the programme's 19-year history, they didn't know what or where, or how the result would be perceived. All they knew was that they wanted the building to have a two-programme function, a build time of two to three weeks and that as usual everyone would provide their expertise or products for free, involving the local community as much as possible and asking them to suggest potential uses. By high summer the show had approached Featherstone Young to help.

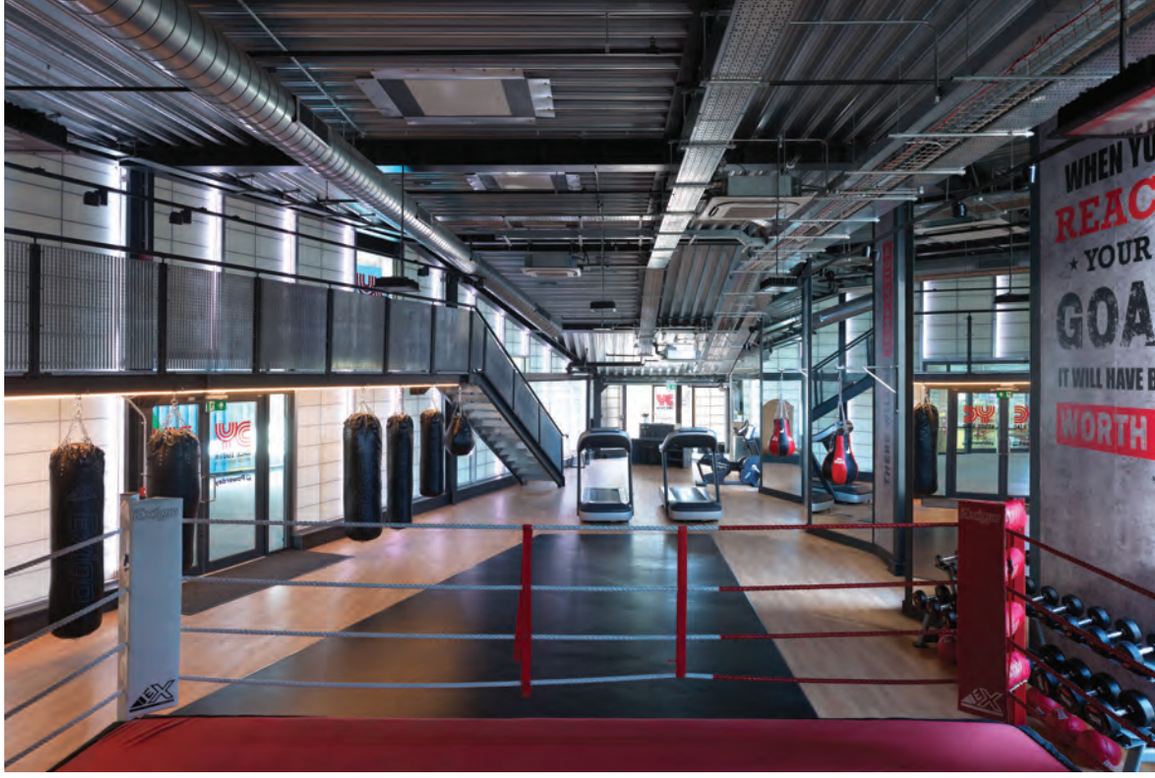
Director Sarah Featherstone says: 'We saw it as a chance to evolve the skills and

The BBC's Big Build show wanted to do something but didn't know what or where

Below The project has a stage set feel. The contrasting yet complementary buildings are locked together, wrapping round the motorway columns. The boxing gym (right), clad in translucent panels, is robust and bright, the silhouettes expressing the movement and excitement behind.

Credits
Architect
Featherstone Young
Client
BBC and Westway Trust
Structural engineer
Conisbee
M&E engineer
Hoare Lea
Contractor
Homes

Right Featherstone Young considered prefabrication for speed but ultimately opted for steel frame – here left exposed in the boxing gym – because there wasn't the head height for anything that needed to be craned in.



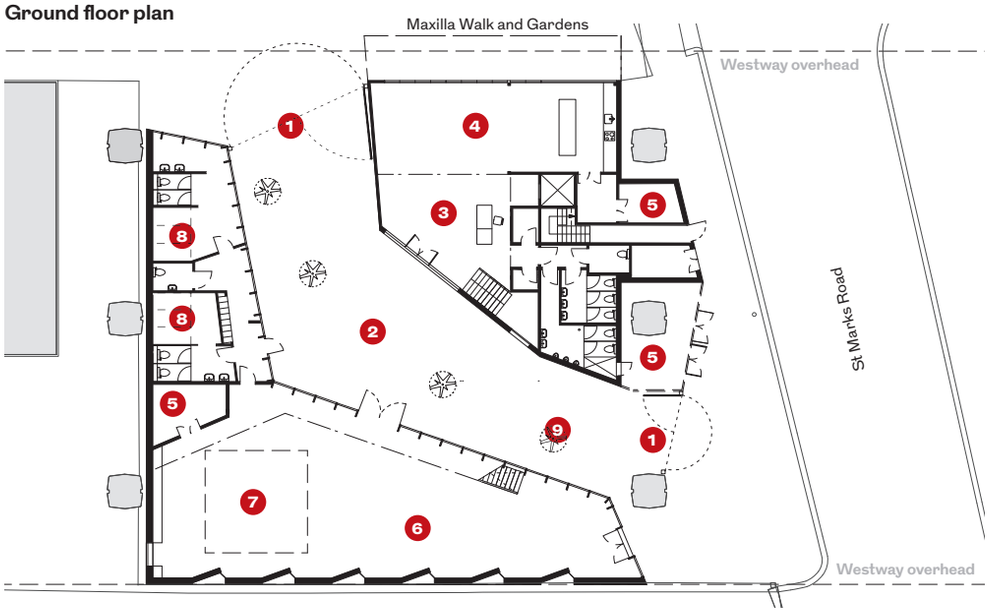
methods we have developed on projects like the Providence Row activity centre for a homeless charity, as well as to demonstrate what good design can do for these kinds of projects and what could be done along Maxilla Walk, which is undergoing a development plan.'

Ultimately, The Big Build became a means to bring Bay 20 back into productive use, healing some of the wounds and creating a space for the community and for the many charities that sprang up after the fire.

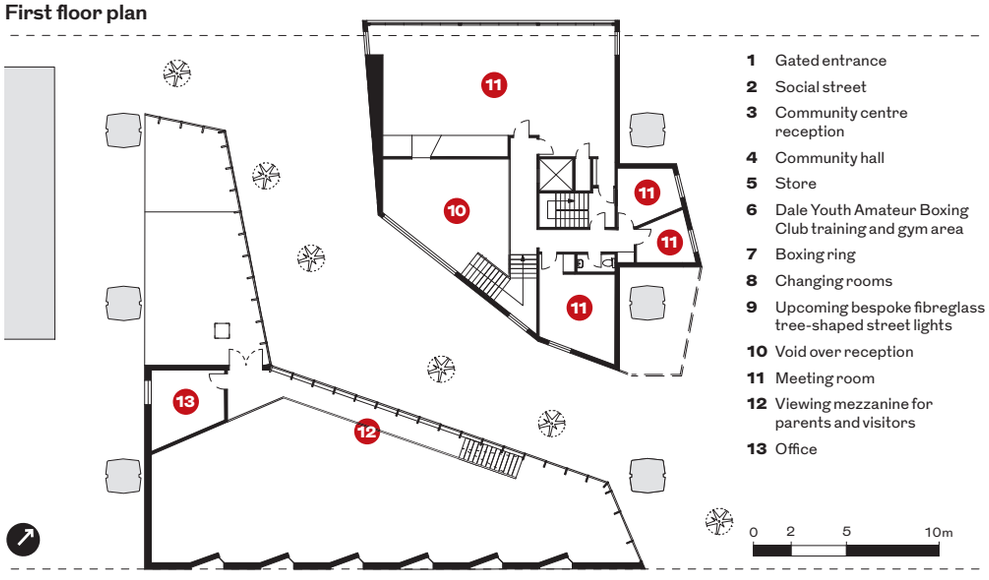
Architectural ideas had to be strong to carry through the quick development process – initial meetings had 40 representatives from the many parties and manufacturers keen to be involved. Featherstone Young's design proposal was to split the two programmes into two separate buildings, dividing the bay diagonally using a social street that is sheltered by the motorway above and allows activities to spill out between the two. One building, primarily single storey, is for the Dale Youth Amateur Boxing Club which was displaced from the first floor of the tower by the fire and came forward quickly requesting help. The two storey element is much more loosely defined as a community centre with a hall and an open plan kitchen on the ground floor and multiple different sized spaces that can be hired above. The BBC programme was aired in September, but the building's new occupants only moved in a few weeks ago.

Now fully in use, this stretch under the belly of the motorway has been brought beautifully to life both day and night with people and colour it has not seen for decades. Young amateur boxers cool down in the 'street', meeting rooms are busy, women chatter on the sofa in the reception area. A terrace and cantilever over the neighbouring park make that space feel safer and more lively. The project feels and looks successful – itself and for the urban realm all around. ●

Ground floor plan



First floor plan



1 Gated entrance
2 Social street
3 Community centre reception
4 Community hall
5 Store
6 Dale Youth Amateur Boxing Club training and gym area
7 Boxing ring
8 Changing rooms
9 Upcoming bespoke fibreglass tree-shaped street lights
10 Void over reception
11 Meeting room
12 Viewing mezzanine for parents and visitors
13 Office

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RICS cabe acai CIC BUILT ENVIRONMENT PROFESSIONS TOGETHER

Millau Viaduct, Tarn Valley, France, 2001
Photograph John MacLean
Words Jan-Carlos Kucharek

For someone who has just sold his car for environmental reasons and got himself a Dutch Van Moof bicycle – whose very form alludes to its ability to transport a tripod – it's intriguing that John Maclean has such a longstanding fascination with Norman Foster and Michel Virlogeux's Millau Viaduct. But with his parents living nearby, Maclean was able, during his visits over 20 years, to document the tallest bridge in the world as it rose from the base of its elegant concrete piers anchored in the valley 343m below the cloud skimming highway.

MacLean re-discovered this image when winnowing down his 5x4in transparencies. He finds this process extremely difficult; for he feels that when they're that size they become, like his choice of bike, beautiful objects in themselves. Even the ones he's dispensing with 'have the sense of a stained-glass window, a preciousness'; that gentle layering of plastic film, gelatin emulsion and silver halide crystals eliciting a memory and connection of and as an object in a way a digital scan never could.

The comment also refers to his passion for the mechanism of 'pure light'; not just as it permeates the transparency, but the way it passes across a structure and alters the way it is perceived – and how physical rays translate into a feeling. On this occasion, MacLean was up early, catching the viaduct in the clear crispness of a sunny winter's morning – his favourite time of day. 'There's excitement and anticipation in a morning shot,' he tells me. 'Later ones are just stressful. There always seems to be a panic around sunset.'

It was only later that MacLean realised he wasn't the only one awake then. Kasper David Friedrich-like, in the ink-stain of the foreground landscape, two figures can be made out in the darkness following the line of the railway gantries. Illuminated in the morning sunshine, the suspended catenaries point the two towards the light – a tantalising intimation of the engineering to come.

Circular economy

Mismatched triangles, curves and squares make Sheppard Robson's stranded Interserve building difficult to warm to – unless you're in the atrium

Words: George Grylls

It is a strange time for Interserve to open its new regional hub. When the building was commissioned the outsourcing giant's share price was about 12 times what it is now. Pickings have been slim ever since. One might tentatively suggest that Interserve's survival is not presently in jeopardy, but given that its competitor Carillion fell by the wayside earlier this year, no-one is being complacent. The construction and management firm's half-year results confirmed the loss of 470 jobs. According to a Financial Times article from March, 1,000 people were expected to go this year.

Step forward Sheppard Robson. Charged with decanting 1600 staff from five ageing offices around Birmingham into one building, it has made an admirable stab at smoothing the transition to a conspicuously modern office. Unfortunately, the old-timers in the smoking area, faced with longer commutes to work, are none too impressed: 'It's got no feel to it whatsoever.'

Ingenuity House is not helped by its desolate location near Birmingham Airport. David Ardill, the partner in charge of the project, is the first to admit the hostility of the site.

'If it looks a bit like a spaceship has landed, that is no bad thing. It's a very harsh environment,' he says.

You can say that again. Interserve bought the land on the promise of HS2. But the trains are yet to come so the offices are left to flounder in a desert of roundabouts, trading estates and budget hotels. Although the airport runways are the main views from one side of the triangular building, and the railway line into New Street another, this is the land of the car. Pedestrians are few and far between.

The offices are therefore wisely lifted up from their surroundings to loom like an inverted ziggurat. Originally aiming for a BREEAM Outstanding Rating (Ingenuity House is Excellent), the 1.5m overhangs stepped between each floor not only shade

IN NUMBERS

£47.34m
total cost
(CAT A and CAT B)

£3,529
GIFA cost per m²
(CAT A and CAT B)

1,246m²
GIFA

101.35 kg
predicted operational energy use in CO_2/m^2

Right Interserve rises from a sea of cars and car parking at podium level.

Below Main entrance to the east, Ingenuity House is a response to the currently desolate location.

JACK HOBHOUSE

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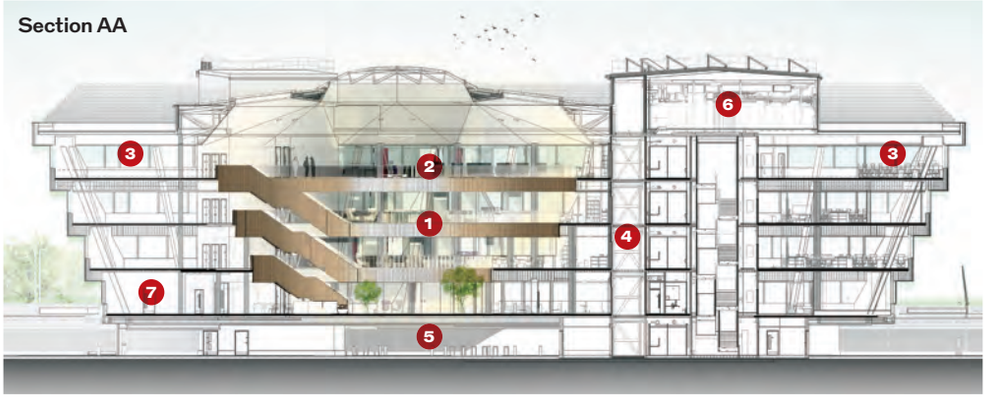
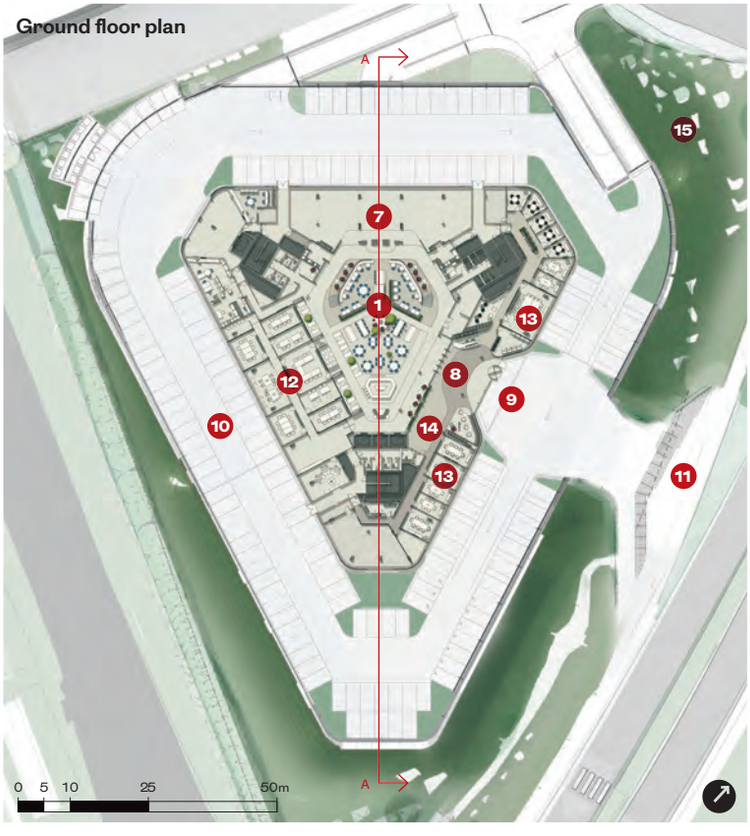
JACK HOBHOUSE

Left At leaving time the atrium buzzes with conversation as the staff flow down the stairs.





1 Central space
2 Gallery flexible working space
3 Office space
4 Lift shaft
5 Undercroft parking
6 Plant room
7 Kitchen area
8 Reception
9 Main entrance
10 Podium level parking
11 Main pedestrian approach
12 Training space
13 Meeting rooms
14 Hospitality / exhibition space
15 Informal open landscaping

the offices from glare, they also add up to give the impression of a fortress. A grassy moat surrounding the building offers glimpses down into the capacious car park below and one of Interserve's own motorway contractors has belted the whole thing in precast barriers. Ingenuity House hunkers down to jealously guard an internal environment all of its own, and given the dreariness of its surroundings, you can't really blame it.

Such solipsism pays dividends inside. From the cool ripples of an anodised steel exterior, the building opens up with the warm oak of its impressive atrium. Here the floors overhang internally by 4.5m, creating terraced farms of computer clicking and informal chats. From the top floor you can look down on the watering hole of the cafeteria, illuminated from above by a cathedral-sized hexagonal skylight. With the geometry of this triangular plan, and at such scale, it is hard to get Niemeyer's Brazilian crown or Gibberd's

HUFTON+CROW

Right Office desks are around the perimeter of the floorplate.

Liverpudlian teepee out of your head.

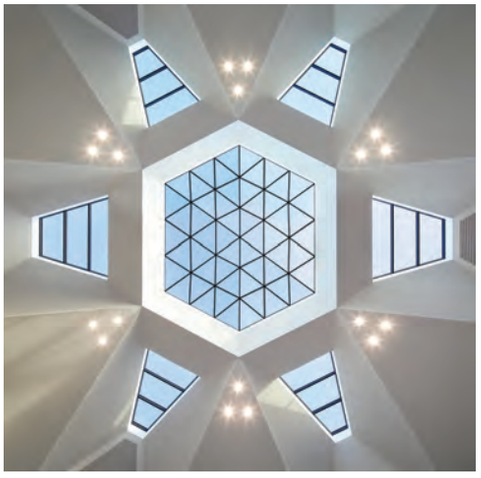
The atrium is the great strength of the project. Here, Sheppard Robson has successfully created animation – the natural poses of employees descending such a generous stair almost appear stagey – and a lot of its success can be attributed to a keen emphasis on circulation. Because the building is only four storeys tall, as the staff leave for the day in a quite Biblical flow, the atrium's zig-zag of stairs buzzes with life as they catch up with each other on the day's proceedings.

Such an emphasis on natural congregation applies also to the working spaces. Maggie Kendall, Interserve's programme and change director, wanted to create an office without personal offices.

'It's hard to see where the big boys sit,' she says proudly of the democratic experiment. And it is true. The grand atrium is fringed by bookable meeting rooms, which are pierced regularly by corridors that lead to the expanses of flexible desk space beyond. Even though Ingenuity House is open plan, this strategy effectively insulates each area from the noise of its neighbours.

The problem with a triangular plan, albeit with chamfered points, is that it inevitably throws up uninviting corners. Clustered around the cores are strangely-shaped nooks and crannies – hopefully transformed into kitchens and printing rooms. It seems a bit of a waste for such natural points of interaction to be so hastily overlooked.

And the awkwardness does not stop there. The placement of columns is at times jarring. An angled example skewers the life out of the building's largest meeting room.



HUFTON+CROW

It seems a bit random to find yourself walking into an unapologetically orthogonal I-beam

Credits
Client Interserve Construction
Architect Sheppard Robson
Principal designer Interserve Consulting
Contractor Interserve Construction
Services engineer Interserve Engineering
MEP and structural engineer pre-contract Arup

Above The dome-form roof glazing adds to the sense of a grand space.

Below Terraces of flexible space follow the diminishing floor plates down in the central atrium.

Desks have been custom-built to accommodate their interruptions. What is more, the columns' rectilinearity is at odds with the rest of the project. Ingenuity House has been written in the language of the curve, partially to divorce the project from its surroundings: 'We did not want to give it a clear directionality,' says Ardill. So it is seemingly a bit random to find yourself walking into an unapologetically orthogonal I-beam. They have been covered in a lick of plasterboard to try and appear as neutral as possible. But when Interserve's own contractors have got carried away, they've taken it upon themselves to plasterboard a whole wall between two such columns – at which point they are pretty hard to ignore.

Ultimately, confusion dogs this project. Sheppard Robson managed to shave £7 million off the budget in two weeks, retaining enough features to stop it looking like a B&Q warehouse. And it did well to keep the curved steel facade from the axe, but the curved strip-lighting screams such middle-management buzzwords as 'streamline,' 'monetise' or indeed 'ingenuity'. At times expensive detailing seems to signify cost-cutting.

The story of the land itself perhaps reflects the turmoil behind the scenes at Interserve. The company bought the plot from Standard Life, then had to sell the commissioned project back to the insurance company halfway through and now rents the premises off it. Confused? Imagine how the architects felt. They've brought clarity to the business with the bold informality of the atrium, but the sense of corporate doublethink has never quite been shaken off. ●

JACK HOBHOUSE

A moment in time

Tim Ronalds Architects' latest addition to the steadily evolving campus of Sevenoaks School imprints its historical stamp with deft discretion

Words: Hugh Pearman Photos: Hélène Binet

Learning factory with jazz touches: the new buildings at Sevenoaks School define a car-free square known as 'The Flat'.

IN NUMBERS

7,200m²
gross internal area

£23m
construction value

£30m
project value after fit-out

£3,080
building cost per m²

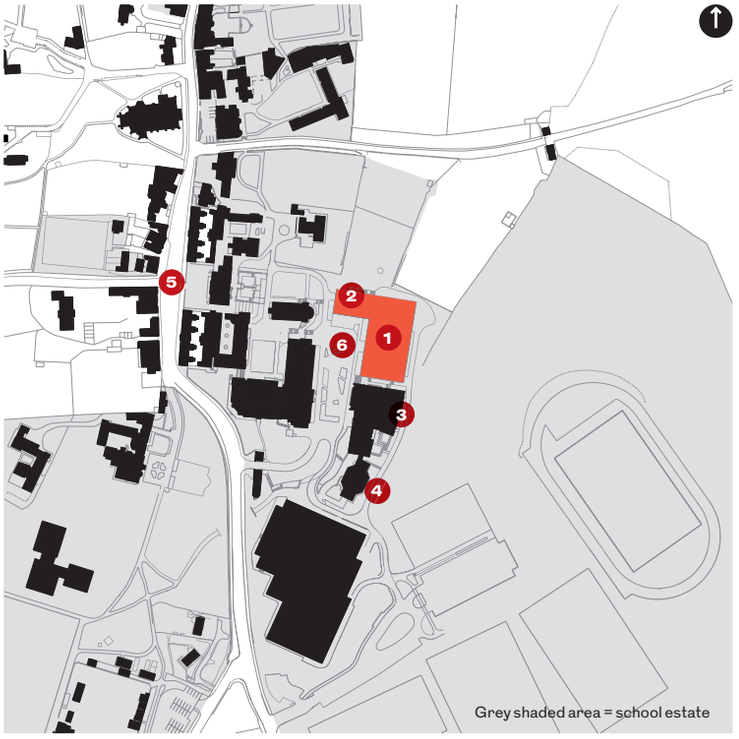
1,080
number of pupils

1 Science and Technology Centre
2 6th form Global Study Centre
3 2010 Performing Arts Centre, The Space
4 1981 Sackville Theatre by Roderick Ham
5 Sevenoaks High Street
6 'The Flat'.
7 Knole Lane

It's one thing to contribute a building to an academic campus. It's another to be its steward over a number of years, masterplanning and updating the masterplan so that new buildings and landscape become part of a coherent and – one hopes – seemingly inevitable pattern. In the case of Tim Ronalds Architects' work at Sevenoaks School in Kent, the latest building – a sizeable L-shaped block incorporating a science and technology centre and sixth form centre – joins his earlier performing arts centre to form a new boundary to a collection of buildings that has evolved since the school was founded in 1432.

Not that Ronalds or his team are strangers to the long-term project. Their acclaimed work in 'arrested decay' at Wilton's Music Hall in Wapping (RIBAJ October 2015) took nine years from first to last, and after it all there was no architectural signature to show for it nor much evidence that anything had happened at all, though of course it had. It was just no longer falling down and was invisibly upgraded for today's requirements.

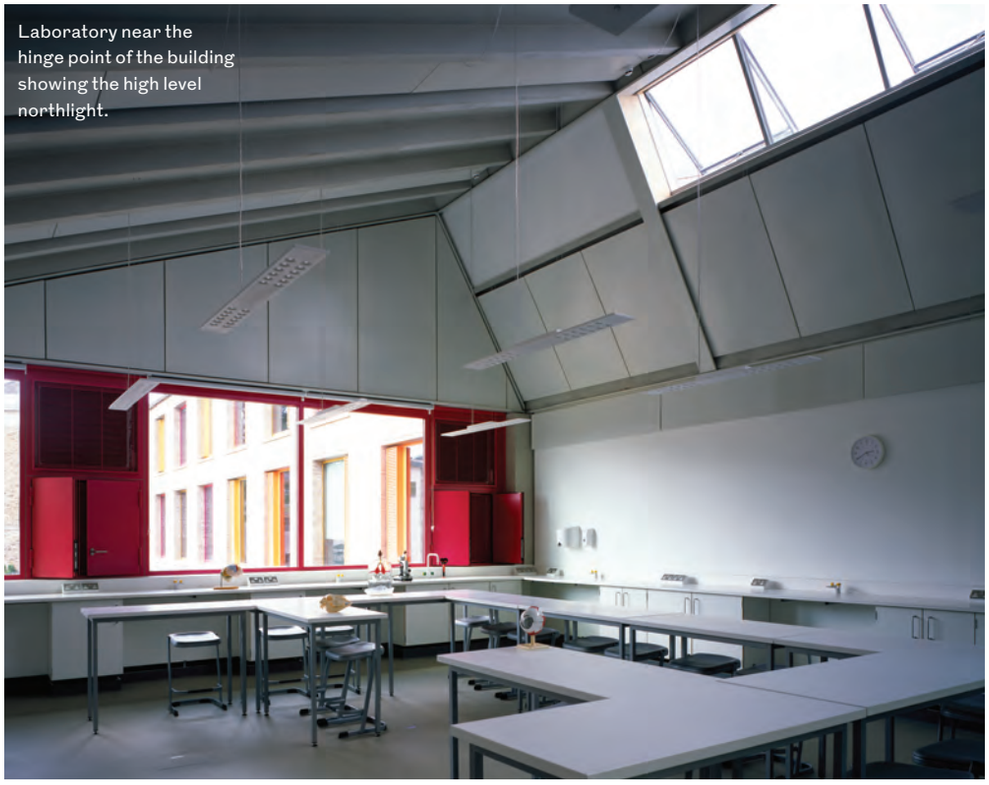
Sevenoaks School is a loyal client – Ronalds' work here has continued via various competitions since he won the masterplanning commission in 2005. Unlike at Wilton's, the architect's hand is clear here in the new buildings and spaces – although I was delighted to find another near-invisible theatre upgrade as part of the overall work.



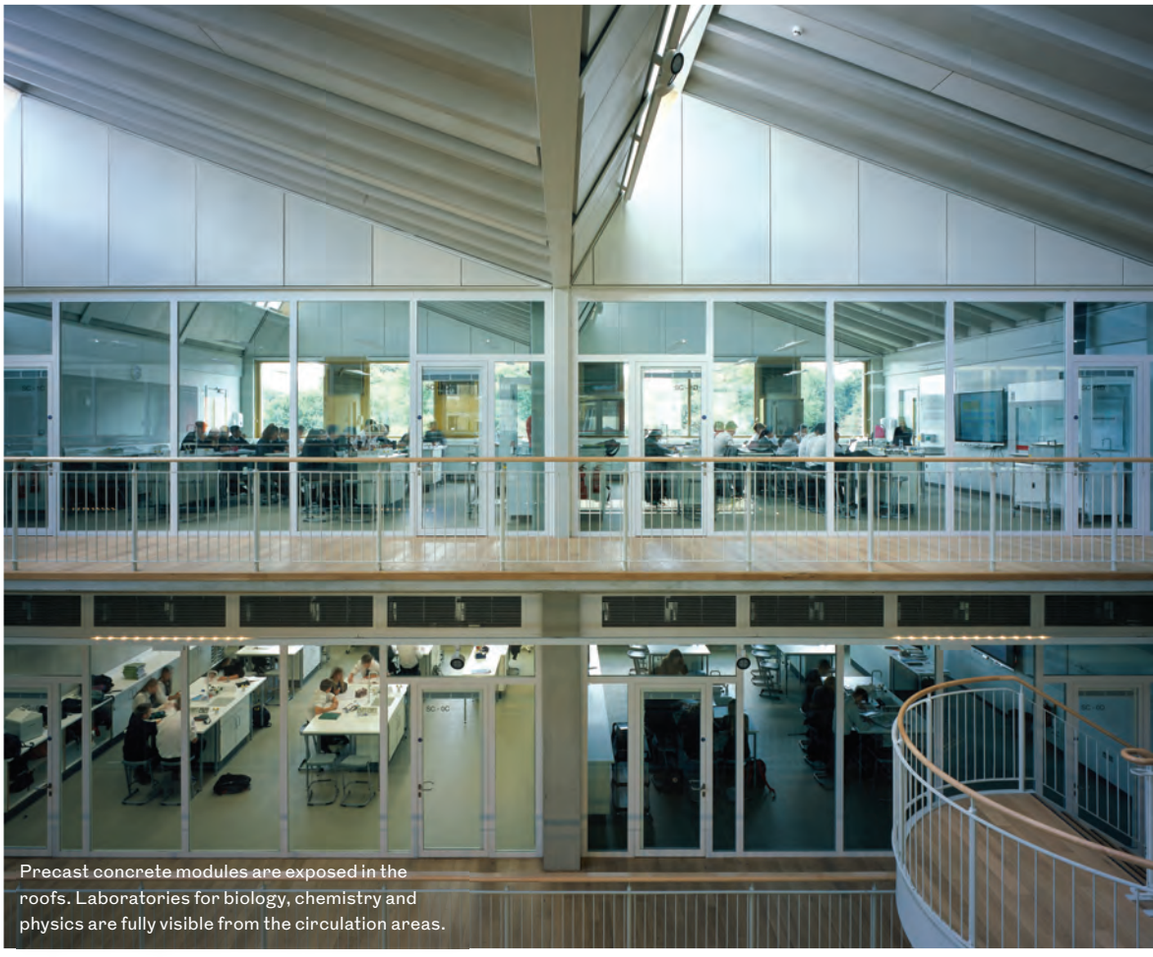
The architect's hand is clear although I was delighted to find another near-invisible theatre upgrade in the work

Ronalds treated Roderick Ham's octagonal 1981 Sackville Theatre very respectfully when tweaking and linking it to his barnlike Performing Arts Centre of 2010, which can accommodate a full concert orchestra. Now the latest buildings continue the line along and turn a corner to start defining a large landscaped open space known as 'The Flat' that was previously just a car park: cars will now be parked around the periphery of the school rather than at its centre.

Sevenoaks – with Knole Park and its Jacobean mansion that was the ancestral home of the Sackvilles – was always a cut above your ordinary market town, but today it is a very upmarket M25 corridor town of the kind that boasts a Lamborghini dealership. Similarly the school was founded to provide free education for the poor and is now pretty much a school for the rich: annual fees range from £23,355 for a lower school day pupil to £40,464 for a boarder arriving in the sixth form. The rich do however effectively subsidise the poorer pupils through a bursary scheme which will double in numbers by 2020. You get the picture: this historic school is a world away from your bog-standard comprehensive. A large number of pupils go on to Oxbridge, Ivy League universities, leading medical schools and so on. So it has a level of facilities available to pupils quite as high as you would expect and it is the constant improvement of these, especially reorganising the site and replacing older modern buildings with new better-equipped ones, which is what concerns the Ronalds team. On the day I visited, this team consisted of Ronalds himself, his co-director Anna Bardos, and architect Amelia Mashhoudy. It was half-term: they were sorting out the snags, with a contractor's team in to put things right after the latest building's first term in use. This is, please note, a traditional contract for a £23 million BREEAM 'Excellent' building and the relationship with the London and Belfast-based contractor Gilbert-Ash has been excellent, says Ronalds.



Laboratory near the hinge point of the building showing the high level northlight.



Precast concrete modules are exposed in the roofs. Laboratories for biology, chemistry and physics are fully visible from the circulation areas.

There is nothing architecturally fancy about the science and tech centre other than a generosity of space and natural light, some brightly-coloured details on the main elevations such as the air inlet grilles and external canopies to relieve what could otherwise have been externally a rather dour building. Very Cambridge-rationalist, it reminds you of certain new university buildings while being distantly related to a traditional factory, with sawtooth north lights. Honesty of expression continues in the way that rainwater downpipes and soil stacks are paired as facade-organising devices, celebrated rather than hidden away. The building is clad in brick, but handmade Coleford brick, deliberately in a slightly different tone to the earlier Performing Arts Centre.

Inside the colour is knocked back to pale earthy tones and a mix of in-situ and precast concrete, left exposed. Little is painted. And the layout is thoroughly logical, the labs (biology, physics, chemistry) and tech spaces all on display behind glass walls, arranged around a rectangular atrium that expands into a large events space at the lowest level running the length of the building and divisible into three when needed. Circulation space is big enough to provide informal 'writing up' tables once students emerge from the labs. Servicing is by basement plant, something made simpler by the way the building drops down the valley side at this point.

The return wing of the building, set slightly higher, is a simpler affair. Rather grandly called the Global Study Centre, it is basically a large sixth form common room and café along with study rooms and careers advice offices: the sort of mix not dissimilar to many a new university 'hub' only without the bars.

Above North-south section through Science and Technology Centre.

Below As seen from the rural southern edge of the campus: 2010 Performing Arts Centre (foreground) with Science and Technology Centre beyond.

Left Circulation spaces around the atrium are broad enough to house informal working areas.

Right Largely self-finished materials throughout.

Credits
Client Sevenoaks School Foundation
Architect Tim Ronalds Architects
Structure Eckersley O'Callaghan
Services, environmental design, BREEAM Max Fordham
Acoustics Ramboll
Cost consultant Bristow Johnson
Project manager Synergy Construction & Property Consultants
Main contractor Gilbert-Ash

Café in the sixth form Global Study Centre.

The overall environment of the 100-acre school campus is important and includes buildings by architects ranging in time from Lord Burlington through Roderick Ham and Sevenoaks-based Richard Reid to Ronalds, plus some rather lacklustre 1980s buildings by others which one suspects are not long for this world. Equally important is the sequence of gardens and open spaces, much of which lies between the High Street and the exceptional landscape of the National Trust's Knole Park which is of course Green Belt. The school is regarded as important by the planners but a deft touch is needed in this context, as a glance at the splendid views out the windows makes clear.

The reorganisation and densification of facilities for the school is epitomised by this latest Ronalds building, which is much bulkier than the two it replaced but enhances the spaces around it. Like the Performing Arts Centre alongside, it has a pleasing plainness. The luxury lies in quality, durability, good materials and space: no fripperies. There is great clarity of design purpose here. ●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La Dunette housing for older people is named after the 'poop', the uppermost deck of a ship where the most important and respected crew live.

C'est bien

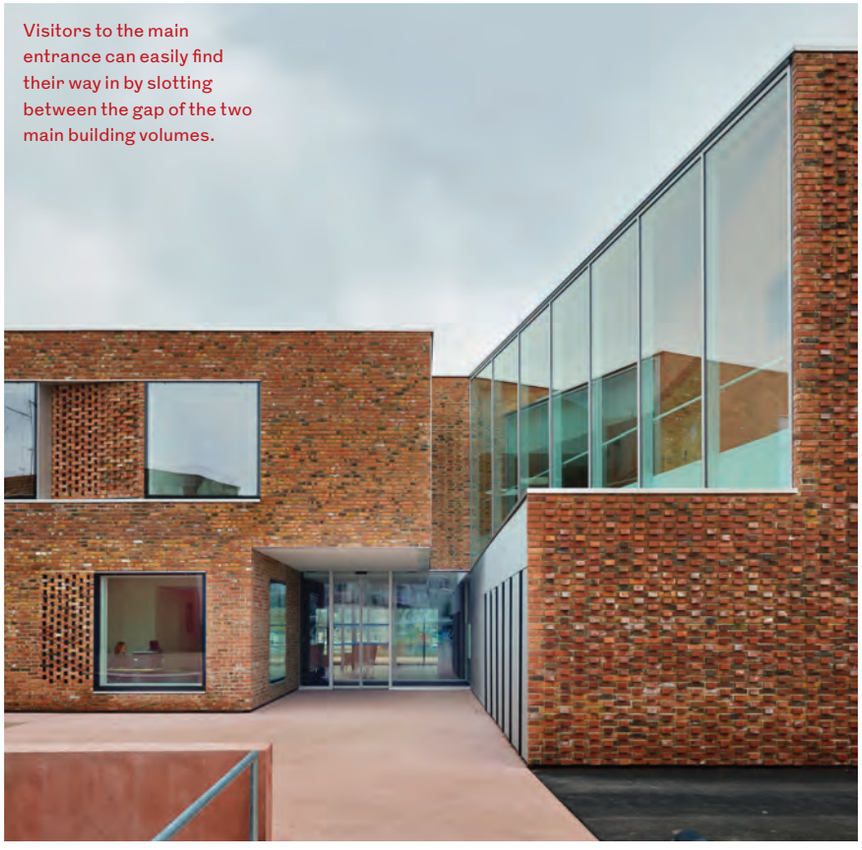
This dramatic architectural space is the opposite of lonely for its happy, confident senior residents

Words: Isabelle Priest Photographs: Eugeni Pons

I arrive at La Dunette, a housing project for older people in north east France, just after lunch. As I enter the central atrium from the rapid-onset wintry continental chill outside, residents are jauntily making their way out of the communal dining area to the right, heading across the hall towards the monumental dog-leg stair or the tucked-away lift. They are finishing the conversations they started over the dining table, saying hello to me and wishing others a nice afternoon and good nap as they pass. For a few moments the magnificently architectural pink concrete double-height space, with its massive drop down light well and heavy, choppy, blocky features, is filled with activity, chattering and chuckles.

A mother and her two young children are going in the opposite direction, accompanied by the children's white-haired great grandmother who is seeing them off. Shoes scuttle and shuffle on the smooth yet textured terracotta tiled floor, which continues onto the terrace. Conversations are looping from the bottom of the atrium, up the stair to the galleried landing. There's a merriment and joviality in the air, as if the midday meal has been satisfying for the spirit as well as the stomach.

As I navigate the bustle and sit down on an armchair in the well of the building to wait for the project's architect, Olivier Nicollas from Dominique Coulon & Associés, one of the younger residents notices me taking



Visitors to the main entrance can easily find their way in by slotting between the gap of the two main building volumes.

The pink tinted, sculptural concrete atrium. The terracotta floor tiles continue onto the river terrace to the right.

I've only been here five minutes and I've been greeted by five people already

a notebook out from my bag. Then she jokes: 'We don't do any work here you know.' I've been there only a few minutes, and probably look out of place, but I've been greeted by five people already. People seem happy to strike up dialogue with whoever is around as they go about their routine. 'On est bien ici,' says the woman. 'It's small but we have everything we need, and the people are nice.'

A few moments later there's quiet. Ahead, through the glazed opening that punches a visual axis from the entrance through the heavy enveloping concrete, beyond the beautifully wrought wonky criss-crossing black picket railing, the only movement is provided by the rippling Rhine, a few fluttering leaves and the odd cyclist on the promenade. Everything else, everyone else, is still, silent.

We are in France, but to the left across the river is Germany and to the right is Switzerland. This new building, described in direct translation as 'housing for aged people', is in a crossroads town called Huningue. I've had to go through all three countries to get here, as well as walk over a customs border where I can pass freely but those in lorries are held up by controls and long queues. The town, having been largely demolished during WW2, is a hotchpotch of mostly commercially built, varying quality boxy buildings. The area is now principally a northern suburb of the city of Basel 5km away, although its strategic position at the bend in the river, and longer contested history between these nations, gives it a more illustrious past.

The fleeting convivial atmosphere that has just passed at La Dunette is, however, good news. The centre's director Sandra Lengert tells me that the primary motivation behind this project for the mayor, who pushed for it, and Ville de Huningue, which paid for the €4m construction and runs it, was to present local people with an alternative to loneliness in old age – a growing problem and killer.

Strasbourg-based Dominique Coulon came to the project in 2013 after responding to an open call. The practice had developed a specialism of injecting unexpected brio into buildings for people at either end of the life spectrum, with an enthralling portfolio of schools and old people's housing across France. Most of the 17 people who have so far taken up one of the 22

First floor landing leading to two apartments. The internal kitchen window to the left.

Below The upstairs library and reading area is lit with the help of circular skylights.

apartments here were living alone in houses or flats not equipped for their slightly changed needs. One woman resident with bad hips, aged 74, was until June living on the fourth floor of a nearby housing block without a lift.

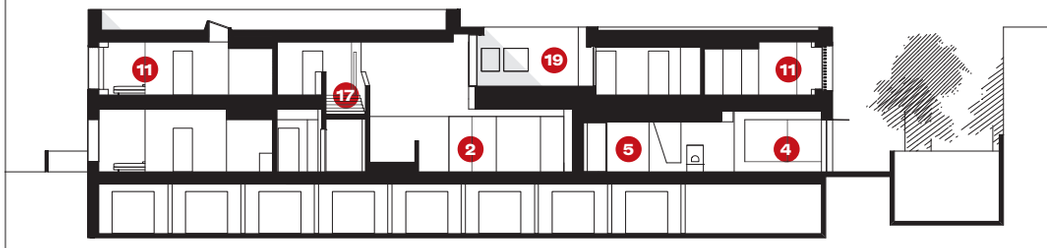
The alternative presented by La Dunette, which is one of 200 examples of this type of building in France and one of seven in Alsace, gives older people a community to engage with at mealtimes and the chance to do daily organised activities with them too. Residents must commit to at least one communal meal a day to help develop a social atmosphere. There's a communal dining, games and living space with TV, a computer room, multi-activity space, workshop, library and reading area, and that light well doubles as a potent solarium. There is also 24-hour on-call assistance. At the same time, the building acts as a conventional block of studio bed-sits where residents seem to spend most of their time, and can come and go as they please.

'It's like sharing one big house,' says Lengert as we sit down in her office, which at once monitors the entrance and has a glazed open door to the atrium. 'Whereas people usually live in care homes for 18 months we expect people to live here for 10 to 15 years.' Residents bring furniture with them and, if they want, their car, which can be parked in the basement (one in two has taken up this offer). And with the other five full-time employees all pitching in cleaning, cooking and looking after the older people, there's a family feel as well.

It is strictly non-medical, however. The closest UK equivalents might be sheltered or assisted living or retirement housing, though here there isn't the same requirement for social and health vulnerability to qualify for residence in the former types, or the usual middle-class trappings and expense of the latter. Those might not end up quite so friendly, either. Here, individuals pay €1,500 a month and if more personal care is required, it's organised externally.

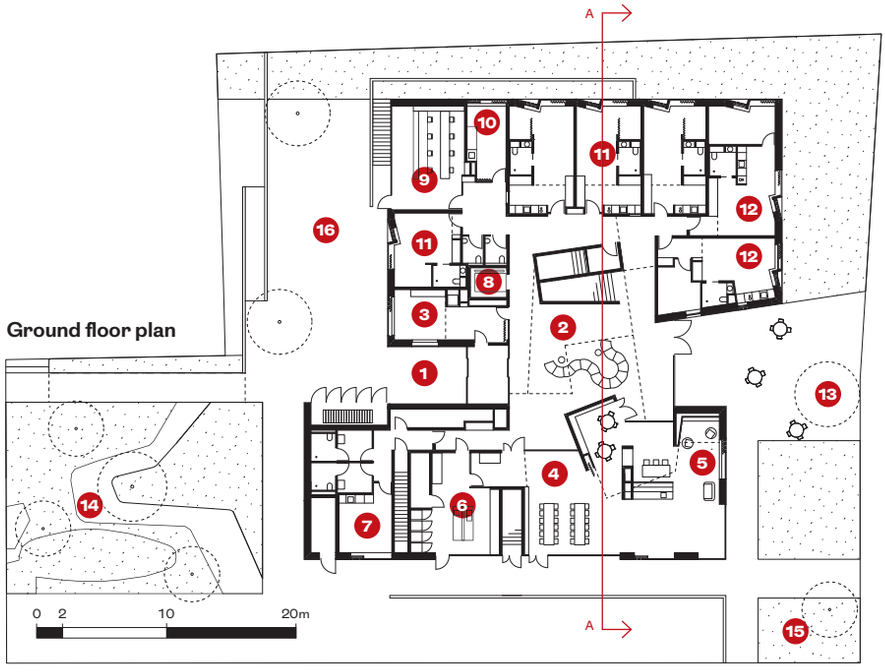
The programme seems ideal, but what sets it alight is its architecture. Dominique Coulon's concept for La Dunette, built on the former site of a small house, to the

Section A-A



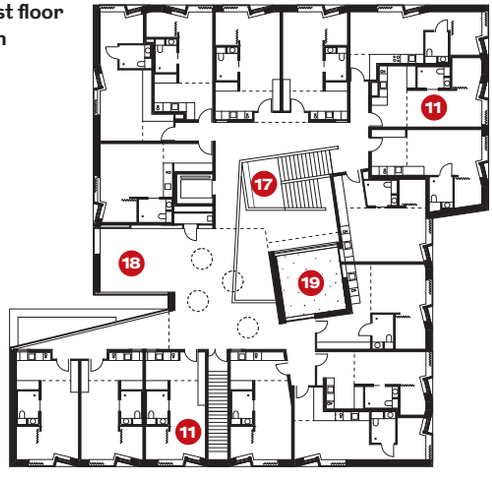
1 Entrance
2 Atrium
3 Director's office
4 Communal dining area
5 TV and seating area
6 Professional kitchen
7 Staff area
8 Lift
9 Computer room
10 Multi-activity communal room
11 Single-person bed-sit
12 Two-person one-bed apartment
13 Terrace overlooking the Rhine
14 Front garden
15 Vegetable patch
16 Pétanque piste
17 Stair
18 Library and reading area
19 Solarium

Ground floor plan



View from Germany on the other side of the Rhine.

First floor plan



rear of an old people's day centre and next to a creche, was that it should feel rustic and domestic. The jubilant, energetic shrieks and squawks of the neighbouring children playing provides a lovely contrast.

Set back and ramping up from the road, the entrance front recedes and projects around a garden planted with mounds of lavender and geraniums. Volumes cut away to reveal a direct way in between building pieces slotted together like a jigsaw. The pink concrete path to the door gives a hint of what is to come, while a winding one allows for a slower walk round. To the left is a pétanque piste with seating built into the retaining wall, and to the right of the entrance – just as at many houses – is a wood store behind a galvanised grille. The choice of a brick facade composed only of rejects contributes to this rustic look. Bowed, chipped, gnarled, effervescing bricks, which would otherwise have been thrown away, are arranged in a plethora of vernacular patterns contrasting with the smoothness of the inside; from straight stretcher bond to stretcher bond with recessed headers through to perforated screens. Deep mortar joints allow for their various contortions. The effect is fantastic, colourful and crinkly, breaking down the large volumes further and sitting satisfyingly

Above The town first mooted the idea for the building in 1996. Here, one of the better positioned bed-sits.

Left The sociable area in the main shared space is used for activities and games.

Credits
Client Ville de Huningue
Architect Dominique Coulon & Associés
Structural engineer Batiserf Ingénierie
Services engineer Artelia
Cost estimator E3 économie
HQE specialist and fire safety system Artelia
Acoustics Euro Sound Project
Landscape Bruno Kubler

against the slick frameless windows and sharp building geometries. They brought down the cost of the build too.

Through the double layer entrance, the building opens into the monumental atrium. 'We wanted a big hall to encourage collective life,' explains Nicollas. Projecting volumes and bold shapes continue to fragment the space, making it surprisingly thrilling given the building's function, though it is cosier in scale than the photographs suggest – not quite so epic. In the main communal space, dozens of gentle yellow-light globes attached to the changing height ceiling create different ambiances within the same area. Window sills overlooking the Rhine are at seating level, and a professional kitchen comes off the back with a smaller area preceding it where residents can help with preparation. The design is imbued with moments of delight and focus – the built-in bench for pausing on the grand stair, as well as the traditional tiled Alsatian wood burning stove in the communal area that allows the space and activities there to wrap around it.

Upstairs the building feels lower and more intimate than your average apartment block. Circular skylights contrast with the multitude of sharp lines; timber doors and entrance surrounds, sometimes recessed, soften the coldness of the concrete. The white ceiling accentuates the pink. Yet after all this architectural radicalness, stepping into the residents' narrow, white-walled private apartments is a disappointment. Each has a kitchen-living area, separate bathroom and bed recess, but while some are better planned than others, they range in size from 35m² for a single-person to 50m² for couples and feel cramped and awkwardly arranged. In many, the bathroom, sized for wheelchairs, is placed in the middle of the long wall, preventing light from the only exterior window from reaching the kitchen to the rear. There is an internal opening, but most residents have it covered over. Main windows feel like they should be chamfered in the opposite direction to catch better glimpses of that glorious river too. With communal space making up about a third of the building's floor area, and being apparently not that well used, you wonder whether the dimensions of these rooms could have been a little more generous.

This is important, but should not detract from Dominique Coulon's efforts. According to Lengert, the building never fails to impress potential residents and goes a long way to assuaging the concerns of their adult children too, which was part of the point. The building is both soothing and scintillating, and the lively lunchtime babble and confidence of its residents surely show the architecture is working. ●

IN NUMBERS

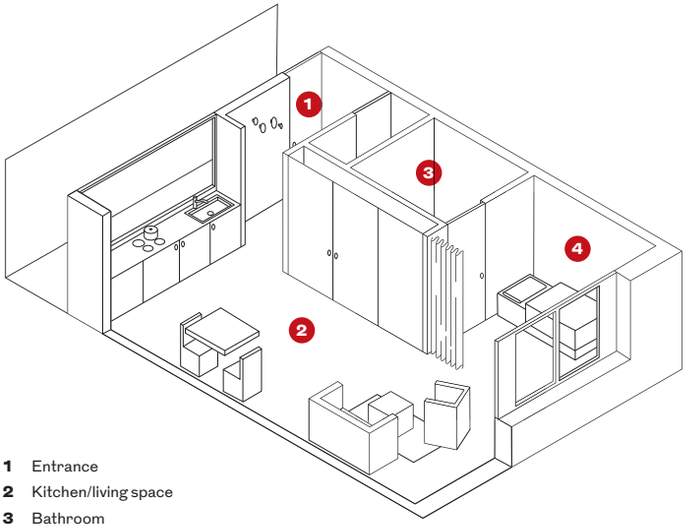
€4m
total cost

3932m²
GIA

20
single-person bed-sits

2
two-person apartments

Bed-sit axonometric



1 Entrance
2 Kitchen/living space
3 Bathroom
4 Bed corner

Above left Looking through from the atrium into the main communal space with its globe ceiling lights. The solarium terrace hangs into the space.

Below An occupied typical bed-sit overlooking the Rhine.

Together we can do it

Designing places for people is done much more effectively when the architect works with the people who will use them, the final Knauf/RIBA Journal seminar heard

KIT OATES

The Granville in Kilburn, London, provides affordable workspace and space for events, training and charitable activities. It incorporates existing uses including a children's centre and community kitchen. The project shows what can happen when different parts of the community all come together for a common goal – to bring a building back into full use, while developing local capacity, skills and know-how for the future.

We could all learn a thing or two from building users and residents like Rachel Richardson. Richardson lives on a south London council estate, whose design left her feeling isolated. Everyday life changed for her and her daughter when they discovered a hidden area of the estate with a patch of safe and overlooked open space, where her daughter could play out and she could meet and chat to other residents. 'It made such a difference to our lives and relieved our isolation,' she said. 'But I was frustrated that some areas of the estate had not been designed for participation.'

It's a simple and somewhat familiar story, but reminds us how embedding a sense of community and neighbourliness in architecture and landscape can exert a powerful influence over the wellbeing of residents and users. It is also a key ingredient of the cocktail that ultimately results in a vibrant, cohesive and commercially successful place, a factor not always recognised by clients.

Perhaps surprisingly, Richardson was speaking from the audience at an evening architecture debate, drawn to relate her experience by a notification about the event on Facebook and a desire to make a difference. The panel debate – hosted by RIBAJ in partnership with Knauf Clerkenwell and chaired by RIBAJ publishing director Helen Castle – looked at the design of spaces with and for people.

Community value

Input from residents like Richardson is invaluable, said panel member Tony Staples, team leader at RCKa. 'I feel there's so much you can be educated about through engagement. People have so much knowledge about a project.' He explained that his own rol e increasingly sees him work hand in hand with communities.

'The role of the architect is more and more about facilitation. I'm not an expert in any particular field, but I'm well placed to identify opportunities, and perhaps that is what good design is about.' An opportunity, he pointed out, could be the difference between a purely functional circulation space and designing that space to be a pleasant winter garden.

Facilitation skills are needed most when working with homeowners on their cherished makeovers and extensions. Private clients may know they want their dream home or kitchen, but pinning down precisely what that means is key for businesses like Pride Road. 'I start with a half day hand-drawing workshop with clients,' explained founder Lisa Raynes. 'I get their ideas down on paper. You have to draw things out or clients can't see the

problem areas. You have to help educate clients on everything – not only plans and economics, but on their own future lives.'

This kind of co-design approach can work at a larger scale, engaging with communities and stakeholders, said Sarah Jones-Morris, director with Landsmith Associates. And it is prompting her to think about working very differently: 'More and more I'm looking away from doing plans – 99% of the public don't understand them.'

Powers of persuasion

But such approaches are far from universal and some clients still pay too little attention to the general public, whether as participants in the development process or as users of the end product. Given many clients' emphasis on hard economics, it is important for designers to use economic arguments when promoting social benefit, advised Jones-Morris, although she acknowledged 'our profession is not good at talking economic value'. She outlined how her practice encouraged one client to support the incorporation of street trees into its scheme: 'The developer had more expensive houses looking onto a green, so we argued that the street trees would help to bring other homes up to their level.'

Other clients don't need persuading, notably the new breed of enlightened build to rent residential developers working in

some of our major cities, pointed out Felicie Krikler, director with Assael Architecture. 'In build to rent, clients retain their assets so they may remain in the same ownership for something like 40 years,' she explained. 'These clients have a real interest in how you build community spirit.' One example of community building in action is Essential Living's Union Wharf, a 249-home scheme at Deptford Creek, in Greenwich, where the developer's ambition is to create a vertical inter-generational neighbourhood. The scheme combines a 23-storey tower containing homes for singles and couples with a 12 storey tower designed specifically to attract families with children. The development team has looked to its target market to learn how to make its homes family-friendly, hosting focus group meetings with local mums to discuss the realities of family life in an apartment and what was important to them. That in turn led Assael to design practical features into the homes like larger balconies, while there is also communal space for children's parties and play. The effectiveness of the strategy will begin to be seen when the development opens early next year.

Share lessons

Tim Wood, founder of Forge Architects, chairs Bankside Open Spaces Trust, a charity established to drive the creation and restoration of open spaces on London's Bankside, such as Waterloo Millennium Green. The latter brings engagement with all the different players that make up a community, from dog walkers to rough sleepers. 'I'd love to bring some of the lessons of the trust to the development world,' Wood said emphatically. He also chairs the Bankside Neighbourhood Plan, which has seen local successes like the Low Line, one local resident's vision to open up the public realm – and regeneration potential – alongside the area's Victorian railway viaducts. 'There's an interest out there in how great places are brought together, and a lot of discussion about it,' added Wood. The results speak for themselves, and so can communities, if given the opportunity. ●

See more reviews at ribaj.com/space-in-architecture

An attentive audience discussing good design at the Space in Architecture series, Knauf Clerkenwell.

CHARLOTTE COLLINS (2)

Above How to collaborate: Sarah Jones-Morris, director at Landsmith Associates; Felicie Krikler, director with Assael Architecture and Tim Wood, founder of Forge Architects and chair of Bankside Open Spaces Trust.

Left An attentive audience listens to the discussion about good design at the Space in Architecture series, Knauf Clerkenwell.

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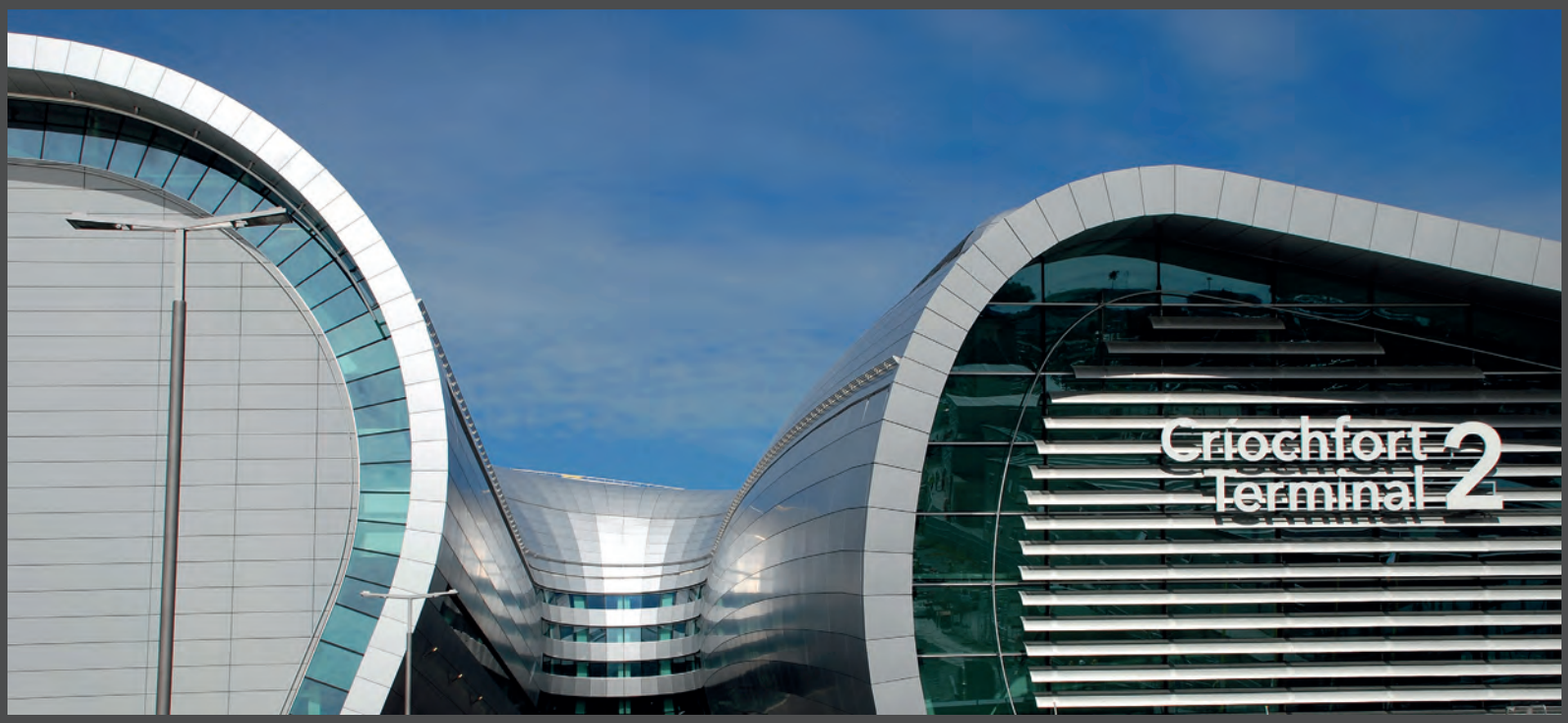
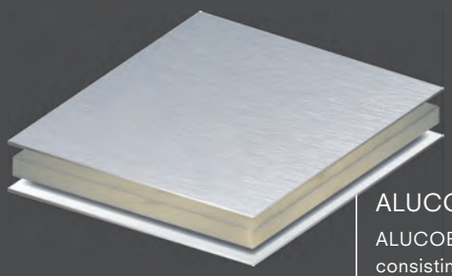


Dublin Airport Terminal 2 | ALUCOBOND® Silver metallic + Traffi c grey | Pascall + Watson Architects, London | Martifer | © Dublin Airport Authority



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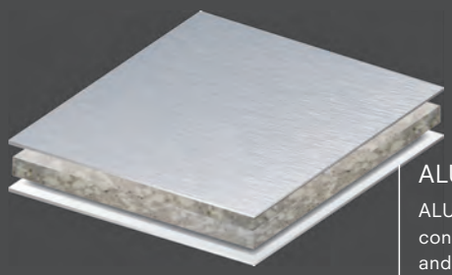

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2: Intelligence

Conservation & heritage

Design, construction & technology

Tony Barton

Donald Insall's 1968 Chester Report for the Ministry of Housing and Local Government set the tone for conservation practice that's still in play now. Donald Insall Associates' chairman Tony Barton looks back at one of UK planning's watershed moments and how it points to the future

What prompted the Chester report?

We forget the condition our historic urban fabric was in back then. Buildings we revere now were empty, leaking and neglected. The government instigated four pilot studies in Chester, York, Bath and Winchester. The Chester Report recognised that historic building was part of a larger urban organism; that without an economic life the old city had no future.

What were its key recommendations?

The big thing was the creation of the Conservation Officer role to promote conservation to the wider world in the way an economic development officer might do now. It also created a mechanism to fund repairs to historic buildings. A penny tax on all city residents was introduced and a grant scheme to help historic building owners repair properties. Townscape Heritage Initiatives and Heritage Action Areas were born.

What was here before this?

There was the Ministry of Works with its Schedule of Ancient Monuments but these four city reports looked at how whole centres could be regenerated. The City of Chester was losing value, population and jobs. Repairing and repurposing turned it into an attractive place to live, work and shop. This conservation and management strategy for historic cities is still referred to 50 year later.

Have conservation and planning policy for urban centres gone too far now — preserving things in aspic?

Yes and no. The conservation officer's role has changed; they are more part of the development control process, blocking change rather than supporting conservation and new growth in historic areas. The National Planning Policy framework is too strong on protecting historic fabric. But Historic England understands that buildings must change to survive; take the implications of disabled access provision on historic buildings...

Talking of imaginative approaches to heritage — what about Heatherwick's Coal Drops Yard?

It's great; it adds a 21st century layer to a 19th century building, which accords with history. Very few buildings remain unchanged throughout their lives. Society is too precious about historic buildings – we seem afraid of adding another layer of grain.

There have been lots of planning policy changes. What's the next big thing?

Pushing the localism agenda to create a civic movement. Engage with developers and planners, get something out of it and demand better architecture. People don't usually get animated about their area until a developer wants to erect a 7-storey block of flats on their common. People need to take ownership!

ONLY ON RIBAJ.COM

Building homes may be a 'top of the agenda' domestic political issue and making the built environment less environmentally destructive may be a planet-saving necessity but, as the saying goes, fine words butter no parsnips

Brian Green looks through the latest construction figures: ribaj.com/constructiondata nov18

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

President's Medals 2018

Allaying the public fear of technology, protecting global knowledge and the architecture of solitude are the themes that inspired this year's winners of the Silver, Bronze and Dissertation awards. The Research Medal (p40) goes on to investigate making life easier for the homeless

Interviews: Eleanor Young

The miracles of hidden knowledge are extrapolated into a remarkable fly's leg stair

Sonia Magdziarz
How to Carve a Giant
Bartlett School of Architecture, UCL
Tutors: Penelope Haralambidou; Michael Tite; Keiichi Matsuda

When Sonia Magdziarz visited Helsinki on a studio field trip, the 1969 Temppelioaukio Church, or Church of the Rock, impressed her deeply. This building, built into the city's pink granite, proved an inspiration for her silver medal winning How to Carve a Giant.

Facing out of the church is that giant, a figure from Finland's national foundation myth, the Kalavela; as he sleeps he protects knowledge. The giant is not the only figure from this myth who makes it into the building, there are also fox, bear and blacksmith. As with Michelangelo's Laurentian Library, bodies are inscribed into the design. Here a fox becomes a metaphor for light, following the story of how the Northern Lights were created by the swish of a fox's tail. So rooflights have echoes and suggestions of fox.

Magdziarz proposes to keep safe the knowledge of our time and the future in vaults carved deep into the granite. That might be in books, encrypted into DNA or carved at a nano-scale (her investigations found that nano-carving now claims to be able to cram the whole of the world's knowledge into the space of a shoe box). The miracles of hidden knowledge are extrapolated into a remarkable fly's leg stair that is a reminder of the microscopic writ large. The architecture acts as a sign for the invisible knowledge within.

The technologies will change over the years, as will the more public spaces, evolving from libraries to freer spaces with digital displays. This is embodied in Magdziarz's film that shows the spaces over time. Central to her architecture is a desire to draw people back to the space to understand and decode knowledge from the past, in the same way that the pyramids pull us in.

Left Carving a folk story into the fabric of a city.

Right Enhancing hand carving with digital tools and processes. The hybrid model explores different types of 3D printing, milling and carving, resulting in a two-dimensional image translated into a three-dimensional surface.

COMMENDATION

Sam Coulton
London Physic Gardens: A New Necropolis
Bartlett School of Architecture, UCL

Kevin Herhusky
Infrastructures of Memory,
Phygital Bodies in a Concrete Cloud
California Polytechnic State University, USA

Ruth McNickle
Tilling the Prado: A Furrow of Re-Construction
Edinburgh School of Architecture and Landscape Architecture

SERJEANT AWARD FOR EXCELLENCE IN DRAWING

Maria Marilia Lezou
Hotel Mollino: Staging Spaces of the Everyday as Heterotopias of Performance in Scenography and Architecture
University of Greenwich

SOM FOUNDATION FELLOWSHIP UK PART 1

Margaret Ndungu
Wild City
De Montfort University

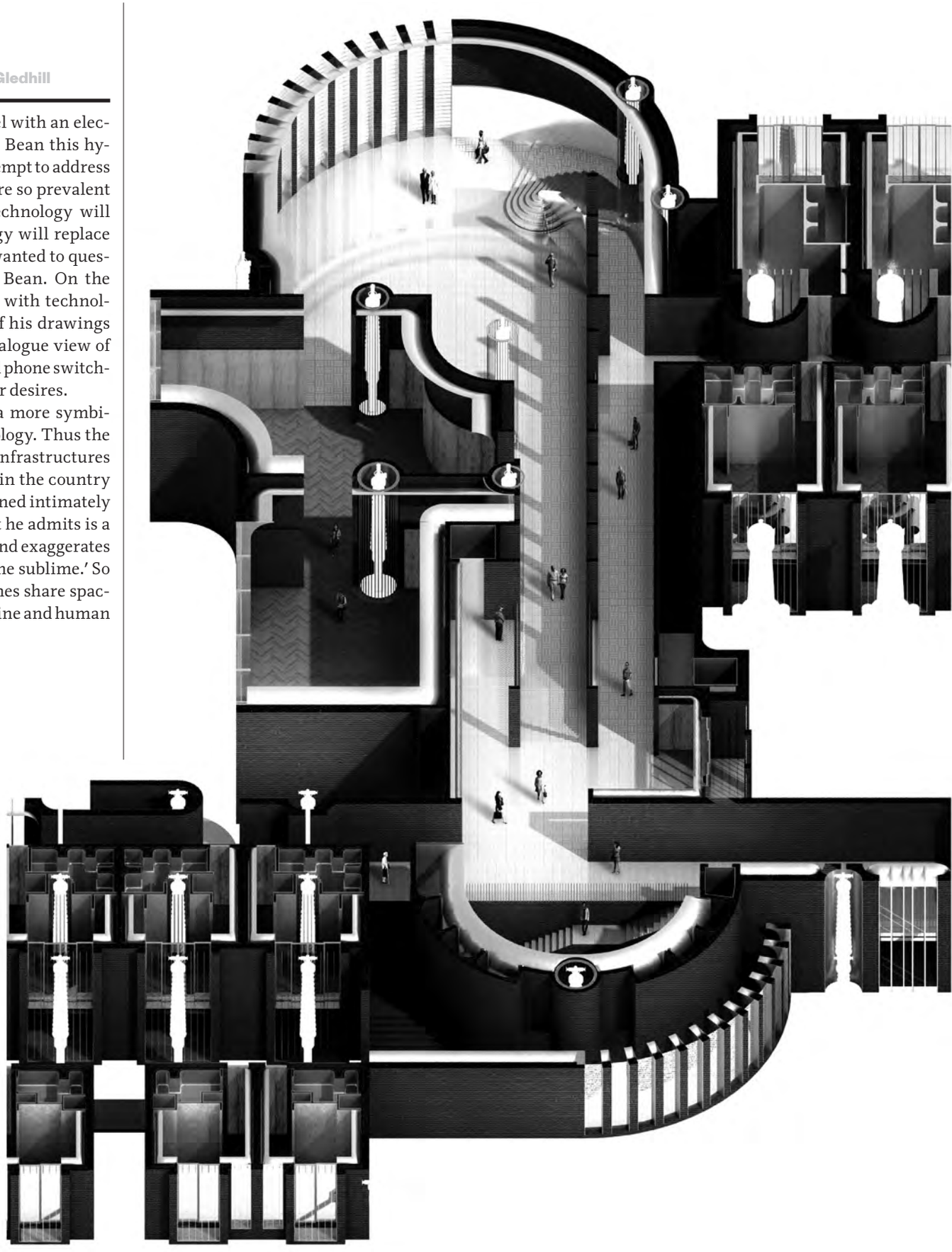
JUDGES, SILVER MEDAL

Chair: David Gloster RIBA director of education
Nicky Watson RIBA vice president education
Professor Yeoryia Manolopoulou Bartlett School of Architecture, UCL
Eva Franch i Gilabert director of the Architectural Association
Carol Patterson OMA

Justin Bean
Dreaming of Electric Sheep
University of Bath
Tutors: Frank Lyons; Martin Gledhill

Why would you marry a hotel with an electricity substation? For Justin Bean this hybrid project grew out of an attempt to address the fears of technology that are so prevalent in society. 'You read that technology will steal our jobs, that technology will replace everything – I disagree and wanted to question what that meant,' says Bean. On the other hand, our relationship with technology is very simplistic. One of his drawings (far right) shows our very analogue view of technology as an old fashioned phone switchboard; we plug in to satisfy our desires.

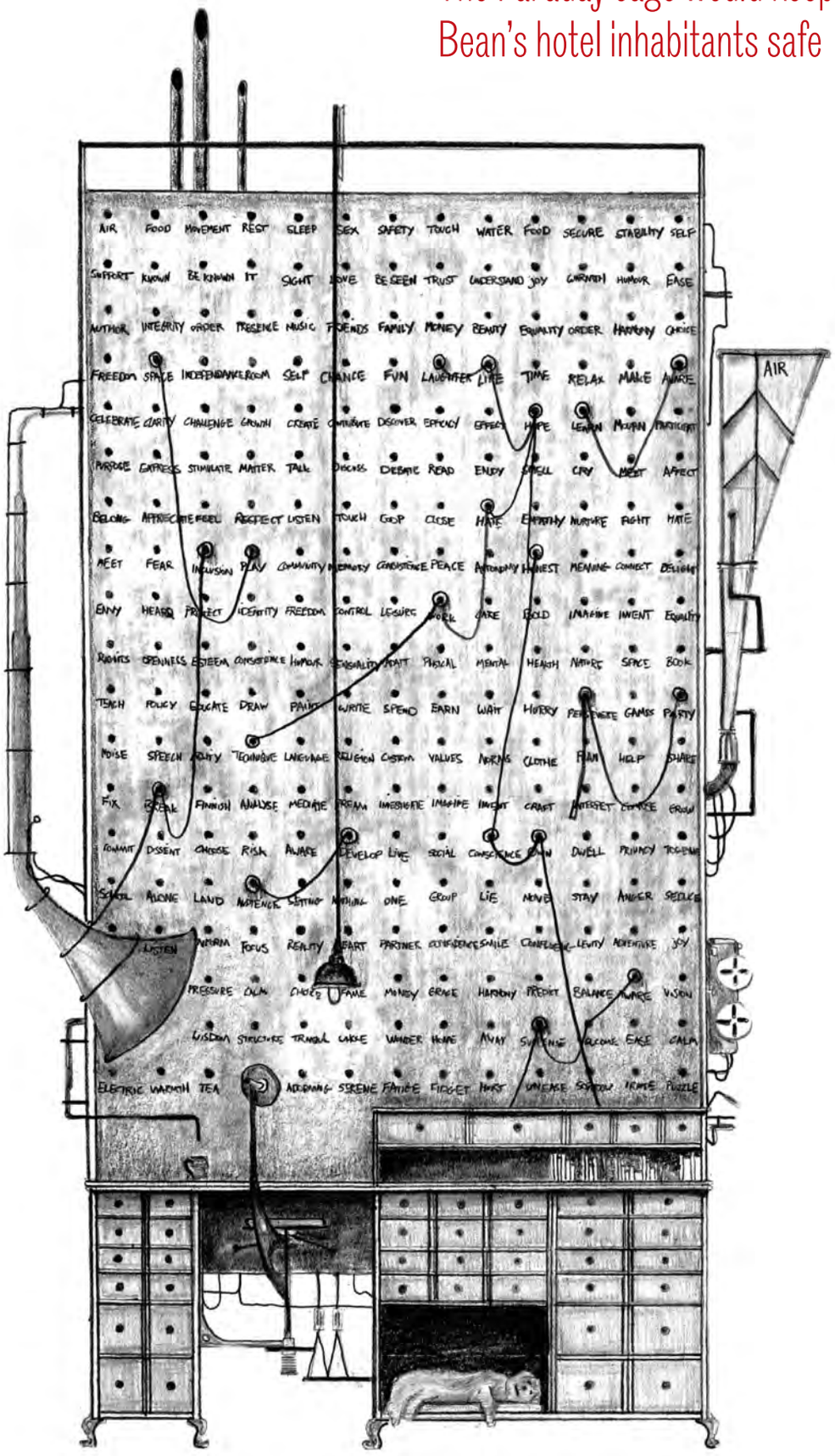
Bean wanted to explore a more symbiotic relationship with technology. Thus the substation. The huge, hidden infrastructures of substations in every town in the country intrigue Bean. The hotel planned intimately around it was chosen as what he admits is a 'weird typology... It tightens and exaggerates banal everyday activities to the sublime.' So could these spaces for machines share spaces with humans? Could machine and human assume equal importance?



Right Axonometric of the interior of the hotel inside the Faraday cage protecting it from the live electricity of the substation.

Opposite The analogue requests we make from technology, drawn as a telephone switchboard.

The Faraday cage would keep Bean's hotel inhabitants safe



The project started as a pragmatic piece of spatial planning. The fundamental question was how close could you build? To avoid electrical bridging there could be no touching and nothing could be too close. In fact, Bean turned to the Faraday cage to keep his hotel inhabitants safe. Bars of metal encase the building beneath a skin of insulating brick. The cage is very fine but just visible in the vertical rods running through the windows.

The gathering spaces are where they could fit and some are graced with elements of the substation. Stripped of context they become totems but also build a familiarity with the elements – a way of getting to know the architecture of electricity and to start to understand it. With this extreme pairing, Bean hopes for a new dialogue on how we perceive machines and technology.

COMMENDATION

Sam Beattie
A Bridge to Wellness
University of Nottingham

Camille Bongard
A Choreographed Timeline, Rewriting RIBA Building Contract
Architectural Association

Alexander Wilford
Smithfield Lorry Depot
University of Greenwich

SERJEANT AWARD FOR EXCELLENCE IN DRAWING

Camille Dunlop
Pipeline Hijacking
Bartlett School of Architecture, UCL

SOM FOUNDATION FELLOWSHIP UK PART 1

Grey Grierson
Negotiation of States: A Crematorium and Columbarium in Hong Kong
Bartlett School of Architecture, UCL

JUDGES, BRONZE MEDAL

Chair: David Gloster RIBA director of education
Nicky Watson RIBA vice-president education
Dr Josep-Maria Garcia-Fuentes Newcastle University
Henriette Helstrup director of operations at Bjarke Ingels Group London
Suzanne Ewing head of the Edinburgh School of Architecture and Landscape Architecture
Harbinder Birdi Hawkins\Brown

Rosemary Milne
Species of Nooks and Other Niches
Edinburgh School of Architecture and Landscape Architecture
Tutor: Dorian Wiszniewski

Rosie Milne came to her dissertation through Gaston Bachelard's The Poetics of Space. 'I had been reading it slowly, over four years. I brought the book to my first tutorial. I wanted to write about nooks,' she says.

There was another starting point too, one often neglected in discussion: the architecture of solitude. Milne points out that the architecture of the collective and of working as a group is often a driving force for spaces. She wanted to look at spaces for the individual.

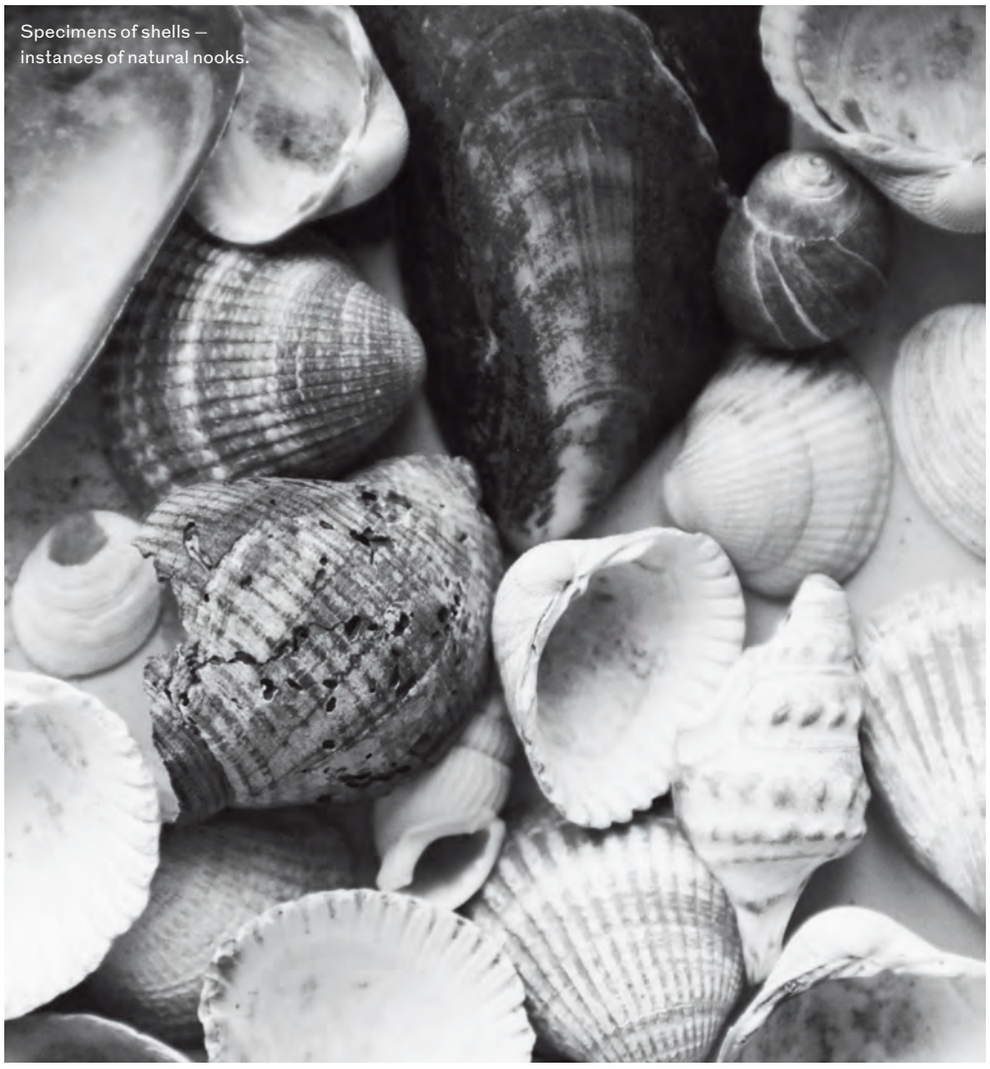
The tripartite structure drawn from Bachelard's writing of basement, ground floor and attic runs through her dissertation as a theme but also creates the structure. She avoids introduction or conclusion and instead starts with her basement, an etymological study of 'nook'. 'The idea is that words are like little houses,' she says.

What happens when buildings lack space for individuals? Milne explored the opposite of the nook – stripped away buildings – 'and they look pretty bad'. In the quest for efficiency and function nooks are excised from designs. She has created the word 'nake', from 'naked' to describe the rawness of the nookless building. She writes: 'Due to its inherent obscurities and inefficiencies, the nook is becoming an endangered species of space, neglected in favour of efficiencies, transparencies, and orders of succession tending towards architectural reductionism – an order which forms the basis of the nook's antithetical counterpart: the nake.'

It deals with temporality and simultaneity, ruptures in the sequence of time and things happening at the same time or place. Here Milne draws on Le Corbusier's villa Le Lac for his mother (and her dog, Nora): in a little corner of a bedroom is a nook on three layers that is simultaneously basement, ground floor and attic, drawers acting as a step up to a chair above, from which you can see out of the high windows – a place where your ideas could take flight. Le Corbusier uses a surprising number of nooks says Milne, 'despite talking about houses as machines for living'.

The second dissertation section is the metaphorical ground floor, where you meet the outside world. Sir John Soane's house at Lincoln's Inn Fields is full of nooks of many layers, a reminder of his own layers of interests as historian, designer and imaginer. Milne discusses a more modern example in Simpson & Brown's Chapel of St Albert the Great in Edinburgh which is full of nooks and notches (a closely related word; cranny comes from the French for notch, Le Cran) – here the tripartite structure is demonstrated by sacramental architecture (lofty attic), views of the gardens (worldy ground floor) and historic grounding of the old walls (memorial cellar).

Milne's third and last section collects images, indexes and strands of thought. 'Different kinds of measure,' Milne calls it, creating a treasure chest in the process: 'It is like an attic – I could inhabit it again and write about it.' As she embarks on her Part 2 in Edinburgh, it remains to be seen how nooks and a clear concept of the nake will manifest themselves in Milne's masters.


Specimens of shells – instances of natural nooks.

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Addresses for the homeless

RIBA President's Medal for Research winner and Rising Star Chris Hildrey explains how his ProxyAddress project works to help the homeless avoid falling into the abyss

Below On site at the Royal Mail's Mount Pleasant Mail Centre, London.
Opposite bottom The initial ProxyAddress receipt provided to service users at the first council meeting.

The address system in the UK forms the basis of how we navigate the built environment. Introduced in the late 18th century, it has more recently been appropriated to become a de facto means of identification. And, though this conflation of location and identity has brought with it some efficiencies, its stretching of spatial data beyond its intended use has also given rise to some significant issues.

The consequences of these are felt most acutely by the homeless. Without a stable address, the inability to reliably receive mail is compounded by a sudden lack of formal identity. As a result, key services which would otherwise play a vital role in recovery are out of reach – for example benefits, a bank account, job applications, a driving licence, a library card. The cause of support being needed becomes the very reason it is taken away.

With such crucial services removed at the exact point they are required, the chance to sustain independence or receive support in the early stages of homelessness is lost. These first moments are key: the number one cause of homelessness in the UK today is the end of an assured shorthold tenancy and the majority of people who find themselves homeless as a result are capable of recovery with the right support. Left without, however, individuals stand on a cliff edge – falling deeper into the situation and finding themselves vulnerable to the development of much more acute problems such as mental ill-health and substance abuse. The current reactive approach to tackling entrenchment is not only difficult to make work, it also places a significant burden on health services, public spending, and the individual's wellbeing which might be avoided through more proactive methods.

> With crucial services removed at the exact point they are required, the chance to get support in the early stages of homelessness is lost

My project, ProxyAddress: Using Location Data to Reconnect Those Facing Homelessness with Support Services, began with

HILDREY STUDIO (2)

a wish to investigate and intervene in this situation. A core question emerged: if the systems we use to make sense of the built environment develop in such a way as to marginalise those who occupy it, can the architectural profession's understanding of that environment be put to use; to insinuate itself within the situation in such a way as to effect positive change? And, if so, might this also suggest a strategy to mitigate the increasing marginalisation of the profession itself through a new outlet of professional skills?

Of specific interest was the need to assess the historical role of addressing systems to better understand the origin of difficulties in the contemporary context and, ultimately, avenues for alternative strategies. In order to create a possible intervention, the constraints and regulatory requirements of postal, financial and public services needed to be interrogated through comprehensive interviews across a wide array of stakeholders.

Through consultation and collaboration with a number of parties – including those facing homelessness, national homelessness charities, academics, policy-makers, postal services, local government, and financial institutions – a thorough understanding of the individual interests and wider implications of each role was established.

Key constraints emerged: public sector services that include confidential information still largely rely on physical post. However, in being forced to move from place to place at short notice, the most vulnerable in society struggle to engage with this process. Keeping appointments or receiving vital paperwork becomes incredibly difficult.

More and more people are feeling the impact of this. Since 2010, the number of rough sleepers in England has risen by 169%. In the same period, a 97% reduction in social rent homes built by government means that those who can be housed tend to find themselves in temporary accommodation.

There are over 70,000 households, including 120,000 children, now living under constant risk of being moved on with little warning – an increase of 60% since 2011. There are also those whose numbers can't be counted: the so-called 'hidden homeless'. These are people who move from sofa to sofa, floor to floor, in order to avoid sleeping rough.

The complexity of maintaining correct address information through such instability leads to the breakdown of communication channels and lost avenues of support. The impact is clear: the current life expectancy of a rough sleeper in England is now just 47 – over 30 years lower than the UK average and three years lower than that of Sierra Leone, the world's lowest national life expectancy.

New legislation has been introduced to tackle the rising problem of homelessness. The Homelessness Reduction Act received Royal Assent in April 2017 and came into force in 2018. This imposes additional duties on local authorities to actively take steps to prevent households at risk of homelessness from tipping into crisis. However, since 2010 councils have also seen central government funding cuts of 38% on average. By 2020, this revenue support grant is set to be phased out altogether and business rates revenue is also due to be largely kept locally by councils rather than being redistributed according to need, leading to disproportionally large revenue losses for the poorest areas.

The question was how to use our sense of the built environment in such a way as to effect change

The ProxyAddress system is, at its heart, a database; one that works with local government, postal services, and the financial sector to reconnect those facing homelessness with support services. It provides a consistent address by using a resource already available to local authorities: empty properties. There are about 500,000 of these in England alone. Over 200,000 have been empty for more than six months, while over 11,000 have been empty for more than a decade.

ProxyAddress works with local authority records to isolate a property's address data – its actual location has little relevance – and uses this to create a proxy address, giving the outward appearance of consistency, access to an identity, and providing postal redirection throughout the person's period of instability.

No interaction with the actual property occurs: all post is redirected by the Royal Mail before delivery and, as of 2004, credit ratings are not determined by address unless individuals are financially linked; the use of the address for identity purposes has no effect on property owners or values.

The ProxyAddress programme is already working with input from financial regulators, credit reference agencies, banks, local government, and the Royal Mail to implement live trials. The first is due to begin in Lewisham Council in 2018. ●

Chris Hildrey is director of Hildrey Studio.
Read about the other RIBA Research Award winners at ribaj.com and in the January issue of the RIBA Journal


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Procurement & contracts

Clarity is everything

Not setting clear, express terms in your contract could leave you facing the danger of unlimited liability

Stacy Sinclair

Time and again we see the aftermath of parties failing to agree and incorporate clear, express terms into their contract. The case of Arcadis Consulting (UK) Ltd v AMEC (BCS) Ltd is one such, which recently made it all the way to the Court of Appeal.

AMEC (formerly CV Buchan Ltd), a specialist concrete subcontractor, engaged Arcadis (formerly Hyder Consulting (UK) Ltd) to carry out design works on a car park in anticipation of a wider agreement between them that did not materialise. The parties had exchanged three sets of terms and conditions, each with different limitations on liability.

It was alleged that the car park was defective and may need to be rebuilt at significant cost. Arcadis denied liability but also said that if it was liable, there was a simple contract in respect of its design works, which capped its liability at £610,000. If Arcadis was wrong about this, its potential liability would be unlimited and could have amounted to some £40 million.

The first High Court judge held that the parties had agreed a simple contract arising out of a letter dated 6 March 2002 incorporating no set of terms and conditions. He considered the parties had not agreed that Arcadis' liability was capped. There was too much uncertainty for the court to conclude that the parties intended to be bound by a liability cap. Arcadis appealed.

The Court of Appeal disagreed with the High Court. The 6 March 2002 letter of intent was a request to start work on all the terms set out in it. It was an offer of an 'if' contract. This was because the letter from AMEC requested Arcadis to carry out a certain performance and promised Arcadis that, if it did so, it would receive a certain performance in return. The letter established a fixed fee of £56,000, which could be revisited.

Arcadis accepted that offer. The 'best evidence' of this was its conduct in undertaking the work. Given that the letter of 6 March 2002 included that the work was to be carried out: 'in accordance to…the Terms and Conditions associated that [the parties] are currently working under…', the court had to determine what, if any, terms and conditions had been incorporated.

Here the Court of Appeal highlighted the need to distinguish between the interim contract under which the parties were currently working (the Contract) and the Final Contract, which once agreed would supersede the Contract. The parties had chosen 'to stop the music' for terms in the interim, but not the Final, Contract, which superseded it.

The Court of Appeal judge was clear that the reference to the 'Terms and Conditions' related to those the parties had previously exchanged and agreed to work under. On the evidence these were terms which had been agreed on a parallel project and AMEC had sent Arcadis an email saying that '[w]e intend to use the documents for the Wellcome Building works subject to your agreement and we will be providing more details shortly'. This was an offer, which was accepted either by Arcadis' conduct in starting work on 13 November or by a later letter.

The Court of Appeal's decision, like that of the High Court, was based on an analysis of the documents said to make up the contractual relationship between the parties – an analysis that was only necessary because of the original failure to sign up to a full contract agreement in the first place.

The High Court Judge had said this was a classic 'contract/no contract' case. One party faced unlimited liability if the terms of the liability cap were not incorporated. It argued its position all the way to the Court of Appeal – the consequence of not having a clear contract with express terms in place. ●

Stacy Sinclair works at Fenwick Elliott LLP

If Arcadis was wrong about this, its potential liability would be unlimited and could have amounted to some £40 million

IN PLAIN ENGLISH: 'IF' CONTRACT

A contract, conventionally know as a unilateral contract, under which A requests B to carry out a certain performance and promises B that, if he does so, he will receive a certain performance in return, usually as remuneration for his performance (see British Steel Corp v Cleveland Bridge & Engineering Co Ltd, 1983).
Put simply an 'if contract' means 'if you do this for us, we will do that for you'.
It is a standing offer which, if acted upon before it lapses or is lawfully withdrawn, will result in a binding contract.

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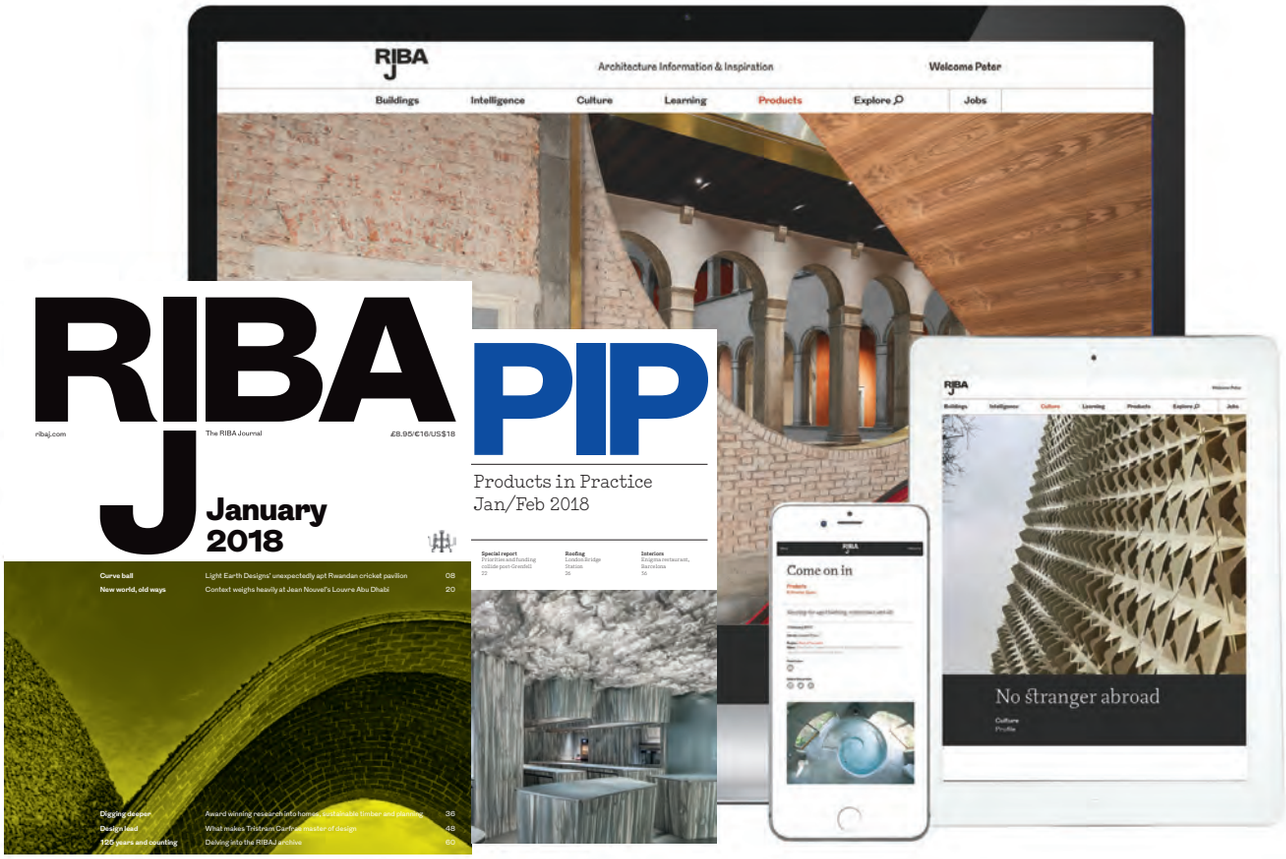

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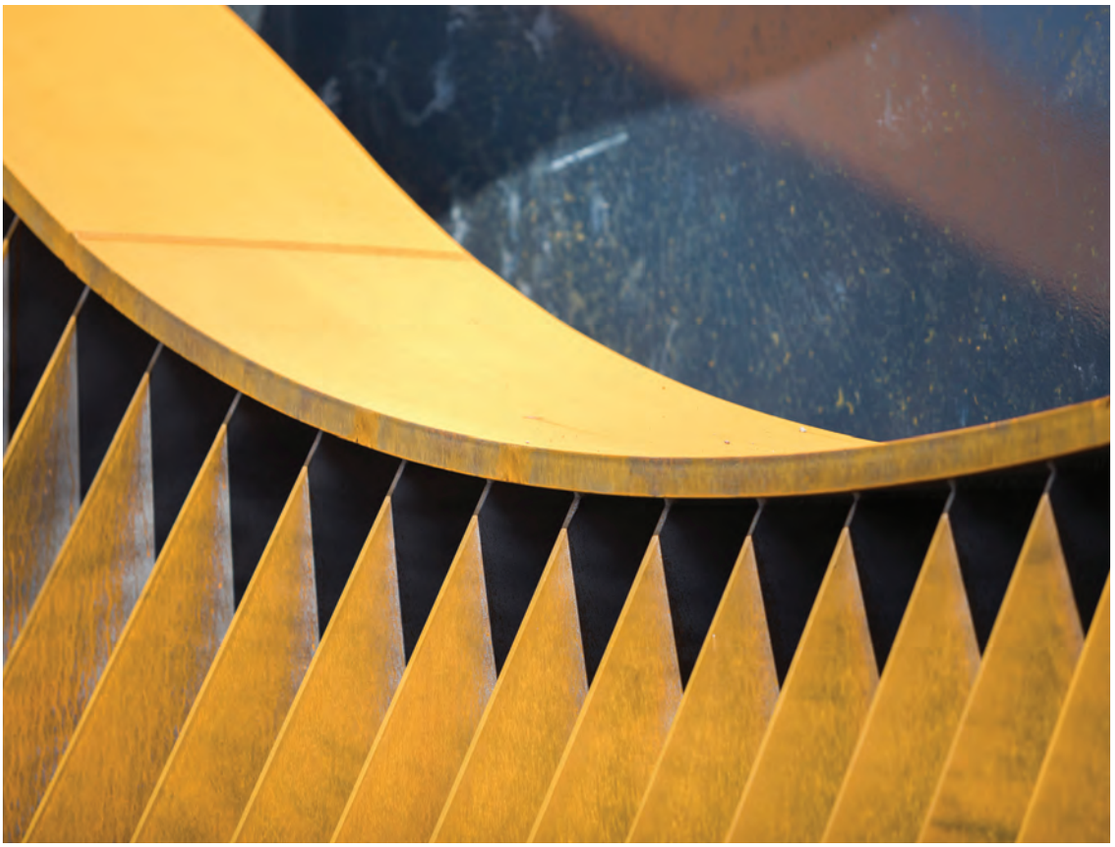


BDP/NICK CAVILLE

In this edition of Steel Intelligence, we look at the often uncelebrated contribution that well-designed infrastructure can make to the quality of the environment. As well as being a vital part of improvements to the rail network around Manchester, the cascading, continuous steel form of the Ordsall Chord (above and p46) has become a local landmark. So too has the flue tower on the Greenwich Peninsula Energy Centre (p51), which has transcended its function to become a distinctive faceted artwork by Conrad Shawcross that brings diversion and delight to motorists inching to and from the Blackwall Tunnel. We also look at the crucially important issue of protecting steel in the case of fire in a Q&A with British Constructional Steelwork Association (BCSA) fire expert David Moore (p49), who answers questions from architects on topics such as intumescent coatings and the behaviour of steel in fire. Finally, BCSA director-general Sarah McCann-Bartlett reassures architects specifying steel that there would be only a low risk to supply in the event of a no-deal Brexit (p54).

Pamela Buxton, supplement editor

Sweet harmony

Two very different rail bridges read as one structure thanks to a huge, concertina-like cascade of steel

Words Pamela Buxton

PAUL KARALIUS

Close to the first ever passenger railway station at Liverpool Road in Manchester (1830) is another world first, an asymmetric network arch bridge. Spanning 89m and morphing at one end into a dramatic 'cascades' feature, the new bridge over the Irwell is the centrepiece of Ordsall Chord, a hugely complex project to improve rail connectivity in the city by linking its major stations of Piccadilly and Victoria.

This is heavy-duty infrastructure with design ambition in a context steeped in railway heritage. The steel arch and cascade ensemble form a new landmark for a former backland area between Salford and Manchester that is already changing fast – work on OMA's Factory arts centre is under way close by.

BDP has been overseeing the architectural design of Ordsall Chord since 2012, with Knight Architects making 'an outstanding contribution' to developing the detailed design and fabrication coordination of the cascades, according to BDP partner Peter Jenkins. This is the focal point of the 300m stretch of new track needed to bridge both the River Irwell and Trinity Way dual carriageway, passing within a few metres of George Stephenson's 1830 bridge, which was restored as part of the project. The two new bridges link the Chord to the historic Castlefield and Middlewood viaducts, which have both been widened.

The challenges were multiple – the logistics of building over road and river, the proximity to heritage structures, and most important of all, how to create a visually harmonious solution given the very different design structures of the two bridges.

'It needed to be something other than a standard design considering the significance of the heritage structures around it,' says Jenkins.

'Everyone involved in the project recognised that it was vital to produce something of the highest quality possible,' says Brian Duguid, lead structural engineer at the Aecom-Mott MacDonald joint venture undertaking the project.

He says steel structures were inevitable given the scale of the single span over the River Irwell and the complex site geometries. Various options were considered, with an arch solution most suitable for the stretch over the Irwell and a twin girder bridge supported on four concrete piers the best and most economical solution for the 100m-long Trinity Way bridge. Between the two is the cascades feature (see overleaf), which acts as a unifying device to deliver a clear visual identity. The result is that the two very different bridges appear as one continuous steel form even though they don't completely align, with the closed box form of the arch ribs widening and changing into the open ribbed I-girder form of the Trinity Way bridge seemingly in one fluid form.

'It was quite an achievement to get a big curve to join with the horizontal line,' says Jenkins.

Teamwork paid off

The key to the project's success, according to Duguid, was the early collaborative involvement of steelwork contractor Severfield, whose staff were embedded in the design team for the creation of the BIM Level 2 model. This minimised the need for later reworking ahead of fabrication.

'We recognised that steelwork was a very critical part of the project,' he says. 'We brought Severfield in at the design and modelling stage, with a number of their technicians working in our offices with our engineers to produce a much better design model. This saved time and money and gave the fabricators more trustworthy information, and it's a crying shame we don't do it more often as an industry.'

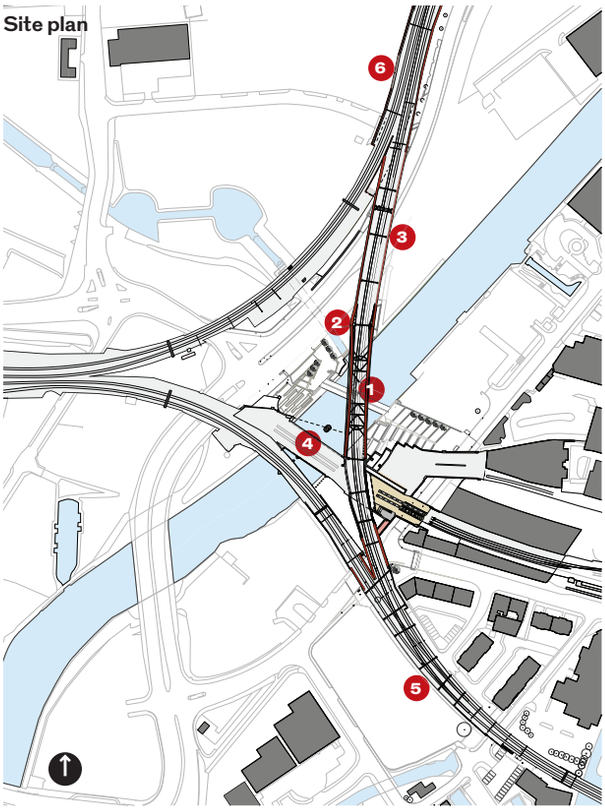
'The architects and engineers all listened to what we were saying and trusted us, and together we came up with a solution that ticked every box,' says Severfield senior project manager Jarrod Hulme.

While a bowstring arch was initially proposed, a more complex network arch construction with a lattice of hangers was chosen as the more robust and efficient structure for supporting railway loads. This structural choice not only enabled the engineers to create a much flatter arch rising to 14.3m to assist with the 'cascade' transition between the two bridges but crucially, it could also deliver asymmetry. This allowed the design team to taper the two ribs of the arch from 2.5m to 0.7m in height so that the structure touches most lightly on the most sensitive part of the site, the riverside closest to the grade I listed Stephenson Bridge. On the other side, however, the bridge was wider to soften the transition to the Trinity Way road bridge. Thirdly, the shallower structure was significantly stiffer, so used far less steel than a conventional arch bridge.

Out of respect for the heritage of the

MATTHEWNICHOLPHOTOGRAPHY

Top Ordsall Chord combines an asymmetric arch bridge over the river with an I girder road bridge.
Above The concertina-like cascades create a strong visual identity for the new rail link.



BDP

1 River Irwell Crossing
2 The Cascades
3 Trinity Way Bridge
4 Stephenson's Bridge
5 Castlefield Viaduct
6 Middlewood Viaduct

surrounding context, the two ribs of the network arch are inclined inwards by 6° to minimise their visual presence and linked with K bracing. From these ribs, 46 pairs of 85mm diameter steel hangers support a composite, open section steel and concrete deck. An open section was unfeasible for the ribs due to the additional stiffening required. Instead, the ribs are hexagonal in cross section with a 'crease' line formed by welded steel plate positioned at 30% of the overall height of the section to visually divide the surface. This line is carried on through the ribs into the cascades and out onto the profile of the girder stiffeners on the Trinity Way bridge. This fold strengthens the rib sufficiently to avoid the need for welded stiffening, thus simplifying fabrication and reducing costs.

Weathered look

The use of weathering steel was an important part of the design, forming a distinctive visual language, often with concrete, common to other parts of the Ordsall Chord. Its use above live rails and the river on the arch also had maintenance benefits because of the protective patina of rust. On the arch bridge, this contrasts with the painted grey of the deck steelwork.

'It has an amazing colour and texture,' says Jenkins, adding that the rough texture avoids the flat look of a perfect finish and so complements the heritage structures in the area.

'You don't see many weathering steel bridges of this type. There are a lot of big white bridges around but we wanted it to be special to the site.'

The construction sequence was highly complex, involving horizontal assembly of the arch on temporary platforms on the riverbank before it was lifted into place. This enabled prefabricated segments of arch ribs to be welded together on the ground, rather than at height. The network arch structure design added extra complexities, with 136 stressing stages required to 'tune' the hangers.

'The finished structure is very efficient and elegant but the construction stages were highly complex,' says Duguid.

Now operational, Ordsall Chord recently won a Structural Steel Design Award.

'Severfield were absolutely outstanding, and were very engaged with making the architecture vision become reality,' says BDP's Jenkins. ●

MATTHEWNICHOLPHOTOGRAPHY

Above The cascade form enables a seamless transition between the river and the road bridge.

Credits
Client Network Rail
Architect BDP
Specialist designer Knight Architects
Structural engineer AECOM Mott MacDonald JV
Concept structural engineer WSP Parsons Brinkerhoff (now WSP)
Main contractor Skanska BAM JV
Steelwork contractor Severfield

MAKING OF THE CASCADES

This 16m linking device rather steals the show of the new bridges, dipping down from the ribs of the network arch on both sides in a double concertina effect before rising to form the girders of the Trinity Way bridge. In doing so, each gradually increases in height from 2.5m to 2.8m to match the dimensions of the Trinity Way girders. As they dip down to form the concertina, the closed box form of the ribs changes into an open girder with vertical stiffeners that begin densely just 80mm apart and widen through the concertina to 800mm to match those of the Trinity Way Bridge. According to Knight Architects associate Tom Osborne, this dealt with the two bridges being in different planes as well as creating a continuous weathering steel form from the two contrasting structures.

'The job of the cascades is not only to blend the alignments of the two bridges but also the closed structure of the arch with the open structure of the viaduct,' he says. 'The challenge was rationalising something that in a visualisation looks quite simple into the 3D geometries of the fabricated steelwork while retaining the original design intent.'

The original design concept involved a twisted steel web but Severfield used Tekla to achieve the same visual effect with a vertical web through careful positioning of the stiffeners. During the design process, the steelwork contractor was also able to cut the weight of the steel in the cascades by one third, by reducing the thickness of the stiffeners as the spacing decreased.

The two sides of the cascades were manufactured in single pieces by Severfield in its Bolton premises and transported whole to the site, where they were trimmed to fit, installed on bearings and positioned hard up to the bridges on either end.

'The cascades are integral to both the visual continuity of the structures and identity of the scheme,' says Osborne.

Facts and fire

In the wake of the Grenfell tragedy, fire safety is under greater scrutiny than ever before. We invited questions from architects on steel and fire performance and put them to expert David Moore, director of engineering at the British Constructional Steelwork Association

Words Pamela Buxton
Illustration Toby Morison

Q What options are available for protective fire coatings for structural, exposed external steel in relation to appearance and performance?
Tom Osborne, Knight Architects

A Unprotected steel has an inherent fire resistance period of up to 15 minutes according to fire protection calculations, meaning that structural steelwork maintains 60% of its strength at room temperature. Fire protection calculations are based on limiting temperatures of 550°C where steelwork is exposed on all sides and 620°C where it is exposed on three sides.

To increase fire resistance using passive protection the options are reactive (intumescent film coatings) and non-reactive (boards, sprays or flexible blankets).

There are two main types or intumescent protection – acrylic based and epoxy based. These generally consist of a primer, basecoat and sealer coat and can be applied either on or off-site.

Acrylic based intumescent performs very well in wet (outside) environments while acrylic performs well in dry (internal) environments. Because of the thinness of the coatings, they are particularly suitable for applications on complex shapes.

Intumescent coatings are the most widely used passive protection, accounting for around 70-75% of applications. They typically meet requirements for fire resistance of 30, 60 and 90 minutes, and sometimes as much as 120 minutes.

Encasing structural steelwork with fire protection boards is another option that gives a regular, boxed, appearance. Although mainly used internally, some board products can be used in limited external conditions. There are two main types – lightweight and heavyweight.

Lightweight boards tend to be cheaper and are more suitable for non-visible applications. Heavyweight boards are more suitable for achieving a good decorative finish since they are better able to accept renders and decorative cladding.

Sprays can be the cheapest approach for large buildings that require high periods of fire resistance. But as the finish can be quite crude, they are unsuitable for aesthetic applications.

Whatever the method of fire protection, a fire safety engineering approach can produce cost savings by enabling a more targeted strategy that puts the fire protection exactly where it is needed. This integrated approach involves the use of codes to design fire protection for individual elements of construction.

Q Is the performance of intumescent coatings on structural steelwork affected when the steelwork is behind additional linings such as walls and ceiling that slow the rate of temperature change?
Brian Heron, Ian Ritchie Architects

A Intumescent coatings intumesce at 200°C, forming a protective char that expands to form a far thicker layer that insulates the steel from the fire. If the steelwork is shielded by other linings, they will still be able to intumesce to give protection but this process will take longer as the steel remains cooler for longer before reaching the point of intumescence.

It is important that a sufficient gap around the structure is left to enable this expansion to take place, depending on the fire resistance period and the type of coating.

Q How predictably do steel structures react in the case of a fire?
Tszwai So, Spheron Architects

A There is this myth that steel is unpredictable in fire –a properly designed and protected steel-framed building will perform extremely well in a fire situation.

A frequent misconception is that steel melts in fire. In fact, it softens and only melts at 1500°C; temperatures rarely get above 1000°C in building fires.

A lot of research has been done in relation to steel and fire so we know a great deal about the performance of steel, which is actually very predictable. I only know of one case where a steel-framed building has entirely collapsed because of fire and that was the World Trade Center Building 7, which was a very unusual situation where there were mitigating circumstances. I was involved in full-scale fire tests at BRE's Cardington site some years ago, where we set fire to an eight-storey steel-framed building and temperatures reached 1000°C. Some of the steel had no fire protection at all and still survived. The building was still standing after the fire.

Fire resistance is another concept that is not well understood. The fire resistance periods required for different building types and heights (see table) is not the length of time that a structure will survive in a real fire. Instead, it refers to how long it would take an element to collapse in a standard fire test within a furnace where the temperature rises quickly and increases indefinitely. This test is different from a real fire situation, where the fire may decay and/or move once the combustible material has been consumed.

Q Following Grenfell, do you believe that more comprehensive and wide-ranging legislation is necessary to coordinate all elements of a design (integrating cladding and structure) to ensure that buildings are safe?
Peter Jenkins, BDP

A A building should have a reasonable provision of fire-resistance – the issue is not so much how we go about meeting that demand in the design and specification but how to ensure that the right fire protection specification for the building gets through into the construction on site, and that this is supervised and checked. As I understand it, the Hackitt review is proposing an independent authority to approve designs for certain residential buildings, which will have to demonstrate that they can satisfy fire safety requirements before they are built. It will also put some legal responsibility on 'duty-holders' such as the client, principle designer, contractor and some of the subcontractors. I think this would be a good thing.

From the steel perspective, BCSA has the opportunity to promote use of the National Structural Steelwork Specification as best practice for fire protection. We're planning to update clauses regarding the use of intumescent paint to make sure that these are specified correctly and can be competently delivered on site.

More information: www.steelconstruction.info/Fire_and_steel_construction

FIRE RESISTANCE LEGISLATION AND STANDARDS

Building Regulations set out the functional requirements for ensuring that buildings are safe and healthy but not, for example, how the need to maintain stability for a 'reasonable' period in the event of a fire can be achieved. As regulations are devolved, these requirements differ between England, Wales, Northern Ireland and Scotland.

Approved Document B is guidance issued by each devolved UK government setting out structural fire resistance requirements to meet designers' obligations on structural stability. Fire protection requirements vary from 30-120 minutes according to building type and height (see table below).

BS 9999 – Fire Safety in the design, management and use of buildings is a code of practice aimed at providing a more flexible approach to fire safety design in order to safeguard the lives of building occupants and firefighters. Unlike the more prescriptive Approved Document B approach, this can be tailored according to an understanding of the causes of risk to life and how these can be mitigated. This can result in reduced fire resistance periods.

FIRE RESISTANCE REQUIREMENTS FOR COMMON BUILDING TYPES, IN APPROVED DOCUMENT B AND BS 9999

Building description	Approved Document B (mins)	BS 9999 without sprinkler system (mins)	BS9999 with sprinkler system (mins)
Open plan office building, two storeys <1000m² ground floor area	30	15	15
Department store, three storeys	60	45	30
Department store 11-18m in height	60	75	60
Storage building, medium risk, four storeys	90	90	60
Leisure centre, two storeys	60	30	30

Above The flue tower of the Greenwich Peninsula Energy Centre has been utilised for The Optic Clock, an artwork by Conrad Shawcross.

Towering achievement

Intense collaboration between architect, artist, engineer and steelwork contractor has given south east London a dramatic new landmark

Words Pamela Buxton **Photographs** Mark Hadden

Why settle for just a chimney when you could turn it into a piece of art? That was the thinking behind the strikingly faceted flue tower of the Greenwich Peninsula Energy Centre, which will be a familiar sight to anyone used to queuing on the adjacent approach road to the Blackwall Tunnel.

Recently awarded a Commendation in the Structural Steel Design Awards, the project began 10 years ago when architect CF Møller won a competition for the design of a 3,000m² low carbon energy centre to serve the planned regeneration of Greenwich Peninsula in south east London. With a mission to demystify the energy generating process, the brief included a visitor centre.

Initially, the concept was for a plinth form to contain the energy centre with a thin blade tower for the flue stack according to architect Brian Cody of CF Møller.

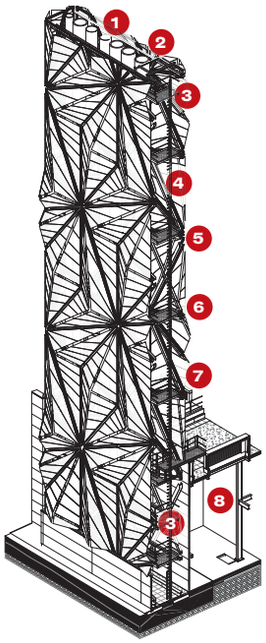
'It was intended to be a striking gateway building as you approach Greenwich Peninsula. Originally the concept was for a much flatter surfaced tower design exploring ideas about translucency and playing with light,' he says.

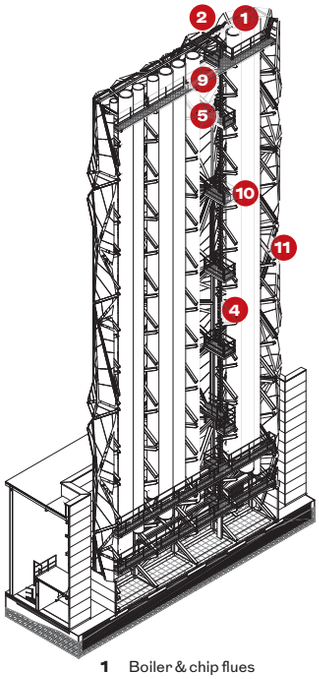
The concept of a podium and blade was kept when the client decided to integrate artwork into the chimney and appointed artist Conrad Shawcross. The piece, entitled The Optic Clock, was realised after intense collaboration with CF Møller, engineer Price & Myers and steelwork contractor Billington Structures, who created the tower from 345 tonnes of galvanized steel and supplied 200 tonnes of steelwork for the structure of the energy centre.

'It could have been quite a standard industrial energy centre but developer Knight Dragon chose to embrace an artistic contribution to the building,' Cody says. 'The idea was to create a very distinctive plinth building in a streamlined, satin-finished black box to contrast with the flue tower, which becomes a 3D sculptural form as it emerges from the plinth, setting up a tension between the two.'

Steel was the natural choice for the

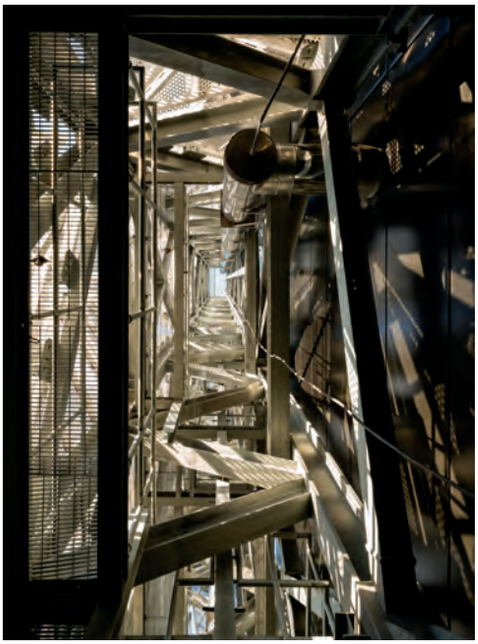
Flue tower assembly

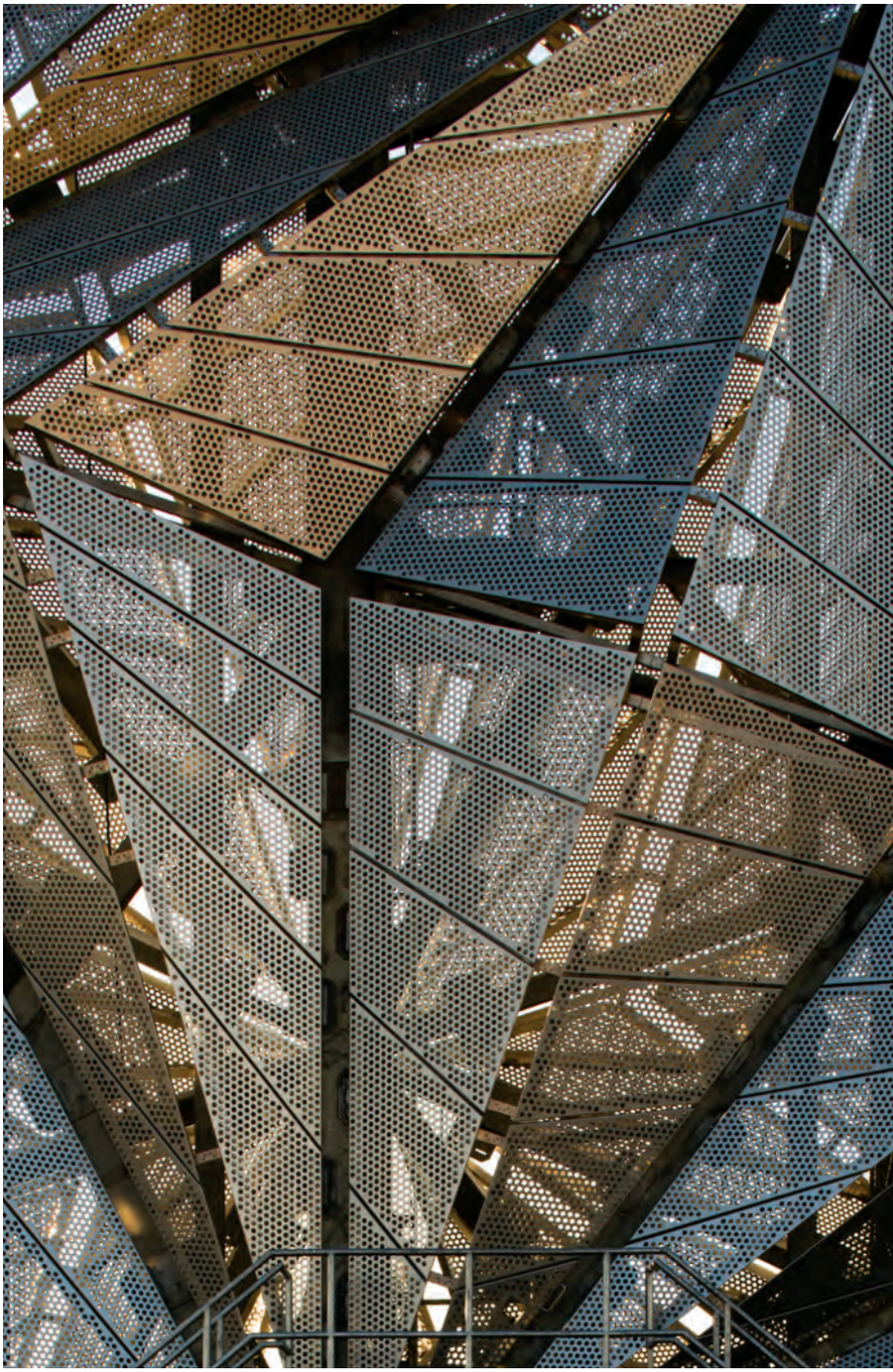




OF MØLLER

1 Boiler & chip flues
2 Gantry crane & track
3 Full width access platform
4 Climbing protection system
5 Intermediate landings
6 Primary frame
7 Cladding
8 Plant room
9 Access hatch each structural bay
10 Access hatch each landing
11 Luminaire installed on bracing members





structure of both the 90m long x 25m wide plinth and the 49m high tower of the energy centre, enabling the creation of 20m spans.

'A steel-framed building allows for flexibility. The number of combined heat and power (CHP) and gas boilers will grow over the years as the peninsula is developed. So we needed large column-free spaces in the plinth,' Cody says.

'The tower required a very thin structure so steel was an obvious choice that enabled us to achieve a thin edge, and allowed for the tower to be perforated to deal with the wind loading.'

On the south side of the building, the architects have included a large expanse of glazing. This not only facilitates views into the energy centre but will maximise natural light in anticipation of future adjacent developments which are planned to rise to the height of the chimney flue.

The tower gives the illusion of cantilevering out from the plinth at the 3m mark, although the structure actually descends to ground level where it is secured with metre-long bolts. But because its base is encased in the same black cladding as the rest of the centre it disappears into it when viewed from afar.

For the structural design, a BRE wind tunnel study of a 1:200 scale replica was undertaken to measure the effects of a 1 in 50 year storm event, says structural

engineer Amanda Constantinesco of Price & Myers.

'The results of this analysis were used to inform the design, cladding porosity, and form to reduce the effects of vortex shedding and fatigue during its 50-year design life,' she says. 'Acting as a braced cantilever, the tower is formed from five 49m tall latticed girders, connected by a series of raking beams and bracing. The structure of the tower was designed not only to perform the function of a flue tower, but also provide support to the artist-designed cladding system.'

Artist Conrad Shawcross and his team worked with CF Møller's brief for a 3.15m deep tower capable of accommodating 10 flues in a single row. The resulting artwork creates a distinctive moiré effect of faceted, anodised aluminium cladding panels over the complex structure of the steel tower. The angled facades are designed to catch the light so that the appearance varies in different light conditions. One of the trickiest elements was creating a hidden door within the artwork to provide maintenance access to the tower.

'We relied on the expertise of Price & Myers to develop a solution in terms of sizing of the steel as well as Billington's experience in producing ladder girders,' Cody says.

'We had anticipated the biggest challenge being how we maintained our design concept through to delivery with addition of the artistic intervention. But we found that there was a harmonious common ground between architect, artist, engineer and steelwork contractor towards creating a sustainable and well-crafted building.'

Eventually, some 15,000 homes and workspaces will be powered by the Energy Centre, which is the largest new build residential heat network in Europe.

'Over the next 10-15 years the area immediately around it will develop and it will be interesting to see how it sits within that,' Cody says. ●

Far left View up the flue tower showing the supporting steelwork structure.
Left Detail of faceted cladding, supported on steel bracing, carefully planned to minimise visual intrusion into the artwork.
Right The ladder girders that create the structure for the flue tower during construction.

CF MØLLER

Credits
Client Knight Dragon
Architect CF Møller
Artist Conrad Shawcross RA
Structural engineer Price & Myers
Steelwork contractor Billington Structures Ltd
Main contractor Kier Group

THE FLUE TOWER

The 49m high tower is a self-supporting structure independent of that of the energy centre. This avoids any effects arising from fatigue or cyclic loading transferring to the main building. Containing four flues with capacity for up to 10, it is created from five ladder girders spaced 4.5m apart with diagonal bracing elements clad in aluminium. These were constructed in three sections varying from 13.2m to 20.1m.

'Our intention from the outset was to maximise their size to limit the work on site and more importantly undertake as much of the work as possible within our factory where quality is much easier to control,' says Billington principal engineer (design & build) Craig Clayton. Weighing up to 23 tonnes each, these sections were galvanised at Worksop Galvanizing, and were according to the steelwork contractor the largest frames to be hot-dip galvanised in the country.

One of the major challenges was to retain a sense of lightness by aligning the diagonal bracing with the joint lines in the triangular cladding panels to both support the cladding and minimise the visual impact of the supporting structure. At node positions up to eight diagonal members intersected with the vertical ladder column through connection details developed by Billington.

'This required many different, irregular and multi-member connections, all with unique combinations of connection forces derived from the dynamic structural and fatigue analyses based on wind loading assessed during the wind tunnel testing,' says engineer Amanda Constantinesco of Price & Myers.

'Close coordination with the cladding subcontractor was fundamental to achieving the correct setting out and detail for the hundreds of fixing brackets. Each was fabricated as part of the steel frame with sufficient tolerance to allow connection and adjustment of the cladding panels throughout the build.'

Each ladder girder was brought to site in three pieces and connected on site.

Steel stocks healthy

Sarah McCann-Bartlett, director-general of the British Constructional Steelwork Association, on how a no-deal Brexit poses little risk to the UK's structural steel supply

With the continued lack of clarity to the ongoing Brexit negotiations, the BCSA has carried out its own risk assessment of what a no-deal Brexit could mean for the UK's structural steelwork supply.

The findings, reassuring for all architects and engineers looking to specify structural steel, are that the risk to supply is low. This conclusion has been reached following a risk analysis undertaken by the BCSA and its member companies that looked at the supply of materials and products, the structure of the workforce, stocking trends, and tariffs under World Trade Organization (WTO) rules.

Crucially, 98% of the UK's structural steelwork is fabricated here, which means a no-deal Brexit poses no risk to structural steelwork manufacturing. The key input to this process is of course steel, and the risk to the availability and delivery of hot rolled structural sections is low. This is largely due to a joined-up supply chain that includes a UK producer, European producers, and a well-established network of distributors and stockholders who keep sufficient levels of stock to support just-in-time deliveries to steelwork contractors.

UK steelmakers currently source their raw materials outside the EU and purchase forward due to long shipping times. A no-deal would have no effect on this trade and any customs delays could be easily absorbed. And if UK-EU trade moved to WTO rules under a no-deal scenario, import duties on raw steel would remain at 0%.

In addition, there is very little risk to labour availability. An average of only 7% of employees working for UK steelwork contractors are from the EU. These form part of a permanent, stable and full-time workforce fabricating structural steelwork offsite in manufacturing facilities and they are employed on the same terms and conditions as UK employees.

Plant and equipment are a high value, long-term purchase with orders for new plant and machinery made many months in advance. Machinery supplies are expected to be unaffected by a no-deal Brexit. Structural fasteners and bolts used by steelwork contractors in the UK are sourced globally and UK suppliers already have to hold a sufficient stock of product in their UK warehouses. The risk to supply is low.

Currency fluctuations would impact on both input and output pricing since around 55% of raw structural steel is sourced outside the UK, but this is only one of many factors that has an impact on steel pricing models at any one point in time.

A KPMG study shows UK structural steelwork capacity to be between 1.142-1.343 million tonnes in 2019. Since Construction Markets is currently forecasting constructional steelwork demand of 0.93 million tonnes in 2019, there is sufficient latent capacity in the sector to meet projected demand.

In conclusion, Brexit poses no risk to the UK's structural steelwork supply. ●

Full risk analysis: www.steelconstruction.org

Stocks are high: 98% of the UK's structural steelwork is fabricated here.

BARRETT STEEL

3: Culture

Architects' varied canon

The profession's ingenuity is one of its great strengths, perhaps best seen in its critical conservation work

HOLLY EXLEY

Hugh Pearman Editor

Architects are quite possibly the saintliest professionals on earth because, generally speaking, they not only take adverse criticism on the chin but operate in such a way as to anticipate it, which means that they are equipped to work round it. It's rare to find an architect who doesn't have a fall-back position when it comes to modifying their project: indeed, presenting a range of options at the outset is the norm, itself a willing admission that there are nearly always several different ways to tackle a brief. We all admire and envy those prodigiously talented architects with understanding clients who can produce a seemingly inevitable scheme out of the starting blocks and stick with it from first sketch right through to opening date with minimal changes but, let's be honest, those are rare. There are as many different kinds of architect as there are styles of architecture.

Earlier in this issue (from p34) we present our annual round-up of the President's Medals, something that the RIBA has done since 1836 and that we picked up on our foundation in 1893. It's always interesting to speculate on what will happen next for these winners from around the world: as you would expect, many go on to be successful, some even famous practitioners (in recent times Norman Foster, David Adjaye and Ole Scheeren among them) while some find their vocation in academia or even outside architecture. In the case of Kibwe Tavares, Silver Medal winner in 2011, his talents led from the Bartlett to film direction and production, a no less challenging and rewarding business. Architecture provides transferable skills.

> There are as many different kinds of architect as there are styles of architecture

I have long been fascinated by what is a big area of work for the profession which I feel isn't celebrated enough: conservation practice, both on its own account and as part of developments also involving conversion and new-build. Sometimes this sees two architects with different skill sets working together, as famously Julian Harrap and David Chipperfield often do, but very often solo. The subject of our profile this month, Camilla Finlay of Acanthus Clews (p62), deals with the fundamentals: the business of being surveyor to the fabric of two ancient cathedrals, Worcester and Exeter. This careful, delicate work can of course include newbuild – witness the publicly-accessible triforium and external access tower at Westminster Abbey by surveyor Ptolemy Dean with gallery by MUMA (RIBAJ July 2018), or the 2013 Stirling Prize winning Astley Castle by Witherford Watson Mann.

Up and down the country, architects work on these and much humbler places of worship, and on historic buildings generally. Arguably this is the most important work that any architect can do because a nation's character is largely defined by its built heritage. Architects as stewards of the national character? That is possibly the saintliest occupation of all. ●

ONLY ON RIBAJ.COM

We are shown how much care and consideration for the residents went into the design of the building from the green space in the middle to the way it was blocked from the noise of the roads

Charlotte Collins is moved by a documentary on Robin Hood Gardens: ribaj.com/robinhoodgardens

Nicholas Cullinan appeared fixated on Fobert's ability to recontextualise and draw out the building's character and detail

Corinna Dean at the Frieze Art & Architecture Conference: ribaj.com/frieze2018

Along the wrong lines

Taiwan's cultural diplomacy is looking a bit hollow

Oliver Wainwright

An elaborately costumed teenager poses for a photo on a green hillock, while her friend gets changed behind a sheet, taking cover in the gap between two bulging white funnels. The rooftop of Toyo Ito's National Theatre in the Taiwanese city of Taichung has become a surreal playground for fashion shoots and music videos since it opened in 2016, a Teletubby landscape of green mounds punctuated by the flaring flues of his concrete caves below.

The building heaves with life on a weekday afternoon, not with punters for the five-hour ordeal of Wagner's Siegfried, but with shoppers, selfie-takers and hundreds who have come to wonder at the cavernous labyrinth. It looks nothing like the pristine white world of seamless sloping walls merging into floors that was published when it opened. It is crammed full of retail stands and dining opportunities, office cubicles and pot-plants, along with an arsenal of ducts and pipes retrospectively bolted on to the ceilings and walls to make it all work.

There are few more glaring examples of a programme squeezed into an architect's abstract diagram than this $150million exercise in NURBS spline-curve modelling. Without the rectilinear hangar-like spaces an opera house actually needs, the backstage is too cramped. Its continuous coral-like form means live music in the lobby spreads through the building, so those free performances will soon end. The workspace, meanwhile, has proved to be a headache from the beginning.

The sloping floors mean we can't put our desks up against the walls, and there's no acoustic privacy at all

Below The largest performing arts centre in the world. Yoga in a cultural icon. National Kaohsiung Center for the Arts (Weiwuying), Kaohsiung, Taiwan by Mecanoo.

HOLLY EXLEY

'Our offices are awful,' says Joyce Chiou, the no-nonsense new director of the theatre. 'The ceilings are far too high, and the sloping floors mean we can't put our desks up against the walls. It's not a human-friendly environment, and there's no acoustic privacy at all.'

Designed in 2006, Ito's theatre is one of three gargantuan performing arts projects opening within a couple of years of each other in Taiwan, as part of the state's strategy of soft diplomacy. As mainland China tightens its grip on the world stage, only 17 countries now recognise Taiwan as independent – thereby disqualifying themselves from formal relations with China. As Lin Hwai-min, founder of Taiwan's acclaimed Cloud Gate contemporary dance company, puts it: 'Cultural diplomacy is one of the few channels we've got left. But if we were to build these facilities again, I'm not sure we'd make them quite so huge.'

In the southern city of Kaohsiung, Dutch architect Mecanoo has just built the largest performing arts centre in the world, a humungous building that contains an opera house, concert hall, theatre and recital hall within its £260 million shell, with 7,000 seats in total. Meanwhile, OMA is struggling to see its £133 million Taipei Performing Arts Centre completed, after its contractor went bust. Looking like a silvery zeppelin docked inside a glass cube, its multiple auditoria can be combined to make one 'super theatre' with a 100m long stage. Walking upstairs, between the two walls of its globe-like theatre, is a thrilling Piranesian experience, as flying staircases criss-cross through exposed beams and braces. One of OMA's characteristic 'public loops' will weave through the complex, providing glimpses into backstage and even punching through the offices on an escalator.

It is a handsome surfeit of cultural icons, but it's unclear whether this country of 23 million has the capacity to fill its gaping new halls. Chiou says she has struggled to sell tickets for the current season in Taichung, now the novelty of the opening has worn off, while others express doubts over the ticket prices in Kaohsiung, a gritty port city with little tradition of concert-going. Some have speculated that these curvaceous wonder-worlds will become white elephants; but, judging by the young hordes in Taichung, at least they'll be humming as backdrops for selfies. ●

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

MARKET FORCES

In true OMA style, the Taipei Performing Arts Centre was planned to be hoisted on legs above the city's gritty night market. The market was relocated in 2012 to make way for construction, but it has taken root and won't be returning. Nor do the traders want competition, so the architect's dream of dumpling-hawkers rubbing shoulders with opera-goers sadly won't come to pass.

Shun this awful policy

Misery for residents and profiteering for developers unleashed by change of use

HOLLY EXLEY

Ben Derbyshire

At this year's Civic Voice conference, one of the audience asked the panel for advice about solutions to the growing problem of transient populations in areas where homes are being converted from offices. Don't blame the people, I replied – blame the policy.

The coalition government introduced a range of change-of-use permitted development rights including conversion of commercial buildings to residential. These came into force in April 2016, unleashing a disastrous, unintended tide of profiteering by developers and misery for residents of their projects.

Government planning statistics reveal that in the year to June 2018, 5,400 applications were for changes to residential use, of which 3,700 were allowed without going through the full planning process. There is no indication of the resulting number of individual 'dwellings' but the total will be many times larger – 40-50,000 is not an unreasonable guess.

The government impact assessment for this policy predicted there would be little uptake, it would be cost neutral, it would save local authority planning department resources and that housing in unsustainable locations was unlikely. How could this assessment have been so totally wrong?

Research led by Ben Clifford from UCL shows this policy has brought a wave of extremely poor quality housing that does little other than enrich unscrupulous developers. I have seen plans with 'studio flats' of just 13.2m^2 and the UCL research reports an overall rate of just 30% meeting nationally described space standards, with no access to private or communal amenity space. Homes have been dumped in the middle of industrial estates or next to some of the busiest, most polluted roads in the country. There was direct evidence of the profitability of conversions for developers and land owners, but little sign of contribution to the public infrastructure needed for this additional housing. The consequence must surely be a heavy burden on social services and health departments, owing to the stressful circumstances in which people are being forced to live.

> We should boycott this dreadful policy, turn down commissions that involve the creation of such poor living conditions

I have no objection to purpose built co-living developments – provided they are well designed, their clientele is carefully selected, there is a management regime to support them and good facilities in the neighbourhood. But I object in principle to projects that are not subject to any sensible consideration of the human condition of their occupants and yet are enabled by this profoundly misguided and shortsighted policy.

The call to end this egregious and exploitative loophole in the planning system is one of the key asks in a new document from the RIBA Expert Advisory Group on Housing. Together with case studies of RIBA award-winning housing projects, it shows how good new housing developments can be when you combine a talented architect and a responsible and enlightened developer.

Clifford's UCL research concludes that developers' agents should provide robust advice about this, particularly if there are professional conduct and ethics implications. I would like to think that RIBA members would offer such advice based on evidence that already exists and turn down commissions that involve the creation of such poor living conditions. We should boycott it, campaign against it, and lobby with research-based evidence that will lead, ultimately, to the repeal of this dreadful policy.

The commitment shared by all five architecture institutes of the UK and the Republic of Ireland, to strive to put the public interest at the forefront of all we do, will, I hope, result in a stronger Code of Professional Conduct and Code of Practice. I look forward to the outcomes of our Ethics and Sustainable Development Commission and the Conduct Review working group, which I hope will rule out our involvement in such poor projects. ●

@ben_derbyshire president@riba.org

A HOME FOR ALL

'Nothing is too good for ordinary people' – Berthold Lubetkin, 1946. A small but perfectly formed display of material from the RIBA Collections is now on show in the RIBA gallery at the V&A. A Home for All: Six Experiments in Social Housing delves into five pioneering projects from the 20th century and one that is currently under way. The display highlights the role and philosophy of the architect behind each scheme.

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Camilla Finlay at Worcester Cathedral's east window. As surveyor to the fabric she has the keys and codes for the hidden spaces.

After a flirtation with flying Camilla Finlay happily surrendered to her fate as a member of the family firm – and the cathedral family

Words: Eleanor Young Portrait: Paul Ligas

Family affair

Under the vigorous fingers of Camilla Finlay, conservation architect and surveyor to the fabric at Worcester Cathedral, stone is crumbling into sand. There are whole chunks coming off. I haven't seen so much deliberate destruction since a tower block demolition in the nineties. She speaks with equal energy.

There are 42 cathedrals in England. Finlay, age 42, looks after two of them, this and Exeter. She is unusually young and female for a cathedral architect – her hero Jane Kennedy of Purcell was one of the first (RIBAJ March 2014) – part of a new generation who think beyond the technical and more comfortably draw together conservation and new build.

Finlay had an unorthodox route into this bastion of conservation. She tried to avoid the architecture that ran in the family by aiming for the air force and learning to fly before she could drive, and then worked closely with Terry Farrell on big ideas for place before returning to the family firm in Banbury, Oxfordshire with her architect husband and young family. Newly conservation accredited, she applied to be cathedral architect at Exeter. And got it.

You can feel she loves Exeter Cathedral from its Roman ground to the grotesquery of medieval bosses and misericord carvings. Her enthusiasm is contagious; our tour gathers cathedral visitors as we go. Worcester she treasures for its ancient monastic origins and beautifully botched measurements of the chantry chapel housing the tomb of Henry XIII's older brother Prince Arthur.

In both it is the substance of stone that draws her hands, the drip-dreared faces in a side chapel, the rubbly mortared vaults of the undercroft, the mason's marks both medieval and Victorian, the smooth weathering profile of our time holding fast over ancient, friable stress-cracked stones. She revels in work with the stonemasons of each cathedral, discussing whether to keep or replace every single stone, securing different stone from different quarries, drawing up the west face of Exeter stone by stone, period by period.

Perhaps it was visiting all those churches as a kid ('two before the beach'). Or every church in Venice, Finlay reports. Her parents ran Acanthus Clews together as two of the six directors. Her father Michael Clews looked after Coventry and Llandaff cathedrals while her mother, Heather Clews, designed social and cultural projects. Years of her father's quinquennial inspections built the relationships that secured Warwick Hall in Burford in the Cotswolds for the practice to be beautifully delivered by Finlay's ex-Mather husband David (RIBAJ June 2017).

Finlay's own work is less visible. Time and again she points to a significant piece and says, quite happily, 'but you wouldn't notice': the west window at Worcester with new stone tracery replacing the profiles that cupped the water; the holy faces on the west windows repainted on fragments of new glass and fixed over the top of the Victorian glass (neatly reversible); the removal of a failing postwar concrete roof; the stabilisation of Exeter's medieval pulpitum (screen) that had been chopped up by George Gilbert Scott (Finlay's first major project at Exeter). All these are invisible, belying the cost, time and skill put into them.

Innovation comes with a wariness of the deleterious fixes of earlier generations. If mesh dulls the stained glass can it be dispensed with in favour of CCTV? Or could a specially framed, slimmer, finer mesh be used where trees and balls pose problems – a trial in the yard, throwing stones at it, and a year installed on one window will test it. Sensors around the cathedrals feed back thousands of readings on temperature and humidity to check conditions and help model new solutions. It may be simple building physics to vent the void between secondary glass and historic stained glass to manipulate where the condensation lies but it takes coordination and sensitive judgements – which piece of leaded glass can be angled to give a top vent?

With Finlay leading you the work and its technical challenges come alive as part of the history, the future and the whole story of the cathedral. A major project, just granted Heritage Lottery Funding, is making the vaulted undercroft of Worcester habitable as teaching space. 'It is so important,' she says, fervently. But why? 'This is the real fabric of the cathedral – it predates the cathedral. And unlike its awe-inspiring grandeur you can connect with the space here. And heat it and teach in it. It is part of the factory of living of the cathedral. Lots of people struggle to cross the threshold of places of worship, even when they are invited, so it is important to have different types of spaces, for arts, heritage, worship and peace.' And yes, finding another space to store the chairs is part of the job too.

ANDY MARSHALL

Many of Finlay's interventions are invisible, belying the cost, time and skill put into them

Below left An early Acanthus Clews project for Finlay, a chapel for Mucknell Abbey.

Right Finlay crumbles the ancient stonework of Edgar Tower at Worcester Cathedral.

'As an architect it is a chance to be part of the story, part of the family,' says Finlay. One drawing of Exeter has the architects' names alongside stones of different period, hers alongside a replacement finial. Other elements to add to the drawing are the new curved corbel stones hidden up on the roof, commemorating local rugby team Exeter Chiefs, the WWI centenary repair funding with a poppy and the eagle owl that found a home on the scaffold. With such complex buildings it is hard to look beyond immediate repairs to the fabric of the cathedral itself but the environs are often studded with scheduled monuments. On Worcester's gatehouse, the Edgar Tower – where stone crumbles copiously – demonstrates the problem. A 1927 architect's letter to the Dean shows how easy it is to choose the cheaper option: £1,000 of repair work to avoid 'imminent collapse' of the decaying stone is set against 'temporary security' at £150. The Dean went for the latter. The project to repair the tower now is £500,000. Being part of the family brings familiarity and responsibility but also a sense of perspective.

PAUL LIGAS

Even as we walk around the cathedral things crop up. 'The aisle floor is sinking,' reports one of the cathedral team urgently. 'More?' asks Finlay, calmly.

Beyond the remit of quinquennial inspections and the projects they throw up is question of the building as part of its place. She describes Exeter Cathedral as the 'most important room in Devon'. In Worcester the cathedral presents a block between city and river below; historic ruins at the back could provide inviting routes and access down to the water but are littered with filthy plastic. There would be a cost but perhaps one that could be shared. 'There is potential, you have to be ready so you can take an opportunity if it comes,' says Finlay. It seems hardly possible to keep up with all these detailed, urgent and strategic issues on the day a week she devotes to Worcester, even with the back-up of her practice and surveyor assistant. Exeter is once a fortnight, leaving home at 6am, getting back around 10 after staying on for Evensong.

Her personal faith is quiet. She mentions the 'mission' of the cathedrals only once before I directly ask her about it. But it is deeply influenced by an early project at Acanthus Clews, relocating a religious community to a new, sustainable, abbey in an old farmstead near Worcester. Here a cedar shingled chapel, lined with ply, resonates with Benedictine chants. Like this, religion is beautiful for Finlay, a retreat from a busy world and a source of strength, particularly since her father and mentor died suddenly last year. Her work, and that of those like her, ensures that the precious buildings that can inspire this spiritual connectedness have a chance of getting through the next century.●

Camilla Finlay is speaking in Exeter on 6 December: www.eventbrite.co.uk

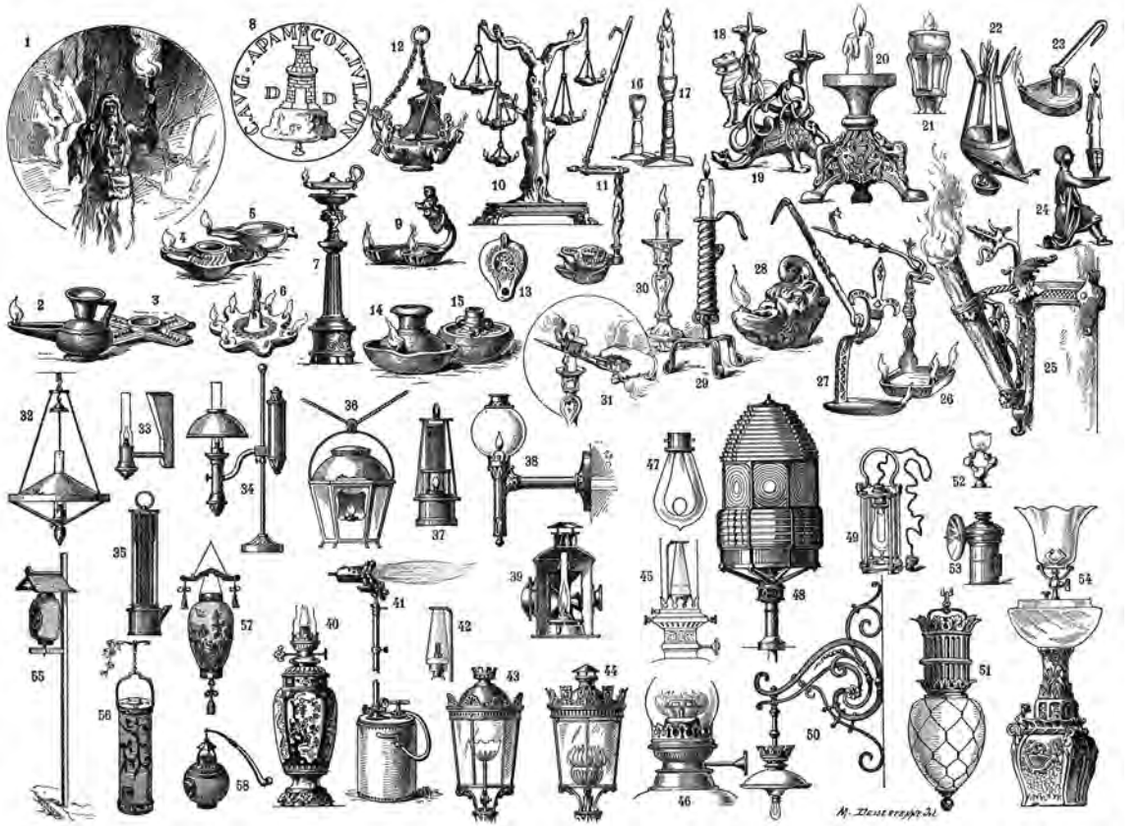
Turn on to modernity

Electricity made light available at the flick of a switch – and changed life irrevocably

Adrian Forty

'Artificial' light is usually regarded as a surrogate for 'natural' light, less good than the real thing. Or, at least that was the case until electricity, which, as Sandy Isenstadt argues in his book Electric Light, changed the whole meaning of 'illumination', literally and metaphorically – an epiphany at every flick of a switch. For the first time, light became something both instantaneous, and activatable at a distance, and it is these two features as much as the brilliance of the light source itself that transformed our perception of life, cities, and even nature.

Electric Light is about a technical invention, but it is not about the technology. Rather it explores how electricity created new spaces that were largely defined by and made up of light. The development of new types of lamp – arc-lights, tungsten, neon, fluorescent – is acknowledged but not lingered on. We don't need to know how it is produced – it is what it produces that matters. For historians, the taken-for-granted, dispersed everywhere is always harder to deal with than the occasional and the exceptional, which cling to a particular time and place. On this account, Isenstadt's book is a considerable achievement. Subtitled 'An Architectural History', it might more accurately be described as 'A Cultural History', though one which emphasises the spatial. If this is an 'architectural history', it is architecture taken in the widest – and best – sense, as what changes space, and as an agent of sensory perception and of social relations.



'Instantaneous, malleable, ubiquitous, evanescent, electric light is modernity's medium,' says Isenstadt

Architects themselves hardly make an appearance, except to remark on their early resistance to electric light, and on the slowness of their take-up of its possibilities. Instead, the book is about the very particular changes to our ways of being in the world that have been brought about by electric light, changes that are coterminous with modernity.

'Instantaneous, malleable, ubiquitous, evanescent, electric light is modernity's medium,' says Isenstadt. Modern too is electricity's ability to make spaces less particular in regard to each other: 'a well-lit workspace no longer needed to cleave to the edge of a building. Easily accessed electric light made space more fungible'. Electricity makes everywhere, if not the same, at least open to many more possible uses. This is a book about modernity; it engages with the theorists of modernity, from Marx to Adorno, to Berman. Above all, it accepts that modernity changes us all irreversibly. Perceptions of buildings, interiors, cities and roads have all been affected by electric light – and we have become accustomed to seeing space in a particular kind of way, from which there is no going back. Modernity, to borrow the title of one of Walter Benjamin's books, is a one-way street. As the electrical engineer Matthew Luckiesh, head of General Electric's Research department, speculated, electric light could modernise vision itself.

Electric Light, befitting its subject, proceeds by spotlighting certain themes: switches and remote control; night driving; factory lighting; and illuminated advertising – Times Square and its many imitators. Each

Above Progress in lighting from antiquity to 1900. 'Eclairage,' Nouveau Larousse Illustré, vol 4, Claude Augé, ed (Paris: Libraire Larousse, 1900).

of these is dealt with in terms of the way that electricity altered and shaped perception. The story told is from the early development of electric light in the 1880s up to World War II, and it is almost exclusively about the USA. These two choices, temporal and geographical, make sense in that the US was one of the principal innovators in electric lighting, and it can be argued that it is when a technology first comes into use that its effects are most marked. As a modern medium, its greatest impact was in the early 20th century, when many of modernity's more transformative effects were most abruptly felt. Furthermore, Americans seem to have been exceptionally assiduous in measuring and monitoring the effects of electric light on human life. Whether other countries would throw up quite the same abundance of research on electric light as Isenstadt has found there is worth considering. American science – and cod-science's – fascination with electric light may be to do with pervasiveness of scientific management, and the desire to quantify every aspect of human labour. Research into factory lighting, initially undertaken to improve productivity, overflowed into the measurement of light's effects in every other aspect of life.

Despite the richness of the evidence about lighting from early 20th century America, the exclusive attention to the country, and to the years before 1945, does skew the story. In the American account of electric light, productivity and commercial gain surface as the two dominant themes. On one hand, lighting in the workplace and heightened attention were means to make workers more efficient; on the other, the spectacle of illuminated advertising in towns and cities stimulated consumption. But if attention were shifted to Europe at the same period, other considerations might take their place. Isenstadt does not write about the floodlighting of monuments and historic buildings, yet it was a feature of European cities from early on – the Eiffel Tower, the Tower of London, and many other monuments were floodlit for reasons unrelated to productivity or commercial gain. Fairs, like the 1929 Barcelona International Exposition, were designed primarily for their nighttime, illuminated effect, and although there was a precedent for this in the 1893 Chicago World's Fair, the sophistication of the lighting effects went far beyond the in-your-face spectacle of Times Square. In cities that already regarded themselves as 'Works of Art', electric illumination recast their public spaces and monuments as a night-time experience for their citizens' benefit. Or, to take a more sinister example, Speer's dramatic lighting at the 1936 Nuremburg rally, the 'cathedral of light', was certainly not directed at either productivity or commerce.

Above 'Electric Light's Golden Jubilee' commemorative two-cent stamp, issued in 1929 by the US Post Office, to celebrate the 50th anniversary of Thomas Edison's demonstration of the incandescent light bulb.

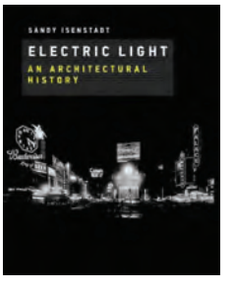
The moment one is most aware of what a technology does is the moment when one is deprived of it. This is as true of electric light as of any other technology, and Isenstadt's final chapter on World War II blackouts is vital to the story. People had to learn again to find their way in the dark: 'blackouts revealed the underside of electric light'. Freud had written about the disorientating effect of stumbling about a darkened room looking for the light switch, but now this experience was translated to an urban scale. But it is in this important, and original, chapter that the restriction to America, and pre-1945, become most apparent. Urban blackouts in the US were never complete, and more of a token for the purpose of creating citizen solidarity on the home front; in Europe on the other hand, they were total, and a matter of life or death. Europeans' scotopic experiences would be a richer story – though, characteristically, it was in America that there was most research into the effects of blackouts. Likewise, the 1945 cut-off date excludes the great power cuts that are in people's living memory, like the 1977 New York power cut that left nine million without electricity for two days: everyone who lived through that had a story to tell.

What would a longer, more geographically diverse history of electric light tell us? More of the same, one suspects, for the most obvious feature must be brighter lamps, LEDs, more and more lumens, and the great artificial suns on slender stalks that illuminate goodsyards, container terminals, and sometimes entire towns. But then there is Las Vegas, not just an extension of Times Square, but a city of lights made to be seen from a moving car, rather than by a stationary or slow-moving pedestrian. Where the English writer Arnold Bennett suffered linguistic paralysis on seeing Times Square – 'These sky signs annihilated argument… "You must not expect me to talk"' – Las Vegas has had the very opposite effect on its countless visitors. ●

Adrian Forty is professor emeritus at the Bartlett School of Architecture, UCL, and author of 'Words and Buildings' and 'Concrete and Culture'.

The moment one is most aware of what a technology does is when one is deprived of it. Isenstadt's final chapter on World War II blackouts is vital to the story

Electric Light, An Architectural History, Sandy Isenstadt, MIT Press, 304pp, £35



Richard Horden 1944 – 2018

Architect, designer, champion of quality and lover of the Swiss; best known for the Skihaus and listed 'Wildwood'

Richard and I recently discussed that his untimely departure was not on the script when I met him 30 years ago. I was 23 when I started working with him in 1989. I had seen an article about him in the Architectural Review that May. On the cover were the words 'Up and Coming in England'. I immediately rode by bicycle over to his studio on Golden Square and asked for a job. I was employed as the most junior member of staff.

It has been an amazing 29 years, he sharing his life and making mine. Having twice left, I rejoined Richard when he became a professor at the TU Munich. We met Stephen Cherry in 1999 and together decided to start HCLA (Horden Cherry Lee Architects) as partners.

From the AA Richard worked from 1975 at Foster Associates before working for Farrell, Grimshaw and Spence and Webster. He set up his own firm in 1985. He is perhaps best known for his tiny 'Skihaus' portable Alpine hut positioned by helicopter. But early on he came second in the controversial 1980s Grand Buildings competition on Trafalgar Square while other projects included Eland House in Westminster, the Queen's Stand at Epsom racecourse, and the Chilterns factory for Ercol furniture.

In February this year Richard was diagnosed with lung cancer caused by asbestos. His daughter Poppy called right away to tell me what was happening and when I arrived in Poole Richard looked very poorly. He said: 'Billie, it's the architecture that is killing me.' The next day Richard was moved to Forest Holme Hospice. The improved environment, and his room with balanced light, air and the sound of water, lifted his spirits. His condition suddenly worsened in September and he died in hospital on 5 October.

Richard practised as an architect, designer, champion of quality and lover of the Swiss. He made a beach buggy when he was younger, and once stole the girlfriend of Tony Blackburn. Richard talked about how we are all here for such a small part of time, and how lucky he felt to have been able to touch our earth, making small contributions to humanity and a better environment. He was modest – like Wildwood, the house he designed for his parents Peter and Iren in Poole. Now listed, the family home is a national treasure. He also designed the Yacht House, self-built by his sister Char in the evenings and at weekends.

Together we designed a tower that turned in the wind which became part of the Glasgow Science Centre. We stayed in the Skihaus in the mountains above Zermatt. He loved designing and building houses, factories and towers from squares and diamonds – always making sure everything had something to do with 26, the golden section proportion or the colour '9002' (Swiss silver grey).

My daughter Mei said: 'It must be like losing your brother, he taught you everything.' She is right.

Above all he showed us how to be brave, positive and fight for quality, most critically over the past few weeks.

His wife Kathy died 20 years ago following a riding accident. He is survived by his children Poppy and Christian, and by his partner Rita Kaga. ●

Billie Lee

IN MEMORIAM

MASON DEREK LEWIS
ELECTED 1948, BIRMINGHAM

MICHAEL HARRY MORGAN
ELECTED 1950, LIMASSOL

JOHN ROLAND BISHOP
ELECTED 1962, ESSEX

ROBERT GERALD CLARK
HUDDLESTON
ELECTED 1962, BRISTOL

ANTHONY JOHN HEALEY
ELECTED 1966, NORTHAMPTON

ROY JAMES MURPHY
ELECTED 1966, LONDON

MICHAEL CHARLES HOLYER
ELECTED 1970, BUCKINGHAMSHIRE

LOUIS TAN JIEW CHENG
ELECTED 1976, SINGAPORE

DAVID MILES MYRES
ELECTED 1998, WEST SUSSEX

LESLIE ROBERT BOVINGDON
ELECTED 1954, NORTHAMPTON

To inform the RIBA of the death of a member, please email membership.services@riba.org with details of next of kin

RIBA J125 YEARS

Our last birthday archive sees highs and lows from the millennium to the Mack – and Prince Charles is back

Above The Glasgow School of Art was declared best building of 175 years in 2009. Then it succumbed to fire twice, in 2014 and 2018.

GETTY IMAGES

Hugh Pearman

Our year-long trawl through the RIBAJ archives to mark this magazine's 125th anniversary concludes here, in the early 21st century, with an account of another big birthday: the RIBA's 175th. The Millennium has come and gone, with all those big Lottery-funded projects that for a while seemed to dominate all popular coverage. Some were very successful, such as Grimshaw's Eden Project in Cornwall. Others flopped, most notably another of the Millennium Commissions 'landmark projects' involving reclamation of industrial sites, the Earth Centre outside Doncaster, dedicated to sustainability. This never got to build its intended centrepiece, the 'Ark' by Future Systems, a shallow double dome like a huge pair of compound insect eyes which remains one of the great unbuilt projects of the period. Lacking this key attraction, the expected two million visitors a year failed to materialise and it closed its doors in 2004.

Architecture returned to 'normal' but 'normal' was then severely disrupted by the financial crash of 2008, nicely in time for the RIBA's own 175th anniversary year of 2009. In the spirit of reconciliation, president Sunand Prasad decided to invite back the man who had lobbed a bomb into their 150th celebrations in 1984: Prince Charles, who this time also wanted to tackled sustainability and climate change. This he did, in a speech in which he warned that 'we have less than 100 months to save the planet'. Reviewing the speech Aubrey Meyer, director of the Global Commons Institute, was dismissive of the fact that Charles made no mention of the 'contraction and convergence' methodology to halt the rise of atmospheric CO_2 – which Meyer championed and which the RIBA was signed up to. 'Without an effective deal on climate change, Chelsea Barracks ends up under water,' said Meyer, referring to the latest project that Charles had controversially intervened on. 'No royal intervention on style or anything else can afford to ignore the political imperative of effective climate change mitigation.'

> In the spirit of reconciliation, president Sunand Prasad invited back Prince Charles

Meanwhile the RIBA Journal decided to mark the anniversary of the Institute by running a 'Stirling of Stirlings' with the aim of determining the best building of the past 175 years. We ran a public vote which whittled down a longlist of 49 buildings to seven: the Crystal Palace (1851, by Paxton and Fox), London St Pancras Station (1883, by Barlow, Ordish and Scott), Glasgow School of Art (1908, Charles Rennie Mackintosh), London Underground Stations (from 1928 by Charles Holden), the Royal Festival Hall (1951, Matthew, Martin and Moro), the Pompidou Centre in Paris (Piano and Rogers, 1976) and that Eden Project of 2001 by Grimshaw.

The winner? Both the public and our panel of judges agreed: it had to be Mackintosh's Glasgow School of Art. In the public vote the Pompidou Centre came second, St Pancras third, Eden fourth, Crystal Palace fifth.

In the light of the double fire tragedy that was later to befall the Mack, let's remember what judge Dan Cruickshank said of it then: 'A tour de force that is brilliantly of its site, with a robustness and excitement where it changes volume and adapts to the steeply sloping landscape, yet with incredible fitness to the interior layout and detailing.'

Sorry about the conflagrations, Toshie. But it WILL return.

Exchange

Shapely or shapeist

A good question posed at the start of Hugh Pearman's review of Kengo Kuma's Dundee building (RIBAJ October 2018, p32): 'Why all the strenuous shapeism?'

The simple answer is that Kuma disregarded the magnificent site and opted for an egoistic solution void of all that architecture should be: contextual, sympathetic and memorable. What will Dundee do now? A question for Kuma to answer.

Antoine Raffoul, RDA Architects
Santa Marinella, Italy

Fees for the job

I read with interest the feature on fees in the November issue of the RIBAJ ('Rates and fees diverge', p57), in particular the last paragraph regarding the hourly rates charged by sole principals.

I am one of those benighted sole principals who charge no more than £63 per hour, despite my now considerable portfolio of 'clever, elegant and successful' projects. However, as the work I undertake is generally for domestic clients, I am in direct competition with the part-qualified. I would like nothing more than to raise my hourly rate, but, if I did, I would probably have no work at all.

So, I would like to know how on earth we convince clients 'that using an architect brings tangible benefits', when the first and invariably only question we are asked is 'How much do you charge?, followed by either a pause, and/or a sharp intake of breath when the answer is given, and 'I'll ring you back'.

The problem is that lay clients, probably with no experience of building projects, have little or no idea of what is involved, nor, more importantly therefore, what they should expect from their 'designer', and what they should expect to pay. So, although they may be spending tens of thousands of pounds on the building work, they are unlikely to go to the bother of interviewing several designers, or taking up references. They will engage whoever gave them the cheapest quote, and embark on their project with documents that may or not be adequate. They may get away with it, they may end up with an outcome that is 'not exactly what they expected', or it may all go disastrously wrong. In any event, if things do go wrong, the one thing they will not do is blame themselves for their misfortune. And, since they are unlikely to embark on any subsequent works, they will have no opportunity to try 'a better way'. And heaven forbid they should have the work supervised.,

The low pay lament is one we have heard so many times, a regular ringing of hands. However, a solution has never been ever suggested.

Stephen Radley, R&D Architects, Ilford

We welcome letters but retain the right to edit them:
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Architects and designers

I read with interest the project for Goldsmiths concerning the successful art and exhibition galleries that have been created there – it looks like a very interesting series of spaces. In the RIBAJ article it states: 'But architects Paloma Strelitz and Adam Willis didn't stop with the tanks…' and 'The architects even put together the concrete acid…'. The credits list states: 'Architecture: Assemble' but the role of contract administrator was undertaken separately.

I note from a cursory review of the ARB public database that neither Assemble, Strelitz nor Willis are registered with the ARB. The article should therefore refer to them as designers rather than as architects.

It is disappointing that the RIBA makes this simple error in its own publication. Please can an explanation be issued by the editor?

Timothy Crum, chartered architect
FINE architecture, London

The editor responds

Fair point. Assemble is a multi-discipline collective that often refers to its members as 'architectural designers', and that is how we should have referred to the authors of this project in this article. We have corrected this online.
In their early years we profiled this interesting and unusual emerging practice (RIBAJ September 2014 p80). We like to be inclusive.

> Kuma disregarded the magnificent site and opted for an egoistic solution void of all that architecture should be
>
> Antoine Raffoul

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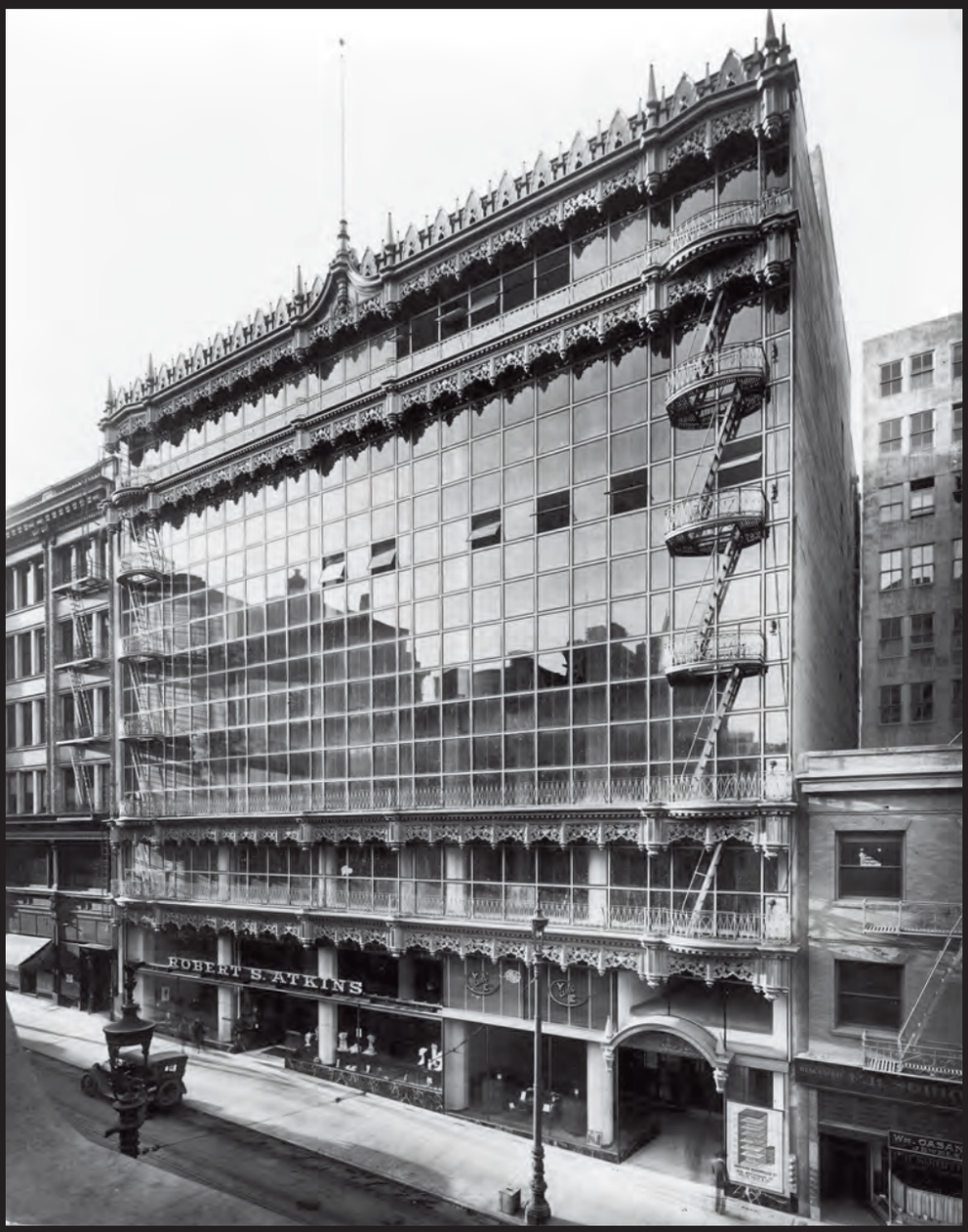

RIBA COLLECTIONS

Hallidie Building
San Francisco , 1918

The Hallidie Building in San Francisco is an extraordinary if perhaps little-known building, designed by architect Willis Polk and completed exactly 100 years ago. Commissioned by the University of California and named after Andrew S Hallidie, inventor of San Francisco's cable car system and a former Regent of the University, the building was described by Henry Russell Hitchcock as the 'first true example of the curtain wall applied to a large urban structure'. Its precedents had supporting elements in the same plane of the facade, while the Hallidie Building's street front is an almost continuous glass surface, literally hung on the cantilevered spandrels. The decorative element is provided by the ironwork balconies and cornices in Venetian Gothic style, and by the fire escapes cleverly treated, in Polk's words, 'as part of the artistic composition of the design'. Threatened with demolition in subsequent decades, the building was designated a 'historic monument' in 1971 and renovated in the 1980s and in 2011-2013. It now houses, among other companies and institutions, the San Francisco chapter of the American Institute of Architects. ●

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Architectural Acoustic Finishes

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Project Architect:	**Hanson Architects**
Acoustic Consultants:	**RBA Acoustics Ltd**
Contractor:	**Basebuild Services Ltd**

This unique project is the first school building ever to be built under a motorway so the technical challenges were considerable. SonaSpray K-13 mid grey was applied onto concrete & plasterboard at 25mm thick to control reverberation, give clarity to sound & reduce overall noise levels.

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