

RIBA

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Sum of parts

Maki and Correa united for the Aga Khan

14

Something to savour

RSHP's Cheese grater is all about its surroundings

22

Crock of gold?

Post recession optimism gilds Northern Irish ambition

47

Prize fighter

Maria Smith tells it how it is on awards

57

Government's bum note

Oliver Wainwright bangs the design drum for schools

73

Etched in stone

Centuries come and go but the working drawing endures

93

All for one

AHMM squares the partnership circle

80



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1

Buildings



Comment 07

Sometimes a certain detachment can be a good thing for buildings

Pavilion 08

Robin Snell has hatched an island pavilion at Getty's arcadian Wormsley Park

Photograph 13

Andrew Paul Hayward loves the night-time loneliness of A-road petrol stations

Museum 14

The Aga Khan's Islamic showcase is the imperfect sum of promising parts by Maki and Correa

Leadenhall building, London 22

It's big but keeps retiring from view; it's striking but deferential: RSHP's Cheesegrater impresses without costing a wedge

Sustainability 30

There's another athletes' village turned residential housing, with the revival of a declining district of Glasgow

2

Intelligence



Q&A 37

Daniel Moylan talks trains and planes

Public procurement 39

Small firms have something to celebrate with the UK's adoption of the EU procurement directive

Construction Summit 44

Design has to go beyond practical completion was the clear message from the government's Construction Summit

Regions 47

As finances ease, Northern Irish practices are getting ambitious

Public sector clients 51

Local authorities are keen to spend, using architects – so get ready to help them do it well

Legal 55

How to avoid getting stung when works overrun: manage your notifications agreement

Diary 57

Maria Smith gets real about awards

Steel Intelligence 59

3

Culture



Comment 71

Mega-projects or back to basics inventiveness?

Wiles & Wainwright 73

Oliver Wainwright launches our new alternating column from the classroom

Out there 75

Three men, three wheels, one adventure

Round here 76

Altrincham lives it up by playing the market

President's column 79

How RIBA events are putting architecture out there

Profile 80

AHMM is a practice built on balance and perspective

Preview 87

The camera's role in the developing metropolis

Review 93

Wonderful world of the working drawing

Obituary 97

Rationalist who clashed with royalty

Exchange 98

Parting shot 106

Vignadò's precipitate Villa La Scala, Italy

On the cover

Screen, Aga Khan Museum
Photograph
Tom Arban



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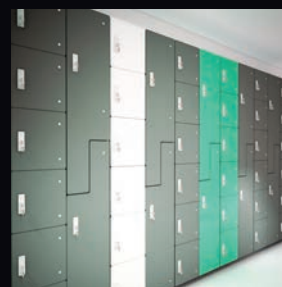
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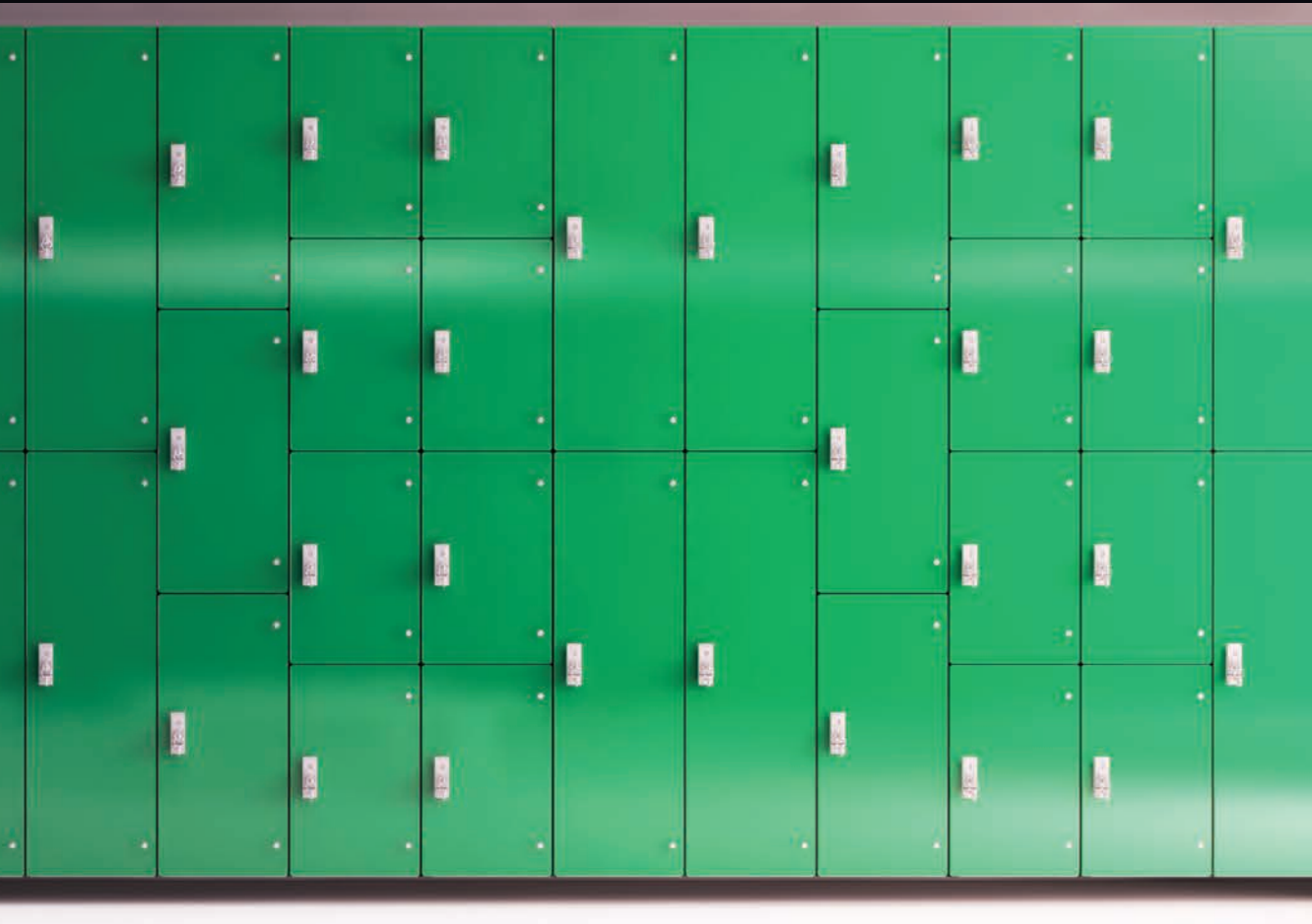


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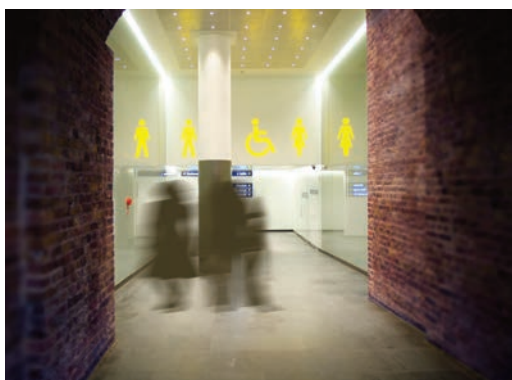


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1: Buildings

Turn to page 16 and you will see car parking. While most of the spaces are buried under this Toronto Aga Khan Museum and Ismaili Centre by architectural veterans Fumihiko Maki and Charles Correa, the arterial roads on its edges speed into car parks – as the energy of the buildings bleeds out into them.

Set in the middle of the site the buildings are left as islands, unanchored by any street-scape or more tangible boundary, awaiting a surrounding belt of trees. Petrol stations, as studied by Andrew Paul Hayward (see page 13), have something of the same floating detachment from their surroundings. The

sense of enclosure and view in the setting is as important for the building as the landscape itself – and for that intangible sense of place. Sometimes it means stepping back, or up, as at the Leadenhall building which has been jacked up to leave a 28m high public space underneath it. How's that for floating? ●

Below Mysterious and numinous – Charles Correa's prayer hall at the Aga Khan Museum and Ismaili Centre, Toronto.



Wormsley Pavilion and footbridge
Robin Snell and PartnersWords **Hugh Pearman**Photographs **Dennis Gilbert**

We are in the 18th century, when wealthy landowners employ architects to improve their country estates, dotting eye-catcher buildings about to add Arcadian interest. Or we might as well be. The 2500 acre Wormsley Park in Buckinghamshire is the country seat of the main English branch of the Getty family. Restored by the late Sir Paul Getty, it possesses some intriguingly eccentric additions made by him, including a private cricket pitch based on the Oval, a library extension to the Georgian house in hybrid medieval/neoclassical manner, and a lake complete with rustic cascade and island. His son and heir Mark Getty has continued the tradition in modernist vein, steadily opening up the Chilterns estate with its organic farms, wooded hillsides and rare circling red kites to more public events. And this is where Robin Snell comes in.

Snell – formerly with Hopkins where among much else he was project architect on

the Glyndebourne Opera House – designed the Garsington Opera Pavilion which Getty offered to host when the company was forced to move from its eponymous former home at Garsington Manor near Oxford. Designed and built rapidly to be wholly demountable, the idea was that the low-cost, lightweight 600-seat opera pavilion would appear every summer and then disappear into storage as its predecessors had. But the award-winning building (RIBA, June 2011) was so evidently good and well-considered as an intervention in the landscape that Getty waived the need for it to be dismantled. Since then it has been modified and extended to give it a backstage area and – with a design life of approximately 30 years and the blessing of the planners – is now as ‘permanent’ as many more conventional buildings, with Shakespeare as well as opera being planned.

What happened next was that Snell (now in practice with another senior ex-Hopkins man, Bill Taylor) found himself being approached by Getty himself as client, rather than the opera company. Snell is now working on a variety of buildings on the estate for Getty and the key one, just completed, is

Below The Island Pavilion is reached by a bridge that barely skims the surface of the lake.

Right A piece of pure modernism in stainless steel and glass, the pavilion provides a display cabinet for Jeff Koons' *Cracked Egg (Blue)*.





fully in the 18th century tradition: a kind of temple, on the island in the lake, complete with a connecting bridge. It is a piece of pure modernism in stainless steel and glass, and its sacred focus is a sculpture by Jeff Koons: Cracked Egg (Blue). The rest of the pavilion is dimensioned from the dining room in the 18th century house and serves as a year-round intimate entertainment venue – for private family use, hired out for receptions, used for music recitals or small art exhibitions. The day I went to see it, it was being used for a lunch press event involving a luxury watch company and an equally high-end champagne marque. Fully serviced, it has a small preparation kitchen and washrooms at the back of the plan.

Unlike the opera pavilion, the 150m² Island Pavilion was designed from the first, with the support of local planners, to be permanent. The materials are of accordingly high quality – stainless steel (structure as well as cladding), sliding double-glazed panels, and a pale grey terrazzo floor. The island – made in the 1980s with excavated

spoil from the lake – was reshaped and stabilised. Foundations are steel-piled. There is a touch of the Farnsworth House about it – the way it hovers, approached by shallow flights of steps – but this is as much a homage to Jean Prouvé, whose furniture is specified inside. It is a portal frame, but with the strongly expressed L-shaped beams for rear wall and roof, pin-joined where they meet the floor, resting lightly on slender stainless steel columns at the front.

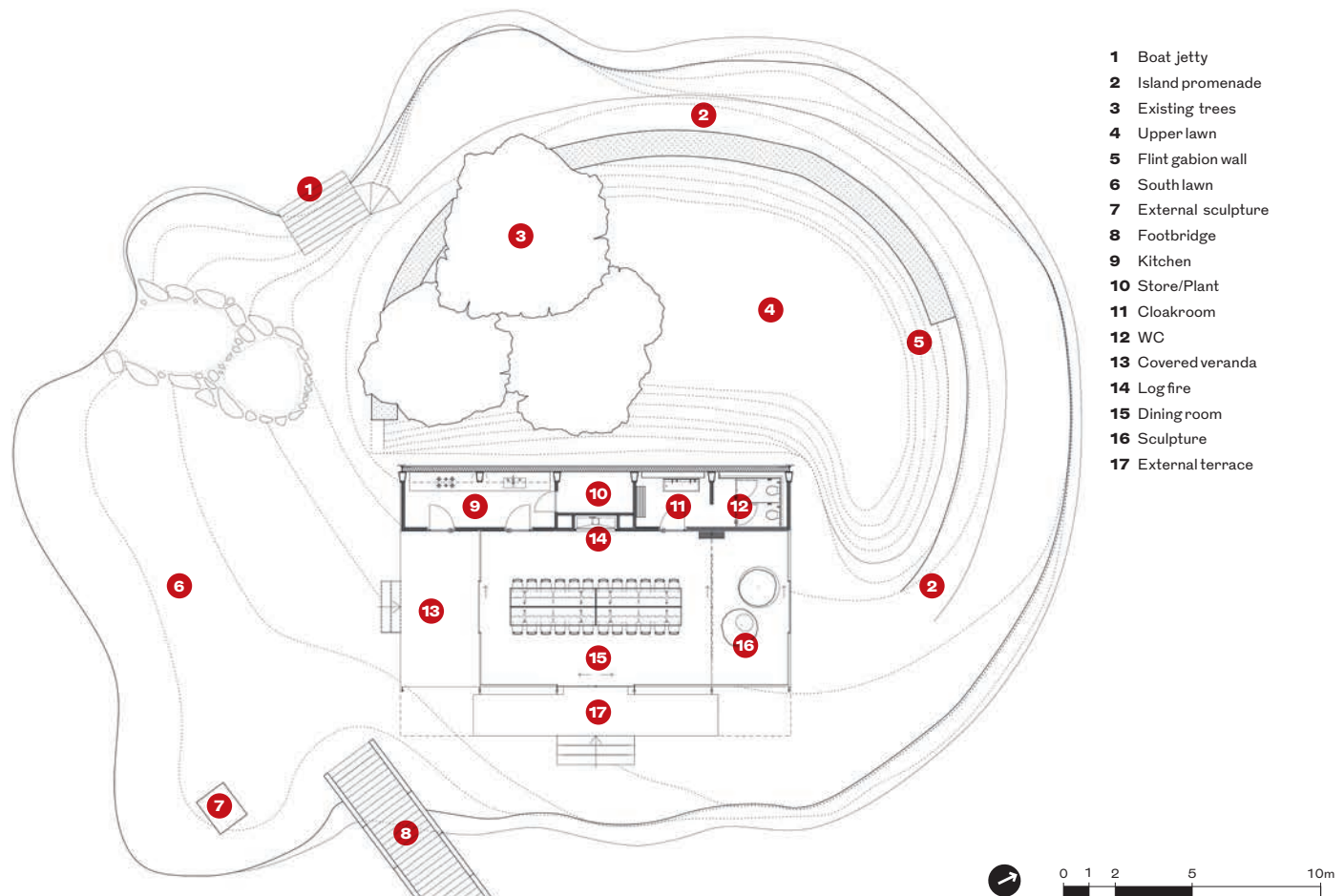
The rear wall wraps over the roof, using a specially-modified cladding system from SAS which avoids standing seams and is fastened through a continuous membrane using patented stainless steel watertight fixings. The roof has a shallow rear pitch, so draining backwards. All the stainless steel is bead-blasted to give it a matt finish, in contrast to the extreme shininess of the Koons sculpture.

Again unlike the opera pavilion which is designed for summer use only, the island pavilion is a fully-insulated year-round building: it even has a fireplace. An acous-

tic ceiling softens noise reflections. But it has one thing in common with its bigger sibling: apart from the terrazzo it was entirely prefabricated, logically enough in view of its small island location. Given that, the six months it needed on site seems quite generous – but that timespan included the building of a 42m bridge of 100m² area, a broad perforated-deck walkway with no handrails, just upstands along the edges. Set very close to the water on concealed steel supports, it is illuminated from beneath at night, when the pavilion itself becomes a lantern visible from the opera house and the modular dining table is pulled apart to allow a clear view to the Koons.

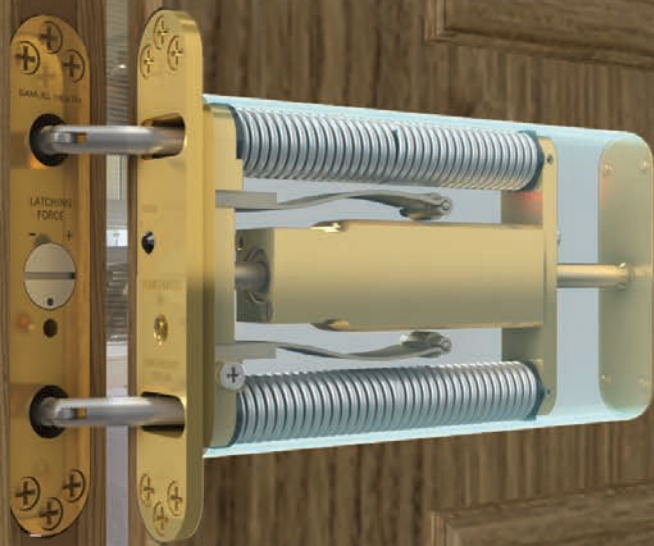
Opened in June for the birthday party of Getty's mother, this is a deceptively simple little building: much thought has gone into the making of it while it and its bridge are oriented as part of a considered development plan for the landscape. 'It's become the focus of the estate,' says Snell as he surveys that landscape. 'Now we need to move some trees.' ●

Site plan



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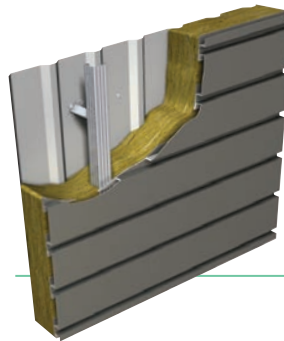
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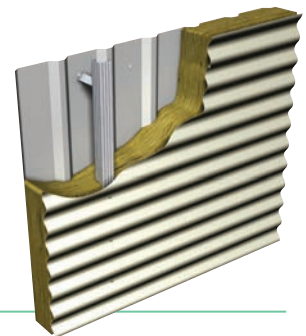
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Station 6

Photograph Andrew Paul Hayward
Words Jan-Carlos Kucharek

A Portsmouth wedding photographer by day, 25-year old graduate Andrew Paul Hayward could be forgiven for engaging in a little moonlighting to indulge his true artistic interests – shooting remote petrol stations by night. The fascination was born during a family holiday in Devon when, from the back of the car, he became absorbed by their appearance out of and disappearance back into the night. The memory became the inspiration for his whole degree show.

‘Seeing petrol stations along a dark road

made me think of their welcoming safety and the bigger sense of the emptiness beyond them; they also feel like a non-place unless you’re actually there,’ thinks Hayward, who spent weeks with his 5x4 large format camera wandering along A-roads in the dead of night to produce the images for his prosaically-entitled show ‘A-road petrol stations at night’, at Portsmouth’s aspeX gallery.

Drawing from influences like Candida Höfer, Andreas Gursky and the Bechers, the result is a set of compelling nocturnal images that have an Edward Hopper-like sense of isolation. They also have a slightly unsettling, conflicted quality to them, counter pointing the apparent illuminated safety

with an emptiness made evident by those same bright lights. But there’s more. Despite their apparent stasis, there’s an energy to the photos that suggests Zaha Hadid’s first Malevich-like designs, her coloured geometries leaping out from the black of the background. Hayward meanwhile cites the legacy of another artist as his inspiration. ‘Pop artist Ed Ruscha’s 1963 project ‘Twentysix gasoline stations’ got me thinking about what they looked like then and how different they look now,’ says Hayward. ‘Doing this project made me wonder what they’ll look like in another 50 years.’ ●

‘A-road petrol stations at night’ is showing at Portsmouth’s aspeX gallery until October 18



In search of harmony

Pretty parts don't quite make a winning whole at the Aga Khan Museum and Ismaili Centre in Toronto

Words: Hugh Pearman

Eighteen years in the planning, the \$300m Aga Khan Museum and Ismaili Centre complex in Toronto consists of two important buildings by octogenarian master architects – Japan's Fumihiko Maki for the museum and India's Charles Correa for the centre – in a new city park by Lebanon-based landscape architect Vladimir Djurovic. Exhibition design is by Adrien Gardère from Paris, so this is all as international as could be. The aim is to celebrate the artistic, intellectual and scientific achievements of Muslim societies from ancient times to the present, and to serve the Ismaili community of the area. It is a very bold move, but as I walked around the site – in the slightly improbable setting of a city-edge business district – I felt that the various elements, individually good, did not quite cohere. There is a pervasive sense of strangeness.

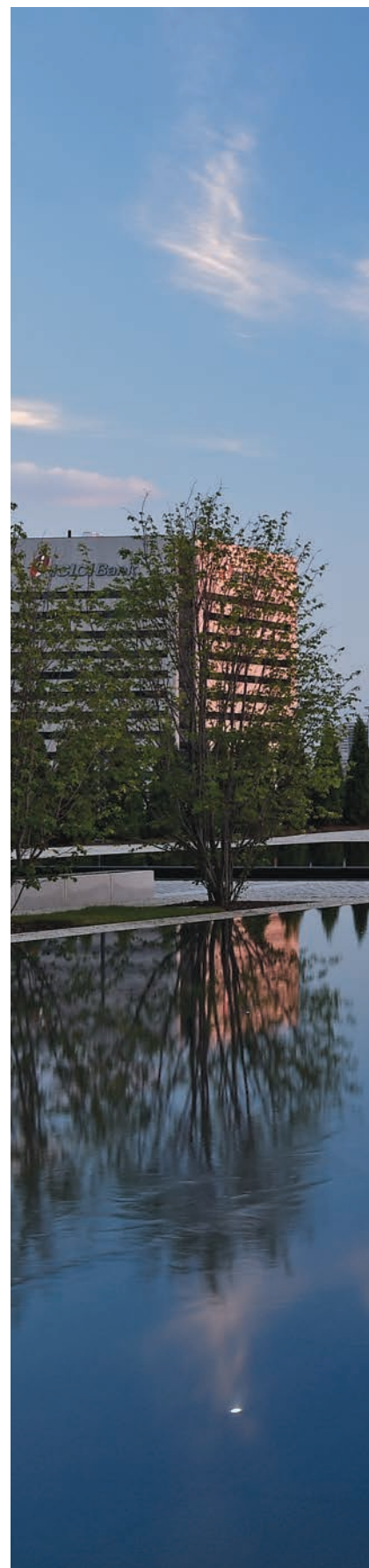
The Aga Khan, who conceived of all this

and picked up the bill for it, is the super-rich worldwide imam and prince of the Ismaili branch of Shia Muslims, who number some 15 million across 25 nations and regions. Swiss-born, French-based but a British citizen, 77-year old Prince Shah Karim Al Hus-saini Aga Khan IV runs a series of charitable foundations mostly devoted to helping the developing world – and of course the famous Aga Khan architecture awards. His ambitions have grown since the first little Ismaili Centre, in London's South Kensington by Casson Conder, opened in 1985. The Toronto project exists to promote Islamic art and culture to the western world – the city was chosen not only for its multicultural, peaceful society but also for its proximity to the US and a large population within a one-hour flight. The museum's permanent collection of a thousand artefacts (value confidential but very considerable) is also the gift of the



Left The chiselled white granite-clad form of Maki's museum with auditorium and dome.

Right Landmark and beacon for the complex, Correa's steel and glass prayer hall in his Ismaili Centre.





Aga Khan. Public funds were therefore not required, making this a particularly single-minded cultural initiative.

The lush new landscape around the buildings includes large mature transplanted trees around a group of five large, gently flowing rectangular pools between the two buildings, attempting to make a contemplative world of its own in one of the traditions of Islamic architecture. Often such public buildings are surrounded by acres of parking lots: here, expensively, most cars are banished into a huge underground garage that serves both buildings. But this is normal in Toronto, where winter snows are often ex-

treme. Mature trees notwithstanding, this is early days for the landscape, which will have to be judged in a decade and more: very close to a busy freeway, at present the perimeter tree belt does not insulate you sufficiently from the roaring world around.

Not that this is meant to be a hermetic institution. Indeed it is designed to announce itself. Not so much Maki's museum, which takes the form of a somewhat forbidding chiselled box clad in Brazilian white granite, but the prayer hall of Correa's Ismaili Centre, set on the high point of the site. These are two very different architectures: Maki's all about the fine detail, Correa's more concerned

with form. And the form and materials he has chosen for the prayer hall – a modified, asymmetrical pyramid of twin-wall translucent opaque glass sandwiching a lean steel structure, rising from a circular podium and of course aligned towards Mecca – turns the building into a beacon at night.

Correa, 84, claims that this is his last building – not the last he designed, since it goes back to the start of the Millennium, but his last to be completed. No historicism for him: as with his client, he wishes to project a progressive version of Islam. Although of different cultures and beliefs, architect and client were also united in their sense that the

Below Maki's museum (top) is aligned with the pyramidal prayer hall of Correa's Ismaili Centre (bottom), both set in a new 6.8ha park.



handling of light held the key to achieving a sense of the mysterious and numinous. It is no surprise that Correa refers repeatedly to Frank Lloyd Wright when discussing his building, though with the proviso that Wright is inimitable. 'None of us knows how to mine Frank Lloyd Wright, the way we mine Mies van der Rohe. Wright won't be imitated. Light from above? His Johnson Wax building - it's The Temple of Lux. The Guggenheim? It's inspiring just to see all that energy spiralling upwards...Frank Lloyd Wright was *really* great.' Here one obvious inspiration (though Correa did not mention it in my hearing) is Wright's similarly trans-

lucent Beth Sholom synagogue in Pennsylvania, which as it happens was the last work to be completed in *his* lifetime. As shining places of worship go, you have to bracket them.

If Correa's building with its sprawling tail of social, formal and educational spaces might be considered as conceptually if not stylistically Gothic, then Maki's is more broadly classical, from outside appearing to be a self-contained temple. Inside it turns out to be arranged around a central courtyard, and the play of daylight is once again key. Maki, 86, takes his chisel to the box, cutting the facades gently inwards at ground level, then flaring out at the upper level, giving

Below The spirit of Wright: the double-skin glass roof of Correa's Ismaili Centre prayer hall, aligned with Mecca, creates the most dramatic space in the complex.

IN NUMBERS

6.8ha

Site area

0.9ha

buildings footprint

10,500m²

museum gross floor area

8,300m²

Ismaili Centre gross floor area

350

seats in auditorium

19.8

height of auditorium roof

20m

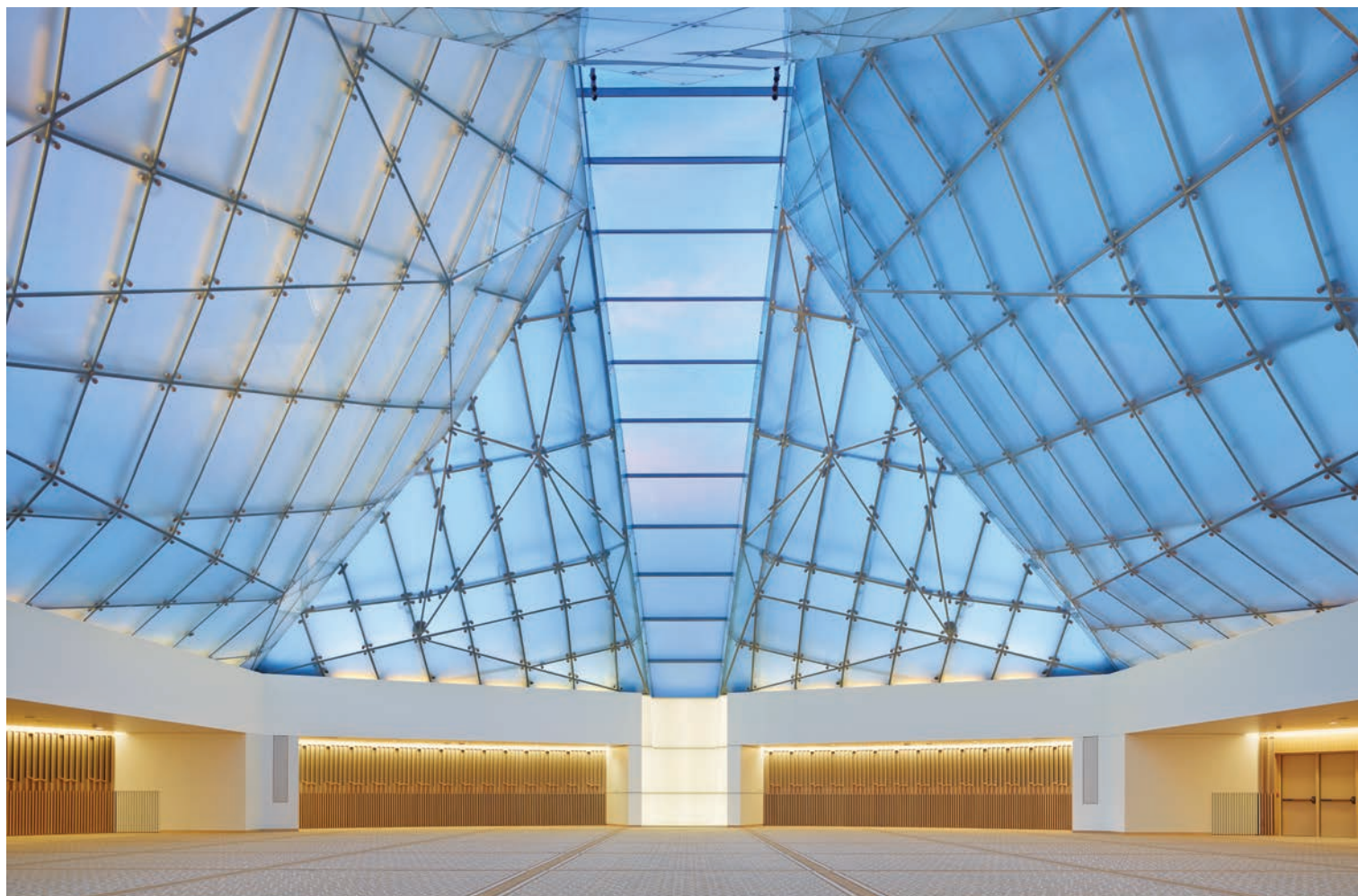
height of prayer hall roof

550

new trees

5

reflecting pools



the building a wasp-waisted effect. He then cuts into the resulting form, making a very tall and deep entrance set off by a wafer-thin blade of a canopy. The roofscape is enlivened by a faceted dome over the auditorium, for this is a performance space as well as a visual arts centre. Maki's final formal move is to inset sequences of set-back hexagonal lenses to bring in indirect daylight when required. The white-granite cladding is well detailed, corners and reveals being done in proper thick blocks which allow a fine incised re-entrant line to define the edges.

The layout is straightforward: permanent collection on the ground floor, tem-

porary exhibition galleries upstairs. Two elements occupy both levels: the auditorium and the main double-height permanent exhibition space, which is surrounded by a broad gallery at upper level. Everywhere the attention to detail of Maki's practice is evident – for instance in the beautiful rows of dark wood tip-up seating for the auditorium, which tuck themselves away tidily to give the appearance of timber troughs. Although the colour palette is largely monochrome (the exhibits providing flashes of colour) one exception is the rich blue staircase linking the upper and lower foyers of the auditorium. An unexpected interlude at ground level is

the 'Bellerive Room' with its ottomans and textiles, a complete domestic interior which recalls the late Prince Sadruddin Aga Khan's home in Geneva. You never forget that this is a family affair.

As to that central courtyard with its geometrical stone floor, it's all very austere. You can walk out there, but there is nothing in it so you don't really want to – though it can be used for performance. Both architects employ such geometrical details – in screens, ceilings, floors and some walls such as the patterned glass around the museum courtyard – that are generally associated with Islamic architecture. However, this is a matter

Below Temporary exhibition galleries upstairs can be blacked out for delicate paper-based works.



Below Double-height permanent collection gallery showing Maki's hexagonal angled-lens diffusers to bring in top light.





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for scholarly discussion, as the academics gathered for the launch made clear. What, exactly, is Islamic art? You think you know it when you see it, but it invariably turns out to be the product of overlapping cultures and religions. The Ismailis enjoy this, since one of the points of the museum is to show how influential the arts of the Islamic world have been on other cultures and vice versa. Theirs is an inclusive and pluralistic approach.

Maki's museum was commissioned after Correa's Ismaili Centre. Although the two buildings are so very different, Maki makes one important visual link, aligning

his great entrance portal with the prow of Correa's prayer hall, so framing it as a view from within the museum. Djurovic's landscape is the other unifying factor, of course, on this 6.8ha site. Time will tell if, with the softening of this raw, just-completed complex and the filling out of the landscape, it will meld better than at present. Perhaps too many hands have been involved, and it consequently lacks the feeling of a strong co-ordinating designer. For me there is something missing, and that something is a clear sense of place. But in these two late works by two very fine architects, there is much to admire. ●

Credits

Museum architect Maki and Associates, Tokyo

Ismaili Centre architect Charles Correa and Associates, Mumbai

Landscape architect Vladimir Djurovic Landscape Architecture, Lebanon

Architect of record Moriyama and Teshima, Toronto

Exhibition design Studio Adrien Gardère, Paris

Contractor Carillion Construction

Below A splash of richly coloured plaster marks Maki's staircase linking the auditorium foyer levels.



TOM ARBAN

Below The central courtyard in Maki's museum employs Islamic geometric motifs as fritting in the glazing.



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Now you see it...

It's one of the tallest buildings in London, but you could walk straight past RSHP's Leadenhall tower and barely notice it

Words Jan-Carlos Kucharek



How times have changed. Nearly 30 years ago Lloyd's of London was commissioned as the future-looking bespoke HQ of one of the world's most famous financial institutions which, with its insides on the outside, was a visceral expression of the game changing nature of the financial Big Bang itself. Once completed in 1986, its service cores – fashioned from stainless steel as an exquisite exoskeleton for the building – lorded it for years over the Square Mile like the towers of San Gimignano over its medieval centre. With all the services moved to the perimeter, architect Richard Rogers argued, occupiers of the doughnut-shaped floor plates within were free to expand or contract as needs demanded. Given what's happened to the financial markets since then, it was a strategy that was right on the money.

But the realisation that markets could implode as well as explode didn't dampen thinking in the 1990s. The City saw its dominance threatened not only by Canary Wharf, rising Phoenix-like from the ashes of Olympia & York's doomed investment, but by competition from Frankfurt in a reunified, and economically strong Germany. City of London chief planner Peter Rees had been charged in 1985 with supplying a projected 10m ft² of office space, while heading his own crusade to 'sex up' the Square Mile after hours. In the 28 years under racy Rees' tenure it has not only grown upwards, but transformed from a place where you could hear pins drop to one where

122 Leadenhall's east elevation from Leadenhall Street, the facade a clever expression of the structural strategy.



you can see pints sunk. A Friday night spent in one of its huge, new, testosterone-fuelled and stiletto-tipped megabars is evidence enough that the planner realised his goal of putting the sex back in The City.

The Leadenhall building by Rogers Stirk Harbour and Partners feels very much part of this period of reinvention, despite having been put on hold between 2007-10 as British Land waited for the damaged economy to recover. At nearly 85,000m², it rises to 225m and 50 storeys in the east side of the City, dwarfing the adjacent Lloyd's Building. The yellow steel structure of its north core, offset by a succession of red and blue toilet pods, it appears as a Brobdingnagian thermometer, calibrating the City's cultural shift from 'old boys' to 'wide boys'. Although driven by a 50% pre-let with insurance firm AON, by way of a reality check the first public images of Leadenhall that I saw were in a Tube ad for serviced office provider Servcorp, which has leased 12,000ft² on Level 30. Rees might claim credit for the moniker 'Cheesegrater', but the form

was influenced most strongly by the St Paul's viewing corridors and how RSHP resolved the tower's geometry so as not to impinge on the cathedral as seen from the west. As a result, the sleek 'A'-shaped glazed steel megaframe leans differentially back from St Paul's nave walls to mask its wedge-like form in the building line as seen from Fleet Street's 'Ye Olde Cheshire Cheese' pub – leaving the lion's share of the skyline to Wren's dome.

Strangely, for the second tallest building in the City, the tower creeps up on you at ground level too – certainly on Leadenhall Street. This is due partly to the fact that as well as disappearing like the Cheshire Cat when you're walking down Fleet Street, the architect resolved the building's interface with the ground by cleverly doing away with most of it. It's here that you'll find the structure most clearly expressed – the huge steel columns of the tapered south elevation shooting free of the 1.3m thick double-skin ventilated cavity facade at 28m up and driving down into the edges of the site defining the four storey basement box below. This

Strangely,
for the second
tallest building in
the City, the tower
creeps up on you
at ground level



LEE MAWDSLEY (2)

IN NUMBERS

£340 m
total development cost

84,424 m²
internal floor area

60,250 m²
lettable area

22
lifts

8 m/s
fastest lift speed

1860 m²
open area at ground

dematerialisation of the building at lower levels, short of the exterior escalators to the stacked AON and tenant lobbies, is an ingenious move. Not only does it deal with how a 50 storey tower handles the nearness of the seven storey Lutyens building next door, it also gives the north facade of the Lloyd's Building space to breathe.

It also defines the major spatial move of the development – the sizeable open 'Galleria' beneath the tower that will be merged with the existing St Helen's Square – as well as a new route north through the building to connect St Helen's Bishopsgate to the north with St Andrew's Undershaft and the Gherkin. One could (and should) debate the pros and cons of stealth privatisation of the public realm via private funding, but this new plaza area reinforces RSHP's spatial commitment to a sense of public realm which it has championed since the Place Pompidou. And while there's something divisive about the glass screens popping up from the plaza to counter the worst wind eddies, the 20,000ft² park creates an area that's coherent

and, with its narrow under-tower link, nuanced.

Leadenhall's structure marks a development in RSHP's formal language and its approach to the office typology. Where the 1986 owner-occupied Lloyd's consisted of concrete floor plates with a central atrium, concrete structure and steel cores, the 1999 spec Daiwa building at 88 Wood Street had solid floor plates, concrete floors, steel structure and glazed perimeter service cores. Here there are no such appendages to the floor plates. The steel wedge form is all; defining both the office floor and the line of the north core within its geometry. The latter is less a simple core than a whole wall of 22 lifts, 82 washrooms, 45 lobbies and top down/bottom up plant servicing. It's all exposed: lifts and counterweights in orange or green, their motors visible above the shafts as if in display vitrines; columns and diaphragm structure in yellow as well as toilet pods. With male and female banks denoted in blue and red, these were pre-fabricated in Northern Ireland, brought in on the back of a lorry, lifted and bolted into place. The

Left The horizontal steel diaphragm and columns of the north core is the framework within which lifts, loos and services are all installed.

Right Two huge banks of escalators draw people from the galleria into either the tenant lobby at level 3 or AON's own at level 2.

Far right The north core elevation is a constantly changing tableau of lifts and counterweights moving against the background of loos and lobbies.

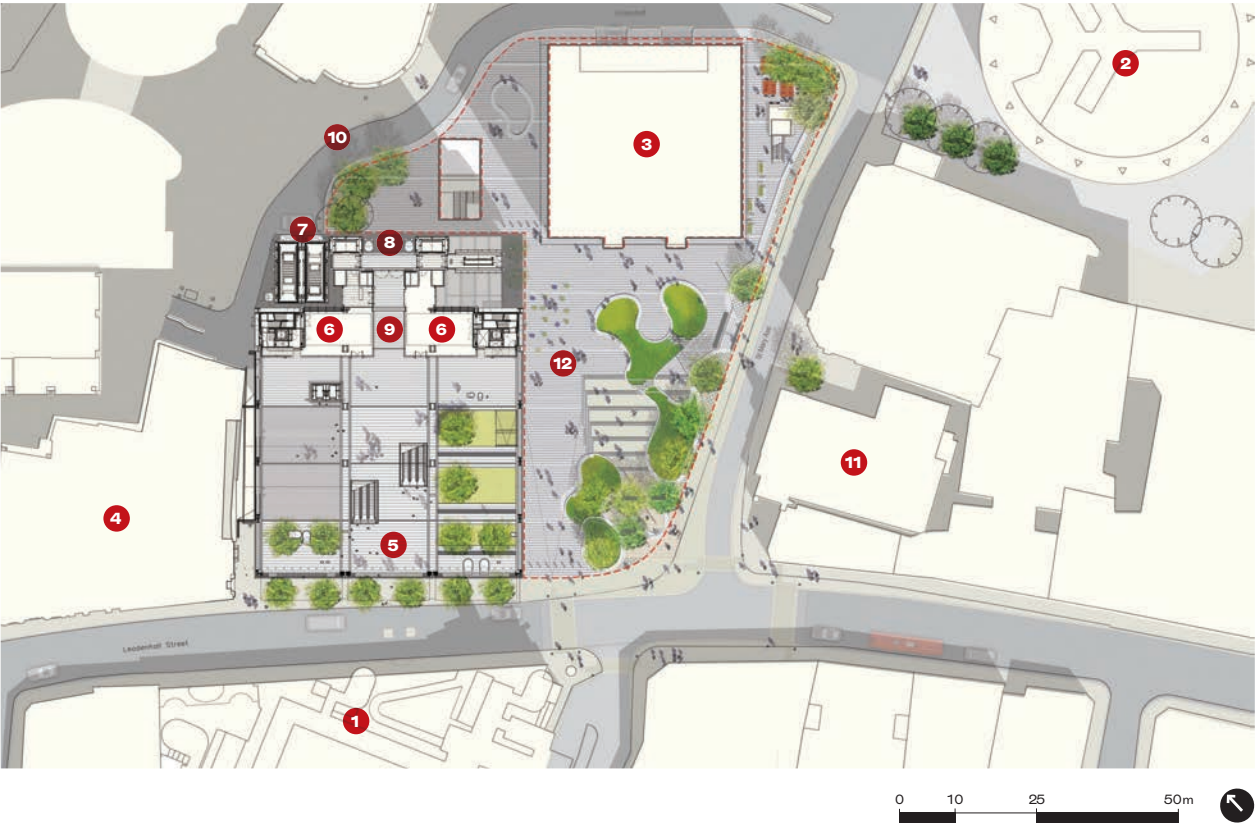
PAUL RAFTERY



RICHARD BRYANT

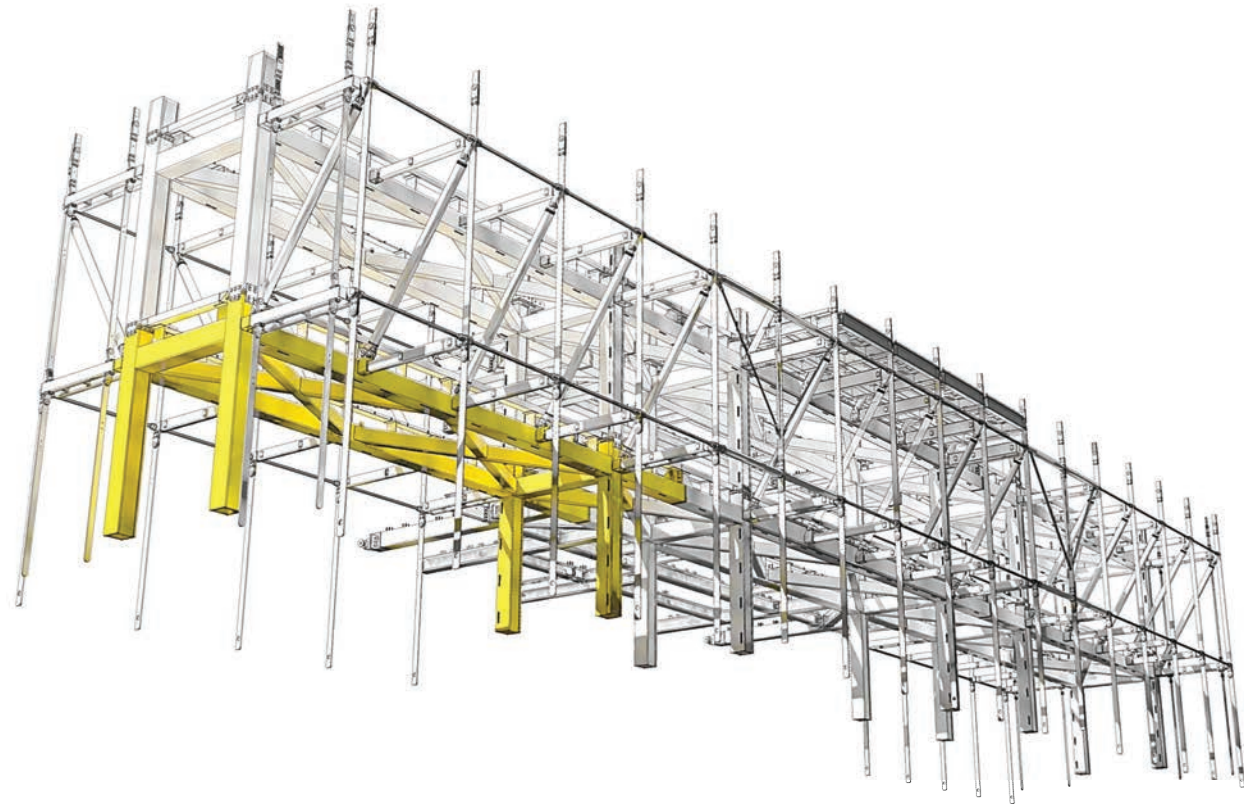


Site plan



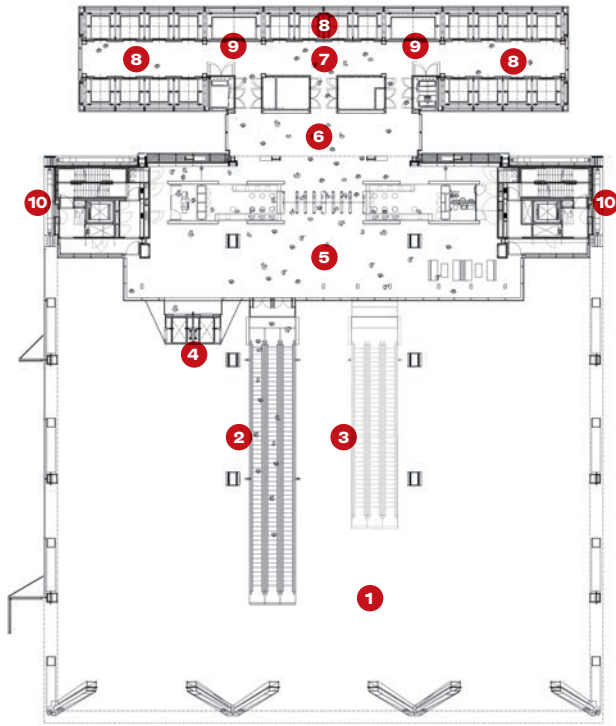
- Key to site plan**
- 1 Lloyd's Building
 - 2 St Mary Axe
 - 3 Aviva Tower
 - 4 Lutyens' Midland Bank
 - 5 Exterior Galleria space beneath tower
 - 6 Retail units
 - 7 Loading bay truck lifts
 - 8 Area below lift crash deck
 - 9 Passageway beneath tower
 - 10 Undershaft
 - 11 St Helen's Bishopsgate
 - 12 St Helen's Square

Structural visualisation of north service core

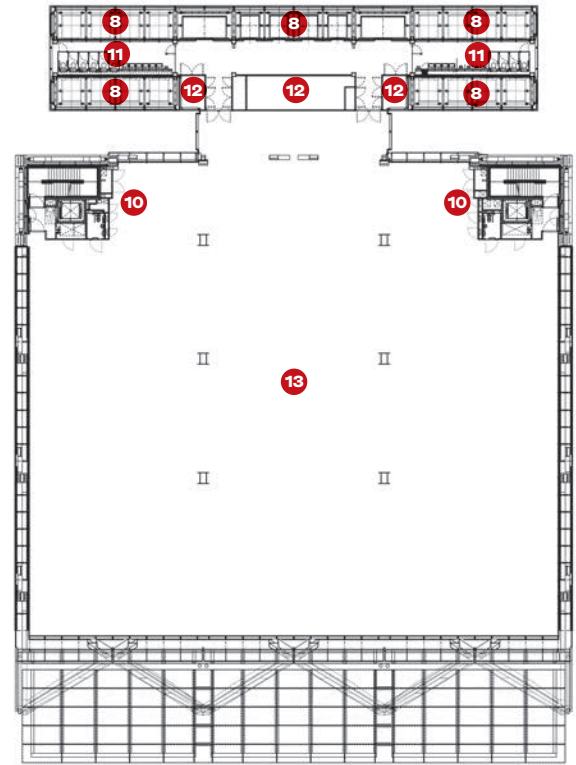


- Key to floor plans**
- 1 'Galleria' Plaza below
 - 2 Escalator to tenant reception
 - 3 Escalator to AON reception
 - 4 Lifts to lobbies
 - 5 Tenant reception lobby
 - 6 'Secure' lobby
 - 7 Office lift lobby
 - 8 Passenger lifts
 - 9 Goods lifts
 - 10 Fire fighting cores
 - 11 Toilets
 - 12 Service risers
 - 13 Lettable offices

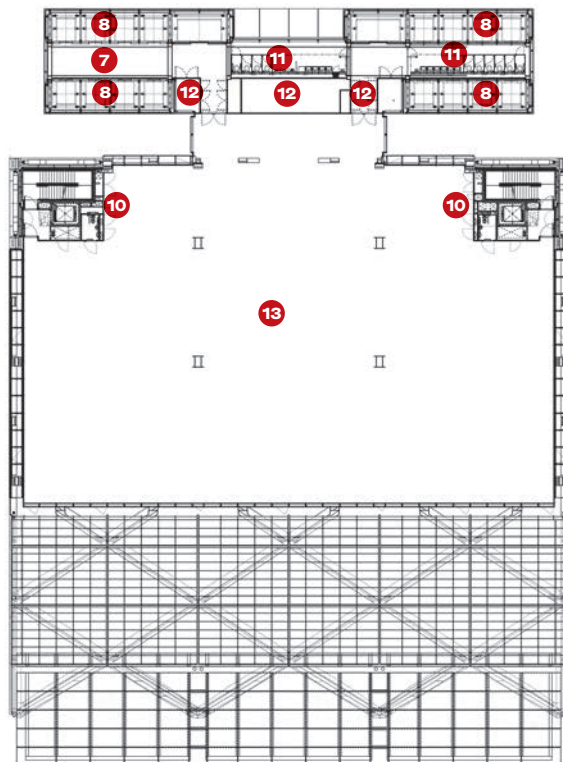
Level 3 upper entrance lobby plan



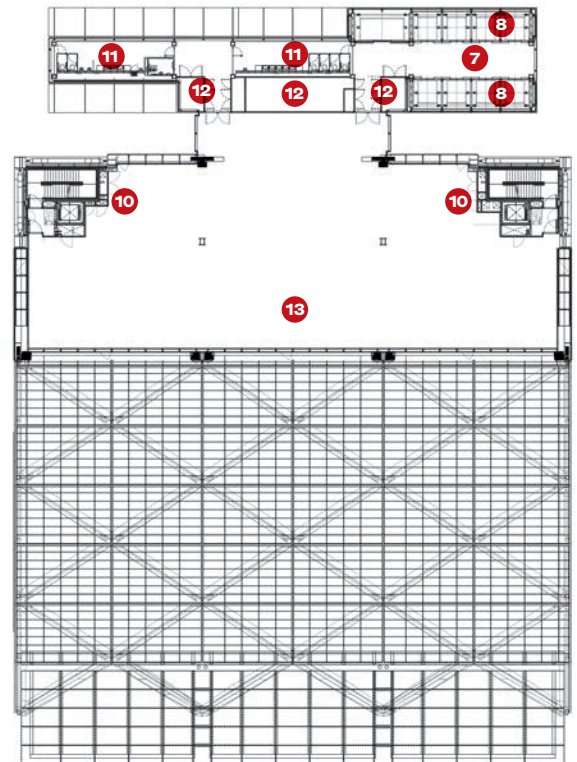
Level 6 plan



Level 22 plan



Level 40 plan



arrangement of low, mid and high rise lifts means that as banks fall away, they're gradually exposed on the north core, giving a layered delicacy to this face. They also give rise to naturally lit washrooms – rare for the spec office typology – some experiencing the sexy swoosh of the lifts passing their translucent glazed faces.

Arup Associate director Damian Eley says the engineering strategy for Leadenhall meant balancing cost and buildability with RSHP's architectural intent for expressed structure. With no concrete cores to rely on, fundamental to the asymmetrical form's stability was the 6000 tonne steel megaframe. This perimeter structure is formed of seven-storey sections, bounded at top and bottom with horizontal steels, braced by diagonal ones and connected every 28m back to the K-bracing of the fire fighting cores at the rear of the floor plate on the east and west sides. Eight of these, tapering back at a 10° angle, are stacked on top of each other to create the huge wedge-shaped form. The K-bracing gives lateral stiffness to floors and together with the megaframe's columns and bracing, anchors the

whole thing to the ground. You might argue that such a deliberate and eccentrically-shaped form is counter-intuitive from an engineering perspective; perhaps it is, but its rigidity is such that even the north core, with its yellow columns and horizontal steel diaphragm – holding lifts, lobbies and vertical services – gains all its structural stability from it.

Main floor plates meanwhile get further support from six internal columns – transferring loads down – which disappear in succession as the floors recede upwards. The two columns left at Level 45 perform one additional function at the apex of the tower – to resist the tendency for the structure to expand and contract, which is particularly marked on the south face when the sun heats the steel. Here they branch at the treetops into diagonal bracing, reaching up to join the primary north and south steelwork and hold the megaframe in place by resisting the thermal movement of the stretching and contracting structure. It's a simple form realised by what appears to be some devilishly complex engineering.

Its form was influenced most strongly by the St Paul's viewing corridors and how RSHP resolved the geometry so as not to impinge on Wren's dome



Left At level 45, braces spring free of the last two floor columns to resist the enormous expansion and contraction forces on the megaframe.

Right The ventilated cavity facade means the spec offices are spared the worst effects of solar gains on the south facade.

Credits

Client British Land and Oxford Properties
Architect RSHP
D&B contractor Laing O'Rourke
Structural and services engineer Arup
Landscape design Edco Design London
Quantity surveyor DL Aecom
Project manager WSP
Strategic planning and consultancy M3 Consulting
Planning consultant DP9
CDM co-ordinator Bovis Lend Lease

Suppliers

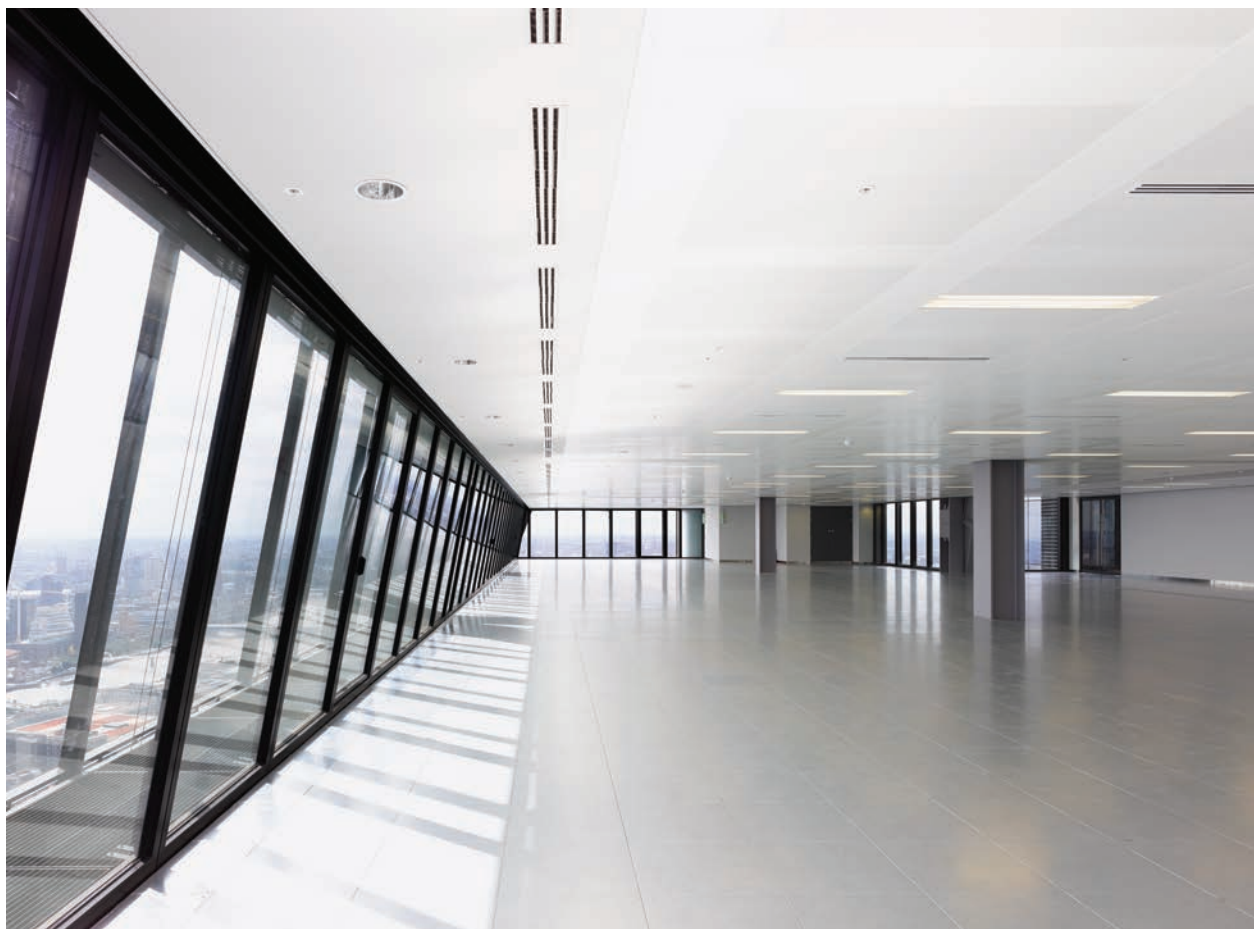
Structural steelwork Watson Structural Steel
M&E services Crown House Technologies
Lifts and escalators Kone
Substructure Expanded Company
Curtain walling Yuanda UK
Washroom fit out Ruddy Joinery
Stonework / tiled floors Vetter
Architectural metalwork Hubbards / LM Engineering
Reception screens / metal ceilings Astec
Plasterboard partitions BDL
Raised access flooring Kingspan
Metal doors Ingersoll Rand Security Tech
Roofing and waterproofing Tilbury Contracts
Acoustic ceilings Regency Plastering
Soft landscaping Hasmead
Facade maintenance Equipment Integral
Glass doors IDE Contracting
Fire curtains and roller shutters Coopers Fire
Trumpet / cowels Flakt Woods
Bespoke sanitaryware Armitage Shanks
Sprinkler systems Hall and Kay
Fire alarm systems Defensor
Lift lobby and office ceilings SAS

Being part of the syzygy of Rafael Viñoly's 20 Fenchurch Street and Renzo Piano's Shard across the Thames, the alliance also begs comparison of the three and Leadenhall holds its own admirably. Full fit-out is yet to take place, but the shell and core approaches for this essentially speculative development bear up well to scrutiny. Reception areas are generous, darkly fitted-out and understated, with common lobbies and washrooms crisply detailed and taking full advantage of their perimeter positioning. The building cost came in at £2700/m². Project architect Andy Young called it 'unbelievably cheap. Accounting for inflation it's the same sum of money to build this today as it cost to build Lloyd's in 1986. That's how efficient this building is.'

Initially a casualty of the economic downturn, it has a sense of being austerity architecture but in a bold guise, that in the intervening years has been value-engineered and pared back in a way that seems to have enhanced rather than detracted from the functionalist expression. This 'boxing-in' of the floor plate and services within an all-encompassing glazed skin might

initially have been generated by RSHP through cost concerns, but it harks back to the proto high tech that started it all: like the modulated red marble facade of Franco Albini's 1961 Rinascente in Rome that so enamoured Reyner Banham, its services hinted-at behind its rippled stone skin. With RSHP's recent solidly-expressed British Museum WCEC extension, it seems to suggest the firm is returning to these early, more constrained high tech roots for inspiration.

Leadenhall seems to have a sense of being both public-spirited and state-of-the-art in a way that belies the straightened times in which it was procured. That deferential cutting away at ground level also gives the street room to breathe, while its smoothly running lifts are now the fastest in the world. One can only assume that Peter Rees, now professor at The Bartlett – a school reinvented by a member of Archigram, is pleased. 'I like tall buildings because you have more time to make love in the lift,' he pruriently remarked to the Evening Standard on stepping down earlier this year. I suggest he gird his loins – here he'll have just over 20 seconds... ●



RICHARD BRYANT

You only live twice

An inexorably declining part of Glasgow has been resuscitated – first as an athletes' village for the 2014 Commonwealth Games and now as a residential community

Words: Alan Dunlop



STALLAN BRAND

Upstream and to the east of Glasgow's city centre, the River Clyde narrows to a gentle and meandering flow around Glasgow Green to the north and the Gorbals to the south. As it loops further back to Rutherglen and through Dalmarnock the river bends into the Cuningar Loop, a lush stretch, unique in form. This area has long harboured a community of people who regard themselves as distinctive 'east-enders'. It is here that Glasgow's Commonwealth Games in 2014 was centred and the 'games village' located.

In 1777, the city's first tidal weir was constructed to provide water for a growing population. The river no longer supplies its drinking water but many manufacturers in the district still draw water from it and the level body of water around Glasgow Green and the loop is much used today for recreation.

Immediately to the south of the loop were handsome sandstone tenements housing a strong, working class community with butchers, fruit shops, chemists, a post office

and public parks. The area thrived until the early 1960s, when the wholesale destruction of Glasgow's social housing stock was initiated. Residents were moved out to peripheral estates and the area went into a gradual and seemingly unstoppable decline. The land which was to become the games village lay derelict after water works, dye-factories, print works and paper mills closed down.

Glasgow did redevelop much of its derelict land in the 1980s and 90s but the effort appeared piecemeal until 2000, when under

Left The Games Village, in contrast to Glasgow's previous high-rise experiments, is looking to re-establish its historical relationship to the ground.

the direction of its Development and Regeneration Services (DRS), it took a more structured approach. RMJM's Paul Stellan and Alistair Brand (now Stellan Brand) became involved, with their team looking at two sites: Sighthill in the north, and Dalmarnock in the east. The outcome was a masterplan and detailed urban strategy.

In 2007, Glasgow beat Abuja in Nigeria to host the 2014 Commonwealth Games. RMJM had provided visuals and master planning details to support the bid. Steven Purcell, then council leader, argued that the games gave the city its best chance to 'improve the lives of every Glaswegian', promising a 'lasting legacy for the people of the east end'.

The venues include a remodelled Celtic Park and a new £113m cycling arena. The athletes' village was developed in two phases: one to focus on the accommodation necessary to meet the requirements of the Commonwealth Games Federation for 7,000 athletes and to provide 700 new homes and a 120 bed care home. The second phase included a school, shops, new bridges and walkways and other local amenities. The brief for the athlete's village was rigorous: 50% of all new houses would be for rent through local housing associations with the rest sold on the private market for under £200,000 per unit.

The City Legacy Consortium of Cruden, CCG, Mactaggart & Mickel and WH Malcolm won the bid, supported by RMJM. The site was challenging, divided by Springfield Road which joins the Dalmarnock and London Roads – the major road route back into the city. A significant portion is occupied by the velodrome, which leaves the village to the east at the Cuningar Loop fronting on the river. The scale of 3DReid's velodrome impacts the site heavily and although the building is lauded as 'world class', the building disappoints as lumpy and abrupt, with little

Below The Cuningar Loop, site of the new Games Village and home to Glasgow's original 'east enders'.

Bottom Stellan Brand's four storey 'Cube' apartment blocks: simple, bold forms helping to create the village's sense of place.



RMJM's Stallan 'wanted the village to be an urban regeneration and planning exemplar on every front'

architectural grace, and poorly considered new landscaping.

RMJM's Stallan 'wanted the village to be an urban regeneration and planning exemplar on every front'. The intention was to test the government's new 'designing streets' guidance: to create carbon free housing with a 'hard edged urban quality'; to blur the distinction between private and social housing and to form streets where the pedestrian, not the car, took priority. When I visited, the site was empty, athletes having gone home leaving contractors to remodel dwellings from games mode to family homes.

The project's eco credentials are impressive and involved multiple design specialisms, including Napier University. All homes are built to the same high specification and benefit from free daytime electricity and hot water from a district heating system. Photovoltaics blend with uniform black clay roof ties. Stallan says: 'Each home will create a surplus of electrical power which will be diverted back to the grid', and the export credit generated will cover the costs of maintenance and reduce management bills.

This carbon reduction strategy has two key aspects: first, the building fabric achieves a minimum 60% carbon reduction over 2007 building standard levels and allows for a minimum of 15% generated on site. The second incorporates a district wide combined heat and power (CHP) system that minimises carbon reduction and when combined with the building fabric meets the Council's brief for a CHP energy centre that

Site plan of the Commonwealth Village



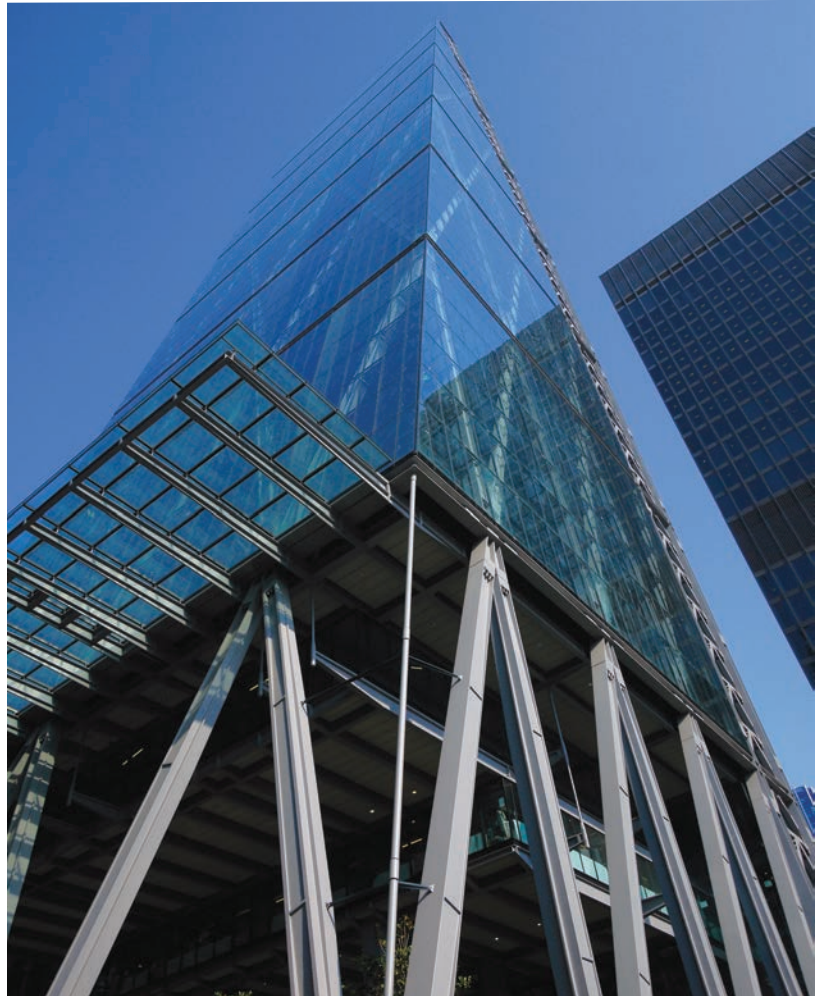
- | | |
|--|---|
| 1 Celtic Park Football Club | 11 New Dalmarnock train station |
| 2 London Road | 12 Sustainable urban drainage – SUDS feature |
| 3 Springfield Cross | 13 River Clyde |
| 4 NISA – National Indoor Sports Arena | 14 New footbridge location |
| 5 New district energy centre | 15 New Forrest Park under construction |
| 6 New East End regeneration route | 16 Dalmarnock Road |
| 7 Springfield Road | 17 Clyde Gateway residential development site |
| 8 New care home | 18 Rutherglen |
| 9 Proposed site for new day-care centre and shop | |
| 10 Proposed new site for primary school | |

0 100 200 300 500m



MADE IN CHINA

The external facades for the Leadenhall building were designed in Europe and manufactured in China to exacting European Standards; Yuanda are proud to be associated with this landmark building for British Land and Oxford Properties.



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TOM MANLEY

Above View of the site and the Cuningar Loop looking north. The intention is to create a sense of place that doesn't feel suburban.

could also service additional new housing beyond the games village.

Two of the contractors, CCG and Mactaggart Mickel, used a closed panel construction system both internally and externally, which was manufactured off site. The CCG homes are timber frame with a metal web floor and roof cassettes. A 'SpaceStud' system was used for the walls which achieves a U-value of 0.15 due to its low thermal conductivity. Systems varied slightly with contractors' techniques but in all units the timber frame was clad externally in either brickwork or black stained larch. Windows are all double glazed with black stained sustainable timber frames. The carbon reduction achieved, by combining the fabric and on site energy provision, is reckoned to be a reduction of 102% compared with 2007 building regulations.

A restrained palette of ochre, red, grey

and black facing brickwork in half lap, with English garden wall bond to external terraces and matching mortar and flush joints throughout, is complemented by stained larch cladding. The project is predominantly two storey with four and five storey residential towers in strategic locations at the end of key vistas, so although a 'village' it does not feel suburban.

There is a real sense of enclosure in the courtyards and terraces and the notion of creating a neighbourhood with authentic urban tone is part way to being achieved. Architecturally, it is difficult to separate homes for rent and for sale, although those for sale do occupy the prime river front locations.

Inside, rooms are standard housing developer areas but good natural light is evident with floor to ceiling windows in living rooms. Each apartment in the towers has

There is a real sense of enclosure in the courtyards and terraces and the notion of creating a neighbourhood with authentic urban tone is part way to being achieved

sliding glass doors onto roof terraces or generous balconies. There is a pared simplicity in the elevations and evidence of clear architectural intent running through both the development and the hard and soft landscaping. Kerbs are removed between roads and pavements and thresholds defined by carefully composed brick paviors, marking parking areas and walkways.

What is missing is evidence of any community. The area once had four schools, now only one primary school remains, and there is no promised new school. There are no grocers or chemist shops, no café and no pub. Stallan says that the city is committed to the 'Legacy' phase, yet to be delivered.

This is a well planned, designed and soundly constructed project, but without the second phase it will fail to fulfil its promise of lasting benefit made to local people. ●

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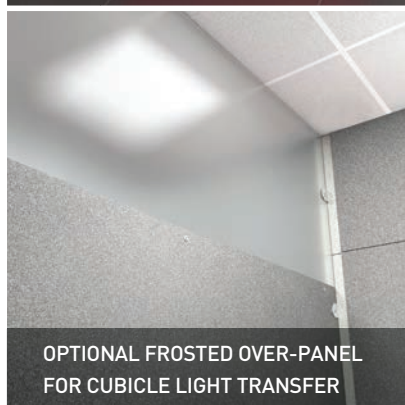


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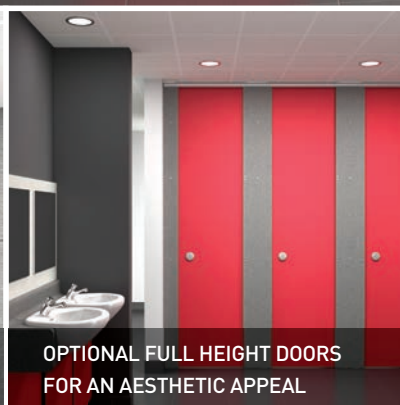
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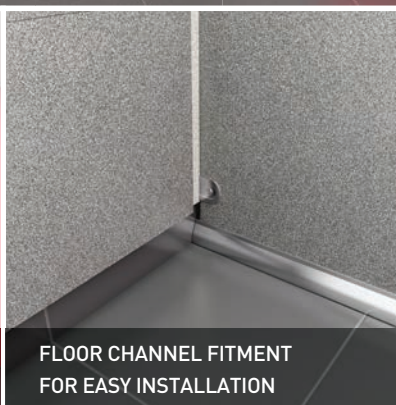
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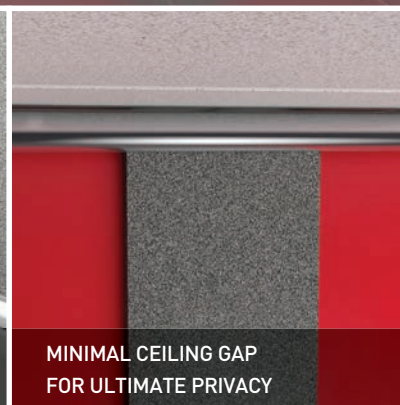
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2: Intelligence



Where people
live

Daniel Moylan



Daniel Moylan, airports tsar to London mayor Boris Johnson has, post-Davies report, been appointed to oversee Crossrail 2. So is an estuary airport dead in the water or is there light at the end of the tunnel?

So, you've shifted from working on the mayor's pet project to Crossrail. Are we to assume that's the end of any plans for a Boris Island?

Not at all – and stop calling it Boris Island! We need a proper solution to London's airport capacity crisis. It can't be achieved with Heathrow expansion and to use Gatwick would be turning our back on the concept of a single UK hub, which would be mad. The only answer is an airport to the east of London. The Airport Commission's Davies report proved itself not relevant to the needs of the capital – we have to move on from it.

What about another hub like Birmingham or Manchester?

The point of a hub is that all airlines are aiming to get as many passengers in one place to reach as many destinations as possible as often as possible. There might be under-capacity at these airports, but in moving there you'd reduce flight options. Arguments about rail congestion to a London hub don't wash- you can fly in from anywhere in the UK. Airports like Schiphol already mop up UK provincial passengers to get them to Amsterdam- that's what we're up against.

So what's the timetable for Crossrail 2?

You know, I've only been in the role a few days now, and I wouldn't want to get it wrong. You'd best speak to the Crossrail press office!*

With Crossrail well under way, what the lessons will you be applying to this project?

I don't know if it's about lessons learned, but I'll tell you what I think the difference is. Crossrail was about the fast connectivity through the centre of London. I would say that Crossrail 2 is more about the periphery – supporting the wider development of homes and jobs at London's edges – places like the Upper Lea Valley that are underserved transport-wise.

Given the current wrangles over HS2, do you think it's justified to invest this much in London's infrastructure?

The fact is that the south east is a success story. By 2050 Greater London is projected to have over 11.5m people. You might say that's a terrible thought and we need to build elsewhere but practicality says it would be far better to plan for it – to cater for the transport and housing needs of an inevitably rising local population.

Speaking of which, what about TfL's HQ by Charles Holden being turned into flats?

I think it's just gone in for planning. Personally, I think it's regrettable that they're trying to change the use. The problem is that over the years the place has been partitioned – when Holden designed it to be open plan, with huge windows letting light and air in. The whole thing should be restored and kept as TfL's HQ. An organisation working in the public interest has a duty to maintain the civic quality of its buildings.

*FROM THE CROSSRAIL PRESS OFFICE

TfL has completed a second consultation on Crossrail 2 to inform the revised safeguarding for the route. It is also completing a range of studies which have examined development potential along the route, funding and financing options and engineering and operational constraints. These will inform a revised business case for the scheme. The mayor intends to use this to ask government for funding to take the scheme forward – submitting an application for powers by 2017, gaining powers and procuring the construction of the scheme by 2019 and building the scheme by 2029.



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



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Architect: Koia Architects, Queenstown & Auckland.

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Procurement
& contracts

Procurement cheer for small firms

SMEs will celebrate the arrival in Britain of the EU Procurement Directive, as processes will get simpler and less exclusive

By Walter Menteth

This autumn the UK is due to adopt the EU Procurement Directive. This will impose a sea change for how the public sector will acquire services, works and supplies, unleashing significant potential for UK architecture.

To date, excessively 'goldplated' application of EU procurement legislation has meant the UK has been undertaking 24% of all public procurement in the EU and compared to other states, has been doing it inefficiently.

An EU commissioned analysis estimated that the economic cost of procurement, to clients and bidders, on low threshold value contracts, was up to 29% of contract values. At this level, the cost of one in four contracts has been expended solely on the procurement process. At median contract values these costs are still staggering at around 10%. Absurdly for the architectural profession, the estimated economic damage has been worse, with £40m spent winning £138m of contracts per annum (as estimated by respondents to the RIBA Procurement Survey, 2011). That is a cost to the practices alone of 29% of contract value.

Lower relative costs at higher values have remorselessly driven the aggregation of contracts into ever larger, increasingly bundled and more centralised procurements.

The preponderance of these high value and often generic contracts, along with the excessive risk criteria, have been locking out UK micro and SME businesses from public work, denying market access and genuine competition with significant long term eco-

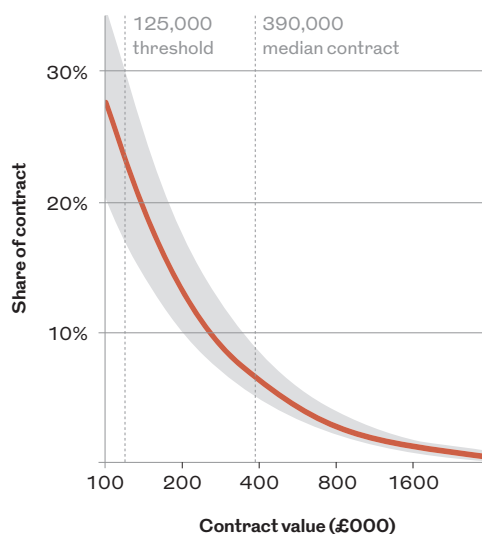
nomic impacts. A central problem of this legislation has been that it's based on the principal of a non-discriminatory open market. It should be noted that 97% of RIBA Chartered Practices are micro or SME sized enterprises.

All change

Adoption of the new directive heralds considerable change. EU Procurement Directive 2014/24 (also known as the Classical Directive) will become UK law through the Public Contract Regulations 2014, superseding the 2006 version.

The legislation removes many hurdles to

Total procurement cost (firms and government) as a share of contract values



Source: Public Procurement in Europe (HiLo estimates)

WHAT IS CHANGING?

- Clients will have to explain why they are not subdividing contracts into lots
- Clients may limit the number of lots awarded to any one tenderer
- The UK is committed to excluding single procurements from procedures that fall below the thresholds
- Consultancies with a tender value below €80,000 may be excluded from regulations
- PQQ requirements can be self-certifiable until verification at shortlisting stage or before award
- New incentives are provided for the Competitive Procedure with Negotiation (previously the Negotiated Procedure)
- PI cover at bid stage is not mandatory
- Annual turnover requirement at bid stage is not mandatory and if used is to be capped at twice a contract's value
- Previous experience may be assessed over longer periods
- Legal structures are no longer required at bid stage for collaborations
- Architectural services can no longer be awarded on the basis of lowest price
- Design services contracts can be awarded based on fixed price submission and design quality
- Abnormally low tenders may be rejected by clients
- The UK government is introducing a single access portal for all public procurement contracts above £10,000 (that is both above and below EU thresholds)
- There will be fair payment terms for sub-contractors

PROJECT COMPASS CIC

Project Compass CIC was formed by four architects in 2013, including Walter Menteth. With its European partners it has been data harvesting, developing a standard, easily accessible trans-European procurement portal systems, and e-guidance. The European portal, along with its first report analysing trends in UK public construction procurement, is scheduled for release this autumn.

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efficient cost effective competition. There is greater flexibility, and application processes should become simpler, faster and – with the emergence of full e-procurement – more streamlined. SME access has also been addressed and sustainability embedded.

The need to tender for services at the briefing stage, for pre-procurement activity and the definition of what a single procurement is, are clarified. So too is the ability to let some tender lots within a single procurement, where each of these individual lots is below €80,000, without further procedures. This should remove many consultancy tenders from EU procurement.

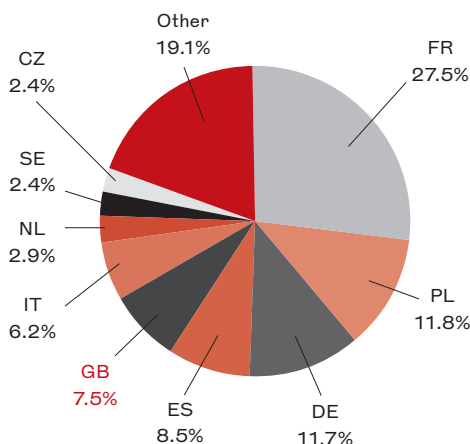
Simpler PQQs

To put more emphasis on better outputs from assessments – including design quality – the structure of PQQs will change, with shorter, clearer presentation and many requirements able to be confirmed by self-declaration until clients seek verification after shortlisting. Questioning can only be strictly related and proportionate to the specific contract. This principle is reinforced throughout with more value placed on the education, qualification, registration and standing of professionals, without recourse to repeated evidencing.

Neither PI cover nor annual turnover declarations will be mandatory at bid stage, and when used, turnover will be capped at twice a contract's value. Removing PI cover from the requirements at selection stage opens up the market for single and integrated project insurance, which offers teams the possibility of more successful adoption of BIM.

Where experience is required it may typ-

Member states share of contracts awarded by number of contracts



Source GHK

ically be assessed over the last five years, but to ensure adequate competition, this period can be longer. The best possible way a responsible client can verify experience is to visit previously executed work and engage the clients and stakeholders. This can be used alone as sufficient evidence of a track record.

Architects will be freer to bid in consortia without any requirement to have a legal structure in place prior to an award. If the bid requirements applied to consortia are kept equitably minimal, it can not only open significant design opportunities for collaborative practice, but it places architects in a better position to lead consortia teams capable of challenging the contracting market.

Costs, life-cycle costing and contests

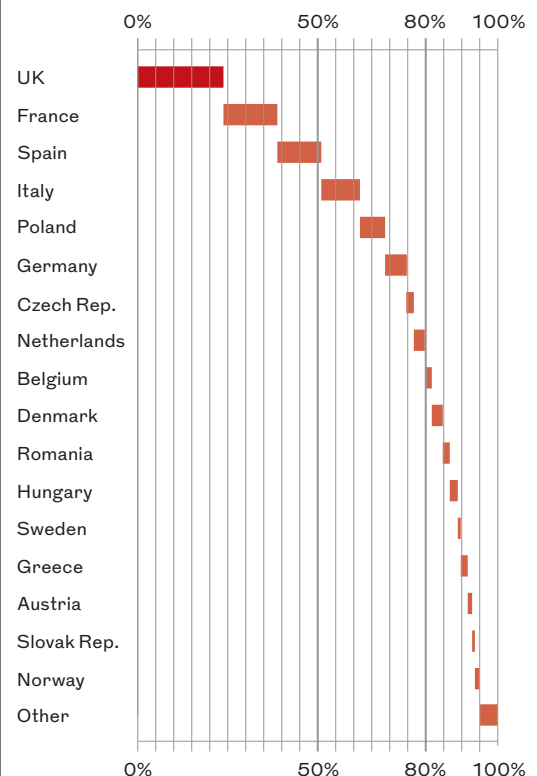
With the exception of design contests, which remain distinct, the award of contracts for design services may be made only on the basis of the 'Most Economically Advantageous Tender' (MEAT) assessment rather than lowest price. MEAT assessment will allow for a fixed price submission with assessment on quality only. The cost element at the award stage may also take the form of a fixed price (eg as in Germany a fixed fee scale) or fixed cost, allowing bidders to compete exclusively on the basis of quality criteria. This approach enables target costs to be determined at the outset in the procurement stage.

Life-cycle costing has been defined and embeds sustainability over the complete life-cycle of a work, product or service. The way of evaluating this must be transparent, objectively verifiable and non-discriminatory using clear methods. This also fits well within the target cost approach, where sustainability targets may be set as the 'cost'. But the new definition is complex and understanding it could become an issue for bidders – particularly those from inexperienced procurers.

Where tenders appear abnormally low they may now be rejected by clients, if there is no reasonable explanation (eg relative to time, cost, national employment laws and service delivery). The RIBA considers that a tender falling 12% or more below the mean of all tender submissions may show that the threshold at which that tender is set is deemed too low for architectural services.

Legal clarity, simplicity and incentives have been brought to the Competitive Procedure with Negotiation, which should permit more procurements through this empathetic

Share of total EU value of awards



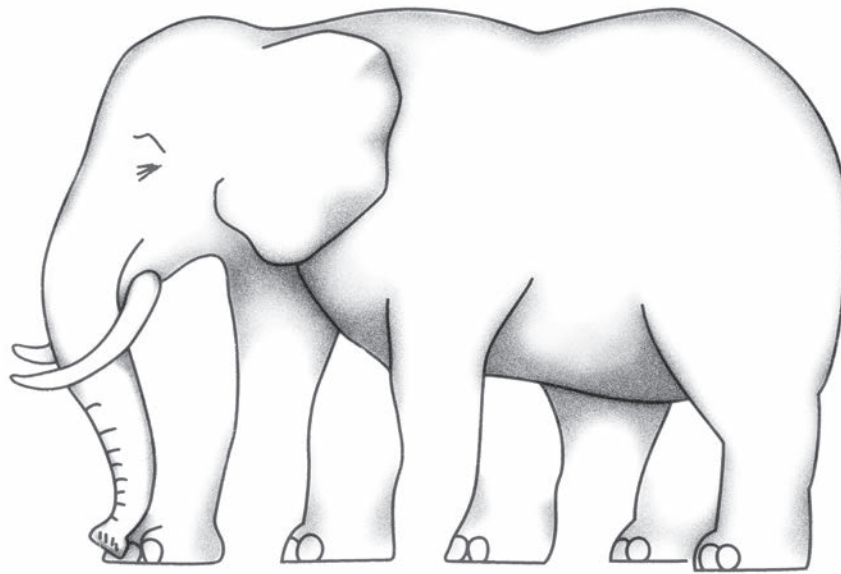
Source: Public Procurement in Europe

route to design team selection, more quickly.

Design contests are a distinctly different procurement route from all others, specifically and mainly for architecture, engineering and planning. They offer enormous versatility, flexibility and opportunity, and when well-managed are highly cost effective. Improvements in legal clarity presage potential UK expansion of their use, where architectural design solutions are sought for individual buildings, client project folios and lots; or even for awards onto frameworks.

Smaller work packages

The idea of breaking up parcels of work – what is called disaggregation – has attracted UK opposition (in stark contrast to the Europeans). But despite lobbying, meaningful justification will now be required on an 'apply or explain' basis, as to why public clients are not breaking up contracts into more numerous lots – whether by size, type, location or nature of service – to open up contract opportunities and make them more accessible. The UK is the most heavily aggregated market in the EU and the most inefficient. The argument that a one size fits all, bigger is better



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solution has been evidentially disproven. Although no one denies the need for size when appropriate, any sense of a proportionate and sustainable market approach had got lost. In clients' pre-procurement stage considerations, legislative support for disaggregation can now also be supported by The Public Services (Social Value) Act 2012, but creating a more level playing field for businesses of different sizes will remain a challenge.

Architects should be alert in competitions now being called for within Prior Information Notices (PIN) for restricted procedures, and competitive procedures by negotiation. This is a new provision which will accelerate clients' selection processes by 30 days or more. Previously PINs have been used to forewarn the market of a client's intended call for a competition which is then placed through issue of a subsequent Contract Notice, but for both these procedures architects will now need to screen PIN notices on OJEU for direct calls for competitions.

As architects are often employed as sub-contractors (Tier 2 suppliers), enforcement of 30 day terms and/or the possibility of payment through project bank accounts, with better opportunity to enforce fair terms against discriminatory sub-contracts, presages a reduction in the practice of transferring risk down supply chains.

What is most welcome in this new Directive is that the EU has a commitment to try and raise contract thresholds at the next round of negotiations of the World Trade Organisation General Procurement Agreement (GPA). The UK government has also undertaken to

ensure it will not be applied to works below certain thresholds. There is minimal cross border trading at lower threshold values and UK national laws are already secure against public bodies tendering with impropriety, so raising the thresholds significantly would remove many lower value procurements from EU tender requirements entirely, reducing costs and time, and improving access.

The government is upgrading and extending its Contracts Finder website to provide a single point of free and easy access for all UK public contracts above £10,000, and is enhancing its Cabinet Office Mystery Shopper procurement complaints service. At present, notice data fields are inconsistent and UK public clients regularly issue 30% fewer contract-award notices than they do contract notices. New collation and e-procurement strategies are being developed to improve market transparency and generate regular reporting with a view to informing future EU and national procurement policy.

A new culture

It is often asked: 'What is the RIBA doing for me?'. In conjunction with publications that brief clients as to best practice, the RIBA Client Service offering is under review and being restructured to provide full support across RIBA work stages to help clients achieve best value. New guidance is being drawn up specifically for Competitive Procedures by Negotiation and Design Contests, which it is hoped will expand their use across public procurement.

This all requires a step change in pro-

The structure of PQQs will change, with shorter, clearer presentation and many requirements able to be confirmed by self-declaration

urement culture, practice and education however, and the challenge is to ensure it isn't again bogged down in UK gold plating.

My question would be: 'What can you do?'. To embed better practice throughout this period of transformation, professionals should support public clients to upskill, raise the bar, de-risk their procurements to focus on quality assessment, offer access to best practice guidance, appropriately instigate referrals to Client Services and encourage use of more diverse procurement routes, particularly by design contest or negotiation by pushing their benefits.

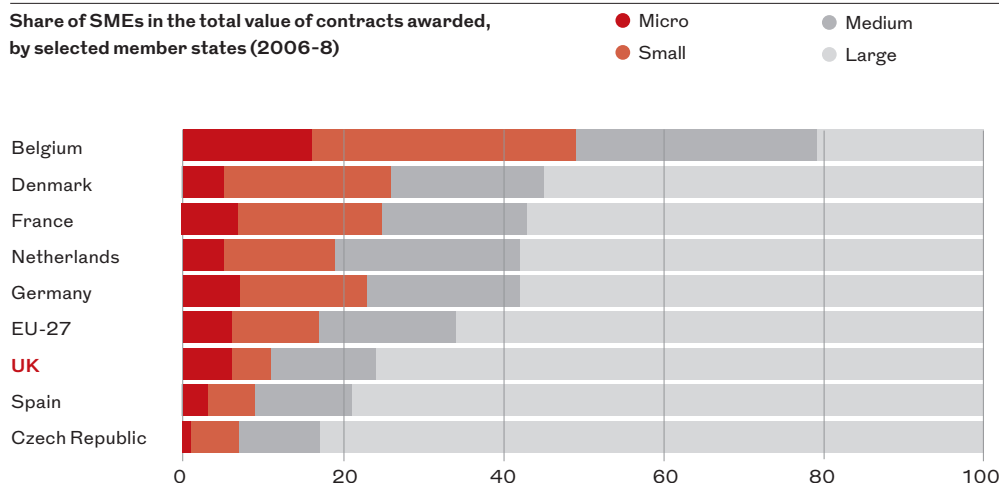
Importantly for the profession, the government's Mystery Shopper procurement complaints service will continue to respond to complaints of poor procurement practice throughout this transition period. Importance is being placed on this feedback to ensure reform is rapidly embedded, so architects should use it to report unfair, discriminatory, inconsistent, over-complex, onerous or otherwise poor procurement practices.

Grasping the opportunity on offer will dramatically reduce the artificial glass ceilings created by legal constraint to efficiency, growth, micro business and SME access, and the value gained from architects engaging with clients, fellow team members, stakeholders and end users. With the new rules, wasted resources can be diverted towards more and higher quality construction outputs that meet needs and improve the built environment. ●

This work has been supported by an RIBA 2012 Research Trust Award

Walter Menteth is director of Walter Menteth Architects and Project Compass. He was chair of the RIBA Procurement Reform Group 2011-2013 and a member of Cabinet Office SME Panel

Share of SMEs in the total value of contracts awarded, by selected member states (2006-8)



Source: Public Procurement in Europe

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The future needs a longer view

Whole life thinking and customer needs stole this year's Construction Summit

Dale Sinclair

The Government Construction Summit has become an annual fixture and it provides a good measure of where thinking in large scale construction is heading. At this year's event, in July, different speakers presented a clear and consistent message about the importance of the latter stages of the RIBA Plan of Work 2013 (stages 6 and 7) and whole life thinking driven by the BIM agenda.

Vince Cable kicked off the summit with a succinct summary of why the recent recession had a greater impact on the construction industry than other sectors: the halt of public sector expenditure, the derailing of PFI initiatives due to banking connectivity, the collapse of the commercial property market (lack of available funding) and the collapse of the housing market.

Due to this quadruple whammy, although recovery is now under way UK capacity is still running 7% below its pre-recession peak. Housing and infrastructure spending is rising but public sector spending is in decline.

20-year strategies

Cable's earlier experiences in the oil and gas industry, where 20 year strategies are commonplace, has informed thinking behind the government's industrial strategy for the

construction sector, marking a shift away from the political five year cycle to longer term views.

Four areas add value: technology, skill, finance and procurement. In terms of technology, the UK is now a global leader of BIM technologies. Off-site manufacturing initiatives and the Future Cities Catapult were being positioned to establish the UK as a world leader in new construction processes and digitally driven cities.

Andrew Wylie from Costain explained to delegates the main reason behind his company's success in recent years. More focused bidding (success rate improved from 1:10 to 1:3) resulted in 90% of clients providing repeat work. For architectural practices, the biggest lesson to be learned from Costain's success was the need to focus on customer needs and to appreciate the importance of technology and innovation in driving the new products and services that they require. He acknowledged that new values and behaviours were crucial in making the transition to this new working environment.

BIM means business

David Philip from the cabinet office BIM team chaired a session on that very subject with several core messages. First, he pointed out that clients such as the Ministry of Justice and HS2 have a better understanding of what information they want from their supply chain and when they need it. Although it was not clear if there was communication between these clients, there is a shift towards common industry wide deliverables. Of greatest significance was the acknowledgement that information demands and deliverables would increasingly be required for the whole project lifecycle, underlining how crucial stage 7 of the RIBA Plan of Work 2013 will become. Andrew Pryke of BAM underlined this point and emphasised the increasing significance of data used during stage 7. BAM's recent experiences demonstrate the significant saving achievable during this stage.

One of the key challenges on the back of these points will be educating architects in how to deliver stage 7 data, as well as providing guidance in how to provide an effective operational and maintenance strategy at stage 2 and how this might be refined as a project progresses through the design stages. Pryke also reminded everyone that with the government mandating it from 2016, an

Cable's experiences in the oil and gas industry have seen a shift in the government's industrial strategy away from the political five year cycle to longer term views

understanding of level 2 BIM was not a 'nice to have' strategy but a business.

In line with the post construction theme, the rest of the panel stressed the importance of shifting thinking away from design and construction and towards soft landings at stage 6 (handover strategy in RIBA Plan of Work 2013) and the in-use activities at stage 7. In the journey towards a more integrated BIM environment the panel stressed the importance of everyone in the supply chain understanding the BIM business case and its potential for designing out waste, generating efficiencies in all stages; and its ability to benefit project team members and deliver better outcomes. The panel agreed that it was crucial that every member of a project team understands the additional value delivered to the client by BIM – a theme already covered by Costain.

To keep ahead of the game architects need to shift from thinking from 'design to construction' to 'design to use', and to place greater emphasis on the technologies and innovation process that will improve the way our clients' buildings are used and operated, as well as ensuring that better project outcomes are delivered. ●

Dale Sinclair is RIBA vice president for practice and profession and AECOM's director of technical practice responsible for EMEA

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Irish eyes are smiling

Conviction that the recession is over is prompting Northern Irish practices to spread their wings

Alan Jones

Northern Ireland is a minute ecosystem of architectural practice, exhibiting various modes of operation from big city cut and thrust to rural calmness, exquisite craft to smart commercialism. Many now refer to the construction industry's dip in fortunes as historical – a view supported by Mike Moore of Belfast-based Hayes Recruitment, who has witnessed a steady increase in recent months of successful placements, and a trickle of returning architectural exiles.

Both present and future are encouraging. Come April 2015, local government reform will allow the new, larger, amalgamated councils to compose development and community plans. Architects with a wider set of

urban design and negotiating skills will find a niche supporting the councils in their new roles. There could be an influx of such skilled architects, encouraged by the new situation. Local schools of architecture and their students will also find that traditional core skills can be supplemented for the new situation. One such architect is Michael Corr, of London Met (CASS) and Pie Architecture, who has recently taken up the role of creative director of Place, the built environment centre for Northern Ireland. Corr cites his desire to use the skills he developed during his time at East Architecture and as an advisor for the GLA's Design for London as his motivation to improve the situation in his home Northern Ireland. His pairing up with the locally-based American Dr Sarah Lappin to form the 'Community + Politics' group within the Queen's University MArch Part 2 is a third way of using his skills and experience to contribute positively.

Award winning culture

Practices that could, and do, operate in bigger pools choose to keep their home base in Northern Ireland because, as Ian McKnight of Hall McKnight says, 'it is who we are', and they are part of an increasingly award winning local culture. Together, Alastair Hall and Ian McKnight are at the vanguard of a reach out from Northern Ireland, (Vartov Square Copenhagen, Ipswich Cornhill, Kings College London), a trend recognised and supported by local agency Invest NI. The 2014

Below left London Met's Michael Corr has returned, bringing back skills and building confidence in the local economy.

Below right Hall McKnight's Police Service of Northern Ireland Memorial gardens. The firm builds in the UK and internationally.

Royal Society of Ulster Architects Design Awards was a dazzling sell out, with Invest NI introducing a new award for exporting architectural services, acknowledging the growth in architects, engineers and contractors taking their expertise to new markets.

Supporting market research and partner identification, Eleanor Butterwick of Invest NI emphasises that new markets can be challenging. The organisation offers support to practices to undertake reconnaissance to understand the market before committing hard earned resources. Expanding markets include the Republic of Ireland and London, and Hall McKnight is taking the plunge with a new office in central London, while citing identity, low costs and high quality staff as reasons to maintain its original main office in East Belfast. It holds Bath-based Feilden Clegg Bradley as an example of practice that can have a home firmly embedded in a one location and a strong presence in another.

But Hall McKnight is also looking at local commissions – it has recently been appointed by Belfast-based Clanmil for a reasonably large project in Londonderry. The development office of this housing association has been encouraging a rise in its aspirations for design quality. Andrew Corkill, an enthusiastic advocate for quality within Clanmil, describes it as being focused on an open process that delivers sustainable communities through purpose designed projects which ac-



ALAN JONES



ROSKAVANAGH

knowledge specific site characteristics. This infiltration to the client side, of recognising that investment in the pre-construction phase of a project brings long term benefits, is gradually finding traction in other organisations.

The venerable John Cole, previously deputy secretary of health estates in Northern Ireland and now an honorary professor at Queen's University, may have worried that his well-recognised efforts to raise the quality of healthcare procurement would founder when he retired. Luckily, the local healthcare estates framework introduced this year would seem, despite some initial difficulties, to be continuing the drive for quality and fair fee levels – and those involved should be applauded for maintaining Cole's momentum.

The torch of quality is being carried highest in the local charity sector by CLIC Sargent, a cancer charity for children and young people. With one RIBA award for 'Paul's House', a respite home where families may spend time with children undergoing chemotherapy, in 2013 (RIBA, June 2014), McGonigle McGrath's (MGMG) second project for it is about to start construction. Cecilia Milburn, of CLIC Sargent, describes the experiences of the practice in starting its local building stock at the upper

end of the quality spectrum.

'We want families to feel as comfortable and relaxed as possible during a very difficult time in their lives. MGMG listened to our hopes, and designed with families in mind. They spent time with staff, families and young people, to understand everyone's aspirations. We needed a practical space, yet they also brought innovative and creative ideas that lift it from an ordinary house to something with a special feeling of light and warmth.'

High quality

Kieran McGonigle of MGMG reveals how the firm's crafting of architecture cross fertilises a series of design-led projects/typologies – restaurant interiors, an art gallery, small housing developments and its staple diet of bespoke one-off dwellings. McGonigle describes its mode of operation as 'a small team and charging proper fees. We don't make a fortune, just enough to deliver high quality.'

It seems to work, if a series of awards and satisfyingly resolved and consistent work are parameters for success. Interestingly, MGMG undertakes no publicly-funded work, and one could imagine they might consider the Clanmil initiative an attractive proposition, but registration for BIS's

The local healthcare estates framework introduced this year would seem to be continuing the drive for quality and fair fee levels

(Department for Business, Innovation and Skills) Construction Line and the fee structure could take them into unfamiliar territory. Perhaps it is a case of knowing what one does best – and sticking to it. The practice seems happy at this stage in its evolution to have one client project in London.

Beyond Belfast, Eamonn Monaghan of Keys Monaghan, Irvinestown, indicates that its team of five is busy on projects north and south of the border, though fee levels seem challenging. The current 'in limbo' state of the Health Estates Framework agreement seems to be frustrating – it would have generated a steady workflow over future years for a successful practice.

In two years' time, Martin Hare of McAdam Design anticipates more projects across a wider geographical area. Good relationships with leading Northern Irish contractors seem to have paid dividends, and it has five recently-completed education projects in England, topped off with a glowing letter of thanks from one of the headteachers. Happy to be labelled a 'commercially astute design practice', Hare appears to enjoy articulating the 'smart' value his mixed discipline practice brings to design and construction.

Although Northern Ireland has only 1.7 million people, its architects show a variety of strategies to encourage success, as defined in their terms. Over the coming months Queen's University is conducting a research project with final year undergraduate and postgraduate architecture students meeting selected practitioners to explore how architectural success is defined and what strategies will encourage its achievement. Reach, niche, infiltration and smart are only the beginning. ●

Alan Jones is director of architecture (education) at Queen's University Belfast and a past president of the Royal Society of Ulster Architects

Below MGMG's CLIC Sargent Home from Home 2, Belfast. The considered design sees local charities as well as the public sector investing in home-grown talent.



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External
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The regeneration game

Councils are ready to spend and they want architects' input: make sure you are there and know how to play

Matt Thompson

Recent findings by the RIBA reveal a surprisingly bullish nascent attitude to capital expenditure among local authorities. It is surprising because, as we all know, public services continue to be savagely cut. However, another branch of government policy has seeped through some town hall corridors to re-emerge as what councillor Nick MacDonald, portfolio holder for jobs and growth at Nottingham City Council, loosely calls 'the regeneration agenda'.

Look at the figures. According to the most recent government accounting, local authority spending in England on 'new construction, conversion and renovation' is expected to rise 45% to £12.5bn in 2014-15, while that on housing services is forecast to increase by 65% to £6.6bn. The biggest cultural change is the amount of borrowing not supported by central government, which is forecast to grow by a whopping 80% to £8bn in 2014-15.

One-to-one video interviews with council representatives confirm this trend. For example, MacDonald predicts many opportunities to create great architecture in Nottingham. His colleague David Bishop, corporate director of development and growth, anticipates an 'exciting period'. John Betty, interim director

of place at Stoke-on-Trent City Council, sees the reinvention of the city centre as the central plank in its regeneration. And Nick Watson, senior regeneration manager at Croydon Council, has developers knocking on his door to get a slice of the action.

Take note

This spurt of optimism is spurred by heady new fiscal and regulatory freedoms in the name of localism and decentralisation, which are galvanising local authorities across the country to produce fresh visions for economic recovery. Inevitably, investment in new built development is at the heart of this, and architects must take note.

Why? Because with increased spending



and borrowing comes a heavy fiduciary burden to make it pay. As guardians of the public purse, local authorities need to maximise the value they extract from this regeneration, and for that they must turn to architects.

Indeed, local authorities need a range of architects with different skills, for two reasons. First, as conventional clients, local authorities need architects for their acknowledged design intelligence and consultation skills. This is especially true for flagship projects, whose design must be functional and accountable, but also emblematic of the authority's ambition and aspirations. More than just buildings with a clichéd 'wow' factor, they must be strategically aligned developer-friendly adverts that inspire confidence that the regeneration is credible, under way, and sustainable.

Architects in demand

Second, architects are desperately needed to help formulate and endorse the regeneration strategy to set the right conditions for investment from private developers. In particular, their unique skills are needed to work out the spatial plan – how to implement the strategy on the ground by influencing the local planning system. After all, while local authorities understand the link between design and urban renaissance, they are less well equipped to deliver functional masterplans.

Since the demise of Regional Development Agencies and Regional Spatial Strategies, there has been a vacuum in the oversight of development. Now, however, the void has been partially plugged by Local Enterprise Partnerships (LEPs). Stoke-on-Trent City Council is co-opting its LEP to inform its spatial plan. Betty wants to use it to allow his council to influence and effectively lead the standard of development and quality in the spatial management it expects from develop-

'The local community is the silent client – consulting them is the key foundation for future success'

Barra MacRuairi

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'Talk to us, build the strength of partnerships, and help us to create the city that people want'

Ruth Rosenau, cabinet member for regeneration, transport and planning, Stoke-on-Trent

ers. He regards architects as 'fundamental to how we build, change and make cities of the future appropriate for the society that needs them.' He warns, however, that they must 'masterthink before they masterplan'.

And of course, the more architects are involved, the more likely they are to be appointed to frameworks and win work directly from the authority or private developers in the region.

It would be wrong to characterise this spending as a frenzy – it is far too politically sensitive for that. Instead, it is a cautious gamble bound by prudential rules, and because of that architects do not have free reign to let their design creativity run riot. Local authorities are looking for what MacDonald calls 'the world on a stick' from them: creative genius tempered by the strict social, environmental and economic constraints.

Added value

The representatives of local authorities interviewed were unanimous in their appreciation of architects, saying they add greatest value when involved from the outset. As owner-occupier clients accountable to the taxpayer, local authorities want architects' creativity to improve project viability and particularly whole life costs. They want a high quality end-product that attracts long-term tenants and is sustainable, easy to maintain, and can be adapted over time.

To get there, successful architects must show design leadership from the start and have the common touch – listen to all stakeholders fairly and respectfully, respond proportionately, and communicate appropriately. This cannot be over-emphasized. As Barra MacRuairi, strategy director for place at Bristol City Council, puts it, 'The local



community is the silent client – consulting them is the key foundation for future success.' Laura Johnson, director of housing at the Royal Borough of Kensington and Chelsea, agrees: 'Good schemes have everyone's buy-in, from the politicians to Mr Smith.'

However, successful consultation is merely one of several prerequisites – such as team co-ordination and creative problem-solving – of which perhaps the most desirable trait of all is surety. Betty says, 'Local authorities don't like surprises. We have quite rigorous processes in the full glare of public scrutiny for how we make decisions and commit to buying a building. Understandably, we need reliability.' This surety is equally sought by incoming development partners or contractors. Bishop describes this as 'continuity of advice' that attracts investment by giving certainty to developers, and manages risk.

So architecture is valued, needed and wanted by local authorities, but there is a suspicion that this in itself is not enough. Betty foresees a focus on delivery at the expense of quality. 'What we are in danger of losing in the cost squeeze is the value of thinking, design and the understanding of space. Architects need to help educate clients about the value they bring.' Barra MacRuairi is clear that architects' free-thinking and problem-solving skills are rich and powerful, although concedes that 'packaging them into something you pay for can often be difficult'.

The answer, perhaps, is proposed by Ruth Rosenau, cabinet member for regeneration, transport and planning at Stoke-on-Trent City Council. Her one piece of advice to architects is to 'talk to us, build the strength of partnerships, and help us to create the city that people want'. ●

TOP TIPS FROM PUBLIC SECTOR CLIENTS

- 1 Build relationships with regeneration teams within planning departments; express interest and share ideas generously.
- 2 Respect local authorities' need for whole life value, sustainability and design that drives economic, social and environmental health across their community.
- 3 Remember that people come first: local authorities' first responsibility is to the community they serve.
- 4 Educate and reinforce the message that it is the added value of good design supplied by architects – and not building for building's sake – that justifies capital expenditure.
- 5 Reliability and sure-footed risk management – surety – is prized by local authorities since their procurement activities are under intense public scrutiny.
- 6 Local authorities are obliged to follow strict procurement protocols; when pitching ideas, agree how services should be provided before investing too much time speculatively.

RIBA CLIENT ENGAGEMENT PROGRAMME

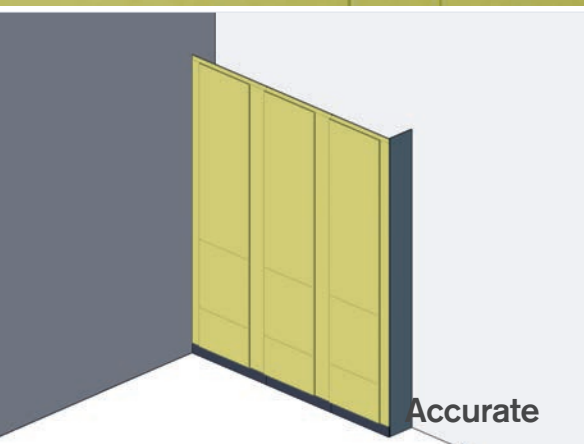
The RIBA's Client Liaison Group is running a series of roundtable discussions to listen to and understand external perceptions of the architectural profession and the value architects bring to the project team, and ultimately to identify the tools needed to promote architectural services in these sectors successfully.

The feedback from interviews with public sector clients is included here, with 60 second clips of the one-to-one interviews available on architecture.com

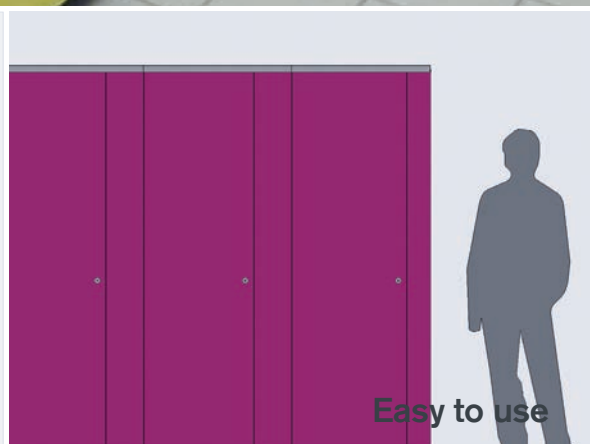
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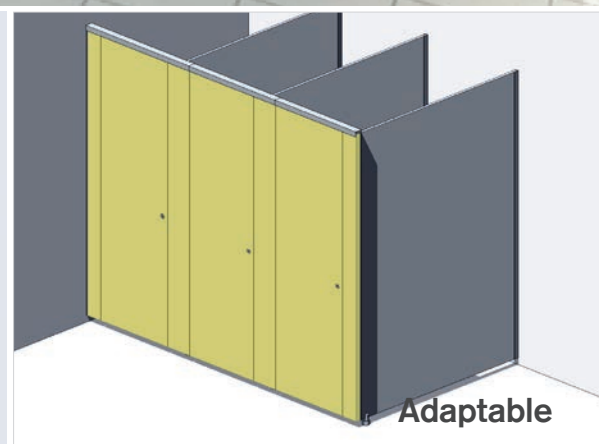
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Procurement
& contracts

Time is money

Don't let demands for more time hit your pocket too

Douglas Wass

Building contracts often provide that a contractor shall not be entitled to an extension of time if it does not give the contract administrator written notice of the event that it claims is, or is likely to delay, the works within a certain time of that event occurring.

These types of clause can promote good project management: they should result in problems being quickly identified and give the contractor and consultants an opportunity to act to mitigate delay. The courts have made it clear they will enforce such clauses.

Loss recovery

When a time extension is awarded the employer must usually pay the contractor any additional costs it has incurred but is unable to claim liquidated damages from it for the delay. The financial impact on the employer can, therefore, be substantial. The employer may seek to recover its losses from the contract administrator if it grants an extension of time or acts in a manner that prevents the employer from relying on the contractor's failure to give notification of the event causing a delay within required timescales.

There are a number of steps which ar-

chitects who act as contract administrators should take to minimise the chances of these circumstances arising.

First, they should ensure they know the circumstances in which a contractor is required to provide notification of an event and the relevant timescales. For example, the contract may require the contractor to notify the architect of an event as soon as it becomes reasonably apparent that the works are likely to be delayed or may only require the contractor to notify the architect of an event when it is actually delaying the works.

Secondly, the architect should give the contractor no indication that it will not strictly apply the time limits for notification set out in the contract because this may waive the employer's right to rely on those limits.

Thirdly, the architect should not grant an extension of time where notification has been provided outside the time limits set out in the contract. If the employer wishes to grant an extension, despite the late notification, it should be made clear to the contractor that the concession relates only to the notice in question, and that the employer requires all further notices to be submitted on time.

Know your contract details

Finally, where contractors have failed to formally notify an event that they claim has delayed the works, they sometimes argue that, for example, meeting minutes and progress reports making reference to the event constitute the written notice. It is important to carefully consider whether such documents comply with all the requirements for the notice set out in the contract. The contract may, for example, require that the notice describes the event and makes it clear that the contractor is seeking an extension. The courts are unlikely to take a sympathetic approach to contractors who fail to provide formal notices and then argue that other documents should be taken to constitute notices. In the recent case of *Obrascon Huarte Lain SA v Her Majesty's Attorney General for Gibraltar*, the judge robustly rejected the contractor's argument that progress reports constituted notices under the terms of the contract.

If architects take the steps set out above, they should find the notice provisions relating to delay in contracts to be a helpful project management tool while avoiding exposing themselves to risks of liability to employers. ●

Douglas Wass is with Macfarlanes LLP

The judge robustly rejected the contractor's argument that progress reports constituted notices under the terms of the contract

MEDIATION

Mediation involves the parties to a dispute appointing an independent third party (usually a senior solicitor or barrister) to help them negotiate a settlement.

The process is conducted on a without prejudice basis, meaning that documents which are produced for the mediation and what is said at the mediation cannot be disclosed to the court. The mediator is given a copy of the key documents relevant to the dispute and a short statement of the position adopted by each party. The parties then attend a meeting with the mediator (usually for a day) during which the mediator tries to help them to resolve their dispute. This can involve, for example, the mediator chairing discussions of the legal issues between the lawyers, discussions of technical issues between the independent experts and commercial negotiations between the parties. Part of the day is usually spent with the parties in separate rooms and the mediator meeting each in turn to try and reach a compromise. The mediator will not usually express a view or make a decision on any aspect of the case.

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Reality check

Maria Smith's awards night



Maria Smith

Only one week left to enter the Real Architecture Awards. Impress clients and win more work by furnishing your office bathroom with a faux-gold loo brush presented to winners of the most honest awards in architecture. And if the glory isn't enough, think of the defrosted dinner in a hideous hotel where you will enjoy the exploits of a washed up old comedian who fails to compensate for the atmosphere of hostility engendered by competition between fragile egos.

This year's categories are:

Youthful Architect of the Year: Established at the dawn of time, this recognises the best projects by architects under the age of 70. Those eligible should run an established practice that has been delivering successful projects for decades. Judges will give special priority to projects that will inspire young people, rather than being delivered by them. Youthful Architect of the Year is sponsored by the Ordinary Architects Pension and the prize is two weeks CAD tuition at a mediocre Architectural Technology College.

Undercut Award: Presented each year to the practice that consistently delivers services with implausibly low fees, this prize was re-established in 2008 to encourage a race to the bottom. To demonstrate eligibility, practices should show fee proposals, time sheets,

and invoices for at least three projects that defy economic sense. Judges will be looking for creative solutions to lowering outgoings including consistent 70 hour weeks by employees, unpaid internships, and a dismal lack of quality control resulting from insufficient resourcing. The award is sponsored by Hipster Hairdressers and the prize is super cool undercut dos for up to 500 employees, 7% of which must be UK tax payers.

Man Architect of the Year: This is a new award set up this year to honour great male architects. The eligibility criteria involves demonstrating extreme manliness. The judges will not be interested in the architect's projects, but in his manly prowess demonstrated at meetings, in emails, and generally about town. Man Architect of the Year is sponsored by Deceptively Benign Adventure Holidays and the prize is a long weekend of uninsured thrill seeking with 20 people the recipient wants to impress.

Less is More Medal: This accolade is for projects that have achieved as little as possible with vast resources. The prize was established in 1994 to recognise expensive projects that look cheap. Eligible projects will have an inordinately high per square meter rate that is almost imperceptible to visitors. Judges will give special attention to the expensive use of humble materials that create a sense of civic poverty and shame. The Less is More Medal is sponsored by the unofficial Brewster's Millions Fan Club who recreationally misunderstand the value of money. Winners receive a digitally remastered DVD of the 1921 film one year after the prize is awarded.

Merging Architecture Awards: Presented to bought or sold companies, this prize rewards laudable skill and cunning in buying and/or selling architecture practices. Eligible firms will either have bought another to great financial reward, or have sold their own practice to great financial reward. Judges will be looking for continuity of cunning coupled with discontinuity of design integrity. This award is sponsored by Massive Built Environment Conglomerate plc and the prize is being bought out by them.

The Tick Box Bursary: This scholarship is for architects that demonstrate a deep, pedantic understanding of design standards and guidelines. Submissions must include extensive certifications issued by approved inspectors witnessed by specialist experts overseen by qualified gurus. Judges will reward

Judges will give special attention to the expensive use of humble materials that create a sense of civic poverty and shame

projects that place guidelines above common sense at every turn with special consideration given to token sustainability and perfunctory community consultation. The bursary is sponsored by adult education charity Reinvent the Training Wheel and the scholarship affords unlimited CPDs for a year.

Architectural Design Prize for Non-Architects: This not particularly sought after award is given for the best project designed by a non-architect. Anyone who has completed a building is eligible. Judges will reward work that best demonstrates the futility of protection of title. This prize is sponsored by MailEverybody.com and the prize is an email to every registered architect in the country spelling out every detail of the winner's professional and personal life.

Award Award: Most prestigious of all, this award is for the best Architectural Award in the UK. In response to the popularity of this award, this year sees the introduction of the sub-award award categories: Best Corruption of Value in Architecture, Best Prejudice-Based Award, and Best Thinly Veiled Profiteering. Eligible entrants will be an architectural award. The award is judged very, very quickly over a liquid lunch using large matrices with maximum opportunity for arithmetical error. It is not sponsored and will be presented by the winner to the winner. ●

Maria Smith is a director at Studio Weave

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Steel Intelligence

With a flourish

Knight Architects' kinetic
Paddington footbridge

60

Cradle-to-cradle

Calculating whole life
embodied carbon

63

Take it to the top

Rooftop gymnastics at
Fletcher Priest's 6 Bevis
Marks

65

In the frame

Matthew Wells on the
innovative steel of
Hunstanton School

68



PETER COOK

In this second edition of Steel Intelligence we offer a way of navigating the complex issue of embodied carbon, specifically how to accurately calculate it not just from cradle-to-gate, but from cradle-to-cradle. We look at Fletcher Priest's 6 Bevis Marks office building in the City of London, which re-used much of the basement slab and foundations of the previous building. We also enjoy the theatre of Knight Architects' delightful kinetic bridge at Paddington, which opens like a fan (above), and finish with another icon of steel architecture – the Smithsons' Hunstanton school – chosen for its lightness and ingenuity by Techniker founder Matthew Wells.

Pamela Buxton, supplement editor

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All a-flutter with a fan

Paddington Basin has another kinetic bridge – this one is muted in repose but fans out like a peacock's tail when it struts its stuff to open

Words Pamela Buxton **Photographs** Peter Cook

Bridge-spotters now have another reason to go to Paddington Basin in west London. For 10 years, Thomas Heatherwick's unfurling Rolling Bridge has been demonstrated every Friday at midday. Now it has been joined by an even more spectacular new footbridge nearby, which creates a distinctive fan shape in its open position by splitting the fabricated steel deck into five 'fingers' raised in an action similar to that of a Japanese hand fan.

The footbridge, over the Grand Union

Canal, is designed by bridge specialist Knight Architects with engineer AKT II for client European Land as part of the Merchant Square development.

Martin Knight says it was important that the new bridge, positioned a short distance from the end of the basin, should have a touch of visual theatre in its opening mode.

'We wanted it to be a spectacle because it is ultimately a folly. But even though it's a folly it still had to be robust and reliable and

meet a challenging budget,' he says.

The first key decision was finalising the location. Knight challenged the direct crossing position given in the brief, which would have produced a span of 15m. Instead, he proposed a skewed alignment offset by 3m in response to the contours of a footpath and building on the north quay.

Like the Rolling Bridge, Knight's 17.1m long crossing needed to fulfill the British Waterways requirement for all its waterways

to be navigable. This left the designer with three main choices: a fixed elevated bridge, a horizontally opening swing bridge, or a vertically opening bridge.

The elevated option had the disadvantage of taking people away from the quayside and would lead to land ownership issues on the south quay. A swing bridge would also take out use of some of the quayside, and would crucially lack drama. In particular, Knight thought the side-opening mechanism would be too resonant of the 20m long narrow boats that manoeuvred at the end of the basin.

The chosen option is a far more exciting vertical-opening design achieved by a hydraulically operated hinged bascule mechanism, supported primarily from the north quay. To develop the design, the engineer and architect used Rhino with a Grasshopper modelling plug-in.

'Through these an extremely lightweight and economic structure was achieved, based on an outer plate thickness of 10mm and an internal ribbing of 10mm plates,' says AKT II director Daniel Bosia.

For the vast majority of the time, the bridge is closed, clearing the high tide by just 100mm to give a sense of walking on water. In this position, the bridge is sober in appearance, each deck beam slotting down onto a conical-tipped steel bar on a shelf on the southern quay. The most visible element is not the bridge deck itself but the integral five steel counterweights on the northern quay which balance the cantilevers. These counterweights, says Knight, are conceived as sculptural objects in the landscape that give a clue to the raised form of the bridge. A great deal of deliberation went into their scale – they needed to be visible but don't compete in any way with the main event.

'There's something nice about the understated quality of the bridge

compared to the drama of when it's open... We didn't want a peacock there all the time,' says Knight.

The fabricated, 600mm wide trapezoid box girders are tapered from 900mm deep at the pivot point on the north of the quay to 300mm at the tip on the other side. These lock together laterally to form a rigid, single deck. One of the challenges was achieving only the narrowest of gaps – the client was adamant that there would be no danger of anyone catching a heel in the gap or of a glimpse of the water beneath. Each has a stainless steel edge strip which contains anti-skid surfacing.

'The 0-3mm tolerance required was very difficult to achieve for a moving bridge with pivoting,' says Mark Randerson, operations director of S H Structures.

As the bridge deck is raised by the hydraulic mechanism, the counterweights rotate down flush into the ground. Added spectacle is created by splitting the 3m wide deck into five parallel, equal beams that rise intentionally slowly in a graduated, sequenced flourish from 67° to 16°. This lowest

Left: The new Merchant Square bridge forms a fan with a flourish when raised.

Below: The bridge when lowered with the counterweights (to the left) forming part of the landscape



beam achieves the required clearance at mid channel. The design allows each beam to move in windy conditions and to avoid any contact by offsetting the axis of rotation by 784mm between each finger. Each beam moves faster than the next to co-ordinate the fanning effect during the opening sequence, with manual override possible if necessary.

'We wanted it to look as simple and minimal as possible, but to make something that minimal is much harder,' says AKT II director Daniel Bosia.

The bridge has epoxy resin decking in charcoal grey to match the quayside paving, with tubular stainless steel balustrades and a timber handrail. The balustrades, says Knight, gives a comforting sense of enclosure when looking along the bridge but still allow a degree of transparency when the bridge is viewed side on from the ends of the dock.

At night, the bridge is lit by LEDs beneath the handrail and strip lights between each counterweight to wash light up onto the sculptural forms.

One of the biggest challenges was installation. Because of limited vehicular access to the basin, the steelwork was

prefitted in the fabrication shop with its pivots, pistons and bearing plates to ensure a very tight tolerance. It was then disassembled and brought to site by barge, arranged on the vessel with the highest point in the middle to ensure that it would clear the vaulted bridges en route.

A separate project by Townshend Landscape Architects integrates the counterweights into the landscape design for a quayside terrace.

'One of the real challenges, and the beauty of the project, is that everything is bespoke,' says Knight. 'The idea is unique and the solution is unique, with everything thought through from first principles. It's very rewarding.'

Soon more buildings will be constructed at Merchant Square, including a high-rise designed by Robin Partington & Partners – adding to the collection of offices by Richard Rogers Partnership, Terry Farrell & Partners and Mossessian & Partners. These new buildings will bring increased footfall across the new bridge and an even greater potential audience for the regular Friday lifting of both of Paddington Basin's kinetic bridges. ●



KNIGHT ARCHITECTS

THE COUNTERWEIGHTS

Five shaped counterweights are set behind the bridge's hinge points to assist the hydraulic mechanism by reducing the energy required to raise the deck structure. These sculptural forms stand 3m high on the north quay and form the main visual interest to the bridge in its down mode.

'It looks like a piece of art on the bank,' says Mark Randerson, operations director of S H Structures, who fabricated the steelwork for the bridge.

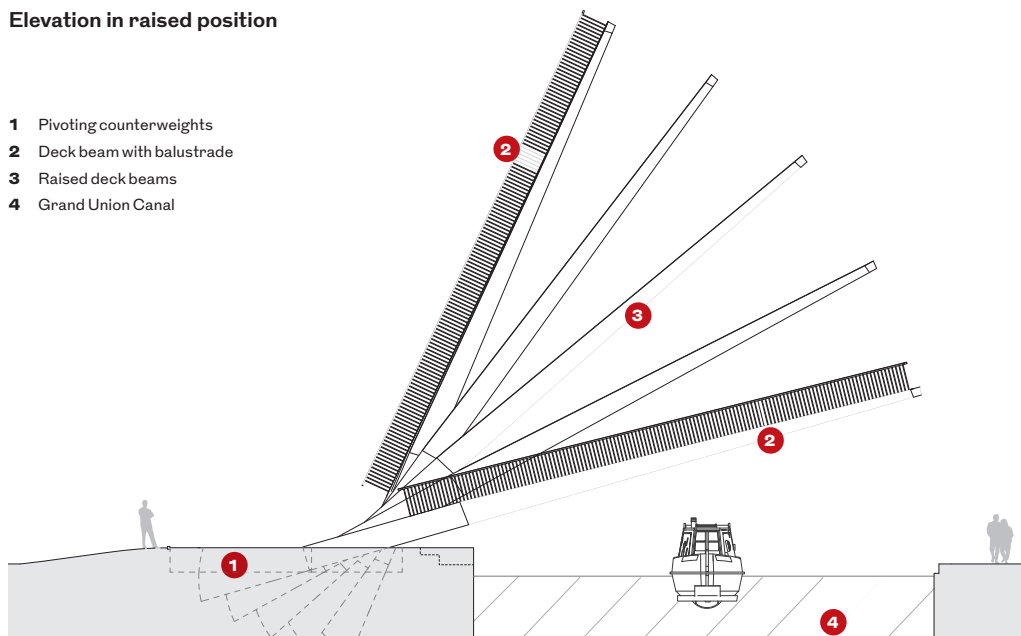
The counterweights are continuous with the cantilever steelwork, having been fabricated as hollow boxes and welded to the beams at the workshop (above). They were fabricated from flat steel plates in sculptural conical form with one side flat and the other shaped to resemble, according to Randerson, segments of a flat-bottomed discus. They were welded, ground, sanded, shot-blasted and painted before being barged to the site with the deck. Because of the combined weight, they had to be transported hollow and filled with concrete only once they were installed on the quayside. Close fitting slots around the counterweights are designed to avoid any openings for people or objects to fall into. The concrete fill increased the weight of the counterweights from approximately four to eight tonnes each, with plates added to cover the nozzle holes.

When the cantilevered deck beams are raised, the counterweights pivot down into a 4m deep pit.

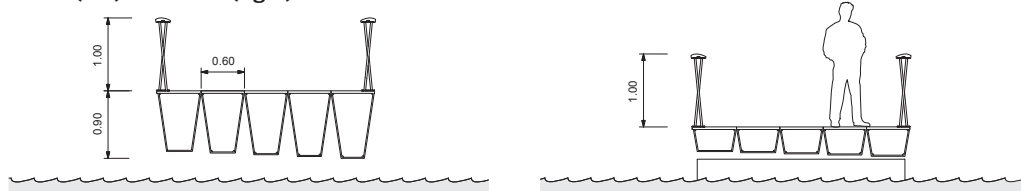
'S H Structures did a very good job with the complexity of the form, and made sure that the design intent could be built,' says AKT II's Daniel Bosia.

Elevation in raised position

- 1 Pivoting counterweights
- 2 Deck beam with balustrade
- 3 Raised deck beams
- 4 Grand Union Canal



North (left) and south (right) cross sections



Credits

Client European Land

Architect Knight Architects

Structural engineer AKT II

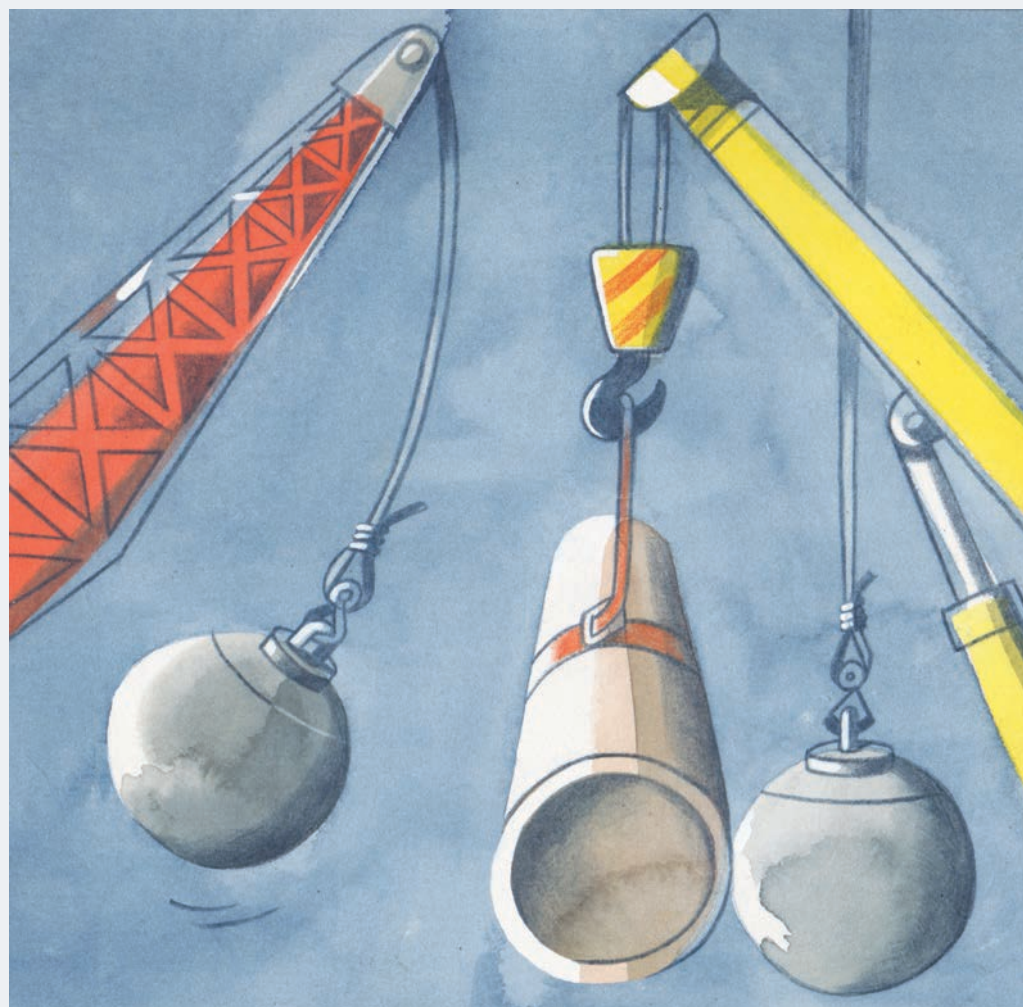
Main contractor Mace

Steelwork contractor S H Structures

Carbon quandaries

Cradle-to-gate or cradle-to-cradle? How to navigate the complexities of calculating embodied carbon

Words John Dowling **Illustration** Toby Morison



As the operational efficiency of buildings improves, the relative proportion of embodied carbon within the total emissions is rising. As a result, embodied carbon is coming under greater scrutiny as part of the drive to meet government targets for reducing CO₂ emissions by 80% by 2050.

Know your definitions

Embodied carbon has become synonymous with the term carbon footprint. This refers to the lifecycle greenhouse gas emissions during

manufacture and transport of construction materials and components, plus the construction process and end-of-life aspects of the building. It is expressed as carbon dioxide equivalents – CO₂e – and is separate to operational carbon, which is the CO₂ emitted during a building's operational phase, such as from heating, cooling, ventilation and lighting. A building's total emissions are a combination of embodied and operational carbon.

It is important to be clear on popular

jargon such as cradle-to-cradle – also sometimes referred to as cradle-to-grave – which includes end of life stages of demolition and recycling. Unlike these, cradle-to-gate only covers extraction and manufacturing processes.

Compare like with like

Lifecycle assessment (LCA) should be used to determine the embodied carbon impact of construction products. Preferably, it should be cradle-to-cradle and follow all the lifecycle stages set out in BS EN15804. However, some manufacturers' data only considers impacts from the extraction and manufacturing process and not end of life aspects as well. The significant difference between these two measurements for most materials means it is important that any comparative analysis uses like for like information to avoid flawed conclusions.

To ensure data is creditable and robust, designers should check with manufacturers how their data has been derived and, if not explicitly stated, whether it includes all lifecycle stages.

Most embodied carbon impacts are measured using rates of kgCO₂e/kg. However, direct material comparisons should be avoided, as different materials aren't used in the same quantities to deliver the same performance. Instead, a kgCO₂e/m² should be used for the various options to reflect the different amounts used when built.

Make use of new end of life datasets

A major issue when calculating embodied carbon is that data has been more widely available in cradle-to-gate rather than cradle-to-cradle formats. As a result, even those who have wanted to consider the latter have often been unable to do so. Where manufacturers do not give end of life data, designers can now plug the gap by using new embodied carbon data for commonly-used framing materials produced by PE International, a strategic consultancy specialising in sustainability.

This data set was overseen by Jane Anderson, lead author of the BRE's Green Guides to Specification. The table below is an extract from the PE International data, covering demolition and recycling impacts for common construction materials (BS EN15804 modules C and D) and includes robust comparative data for extraction and manufacturing lifecycle stages too.

Calculate embodied carbon footprints online

Tata Steel and the BCSA have developed an online tool to assist in estimating the embodied carbon footprint for a multi-storey superstructure as part of a new guide on the subject. The tool can auto generate a CO₂e figure using algorithms developed by the Steel Construction Institute, or can be used with manual inputs specific to the designer's building. This manual option also enables a comparison to be made between the impact of a steel and concrete framed building.

The carbon emissions rates used in the tool can alternatively be incorporated into the designer's own spreadsheet. ● John Dowling is sustainability manager of the British Constructional Steelwork Association and author of the Tata Steel and British Constructional Steelwork Association's new guide to calculating embodied carbon. Steel Construction: Embodied Carbon is available to download at www.steelconstruction.info. An extended version of the table below is also available online.



CASE STUDIES

Steel Construction: Embodied Carbon includes an analysis of the embodied carbon impacts of four case study buildings, calculating comparative data for different framing options. Data includes cost and programme analysis and was produced independently either by Gardiner & Theobald, Peter Brett Associates and Mace or AECOM, Sweett Group and the Steel Construction Institute.

In all cases, standard steel framed buildings outperformed standard concrete framed buildings. For Building 1 – a typical business park office building with a gross internal area of 3,200m² – embodied carbon for the total structure was 180kgCO₂e/m² for steel composite compared with 267kgCO₂e/m², 268kgCO₂e/m² and 328kgCO₂e/m² respectively for post-tensioned flat slab, steel precast and concrete flat slab frames. For Building 2, a typical 16,500m² city centre office building, a composite steel frame option had around 11% less embodied carbon than the post-tensioned frame.

At the 10 storey office building of One Kingdom Street in London, the total building impact of the post-tensioned concrete option was 12% greater than the composite steel option.

Cradle-to-cradle research data for the 17 storey Holiday Inn hotel and office tower at MediaCityUK in Salford found that the total building impact of the concrete flat slab option was 18% greater than the composite steel option.

Full details of the relative embodied carbon and cost comparisons can be found in Steel Construction: Embodied Carbon.

SPECIFICS, MINDSETS, AND A HOLISTIC APPROACH

Architects specialising in sustainability discuss some of the issues they encounter when calculating embodied carbon.

Stewart Dodd, managing director, Satellite Architects

Embodied energy is a minefield. There are so many bits of data out there that contradict each other. The major problem is that it's so subjective you rarely end up with any true information. BRE databases can give you a broad brush idea but you really need an analysis of your particular building to get the true picture, and that's where the cost comes in.

Duncan Baker-Brown, director, BBM Sustainable Design

You can't analyse embodied carbon without looking at things holistically. Architects and specifiers need to understand the relative embodied carbon values of the most commonly used materials in principle, but then it's all about how they detail and construct a building so that any components that might have high embodied carbon can be easily re-used.

Anna Woodeson, head of sustainability, Wilkinson Eyre

As an industry we've just about cracked calculating embodied energy, although it's clear there's no one single approach. What's interesting is how we then use that information to adapt our designs. We've started analysing embodied carbon in detail on some of our projects and as soon as you start questioning it, you begin to get a different mindset and start to pare back and simplify the design and the use of materials.

CRADLE-TO-CRADLE EMBODIED CARBON DATA FOR COMMON FRAMING MATERIALS				
Product	BS EN15804 Modules			Total
	A1-A3 (kgCO ₂ e/kg)	C1-C4 (kgCO ₂ e/kg)	D (kgCO ₂ e/kg)	
Brickwork	0.16	0.01	-0.0207	0.15
Concrete blockwork	0.09	0.0103	-0.0053	0.10
C40 concrete	0.13	0.0043	-0.0053	0.13
C50 concrete	0.17	0.0037	-0.0053	0.17
Lightweight C40 concrete	0.17	0.0111	-0.0053	0.18
Hollowcore slab	0.2	0.0006	-0.0103	0.19
Hot rolled plate and structural sections ¹	1.735	0.06	-0.959	0.84
Hot formed structural hollow sections ¹	2.49	0.06	-1.38	1.17
Reinforcing steel ¹	1.27	0.061	-0.426	0.91
Steel deck	2.52	0.06	-1.45	1.13
¹ Fabrication (bending, cutting and welding for rebar) impacts have not been included				

Feet firmly on the ground

Forget the fad for height and funny shapes, wearing the last man's shoes is the really smart move at the City's 6 Bevis Marks

Words Pamela Buxton **Photographs** Robert Leslie

At just 16 storeys high, 6 Bevis Marks is relatively diminutive compared with the many new towers now dominating the City of London skyline.

The Fletcher Priest-designed office development is dwarfed by the adjacent Swiss Re 'Gherkin' and nearby Leadenhall 'Cheesegrater', and at 52.4m is nowhere near tall enough to attract a nickname of its own yet. But there are ways other than height to create distinctiveness on the skyline – in this case a steel and ETFE rooftop canopy that wraps over the 21,370m² building to capture an all-weather roof terrace, before continuing in a lattice down the side.

The site was occupied by a 1980s eight-storey structure, and client AXA Real Estate & MGPA naturally wanted to maximise its potential with a much larger development. After experimenting with several massing options, Fletcher Priest designed a 15 storey tower that steps down to 11. The footprint is slightly reduced from 27.5m to 24.5m to maximise public space on Bevis Marks, with new pedestrian links created from the rear to Bury Court and the Swiss Re building.

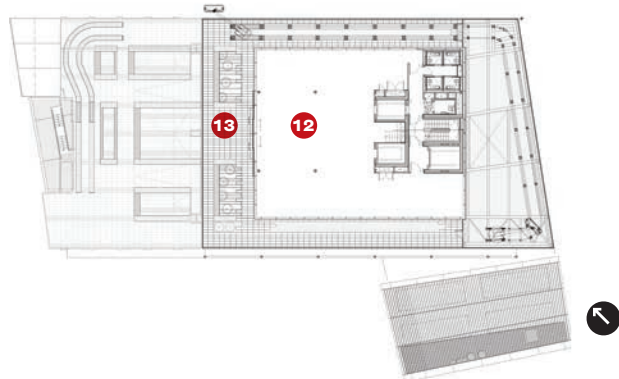
But while the top of the £52m building grabs attention, it's what's going on at the bottom that provides the key to the whole scheme.

With limited scope to install new foundations, options quickly moved from demolition to the more cost effective re-use of what was already there, according to Julian Traxler, director of structural engineer Waterman Structures. This meant retaining the original 67 piles, basement slab and retaining walls and rebuilding the cores in the same place. These original piles

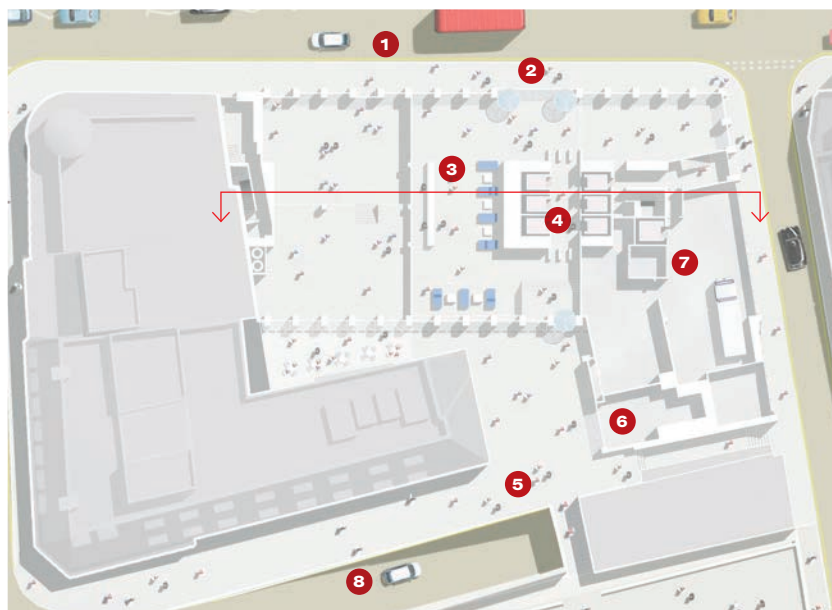


Right 6 Bevis Marks is topped with a spectacular canopy over a sky garden with views over the City of London and beyond.

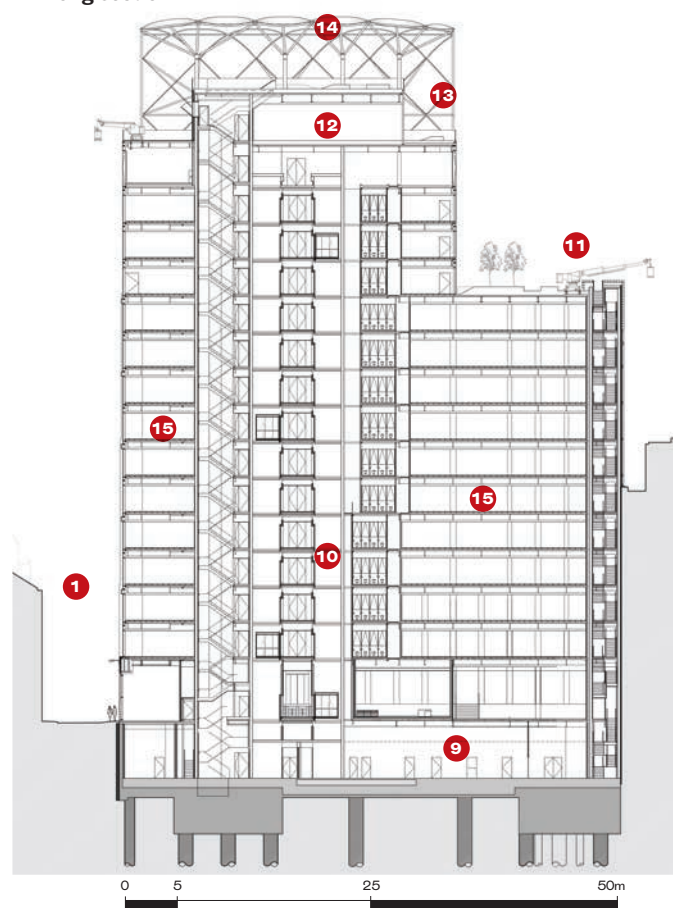
Level 15 plan



Ground floor site plan



Long section



- | | | |
|--------------------------------|---------------------------------|-------------------------|
| 1 Bevis Marks | 6 Retail unit | 11 Lower terrace |
| 2 Entrance to
6 Bevis Marks | 7 Upper level of loading bay | 12 Level 15 bar area |
| 3 Reception | 8 Access to loading
bay road | 13 Upper terrace |
| 4 Lifts | 9 Plant/storage zone | 14 Polycarbonate canopy |
| 5 Bury Court | 10 Lift shafts | 15 Typical office space |

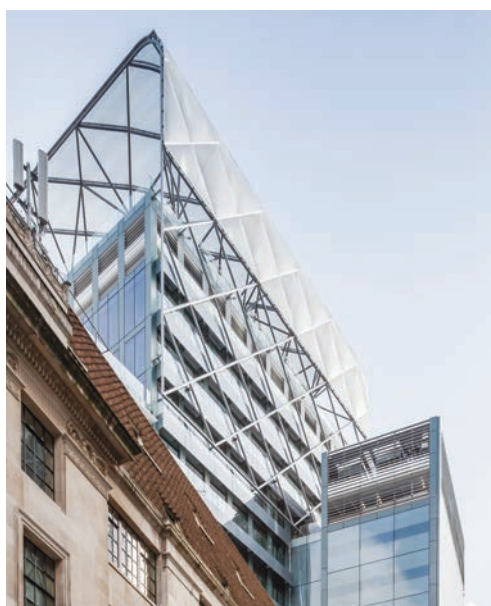
support 56% of the new building with the rest provided by 37 new piles and 66 mini piles.

To make this solution viable, the new, taller building needed to be as lightweight as possible, using a superstructure far lighter than the one it replaced.

'This wouldn't have been possible if it had been a concrete building,' says Traxler.

The structural design uses a 150mm composite steel and concrete deck slab supported by 600mm deep fabricated composite steel beams with circular and rectangular web penetration for service distribution. The total floor zone is 1100mm deep. These beams were fabricated by steelwork contractor William Hare from three plates welded together to the engineer's specification to ensure the lightest possible outcome for the job.

According to Traxler, the new steelwork



Left The roof canopy continues down the top of the south elevation as a diagrid.

Credits

Client AXA Real Estate & MGPA

Architect Fletcher Priest

Structural engineer Waterman Building Structures; David Dexter Associates (ETFE roof)

General contractor Skanska

Steelwork contractor William Hare (main structure) Billington Structures/Tubecon (ETFE roof)

for the main structure was relatively straightforward. The structural grid is formed using 13.4 m long secondary beams and 9m primary beams with perimeter columns varying from 300mm circular hollow sections (CHS) to 550mm by 350mm rectangular hollow sections. This gives clear spans across the plan depth with the exception of three CHS columns on every floor excluding reception level.

Floor plates total approximately 1255m² on levels 1-10 and 650m² on the smaller levels 11-13. All have 2.75m floor to ceiling heights.

The only major complication was the inclusion of a number of large transfer beams including three at first floor level. The biggest was needed above the loading bay. Weighing 38t, this 15m long beam measures 1500mm deep with 1000mm by 100mm flanges and 50mm webs. Because of its size and weight it had to be brought to site in two pieces and welded; then it was installed with the help of kentledge blocks on the ends of the beams to shift the centre of gravity and avoid the core. All this had to be achieved within a very tight programme window as a result of Olympic Games-related road closures.

On level 11, a 10.5m long plated section – again delivered in two pieces – supports the plant unit enclosure.

Two further 9m transfer beams, each weighting 25t, were incorporated over the reception to avoid columns within the entrance space. All these transfer beams were essential for the success of the development.

‘If you don’t have a decent reception or operational loading bay, you can’t let the building,’ explains Traxler.

Aesthetically, a key reference point for the architects was the nearby, HP Berlage-designed Holland House, in particular its vertical emphasis and the way its ribbed green faience appears ‘closed’ when viewed obliquely. Fletcher Priest aimed to reference this through its choice of textured green glass column cladding panels brought forward from the glass facade line. This cladding is interspersed after every two panels of windows to form a strong vertical rhythm down the building.

‘Like Holland House this looks like a closed façade and you get a sense of solidity of the material which goes as you walk past,’ says project architect Mareike Langkitsch.

From a distance however, the roof canopy is the most striking feature, providing all-weather protection for the 204m² sky court – the largest of three roof gardens in the development. The architect toyed with the idea of a running track or tennis court,

but wisely settled on a garden with obvious potential for corporate events as well as an ideal lunch spot for tenants. It is protected by a steel and fritted ETFE canopy, which frames views in two directions over London (see box) though it screens out much of the Swiss Re building. The canopy – fabricated and installed by Tubecon, the exposed steelwork division of Billington Structures – wraps over the garden and down the south facade to level 11 in a diagrid to assist solar shading.

‘The roof is a very special top to the building, picking up on the same criss-cross diamond grid as that of the Gherkin,’ says Langkitsch.

Careful re-use of existing foundations is an increasingly popular option for developers on crowded City of London sites, aided by the better quality engineering records available for 1980s buildings – the era increasingly coming up for demolition. Load capacity testing of existing piles will be required to enable engineers to prove the foundations but, if they can be incorporated into the new building, massive programme and cost-savings can be achieved.

At 6 Bevis Marks, the re-use of 52% of the original structural mass shortened the construction programme and contributed to its BREEAM Excellent rating. ●



ROOF CANOPY

The light steel roof structure covers a bird's eye footprint of around 33m by 25m and oversails approximately 28m down the south facade, leaving the terrace open at two ends. The canopy is supported on eight branched 355mm diameter circular hollow section columns. These tree-like columns support 45, CHS branches of 193mm each – up to seven per column – which form the cranked and curved diagrid canopy arranged in 6m bays.

Canopy aprons are fixed back to the building's structural frame through the cladding, at level 11 on the south side opposite Swiss Re and on level 15 on the other.

Tubecon fabricated and welded over 1000 bespoke t-saddle brackets to the structure to accommodate the 4m by 4m ETFE cushions that clad the canopy.

Due to site constraints, the only feasible option for installation was to fabricate the structure in small pieces that could be bolted and assembled on site. To conceal the bolted splice connections, Tubecon used its 'invisible' connection technique with the help of CNC laser-cut 'cod mouth' cuts on the ends of each CHS member, according to parent Billington Structures' process planner, Simon Ward. The canopy was test erected at Tubecon's Bristol facility using bespoke steel jigs.

Customised structural nodes are covered in a 3D-printed architectural nylon shroud, designed to fit tightly to the steelwork to achieve a smooth transition from the structural column to the branches.

Lightweight frame to die for



Matthew Wells of Techniker on the pioneering steelwork of the Smithsons' Hunstanton School in Norfolk

I once thought that the best buildings occurred in the middle of a Venn diagram between architecture and engineering. But these disciplines are actually more like separate paths weaving back and forth, with something special happening at the intersections. Hunstanton [now Smithdon] School (1949-54) is one such example.

After the Second World War engineers were looking to use what had been learnt during those years in the rebuilding programme. Engineer John Baker's 'plastic theory', born out of blast resistance studies, offered a new way of looking at analysis with trabeated steel frames of unprecedented lightness and efficiency. In that austere time architects sought to express the essence of structure and materiality, and in Alison and Peter Smithson's design of Hunstanton, this translated into unadorned materials brought together in a very direct, 'brutal' way with a fully welded steel frame engineered by Ron Jenkins of Ove Arup.

I like Hunstanton because it is light and elegant rather than high-tech and overworked. Of course, like all English work it is very derivative – all mannered Dessau Bauhaus and very Miesian. The water tower is ludicrously over-wrought. But the lightweight truss monitor lights are to die for.

Hunstanton was – and still is – hugely influential; a direct precedent for Tony Hunt's structuring of the Reliance Control Factory in Swindon with Team 4 and Peter Brett's work for Nicholas Grimshaw and Partners. And as with all good structures, it photographed a dream during construction. ●

Right Slim beams and girders go up during the construction of Hunstanton School.

Below The finished school's main block.





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3: Culture

Bigger isn't always best

Progress on a human scale gets the popular vote



Hugh Pearman Editor

There's something of a back-to-basics feel about architecture at the moment. Here's a test: which are you more interested in, Rogers Stirk Harbour's just-completed, sleekly mechanistic Leadenhall Building in the City of London, costing £340m, or the £50,000 'WikiHouse', an exercise in open-source design by Architecture 00 and Arup? It was no contest, so far as our Twitter followers were concerned, whose retweets were at least three times as high for the WikiHouse and its downloadable componentry. Interesting too that Arup was instrumental in both projects. The Leadenhall building is in this issue on page 22; for the WikiHouse, appropriately enough, go to ribaj.com where you'll find a treasurehouse of extra material.

Then there are back-to-basics schools. In this issue I'm delighted to welcome a new member of our expanding roster of columnists: Oliver Wainwright, architecture critic of the Guardian, who will take monthly turns with architecturally-savvy novelist Will Wiles. In his first column overleaf, Ollie tackles the ever-relevant issue of how to achieve good new schools on much-reduced

The more knowledge you give away, the more people come back asking for more

budgets and space standards post-Gove – and emphasises the point that most of the politically-perceived extravagance of the Building Schools for the Future programme lay not in architecture but in the procurement process – something made very clear at the time by Sunand Prasad when RIBA president.

Let's hear it for our columnists, by the way, in print, online, or both: what with Maria Smith of Studio Weave – hers was the most-visited page in ribaj.com last month – Wainwright and Wiles, Elly Ward and Charles Holland of Ordinary Architecture celebrating the everyday, and Rome Scholar Adam Nathaniel Furman's wittily perceptive 'Magnificent Seven' architectural tropes, we have a company of commentators second to none. Furman also reviews with elegance and insight an exceptional new book on working drawings this month (page 93). The RIBA Journal wants to provide a forum for the widest variety of voices in architecture: add yours by writing to us at letters@ribajournal.com.

'The more knowledge you give away, the more people come back asking for more,' says Alastair Parvin of Architecture 00, apropos of the WikiHouse. 'It gives everyone the opportunity to hire an architect for a few hours or a few days.' This may seem counter-intuitive: aren't architects always beating themselves up about how much work they do for free, about how profligate they are with ideas which others then profit from? Shouldn't every little bit of work be accounted for? Well yes, when there is a client and a contract and the need to turn a profit. Our profile this month is AHMM, a hugely successful practice which at 25 years old is living proof that good architecture pays. But there is a world of ideas out there looking for clients. I'm not in the least surprised that the WikiHouse – a basic house armature aimed at creating a very different one-off house market, so leading to a new strand of commissions for architects – is fascinating our followers. ●

It was determined to be anti-everything – anti-corporate, anti-big money, anti-middlemen, anti-lawyers, anti-establishment, even anti-architecture

Nick Johnson
p76

Berndt and Hilla Becher sit on the pivot between architecture as object and architecture as a signifier, a container of meaning
p87

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Shout it from the school roof

Oliver Wainwright teaches a lesson or two



Oliver Wainwright

The architect-designed state school, like the Dumpu language of Madang and the dwarf buffalo of Mindoro, is facing extinction. Architects had their chance, with the £55bn bounty of Building Schools for the Future, but they blew it on extravagant whims like coloured cladding and wavy canopies. And all those expensive curved walls. So goes the view established by former education minister, Michael Gove, who holds the record for managing to alienate two professions at once, labelling defiant teachers 'the blob', while accusing architects of 'creaming off cash'.

The cash-rich blob might never have wobbled with such glee as when 'toxic' Gove was axed. His successor, Nicky Morgan, has been propelled from back-bench to the front of the class in just four years, and has distanced herself from her bullish predecessor by claiming to be a good listener. So architects should tell her why the design of schools matters.

The Govist view, guided by the chief executives of Tesco and Dixons, saw pupils as units to be stacked into standardised warehouses, with predictable results. The series of baseline design guides shows what can be achieved with the swingeing £1,113/m² construction cost, including some flexibility for mavericks that break the rules. Like Lego, 'the short and long blocks can be combined in various ways to suit a wide range of school sizes'.

Contractors like Willmott Dixon have embraced the challenge, producing a system that allows tired headteachers to choose from the portal-framed shed of the Keynes, the

The extravagance of BSF was in procurement, not architecture, with up to £10m often spent before design work had even begun

sweeping arc of the Paxton, or the boxy block of the Mondrian. It's 'like buying a kettle, TV, or a car,' says the company – with no guarantee that it will last longer than one of these domestic consumables. The schools are 35% cheaper than those of BSF – and 15% smaller, with meaner corridors, tighter assembly halls and none of the profligate loose space that is actually useful for teaching smaller groups and managing charging crowds.

With pupil numbers set to exceed eight million by 2023, we will need the equivalent of almost 2,000 new schools, increasing the lure of the standardised production line. But it must be shouted from the rooftops again and again that the extravagance of BSF was in procurement, not architecture, with up to £10m often spent before design work had even begun.

Morgan must give schools the strength to create their environments as they wish, and learn that working with an economy of means, in constrained sites, to tight timeframes, is the essence of the architect's toolbox.

An encouraging tale, from which Morgan and her advisers would do well to learn, can be found at Ralph Allen School near Bath, to which the (actually) young practice Feilden Fowles has been quietly adding pieces over the last few years. Entrusted with developing a masterplan to unite the fragmented estate, including a new teaching block and applied learning centre, the architect has crafted a beautiful pair of buildings, which show what care and attention to detail you can get from employing an energetic young firm.

They are not shouty or groundbreaking, but just simple, well-planned buildings that respond to the specific needs of the school and site. There are elegant touches and a tactile choice of materials, with walls of solid timber and rammed earth, polished limecrete floors and a joyful red walkway and staircase suspended from deep overhanging eaves.

Such small miracles, achieved for the same Govist budgets, were possible because as an academy, the school controls its own budgets. The coalition's centralised procurement machine, which excludes smaller firms, prevents other state schools from doing the same. Many of the country's leading practices cut their teeth on small school projects, when it was still possible. The government should have the confidence to trust it to work once again, or be left with a flimsy legacy of bleak child depots. ●

Oliver Wainwright is architecture critic at The Guardian. Read him here every other month

TURKISH DELIGHT

An unlikely piece of good news comes from Istanbul, where the incessant march of the wrecking ball is to be turned away from the city's historic streets and towards one of its more recent carbuncles. Looming aggressively above the city's skyline, the three towers of the OnaltiDokuz Residence have been deemed illegal by the high court, which has ordered them to be torn down.



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The Shard, London

London's tallest iconic landmark, The Shard, now dominates the city's skyline. At the building's heart is a 72-storey high-performance concrete core which achieved 30 MPa cube strength within just 24 hours. Post-tensioned floors were used throughout the luxury hotel and residences which offered both material efficiency as well as superior occupant comfort.

www.thisisconcrete.co.uk

The Shard, London is nominated for the 2014 RIBA Stirling Prize.

This is Concrete is supported by The Concrete Centre.

Through the monsoon

Three men and a tuktuk take on India

Ben Myers

The Archituks are three friends from Glenn Howells Architects, Birmingham – Ben Myers and Tom Shenton, both architects, and Rico Cacciatore, Part II. We were looking for an adventure and something a bit different to celebrate when two of the team became architects last June. On a whim, we discovered the Rickshaw Run, a 3,500km expedition across India in a 'tuktuk' – a three-wheeled, seven horse-power bag of bolts with no suspension and a tendency to roll over or vibrate itself to bits at every opportunity... not the ideal vehicle for transcontinental expeditions.

The route involved crossing the subcontinent from Shillong, in the isolated north-eastern territory of Meghalaya, to Kochi in Kerala at the southern tip of the peninsula, navigating some challenging terrain and taking on officially the world's most dangerous roads. The three of us (tightly packed in one hired tuktuk) were without any particular expertise in mechanics, orienteering or indeed driving for that matter. The event organiser, The Adventurists, made a point of ensuring there was no prescribed route and no outside assistance at all during the 17 day journey.

As a result, when facing accidental Bangladeshi border crossings, exploding batteries spewing acid, electrical cockpit fires following bodged sound system wiring, serial self-disconnecting exhaust pipes and monsoon downpours, we were left at the mercy of the Indian people unfortunate enough to find themselves in our vicinity at our time of need. Our lasting memory of the trip as a whole will be the warmth and kindness of the people we met in these chance encounters; surprised to see foreigners in these remote parts of their country, truly amazed at our ridiculous

We will never again take for granted the headlight or the horn

choice of recreational activity, and delighted to help us in any way they could.

However, the setting sun at 6pm and the onset of night brought an entirely new and frightening set of challenges to life. We will never again take for granted the headlight or the horn. The single most significant road obstacle we encountered in rural India, the cow, has neither horn nor headlight, and gave us some narrow escapes from death.

Each night we planned the next day's distance and, usually en route, decided where to stay. We were up at 4:30 most mornings to make the most of the daylight. Often we made great progress, only to turn on to a very poor quality road that allowed us to go no faster than 10kmph for the next 40km; forcing us to spend 18 hours behind the wheel. Add the dirt and pollution which lies heavy on the lungs; the body vainly trying to get used to chickpea curry for breakfast each day; and the extreme concentration needed to stay alive on the road, and it is a physically draining experience. But a really good one. We made it all the way.

The Adventurists encourage teams to seek charitable donations and try to promote, in some small way, improving the world while trying to experience some unusual parts of it. The organiser's affiliation with Cool Earth means that half our contribution will go towards the preservation of the rainforest and the protection of its indigenous people. We decided we would also champion Architecture for Humanity. AfH has given us the opportunity to connect our profession with our adventure and show how architecture can help people and provide relief. ●

If you would like to make a contribution, do so at: www.virginmoneygiving.com/team/thearchituk architectureforhumanity.org; www.coolearth.org

Jumping jacks for the Archituk team outside Coimbatore in Tamil Nadu, on day 17 of being cooped up in a tin can.



Masters of our own destiny

Let's stand up and fight the blight of corporate might

Nick Johnson

The impact on highly geared, highly ambitious property players of the Lehmans collapse gave me time for reflection on the erosion of regional identity, the importance of independents, the death of the high street. I realised I was unhappy with the place in which I lived, that people not architecture and design were the solution, and that we had to find another fleet-of-foot way, to reinvent 'place' that side stepped the overstuffed melee of mindless moneyed middlemen that the so-called regeneration industry had become.

Seven miles south of Manchester, Altrincham's market charter dates back to 1290. It has some of the most expensive houses in the country, some of the finest schools, railway and tram stations and is one mile from the country's third largest airport. On paper the town should be a runaway success. It isn't.

In 2010, Altrincham hit the headlines as the town with the highest proportion of shops lying empty in the country. Dealt a triple whammy by Manchester's über mall, the Trafford Centre, the recession and some dreadful planning decisions, it flat-lined. Alty Market followed the same trajectory, oc-

cupying a beautiful listed building, finished in 1879, home to over 300 traders up to the early '80's and latterly, in the world of chains, corporates and empty brand identities, the last bastion of 30 diehard market stalwarts.

Inspired by local graphic designer Peter Saville, the proposition for change seemed simple – Altrincham was the original market town, it now needed to become a modern town with, at its heart, a modern market. It was inspired by London, fuelled by the desire to make Alty fit-for-purpose and determined to be anti-everything – anti-corporate, anti-big money, anti-middlemen, anti-lawyers, anti-establishment, even anti-architecture. It also fiercely promoted independence, enterprise, the region, distinction and identity.

Operating in a property world where permanence is the key to value, the object is to demonstrate 'value through impermanence', the capacity to generate demand and 'footfall' through constant, clear and heavily curated change. Curation of people and what they do is the key. Regeneration can be effected without big bucks and big architecture by embracing individual enterprise and endeavour.

Less than 18 months and £1m later, there is a real sense that perception of the town is beginning to change. We have fostered and facilitated enterprise – there are eight new independent food operators, all less than 18 months old, who now have a seat at the Market House table. They are good, different and started business on one of our market stalls.

We have a Manchester man who makes possibly the best wood-fired pizza in England, a Salford based micro-brewery staffed by 20-something sommeliers, an expert chocolatier, coffee from a Lancaster coffee house whose sons win UK barista championships, and a Michelin quality chef. Outside we have over 60 constantly changing creative, spirited, people. Pulled together and craftily curated, it looks pretty powerful. And it's fun.

We need to bring some intelligence back to the debate about the places in which we live. If we are to fight the blight of corporate might, we need to drink to our differences, indulge our identities and subvert the systems we have allowed to suffocate our souls.

Peter Saville says people get the city they deserve. You can scale that down to village. If we don't stand up and attempt to change things around us... we deserve what we get. ●

Nick Johnson, previously deputy CEO at Urban Splash, is director of Market Operations

Regeneration can be effected without big bucks and big architecture by embracing individual enterprise and endeavour

Below Local makes sense: at fast-reviving Altrincham market.





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Stephen Hodder

It was with the sad loss of Sir Richard MacCormac this summer that I was reminded of his agenda while president to make the RIBA more outward-facing and promote architecture to a wider public.

It is important that the RIBA takes the role of informing and educating the public about architecture seriously. We have come on in leaps and bounds over the last few years through exhibitions, talks, roadshows, BBC programmes and news features. It is equally important that as part of this we showcase the work of architects nationwide and globally. There is plenty more to come too, with a new architecture centre in Liverpool and more and more online materials to develop as the new architecture.com develops.

The other components of that are coming together at 66 Portland Place and it is a pleasure to see the building coming alive with visitors once again following the summer lull. The new Practice Space has opened, dedicated to showcasing innovative and interesting work from practices. We have an inspiring programme initially showcasing work from Tonkin Liu, recipient of the RIBA research award, which has been developing a pioneering tailored surface structural technique with engineer Arup. This unique shell lace structure integrates the structural

The new Practice Space has opened, to showcase innovative and interesting work from practices

principles of seashells and the ancient art of tailoring with today's powerful digital tools, resulting in stunning geometric forms that gain strength and lock in stiffness through curvature and corrugation.

Tall Storeys – Evolution in Hong Kong Architecture 1965 to 2014 presents the story of Hong Kong through its architecture and charts the development of Hong Kong's distinctive built environment. We will also showcase student work chosen through the President's Medals, and host the government's think tank Foresight to tell the story of city development. It is important that we consistently afford the opportunity for practices to exhibit work both in physical displays and online content, and we will extend the offer in many more ways in the future – in particular, around the country.

And of course our programme for the autumn season opened in September with Ordinary Beauty: The Photography of Edwin Smith displaying over 100 extraordinary black and white photographs from a collection of over 60,000 negatives and 20,000 prints given by Olive Cook, Smith's widow and collaborator, to the RIBA Library. From urban scenes documenting British social history to evocative landscape images and atmospheric interiors, the photos displayed reveal the genius and breadth of his work.

Earlier this year I opened 'Mackintosh Architecture' at the Hunterian in Glasgow, the first exhibition dedicated solely to the architecture of Charles Rennie Mackintosh. Curated by Professor Pamela Robertson, it offers a remarkable insight into the man and the context within which he worked. The exhibition transfers to the Architecture Gallery in February 2015 in collaboration with the Hunterian. This will be followed by a Palladio season, and the opening exhibition in Liverpool. I hope these shows will draw in even greater numbers to learn more about these well-known architects and their influences, and encourage greater participation in debates and talks generated by their inspirational work.

All of these events give us the opportunity to offer workshops for school-age children and university students. We have had popular photography, building and exploring workshops. It is so important we excite and educate children about architecture so they can participate in shaping it in the future. ●

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DESIGN LEADERSHIP SUMMIT

I am launching the RIBA's first ever Design Leadership Summit on 21 October at Arne Jacobsen's iconic St Catherine's College Oxford. Speakers from across the construction industry and beyond will challenge the top architects of the future to lead design, risk, collaboration and innovation - based on recommendations for the profession identified by clients through the RIBA's engagement programme. You can find out more or book at architecture.com/summit2014





Left Leaning in: Simon Allford, Peter Morris, Paul Monaghan and Jonathan Hall after 25 years of running the practice together.

Right Clear and bold, with a healthy blast of colour: Westminster Academy (2007), Stirling Prize shortlisted.

The secret of AHMM's remarkable success is a dose of business and creativity, corporate and individual working

Words Eleanor Young. Portrait David Vintiner

Sign of four

'You have no chance of getting things built if you are not assertive.' Jonathan Hall, though the most reticent of the founding directors of Allford Hall Monaghan Morris, has a measured sense of what is needed to ensure that projects go ahead in this era of squeezed programmes and contractor clients.

You will know AHMM. If not individually then by repute, because they have lectured near you or you have noted one of their colourful buildings, or maybe one of their smaller, more understated (possibly brick) ones. The practice is a social one, active in the worlds of architecture and the places intelligent clients move in, less networking than now, 25 years on, networked. How has fundamentally decent and attractive design

grown this gang of four into a phenomenally successful practice?

I suspect the answer lies in the number four. Simon Allford and Paul Monaghan each run their own design studios while Peter Morris and Jonathan Hall manage the practice and contracts respectively. Decisions are made together. The latter two are the secret weapon on the business side; worrying and delivering is in their hands. Morris remembers setting out on a creative business management course at Cranfield in 2006 with a practice of 80. Then his question was 'How can we stop ourselves growing?' Now with 318 staff, he reflects, 'you only need to worry about things if you feel you can't control them'.

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informal let-it-all-hang-out Bartlett in suits, the business aspects of running a practice have meant clients have trusted it to deliver. Simon Allford, still sharp-suited, says: 'We always tried to be a business, though we weren't initially as we couldn't make any money.' Paul Monaghan remembers it as a slow start from student days, through gradual growth and the urge to build bigger buildings, which eventually came from back extensions and school alterations. An insertion of a mezzanine for journalist Jeremy Melvin was the start of what they jokingly call the Editors' Series. Projects for Paul Finch, then editor of Building Design, and others followed. These people remained friends and powerful proponents for the practice. The work might not be showy (though it is eye-catching at times) but it is reliable, as these relationships show.

Bits of luck, says Monaghan, have been married with striking design. A pool house for Allford's parents got them their first cover on an architectural magazine: the Prince of Wales' *Perspectives*. There was the striking triangular plan of Great Notley Primary School in Essex in 1999 – its memorable low form and linear facade in timber and black

perhaps disguising a huge investment for its time in sustainability. Moving into an office near the Barbican 19 years ago introduced the firm to its landlord, Derwent London, for which the practice has gone on to design nearly 20 projects, including the Stirling Prize-shortlisted Angel Building (it had two other Stirling nominations – Westminster Academy and Kentish Town Health Centre).

The collection of buildings that makes up its office has also proved flexible enough to grow with it (not shrinking even in the 2008 squeeze). From the four person practice in an old watchmakers studio to 24,000ft² with a model-making studio of eight, AHMM has grown up here. A new roof top pavilion and linking bridge were part of the latest reorganisation, and Morris talks about having 'grown up' meeting rooms, serviced and all with the same audio visual facilities. And getting rid of That Green Carpet, which visitors would never have been quite as fed up with as the practice itself was. In its place are brilliant, super smart triangles of grey – Bolong plastic carpet (which occasionally breaks into yellow).

If the office design made the practice think closely about how its ethos works, then

that is just par for the course for the way the firm wants its people to be looked after. For Monaghan that has been at the heart of running AHMM and is heavily influenced by earlier experiences in YRM, where Allford's father was chairman, and at BDP where all four worked and took advantage of the good parties, as well as the shareholding. 'It is more important now than ever: as you get larger it gets harder to think of peoples' individual careers,' Monaghan says. These issues are discussed in regular team meetings to marry practice and individual ambitions. And the parties? Since the mid 90s, the weekly taking over of the St John bar in Clerkenwell has faltered – due to lack of space – but the office's new project space and canteen is pressed into use every Friday for drinks and design reviews. And this anniversary year a research trip to Amsterdam took in the practice's university masterplan and a good deal more.

Back in the office the serious business of peer review is headed up by Morris and Monaghan, with a couple of sessions every week delving into detail and the process. The diagram is where all agree the starting point must be – an approach that is very visible in

Below The result of a long gestation of ideas with many iterations, AHMM's Angel Building (2010) for Derwent in north London, which is occupied by the Design Council and Cabe among others.

Below middle School and church at a new academy in Southwark.

Below right After exuberant work in the town centre this social housing creates modest new streets for Barking.



TIMOTHY SOAR (2)

ROB PARRISH

many of its new builds such as Westminster Academy. This is architecture that talks clearly and occasionally offers a cheery wave. The theme of consistency and a single practice are strong, from this process to the way the directors talk about learning methodologies. 'Our projects may look different but they are the same method, we are strategic early on, rarely with one solution,' says Monaghan.

There is an oft-quoted idea of the fifth man – the extra element created by the coming together of the four – but Allford is aware of the danger of design by committee. 'I don't want collaboration to be something we can all agree on, I lead my studio so I am not looking for sign off. We are collegiate and corporate – it is right a project is published as AHMM – but pushing parallel paths.' As for the suggestion he cannot possibly be closely involved in so many projects, he is having none of it. 'My diary is a mess, my life is a mess because I am deeply engaged in my projects, twice a week in the early stage, though I am more relaxed when it gets to toilets and doors.'

Despite the directors' numerous extra curricular activities – from lecturing to chair

of the Architecture Foundation and chair of the Cabe design review (and that's just Allford) plus a big presence on the London architecture scene, and a certain patronage for firms like Coffey Architects and Duggan Morris – the answers to any questions come quickly back to the practice. As Allford is keen to assure me, it is a much bigger group of brains than the four alone. Indeed, the architects, associates and associate directors I talk to are all very on the ball, and loyal to the firm. There is an air of focused energy to the office. One of its new ventures has been opening a branch in Oklahoma to grow US work. Allford is excited about 'exporting London' to a US city centre that is starting to refind itself. He is delighted at the expansiveness of sites, while in awe of the differences – for example the 1500+ workers at a new project who must have parking spaces as it is the only way to get there. He likes the cultural links, knowing that China, say, would have been a jump too far: the US is 'culturally near enough to run a job, not just drop an image into a city'. Not that he really wants to be anywhere else: 'London is our base and our history, and the

most attractive city to be an architect in now'.

The practice has had an enormous influence on the capital: on the western route in the A40 is brightened first by the Yellow Building for Monsoon, then the green Westminster Academy and finally the refurbished 1968 Battleship Building. Its 20-storey block south of the Thames at Blackfriars puts a firm stamp on this. Down the road the tallest building at Elephant and Castle is about to go in for planning and at Embassy Gardens beside Battersea Power Station, flats are being built out (by another practice). AHMM is also reconfiguring the city's institutions with new Scotland Yard, reworking the BBC's 1960 Television Centre in West London and designing a headquarters for Google in King's Cross. In an acknowledgement of this in September it opened 25 of its London buildings for Open House. And it chose some of its more quietly spoken buildings, including refurbishments and insertions – notably photographed in black and white – for a show at this year's Venice Architecture Biennale. Allford's accompanying essay emphasises that what matters is the focus on the city over the building and life over the programme.

It is interesting in a way that the feel of this exhibition speaks to the mood for architectural restraint that can be seen in the best of current British architecture. But the practice is does not wholeheartedly back puritanism. 'There is unchecked morality floating through much architecture at the moment,' says Allford. 'I do hope British architecture doesn't lose its expression and exuberance,' says Monaghan, rather sadly remembering the fun and inspiration of Alsop. For Morris there is no reason why economic austerity should require hair shirts – look at the spatial exuberance of post-war design.

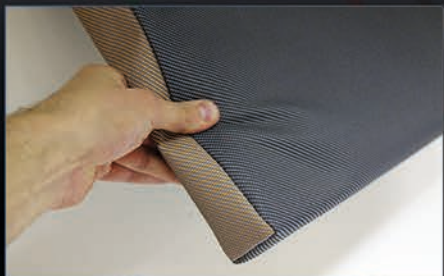
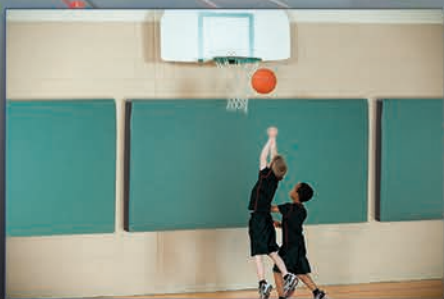
Saying that, tight budgets and procurement methods – design and build – which have become the norm, have meant a struggle to design decent buildings, never mind exuberant ones. Morris looks at the firm's Buildings Schools for the Future projects with relief and hard won pride. As work stages collapse into each other and with contractors who rarely have design at the front of their minds, he says it is all about tactics – which the practice seems pretty good at. That's not just cheering spaces up with supergraphics but more tactically what to hold on to: individuals who are secure in their position with contractors, and plenty of assertiveness. ●

Below Redesigning London's institutions: Scotland Yard as it will be.



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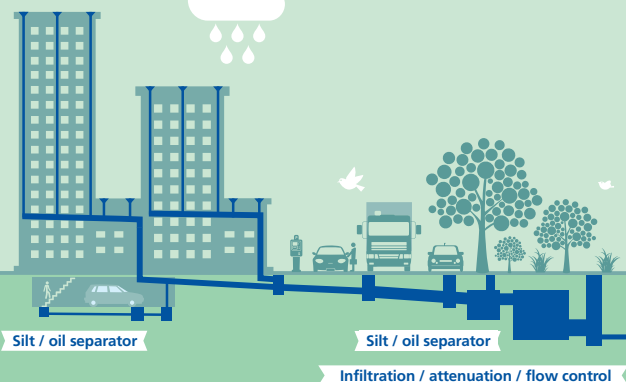
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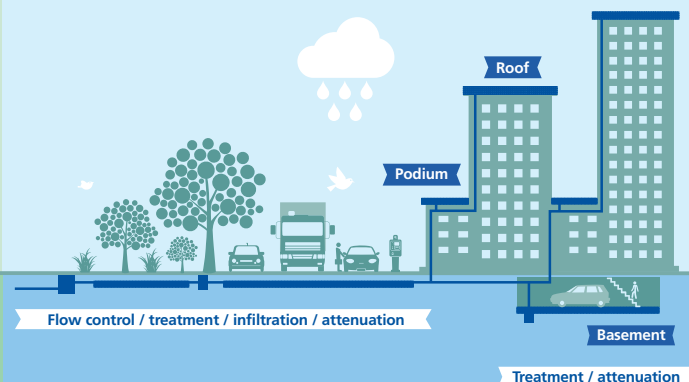
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Watching worlds collide

How photographs reveal the march of urban progress

Eleanor Young

A group sitting down to picnic alongside a hazy river, nearby a small boat. It is an arcadian scene. But in Nadav Kander's lens a huge new bridge sweeps in to transform that view to a canvas for change, its enormous columns pulling the traditional into the future of rapidly urbanising China. On his journeys up the River Yangtze, over two and a half years, Kander captured half built bridges and encountered the displacement of the Three Gorges Dam. Taking on the watery whiteness of Chinese art and the structures of a romantic landscape painting, he places tiny figures and their everyday lives against the vastness of monumental construction projects.

Kander's Yangtze journey lies towards the end of the Constructing Worlds exhibition which has just opened at the Barbican. The curators, Alona Pardo and Elias Redstone (previously of the Architecture Foundation and more recently collector and curator of the fascinating tiny show Archizines), wanted to explore how photography had emerged as a practice alongside the modern metropolis from the 1930s through to the current day.

Eighteen photographers span these 80 or so years. They don't all take on huge landscapes like Kander. Often though the architecture is used as a signifier of place. The shots of the unfinished Torre David in Caracas, and its squatting inhabitants, by Iwan Baan represent the huge challenges of urban populations in South America. Although critical thinking is often now a pre-requisite for fine art, some less than critical architectural photography makes it in, identifying closely with the ambitions of the architect and the



Above The vast constructions along the River Yangtze put humans into perspective when shot by Nadav Kander.

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values of their design: Julius Shulman and his photographs of the Case Study Houses; Herve's seminal photographs of Le Corbusier's Chandigarh, Luigi Ghirri's cold shots and the formalism of Aldo Rossi's grids all fit here.

Bernd and Hilla Becher sit on the pivot between architecture as object and architecture as a signifier, a container of meaning. Industrial structures – notably water towers – stand proud but alone, the viewer left to meditate in solitude too. And their influence is felt through the megaviews of Andreas Gursky – here in huge prints – and scenes from Stephen Shore's road trips.

The forest of signs disappearing into the distance signals a turn away from the epic to the everyday

Shore's forest of signs disappearing into the distance signals a turn away from the epic to the everyday as he searches for the quintessentially American street.

And so back to the starting point of the exhibition: the composition of the city. Berenice Abbott, returning home in the 1930s after years in Europe with Man Ray and Eugène Atget, was blown away by the pace of change in New York City. Heroic yes, but also a palimpsest for the modern world. Her Rockefeller Centre is like one you have never seen, shot from below with the detritus of life edging over the rock excavation beneath. →

From top left: Stephen Shore in search of the quintessential American street in Los Angeles and Massachusetts; Walker Evans, frame houses; and Aldo Rossi's Cemetery of San Cataldo as captured by Luigi Ghirri.

303 GALLERY, NEW YORK AND SPRÜTH MAGERS, LONDON (2)

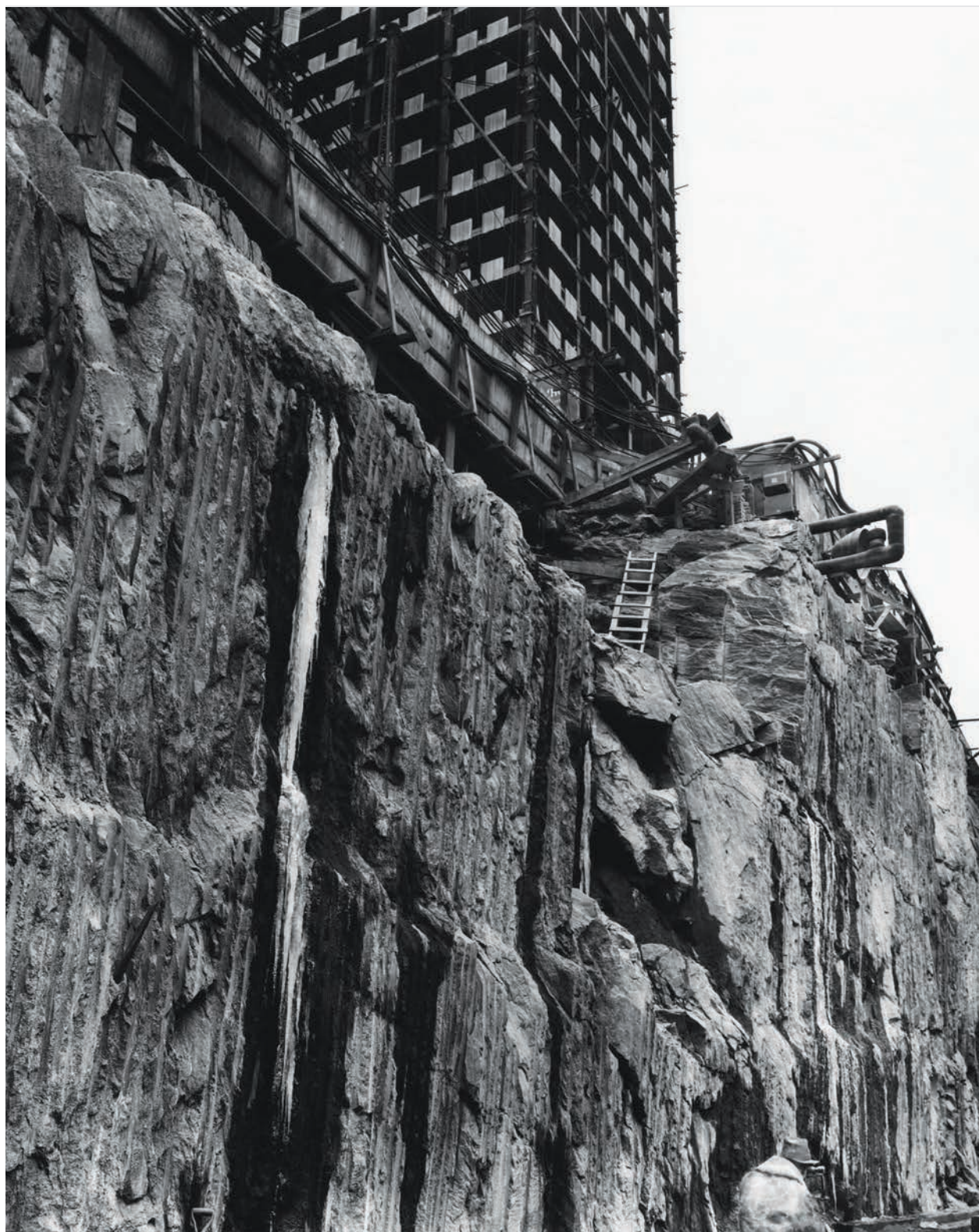


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Below 1932 and
Berenice Abbott sees
the downside of the
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Metamorphosis of the working drawing

This exquisite history celebrates the enduring, pivotal, working drawing

Adam Nathaniel Furman

Ever since Leon Battista Alberti postulated the primary authority of the drawing set – of plan projections drawn by an ‘architect’ representing his ‘idea’ – the privilege of invention and planned intent was sundered from the artisans and builders who had until the 15th century imagined and implemented their built structures on site, as they were made. Drawn information, the very foundation of architecture as a profession, is also a place of profound longing for a lost state. Like Aristophanes’ story that man was originally cleaved in half by Zeus, and that all of us are but half of one split whole, and are doomed to spend our lives searching for our long lost other in pursuit of an impossible unity, so it is with architecture. The site, the builders, the artisans and the makers are on one side of the historic divide, and architects are on the other. Where Aristophanes’ humans engage in fraught, never complete relationships bound by ‘love’ between pairs of individuals in pale imitation of an original unity, so architects and builders repeatedly unite in never complete, fraught and complex relationships, bound by their working drawings.

The Working Drawing: The Architect’s Tool, edited by Annette Spiro and David Ganzoni, is a beautiful paean to this complex relationship. A powerful sense of longing for that lost role – for the materiality, craftsmanship, the site and for the hand of the maker, embedded within the working drawing – emerges from this book. As the editors write, ‘When Sigurd Lewerentz draws masonry work, he “builds” the walls, as it were, with pencil on paper. One can positively smell the bricks.’ Severiano Mario Porto ‘draws the roof truss as though he would lay, with the pencil stroke, every rafter of the beams’. These phrases set the tone for a close, tactile look at the repro-

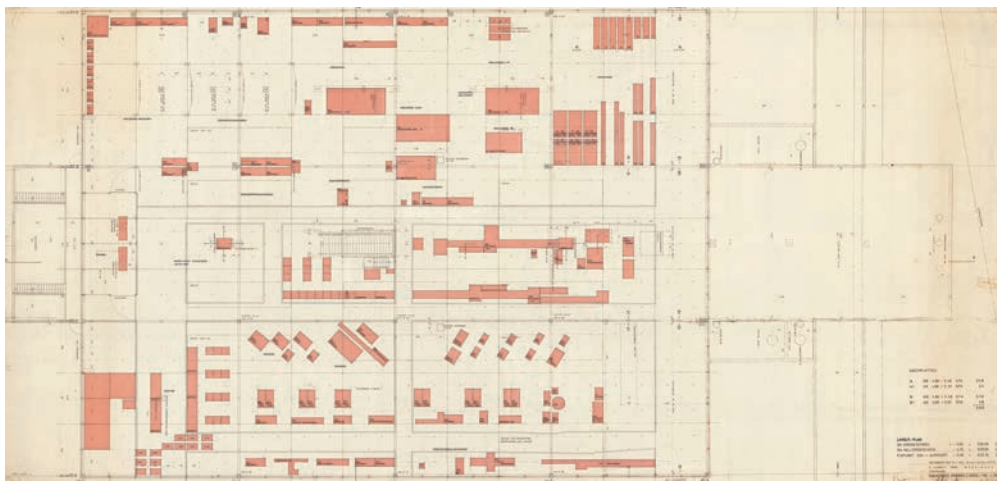
ductions in its pages. They speak eloquently of concern for the relatively small luxuries that such a modest project could provide in those times, whether it is Pier Luigi Nervi’s steel reinforcement drawing for the Palazzetto dello Sport in Rome from 1957 – of which Nervi says ‘the form of steel reinforcement should always be aesthetic and give the impression of being a nervous system that brings to life the lethargic mass of concrete’ – or Lux Guyer’s housing complex for working women from 1925, with its five floors of meticulously drawn bathroom sanitaryware.

The Working Drawing is a beautifully presented, large format book. It has 98 drawings, each with their own double-page spread, reproduced at the largest scale the format allowed, often with fold-out pages, and with a host of documentation. They range from a vast 13th century elevation of Cologne Cathedral, through an engineer’s drawing by Mahendra Raj from 1980 of a concrete diagrid roof structure in Srinagar, India, to a bricklaying computer script by Gramazio Kohler from 2006. The drawings are organised into 12 categories including ‘Measurement and Numbers’, ‘Building Elements’, and ‘Catalogue’. While these groups sometimes feel rather uncomfortably forced, each provides an opportunity for succinct and clearly phrased introductory texts which help to reiterate the main themes of the book in relation to the dizzying array of drawing types presented. The categories are followed by 12 essays by Herman Czech, Tom Emerson, Jonathan Sergison and others. The first six are outstanding as general commentaries on the subject, while the rest home in on more specific topics – for instance the planning for the Swiss Alpine way, the ‘Sustenstrasse’, and

Architects and builders repeatedly unite in never complete, fraught and complex relationships, bound by their working drawings



Below Bruno and Fritz Haller, Grundriss. Floor layout plan for production machines. U Schärer's Söhne Münsingen, Münsingen, Switzerland, 1961



its remarkable topographic documentation.

The book has an archival feel with its thick paper and excellent print quality, emphasising the scribbled note or rubbed-out line as much as anything else, a sense of deep concern that we should not forget the craftsmanship or the act of making that was involved in many of these drawings. Ganzoni writes: 'I feel the worn paper, smell the dust and heliographic print's slight acidity,' as he trawls the archives, and that 'When looking at the plans, I can see the draftsman at work: a pencil travels over the paper, an ink pen draws line after line, and a razor blade scrapes away the errors. Someone carefully coloured in an ink plan in the 19th century; another spent hours gluing on film after film of cross hatchings from behind 100 years later; and a third labelled the header with a stencil.'

An opposite tendency is also found in these pages to celebrate the architect's complex relationship with the maker. This is the attempt to negate the need for that relationship to exist at all, to erase the maker to some degree, reducing him or her to a pure extension of the perfect, totally complete drawing. Whether it is Spiro and Gantenbein saying of an air-pipe, 'One plan is not enough, above the plan header is a reference to seven additional plans for the same building elements'; or a plan by Helio Olga in which 'there is an axonometric drawing for each single wood joint so that the tradespeople could place every screw in the right place accurately to the millimetre'; or the technological future where makers are robots and architects scriptwriters. In his essay 'Future Plans', Stephan Rutishauser dreams that 'the building plan as a means of communication between architect and tradesperson will become an obsolete instrument, since the mediation between the two professions will no longer be necessary when the transformation to matter is carried out by a machine and the machine's transformation code is written directly by the architect'. This is the prevailing, legally watertight tendency that is leading us towards a form of BIM in which the dream of this kind of perfect documentation comes true. Like Borges' totally accurate map that was as big and detailed as the territory it depicted, 3D models may eventually become perfectly complete templates in every respect and at all scales, of a building that tradespeople will have to construct as a real facsimile of the digital original.

While this book could be seen as a nos-

'When looking at the plans, I can see the draftsman at work: a pencil travels over the paper, an ink pen draws line after line, and a razor blade scrapes away the errors'



Above Gottfried Semper. Perforation template.



Left Meister Arnold. View: west facade, Cathedral, Cologne, Germany, 1280.

COLOGNE CATHEDRAL ARCHIVES, MATZ UND SCHENK

GTA ARCHIVES, ETH ZÜRICH

talistic look at a soon-to-be-gone area of knowledge, it is full of a sense of confidence that this is not the case; that no matter what changes technology brings, as Tom Emerson put it in his essay *Lines on Paper, The Enduring Language of Architecture*: 'Architecture continues to evolve within the present, dragging a past into the future full of conflicted meanings and associations'. He says: 'Bricks remain bricky, even when laid by a robot borrowed from a car factory. Timber remains fibrous despite the scorched traces of the laser cutter,' and so our information sets will always contain the marks of our working process, whether they are generated from a 3D BIM model, the infinite 2D space of Autocad, oil paper stretched out on our drawing desks, or the patched together pieces of parchments and quill of the renaissance. As we move yet again into new territory with our drawn information, this book is an exquisitely put-together, thoughtful reminder of how our profession always has and always will weave creativity, character, expression and depth into the precision and clarity of our drawn or modelled working information. ●

More drawings and Adam Nathaniel Furman's regular column at ribaj.com

The Working Drawing: The Architect's Tool
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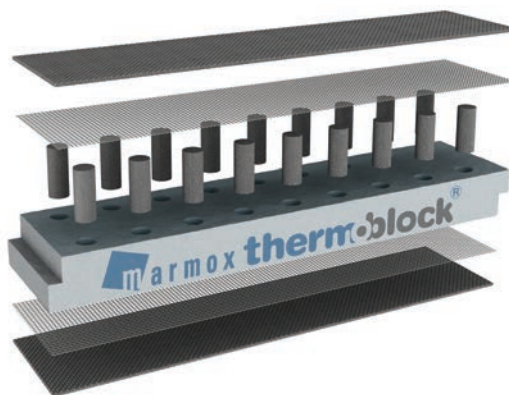
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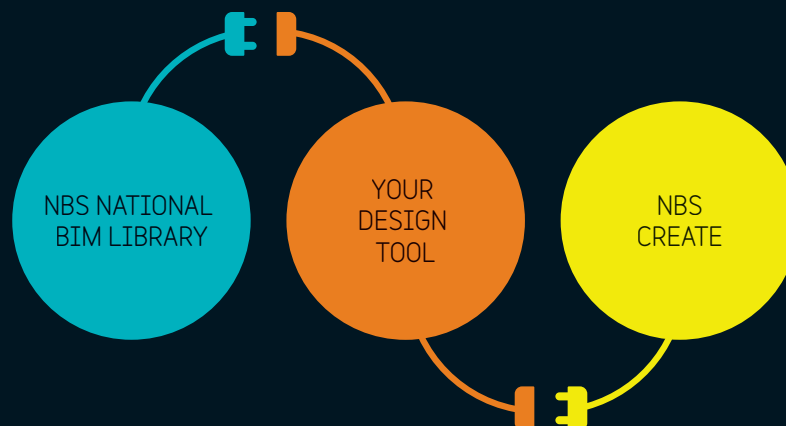
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Sir Philip Dowson CBE

1924–2014

Arup Associates founder who favoured a rational, scientific and functionalist approach but fell foul of Prince Charles over Paternoster Square



Sir Philip Dowson, who died on 22 August a few days after his 90th birthday, was old-school: very tall, reticent, somewhat patrician, a Royal Gold Medallist and one of the most important British architects of the late 20th century. This was true not only of his generally understated buildings, but also of the firm he helped

to found. He joined the engineering firm Ove Arup and Partners in 1953 as an architect and, in 1963, with Ove Arup, Ronald Hobbs and Derek Sugden, became a founding partner and later chief architect of Arup Associates.

Composed of an innovative and collaborative multi-discipline team of influential architects, engineers and quantity surveyors, Arup Associates' approach to design was rational, scientific, and based on a belief that the function of a building, the nature of the materials used and the necessary methods of construction should form the basis of design. This approach proved convincing across sectors including factories (the IBM Process Assembly Plant in Havant) Oxbridge colleges (notably at St. John's) concert halls (Snape Maltings for Benjamin Britten's Aldeburgh Festival was an Arup project) and company headquarters and back offices such as the tiered Lloyds in Chatham and the Gateway House development in Basingstoke for Wiggins Teape – the first phase with its famous shaggy hanging gardens, the second a pioneering use of natural ventilation for a modern office building.

In the 1980s the Broadgate development in London marked the start of a somewhat uneasy period stylistically for Dowson's Arup. Always a man with a preoccupied air and a vocal delivery as clipped as a box hedge – possibly a result of his officer-class wartime background in the Royal Navy, where he served with distinction in both

the Atlantic and Pacific theatres – he encountered some resistance to the modernist, functionalist approach during the post-modern era. If Broadgate – largely the work of the late Peter Foggo – shows slight PoMo leanings, this was at any rate a rapid straightforward commission compared to the ordeal he underwent as the first masterplanner of the new Paternoster Square redevelopment next to St Paul's Cathedral. There he had the misfortune to run into Prince Charles and his followers who did their level best to unseat him from the commission and eventually succeeded – but not before Dowson had been forced into a compromised modernism-meets-neoclassicism design in an attempt to mollify a resurgent traditionalist tendency as represented by John Simpson's alternative proposal.

In the face of the behind-the-scenes manoeuvrings of the Charles set but unwilling to enter into a public row, Dowson was obliged to conduct off-the-record press briefings in restaurants to put his side of the story. However, although his Paternoster scheme foundered, its classically-tinged aesthetic resurfaced in the first phase of Arup's Canon's Marsh development in Bristol.

Educated at Gresham's School, Norfolk, he spent a year reading mathematics at University College, Oxford, before joining the Royal Navy during the Second World War. He returned to study Art History at Clare College, Cambridge, from 1947 to 1950, and then trained at the Architectural Association.

Among numerous awards and honours, Sir Philip Dowson was made a CBE in 1969, and received his knighthood in 1980. At the Royal Fine Art Commission he was known by his chairman, Lord St. John of Fawsley, as Philip the Great – in contrast to Sir Philip Powell of Powell & Moya, dubbed Philip the Good. He was elected to the Royal Academy of Arts in 1979 and two years later awarded the Royal Gold Medal for Architecture. He was president of the Royal Academy from 1993 to 1999.

He is survived by his wife, Lady Sarah Dowson MBE, his son, two daughters, and six grandchildren. ●

In Memoriam

PHILIP (MANNING) DOWSON
ELECTED 1953, LONDON

JOHN DAVID BILLINGHAM
ELECTED 1958, SOUTHAMPTON

DAVID TERENCE WALL
ELECTED 1959, NEWQUAY,
CORNWALL

PHILIP DEREK HUNT
ELECTED 1959, HOLSWORTHY,
DEVON

LESTER BOON KHENG THAM
ELECTED 1960

ARTHUR LEONARD HUNT
ELECTED 1967, FRANCE

CHRISTOPHER JOSEPH TOTTON
ELECTED 1974, WALLINGTON,
SURREY

CHEZEL BRENT BIRD
ELECTED 1977, MIDHURST, WEST
SUSSEX

WALUSIKU LISULO
ELECTED 1982

KENNETH HALL MURTA
ELECTED 1954, MALVERN

CHARLES BRIAN HENDERSON
ELECTED 1953, MARLBOROUGH,
WILTSHIRE

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

Exchange

Not so graceful

The article on the Three Graces (RIBA September 2014) ends with the question – ‘agreed?’. Well I don’t agree and the editor must take some responsibility for in my copy the images on page 20 and 21 don’t even join together. OK, printer’s fault, but it challenges the remainder of the article.

The photo on page 20 gives the game away. How could you publish a photograph of the new building projected as shown in front of – blocking – the Three Graces (which I don’t think it does) and yet taking its importance from the pre-eminent adjacent buildings? I don’t live in Liverpool but have visited the site recently and found the third member of the new group to be out of character and unfriendly to the concept. This applies particularly to the third block at the back of the site, which I accept was designed as an office building – but did it have to be so different in form – as if another hand had designed it?

John Billingham, Derbyshire

Arbour ardour

The very welcome show of Edwin Smith’s photographs is billed as the first to be shown at the RIBA. It is in fact the second.

The first, titled Visions of Eden, was a major retrospective of his work held there in 1985, curated by his widow Olive Cook and organised by my wife, Lesley Murray, then director of the RIBA’s exhibitions, lectures and events programmes. The huge show of 86 large photographs, chosen by Olive from Smith’s legacy, and printed for the exhibition by the studio used by Smith, were all for sale at prices ranging from £20 to £37!. It will be interesting to see how work included in the current exhibition mirrors or differs from Olive’s selection in the 1985 catalogue list.

At the end of that earlier retrospective, as a thank you, Olive Cook invited Lesley to choose a picture from those that had not



Specifications are usually words, but the article put Word document almost as an afterthought on the relevant sentence

Howard de Mont

sold – so a marvellous, beautifully famed, A1 print of The Arbour, Melbourne Hall, Derbyshire, shot by Smith in 1963, graces our dining room.

David Rock, Harleston, Norfolk

Low gear

Re Arthur Quarmby’s letter (RIBA September 2014). A fairly average new car might cost say £12,000. The area, on plan, of a family car is about 8m². The cost of the car is therefore about £1500m². The plan area cost of a reasonable quality new house in this area can also be about £1500m². The car is a standard item made in a nice warm factory.

The house is largely hand built to suit the customer from factory produced components and assembled, quite often, in awful weather conditions. The car might last 15 years. A house can last hundreds of years if well designed and maintained.

Perhaps the car people could do better?

Peter Ashworth, Hedley on the Hill, Northumberland

Better BIM

As a specialist architectural specification writer I was pleased to see the piece on BIM in Products in Practice (July/August 2014), as the publication was coupled with Excellence Awards, sponsored by Schueco, reported in the main Journal.

However, the gist speculated how the whole BIM system might work, integrating the drawing information, and the discipline of the structure of the information and how it might be organised between composers, formats and timing. This is not new in the specification arena.

Perhaps the following may be a way to increase the effectiveness of BIM. Written information should be attached to the item being drawn. Definitions such as workmanship and performance assembly can also be attached to the drawings, while samples, testing and commissioning could be kept in the BIM model file.

Specifications are usually words, but the article put Word document almost as an afterthought on the relevant sentence. I see specification as a fundamentally important document that can define the quality of the design within the procurement process.

Howard de Mont, Loughton, Essex

Tweetback

Habinteg Housing @Habinteg
MT @RIBA: Ultimate flatpack: the £50k WikiHouse is on show in London Interesting project, but is it #accessible to all?

Steve Parnell @steveparnell
@RIBA: What exactly do you get for your £50,000?

Rachel Firth @rachelfirth1
Really interesting article on Sheffield – exasperating yet cherished

Diana Spencer @DianaJSpencer
Maritime Theatre vibe? MT @RIBA: Getty’s Island Pavilion: 18C romanticism/21C style

nickwattsdesign @nickwattsdesign
Great write up of Terence Conrans #wishlistldf London Design Festival project in the RIBA Journal



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E: projects@parksidegroup.co.uk

In two RIBA assessed seminars, Comar, one of the UK's leading aluminium systems companies, outlines:

Title 1: Stand & Deliver: a Study of Curtain Walling

The design of curtain walling, its properties and how it is used by specifiers. This seminar aims to offer an understanding of the points of H11 in the NBS specification system, and how best to make use of it.

Title 2: Designing Functions & Reliability into Entrances

The issues that influence the function of main entrance design and technology. This seminar aims to offer an understanding of how user expectation influences door design and links this with hardware selection, entrance configuration and floor finishes.



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T: 0800 121 4561
E: askcalor@calor.co.uk
W: www.calor.co.uk/business

Title: Low carbon energy solutions for non mains gas areas

This seminar provides an introduction to Liquefied Petroleum Gas (LPG) and its credentials as a clean and efficient, low-carbon energy for modern businesses off the mains gas grid.



Rivermeade Signs

C: Marion Phelan
T: 020 8896 6906
E: marion_phelan@rivermeade.com

Title: Wayfinding and Best Sign Practice

The CPD looks at what constitutes 'Best sign practice' and how good signing can help everyone; not just those with disabilities. Specifically:

- how signing for the disabled can be well intentioned but is often poorly thought through
- the choice of typography and colour ways to aid legibility
- why the layout of information on a sign is so important
- helpful and misleading symbols and arrows
- case study Whitley Court - what do signs look like when they are specifically designed to assist a variety of visitors with different disabilities.



T: 0116 257 3415
E: marketing@lathams.co.uk

Title 1: Acrylic Based Solid Surface

This seminar provides a greater understanding of this versatile material and its potential applications and assists with specifications and material choices.

Title 2: Performance Door Blanks

This CPD focuses on five key learning aims and addresses the concept and significance of performance door blanks. It looks at the appropriate documents that make up Building Regulations and its limitations and conflicts.



T: 01604 766 251
E: info@hunterdouglas.co.uk
W: www.hunterdouglas.co.uk

Title: Wood Ceilings: The Beauty and Benefits

Created to help architects and specifiers gain a clearer understanding of how such a traditional building material translates to contemporary design and architecture; covers the aesthetic and practical uses for wood and the wide design flexibility available to the specifier. It also highlights how the use of wood supports responsible design and provides an important guide to the performance standards that can be met through the use of wood systems.



E: Elizabeth@urbanfront.co.uk

Title: Specifying Hardwood Timber Doorsets

Learning Aims include information on insulation, passive house, challenges with maintenance, accessibility and door security. 45minutes.

The learning outcomes are:

- Improved ability to specify hard wood timber doors
- Understanding Passive House doors
- Awareness of challenges with hard wood doors
- Better understanding of accessibility, sizing & longevity.



E: training@schluter.co.uk
T: 01530 813396

Title 1: Integrated Solutions for Tiled Wetrooms

The session will provide the information and knowledge required when specifying an integrated solution for wetroom installations; Schlüter's waterproofing and wetroom range will be explored and explained.

Title 2: Movement Joints and Uncoupling Membranes for Tiled Coverings

This session provides information on how to solve problems such as moisture movement in the substrate or drying shrinkage by specifying the appropriate movement joints and uncoupling



C: Gareth Dixon, Russell Calder
T: 44(0)207 940 0000
E: gareth.dixon@havwoods.co.uk
E: russell.calder@havwoods.co.uk

Title: The use of wood flooring in sustainable architecture

Provides an understanding of the ecological benefits of specifying wood and the main legislation involved; different types of wood flooring construction, installation methods and the difference between oiled and lacquered finishes together with indicative cost comparisons.



C: Sean Parr
E: cpd@geze.com
T: 01543 443000
W: www.geze.co.uk

Title 1: Glass Door Assemblies – Selection and Specification

This seminar on glass door assemblies provides architects with valuable guidance about glass and how it can be used within door situations throughout a building. The 40 minute seminar provides information about the beneficial properties of glass and the latest regulation and legislation.

Title 2: Removing Barriers to Access

Title 3: Safeguarding Pedestrians from Accidents at Power Operated Door sets - EN 16005

Title 4: Designing Effective Heat and Smoke Ventilation

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RIBA
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Twyford's new Energy Collection is perfect for specifiers

Twyford Bathrooms has launched its new Energy Collection, offering a range of ceramics, furniture and shower enclosures that cater for a wide range of projects, customers and budgets. Ideal for the commercial and domestic sectors, the Energy Collection, along with all of Twyford's other ranges, can now be downloaded from the unique SpecMaster on-line specification tool by architects, designers, specifiers and contractors. It's also available on Twyford's newly upgraded website and has a new suite of literature.

There are 57 new products in three sanitaryware and furniture ranges, e100, e200 and e500, plus two shower enclosure ranges, es200 and es400. The new products have been developed to combine fashionable styles and excellent value for money. And backed by a 25 year guarantee for ceramics and a lifetime guarantee on shower enclosures, Twyford is assuring customers of quality and purchasing confidence.

For further information on Twyford Bathrooms, contact

t: 01270 879 777

w: www.twyfordbathrooms.com



Forbo and ByALEX Collaborate to help celebrate John Lewis' 150th Anniversary

London design studio ByALEX opted for a sustainable and alternative approach to creating its new contemporary Neighbourhood chair. The warmth of the bamboo frame was contrasted against Forbo Flooring Systems' furniture linoleum to give a distinctive and genuinely individual look. The end result is a chair that really makes for a timeless aesthetic.

W: www.forbo-flooring.co.uk/linoleum

W: www.byalex.co.uk



Kingspan Klargester Guide Awarded CPD status by CIBSE

Kingspan Klargester, the UK's foremost manufacturer of off-mains drainage solutions, has published a new presentation on specifying commercial waste water treatment entitled, A Guide to Sewage Treatment Systems. The advice is designed to ensure that architects and specifiers feel confident in designing the correct waste water management solutions, and that their professional recommendations meet the stringent legally-binding requirements.

w: www.kingspanenviro.com/CPD



Heradesign brings peace to the refurbished Imperial War Museum

The Imperial War Museum, London, has undergone a £40 million transformation, and reopened with impressive exhibition areas. Around 3,600m² Heradesign ceilings from Knauf AMF are installed in these spaces. The exhibition galleries, spanning four floors, wrap around a visually-striking atrium, which allows natural light to flood in. Architects, Foster and Partners designed the overall concept.

w: www.amfceilings.co.uk



To clad or not to clad? That is the question

NVELOPE NV1 vertical cladding support systems have been installed on Shakespeare House to provide an attractive external envelope. The NV ranges provides a secure fixing solution for façade materials, and are available pre-assembled with thermal isolators to help reduce thermal bridging. All cladding systems can be engineered to project specific requirements.

w: www.nvelope.com



SG System Stargard system

Stargard the original "Warm to touch" DDA compliant handrail system from SG System Products is proving increasingly popular with architects and designers due to the system's design flexibility. Stargard can be specified in a range of colours, can be fitted to different designs of baluster, these options when combined with a range of infill panels make Stargard ideal for office, public buildings, school and even railway stations for both interior and exterior applications.

w: www.sgsystems.co.uk



Armstrong Ceilings fly out of Farnborough

This year's Farnborough International Airshow (July 19-20) made its first use of Armstrong Ceilings' Off-Cut recycling scheme. A regular user of Armstrong's End-of-Life recycling scheme for the ceilings of the show's temporary corporate hospitality and business chalets, 2014 saw the first time it used both of Armstrong's pioneering schemes. This year, Armstrong recycled a total of 13,400m² (or 55 tonnes) of its mineral ceiling tiles.

w: www.armstrong-ceilings.co.uk



Hope extends range of performance concretes

Britain's leading independent concrete supplier, Hope Construction Materials, has extended its range of high performance mixes to complement its existing array of quality-assured readymix concretes. The performance mixes – including HOPEFast®, HOPEFoam®, HOPE Tough®, HOPEeco®, HOPESeal® and HOPEFibre® – have been designed by Hope's technical team to meet specific construction needs, from high early strength and extra durability to waterproof and lower carbon mixes.

w: www.HopeConstructionMaterials.com



SCHOTT introduces Performance Glass Processing Ltd. as accredited PYRANOVA® value-added partner

With a broad industry network and a commitment to high quality products and outstanding customer service, the company is ideally suited to support SCHOTT in further developing its PYRANOVA® business in the UK market. PYRANOVA® is a reliable, high specification specialty glass for fire-resistant glazing, combining full insulation with fire integrity and impact protection

w: www.schott.com/uk



Dramatic Georgian restoration

A spacious and beautifully proportioned Georgian farmhouse situated in rural Broadland, Norfolk has been sympathetically and carefully renovated by an award-winning developer. Timber sash windows, bi-fold and French doorsets from the Lomax + Wood Kensington and Chelsea range have been installed throughout the property providing high levels of thermal and acoustic performance with period aesthetics.

w: www.lomaxwood.co.uk



Working in Urban Regeneration

'Skainos' urban village regeneration on Belfast's Newtownards Road encapsulates many cutting edge design features which together make the building itself a large piece of modern art. The vast roof areas were specified as an APL Energi™ Roof System consisting of aluminium AP65ZS Zip Standing Seam profile installed over an APL Tritherm™ fixing system.

w: www.archprof.co.uk



Levolux brightens up Bedford

Following a major refurbishment project, the Allhallows multi-storey car park in Bedford has been given a new lease of life, with a bright external screening solution from Levolux. In total, 600 triangular-shaped Fins are arranged vertically, each measuring 300mm wide by 65mm thick. They give the car park a new, more contemporary appearance.

t: 020 8863 9111

e: info@levolux.com

w: www.levolux.com



SSQ takes extra care at Thingoe House

Originally built in 1973, Thingoe House extra care development in Bury St. Edmunds required a complete renovation. SSQ Slate provided 25,000 of its Del Carmen slates to help bring a new lease of life to the existing roof. As a heritage accepted slate, SSQ's Del Carmen was ideal, being commonly accepted as a viable alternative to indigenous slates.

w: www.ssqgroup.com



Wind barrier system launched by Steni UK

A wind barrier system capable of sealing a building against the elements for up to 12 months before the final cladding is fitted has been launched by Steni UK. The Wintec system has been developed in conjunction with Nordic building research institutes to meet construction workers' requirements for easy installation and handling on site and been tested to new EU standards for air-tightness and windproofing.

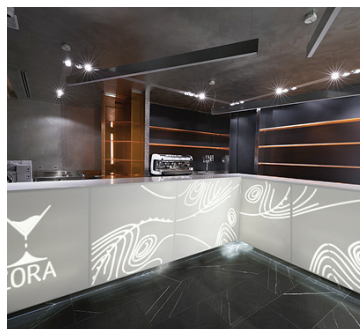
w: <http://www.steni.co.uk/>



Scottish Power, Cumbria

Comar Architectural Aluminium Systems recently completed 'The West of Duddon Sands Offshore Windfarm'. Solar shading was a key consideration on the southern elevations of this project; therefore to shade the façade vertically hung Comar Duco-sun C was specified. A striking curved facade was installed and Comar 6EFT 4sided SG with concealed vents was selected as it provides a structurally glazed curtain walling solution with EPDM or Silicon seals.

w: www.comar-alu.co.uk



LG Hausys

At L'Or, a lounge bar inspired by air and water, the star feature of the decor is the white bar, which stands out like a monolith.

The front and top are created from HI-MACS® by LG Hausys, a new material made from acrylic, minerals and natural pigments. HI-MACS® is thermoformable and has no visible joints, so is ideal to create the bar to the exact shape and size required with the appearance of having been carved from a single block.

w: www.himacs.eu



The Performance Timber Products Group appoints new CEO

Mr Roy Wakeman, OBE, Executive Chairman of The Performance Timber Products Group (PTPG) has announced that Joe Martoccia, currently Commercial Director of Ultraframe (UK) Ltd, will join PTPG as Chief Executive Officer. His appointment takes effect from 15 December 2014.

PTPG includes the market leading timber fenestration brands of Mumford & Wood, Timber Windows and Dale windows.

t: 01621 818155



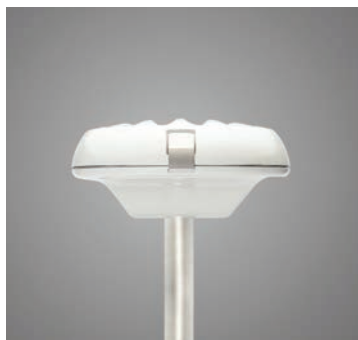
NEW WEBSITE REVEALS COST SAVINGS AND INSULATION ADVANTAGES OF 'AIRPOP' BLOWN BEAD FOR NEW BUILD PROPERTIES

The NBBA - which represents the UK cavity wall insulation industry using 'blown bead' expanded polystyrene (now known as airtop across Europe) - has re-launched its web site with new case study and video evidence of the clear advantages of the material.

The new case study featured on the web site, verifies a 21% reduction in installed cavity wall insulation material costs - and the latest video, shot under controlled test-rig conditions, shows the internal coverage of blown bead which is able to fill every internal void as well as coping with complex internal structures. For these reasons, the case study is able to show that the blown bead system achieves better thermal performance at lower cost than alternatives leading to a 30% reduction in heating costs - an ideal solution for new homes and commercial properties.

w: www.nbba.org.uk

e: scammarano@bpf.co.uk



The latest low watt roadway solution from GE Lighting

Adding to its range of outdoor LED solutions, GE Lighting reveals the Spinella Low Watt Roadway fixture, providing local and highways authorities with an intelligent and cost effective lighting solution for the modern city and highway. Designed to balance the technical needs of a sophisticated LED system with the functional demands of a reliable outdoor fixture.

w: www.gelighting.com



KALWALL The Long Light Walk

This dramatic link bridge is at the Queen Elizabeth Hospital Birmingham. Designed by BDP architects, it's formed with Kalwall, pierced at intervals with clear glazed full height windows. The highly insulating cladding admits natural diffused daylight to create an attractive ambience without shadows or glare, while providing privacy. Kalwall is increasingly specified for the refurbishment of aged cladding and rooflights.

w: www.structura-uk.com/kalwall



FLAMEBREAK DOORBLANKS FROM JAMES LATHAM

James Latham's high specification door blanks, Flamebreak, are manufactured with a special three layer tri-laminated hardwood timber core, which helps to eliminate gaps, rippling and telegraphing. They are also lightweight, and have an excellent substrate for easy machining and conversion, making them easy to handle and fix. The Flamebreak range, which is available with FSC certification, boasts an extensive list of industry recognised accreditations including; British Standard BS476 (Part 22 1987) and BS EN1634 - 1 as well as PAS23 and PAS24. Flamebreak door blanks also hold DD171 and BS EN 1192 ratings for durability and wear and tear and have been successfully tested to meet the requirements of the BWF Certifire Scheme as well as attaining BMTRADA Q Mark. Plus, Flamebreak achieves U-values of 0.9/m2K for thermal insulation as well as sound insulation readings as high as 35dB.

t: 0116 257 3415

e: marketing@lathams.co.uk

w: www.lathamtimber.co.uk



Apavisa

Renowned Spanish manufacturer Apavisa presents the hi-tech Regeneration Collection of large-format, rectified porcelain tiles with excellent mechanical strength and ultra-low absorption. Defined by neutral colouring in tones of black, grey and white, the collection has a 'retro industrial' character while also offering reliable functionality, durability and easy maintenance courtesy of an advanced micro-sealed coating.

w: www.apavisa.com



Junckers New Product Launches a Success at Design Junction 2014

Junckers launched two new solid hardwood floors at this year's Design Junction. Whalebone Staves, a pre-finished parquet floor using long, larger than average wide board staves for an exclusive contemporary look, proved very popular with architects and designers and there were many enquiries for Industrial Parquet, which is made of slim Oak staves laid on edge to create a spectacular pattern of natural colour variation.

w: www.junckers.co.uk



DRU introduces new Metro 100XT gas fires with tablet app controls

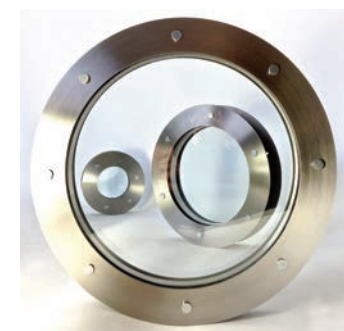
DRU Fires is a long established European manufacturer of gas, wood burning and multi-fuel fires. DRU has a reputation as a designer and producer of ultra-contemporary and high technology fireplace products. It has announced improvements to its popular Metro100XT series of 'letterbox' gas fires in time for the autumn 2014 season.

The DRU Metro 100XT range is a selection of glass-fronted, contemporary gas fires that can be installed in homes, with or without a conventional chimney. The fires utilise the balanced flue system, in which air is drawn from outside the building for combustion and waste gases expelled outside using a concentric flue.

This results not only in an impressive flame picture, but an energy efficiency rating in excess of 80% for all the Metro 100XT models. This high efficiency makes them in great demand from house builders and refurbishers, as they make a significant contribution to a home's energy efficiency rating.

The Metro 100XT models can be operated by a new Siemens electronic remote control or by using the exclusive DRU Eco Wave tablet or smartphone app.

w: www.drufire.co.uk



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w: www.philipwattsdesign.com



Hoppe locksets end CE Marking confusion

It is now mandatory to CE Mark all hardware for fire and escape doors. In order to comply with the requirements of the CPR, any lever furniture used on an emergency exit door needs to be tested with the EN 179 lock product supplied as a complete unit. To make life easier, the HOPPE AR915 has been successfully performance tested, CE marked and CERTIFIRE approved in accordance with emergency exit hardware standards and mechanically operated locks and latches.

w: www.hoppe.co.uk



Kemmlit lockers on the button with sushi bar brand

Fashionable eatery Yo! Sushi, keen on high quality interiors as well as food, looked to Kemmlit UK when specifying metal lockers for the staff spaces at their Baker Street, High Street Kensington and Ellesmere branches.

Ergonomically designed and robust, with digital locking and bench seating- they're part of Kemmlit UK's range of high performance storage solutions. The firm can also project manage and install.

w: www.kemmlituk.com



Contemporary range with Passivhaus option

Lomax + Wood have launched a range of high performance, made-to-order, Contemporary-style timber windows and doors in response to customer demand. The range includes Tilt Turn windows, Alu-Clad casement windows and coordinating Bi-folding doors, sliding doors and entrance doors as well as a triple glazed option that meets Passivhaus standards of performance.

w: www.lomaxwood.co.uk



Derbigum Olivine Provides Environmental Benefits at Nottingham Trent University

Nottingham Trent University is one of the largest universities in the UK, with around 28,000 students spread over three campuses.

As part of a recent refurbishment programme at the Clifton Campus, the roof of the Clifton Library building was fully stripped and replaced with Alumasc's Derbigum Olivine mineral roofing membrane.

Derbigum Olivine was identified as the most appropriate waterproofing solution which offered added environmental benefits. Olivine is a bituminous membrane with a naturally occurring mineral upper layer that neutralises CO2 in rainwater, via an irreversible chemical reaction. The membrane boasts a 30-year life expectancy and is 100% recyclable.

M&J Roofing installed a total of 1000m2 of Derbigum Olivine, resulting in the library being a much more comfortable space for students and staff to work in, with the new roof also boosting the building's environmental credentials.

Alumasc's full system solution also included their Fascia system, Rooflights and Harmer Roof Outlets.

t: 03335 771 500

w: www.alumascroofing.co.uk



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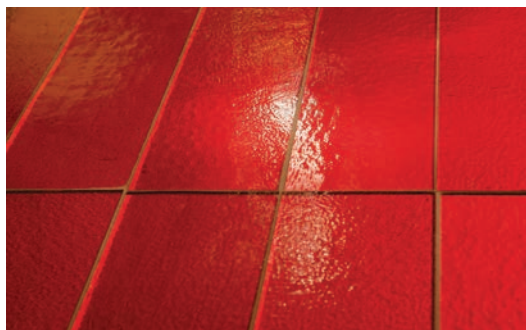
e: cladding@taylor.maxwell.co.uk



Open door to learning

As part of its ongoing refurbishment programme, Edinburgh College is fitting HOPPE's Quick-Fit Plus door handles to its internal doors as the quick, easy and smart alternative to traditionally fitted handles. It comprises stylish handles plus flat roses and escutcheons which are just 2mm thick and come in round and square versions offering myriad design options. The Quick-Fit plus system could save up to 75% fixing time on site as there is no need for tools or fixings to complete the job.

w: www.hoppe.co.uk



Karma, Karma, Karma Mosaic Tile

Karma is the unsung hero of the Trend glass mosaic collection. This drawn glass, hand-cut transparent mosaic, with its characteristic natural veining and deep internal fold lines, is the basis for Trend's highly-regarded designer patterns like Liberty, Metropolis and Subway, yet is also available as a tile range in its own right. Architects and interior designers in the know prize Karma for its unique choice of tile formats up to 4cm x 8cm, even 48cm x 96cm on request, and its deeply saturated colours with distinctive radiant reflections.

Inspired by the stained glass windows of Gothic cathedrals, Karma mosaic recreates their elegant colours and illuminating effect with remarkable integrity. A slight unevenness of colour is a peculiarity of this product, giving rise to a pleasingly irregular, flame effect, which will enhance walls, floors, swimming pool and fire surrounds, even exterior facades. Offered in a choice of more than 40 colours, Karma is priced from £206 per square metre.

t: 0800 044 5395

e: info-gb@trend-group.com



Gerflor passes with flying colours

Gerflor were brought in at Huddersfield University's sports centre to supply 'under rig' flooring to support its 'Technogym' equipment. Taraflex™ Sport M Evolution (7mm) was chosen for its safety and comfort properties. Used in every summer Olympics since 1976 and available in 19 colours or wood-effect designs, Sport M Evolution is environmentally friendly and offers P1 category shock absorbency 25% to 35%, meeting EN 14904 Standards for indoor sports surfaces.

w: www.gerflor.co.uk

We're exhibiting at



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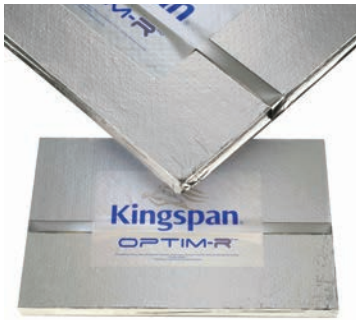
Visit us at stand: 2B

Lorient Group exhibiting at The Big 5 in Dubai

Lorient is delighted to announce that it will be exhibiting at The Big 5 International Building and Construction show at the Dubai World Trade Centre on 17th – 20th November 2014.

Lorient will be showcasing its new range of AURA® architectural seals – which embraces a distinctive selection of smoke, acoustic and energy seals. Lorient's range of products including architectural seals, smoke and fire seals, fire resistant glazing systems, air transfer louvres and hardware protection will also be displayed.

w: www.lorientuk.com



LABC system approval for Kingspan OPTIM-R

When it comes to thermal performance, Kingspan OPTIM-R Systems are right at the top of the pile and as a mark of their quality, they have now been recognised with LABC Registered System status, helping to speed up the Building Control checking and approvals process.

w: www.optim-r.co.uk



Ceracasa

The Filita stone effect tile range by the Spanish innovators Ceracasa, benefits from the advanced dirt repelling and anti-slip Soft Finish. This silky texture facilitates maintenance and reduces the amount of water needed for cleaning, making it ideal for high-traffic spaces and outdoor areas. Filita comes in large architectural formats and in a variety of elegant colours.

w: www.ceracasa.com



Award-winning windows and doors for 'Best Out of London Home'

Mumford & Wood has designed and manufactured beautiful windows and doors for Kylemore House on the Coombe Estate, which was recently awarded winner of the 'Best Out of London Home' at the 2014 Evening Standard New Homes Awards. Mumford & Wood Conservation™ timber fenestration products helped the property achieve the highest levels of energy efficiency.

w: www.mumfordwood.com



SWA members see 'Belgium doors' making a comeback

As in the fashion world, architecture tends to be cyclical with UK designers having revisited everything over the years. Steel windows, for their part, have remained an enduring element to both domestic and commercial buildings – favoured for their slim sight-lines combined with rugged performance – though they too are subject to trends in styles and application.

w: www.steel-window-association.co.uk



Plans approved for factory extension at Armacell insulation manufacturing site

Thermal and acoustic insulation materials manufacturer Armacell has received planning permission for a new extension development to increase floor space and production capacity at their UK factory located on Mars Street, Oldham. The planned single storey extension building will house a new state of the art equipment for its Armaflex pipe insulation product range and creates additional space for optimisation of logistics operations. To this end, a large covered loading bay area and a one way system layout are being created to improve site access and allow for lorries to enter and exit the plant without any reversing required. The development will also provide additional waiting bays and space to reduce the impact of noise and disruption to surrounding residential properties, with delivery vehicles having easier and faster access to the despatch area in future. Acoustic barrier fencing will be introduced, with trees and shrubs planted and existing foliage preserved around the perimeter of the site to help further alleviate noise and screen the buildings.

t: 0161 287 7015

e: info.uk@armacell.com

w: www.armacell.com/uk



Pre-Finished Wide Board Parquet

Junckers has launched a new parquet floor with longer, wide board staves. Whalebone Staves is a contemporary take on the classic parquet floor with a perfect, factory applied finish in UltraMatt lacquer, which means there is no need for on-site treatments when the floor has been installed. The extra-long staves measure 700x140mm and are available in solid, natural oak or Black Oak.

t: 01376 534 700

w: www.junckers.co.uk



Sika 1 is the Watertight solution for former M & S HQ

Sika has supplied a range of high performance structural waterproofing products as part of the refurbishment of a 9000m² office building on London's Baker Street. With long term performance in mind, 1200m² of the Sika 1 Pre-bagged Waterproofing System was specified for the floors and walls. A further 200m² of the Sika Cavity Drainage Membrane was specified for additional protection and ensures any penetrating water is directed into a drainage system.

w: www.sika.co.uk



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IMP the exclusive UK distributor for Vimar is proud to introduce the new Clima thermostats and time-thermostats combining cutting-edge technology with the utmost practicality. Whether surface or flush mounting, battery or mains powered, designed for stand-alone operation or integrated into a building automation system, the range assists in optimising consumption and creates the perfect climate throughout.

For further details please contact IMP on t: 01763 241300

e: mark@improducts.co.uk



Maintenance free cedar shingle solution for forest holiday village.

John Brash Cedar Shingles have been specified for the new Center Parcs Village at Woburn Forest.

A 'soft friendly material', the Shingles provide a low maintenance solution that do not require any further treatment. The completed roof will provide a natural looking, sustainable solution that will provide a maintenance free roofing solution for many years to come.

w: www.johnbrash.co.uk



Villa La Scala Lake Garda, Italy, 1958

Vittoriano Gregotti (1919-1996) was one of the most significant Italian architects of the post-war period, his work regularly featuring in the pages of *Domus*. Villa La Scala, perched on a cliff in a spectacular position overlooking Lake Garda, was designed by Gregotti in 1958 for the artist, architect and founder of *L'Architecture d'Aujourd'hui*, André Bloc. Two concrete slabs, acting as floor and roof, define the horizontal volume of the building, while the external walls consist almost entirely of glazed surfaces, offering views towards the lake and the olive

groves surrounding the site. The interior is mostly open plan. The house, cantilevered towards the lake, is slightly raised and almost floating above the ground; the concrete stairway, which gives the house its name and links it to the small beach at the bottom of the cliff, is equally raised from the ground, supported only at the two ends and halfway through its length. Uncompromising in its bold forms but at the same time highly responsive to the site, the house is often acknowledged as Gregotti's best work. ●

Valeria Carullo

Editor
Hugh Pearman

Executive editor
Eleanor Young

Senior editor
Jan-Carlos Kucharek

Sub-editor
Alysoun Coles

Art editor
Patrick Myles

Advertisement manager
Richard Tomlin
+44 20 7496 8329

Business development
manager
Midge Myatt
+44 1902 851 645

Advertisement executive
Clive Waite


Production manager
Pete Songi

Director of media
Jonathan Stock

Telephone
+44 20 7496 8300
Fax +44 207 374 8500
firstname.surname@
ribajournal.com

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