

# PIP

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Nov/Dec 2017

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# What a difference . . .

...an issue makes. After writing a rather gloating leader in the last PIP on the demise of the Thomas Heatherwick's Garden Bridge and we're dedicating this issue's Interiors section (p42) to bigging up his intervention at the Zeitz MOCAA Museum in Capetown. Now while some might say that exemplifies the fickleness of architectural journalists, I'd like to think that what it really means is that we have the ability to bring objectivity to everything we review. And there is something to be said for non-linear approaches to architectural thinking – it

did after all, generate the ground shift that was deconstructivism. But in the midst of all that programmatic clashing together a question in the frisson of resulting static remained: like the bridge, just because you can, should you?

The gargantuan task of removing a building by degrees may in principle seem counter intuitive, but here Heatherwick has created spaces that seem referential and embedded in a bigger history; as if the ego has stepped back a little so the structure can speak of what it was, and the Gaudi-esque provenance of its new iteration.

Architectural wilfulness seems to be on full display at architect Giovanni Vaccarini's Geneva office building in our cladding focus (p14); which has me marvelling at the levels of self-belief that can convince a corporate client to shell out a fortune to clad its building in an extra, diaphanous, one hundred tonnes of glass. In both cases the approaches seem metaphorically expressive of these uncertain days. Karl Marx was right: All that is solid really does melt into air. ●

Jan-Carlos Kucharek, Editor



**More online...**  
We wanted to encourage the idea that architecture is really all around and about light, acoustics, texture and material  
Stephen Cousins tries out RIBA's new 'Sense space': [ribaj.com/sensespace](http://ribaj.com/sensespace)



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Cover image: Adrien Buchet's shot of Société Privée de Gérance by Giovanni Vaccarini Architetti



# Compendium

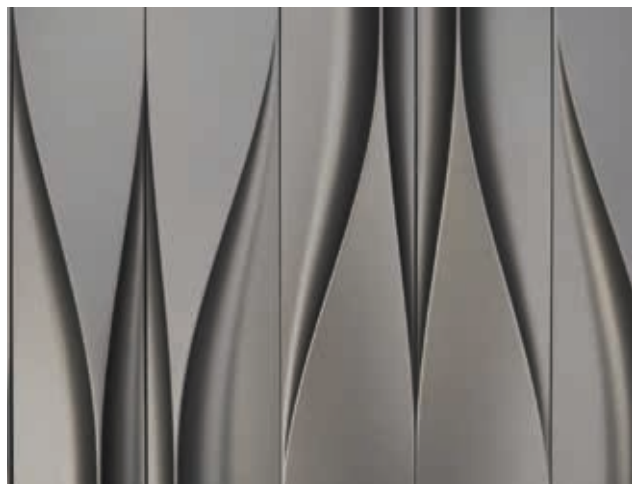
## UPCOMING

**Le Mondial de Batiment** Paris Nord  
Villepinte Exhibition Centre, France, 6-10  
November

**Lux Live** ExCel London, 15-16 November

**Sleep Event** Business Design Centre,  
London, 21-22 November

**Architect@ Work** Olympia, London, 24-25  
January 2018

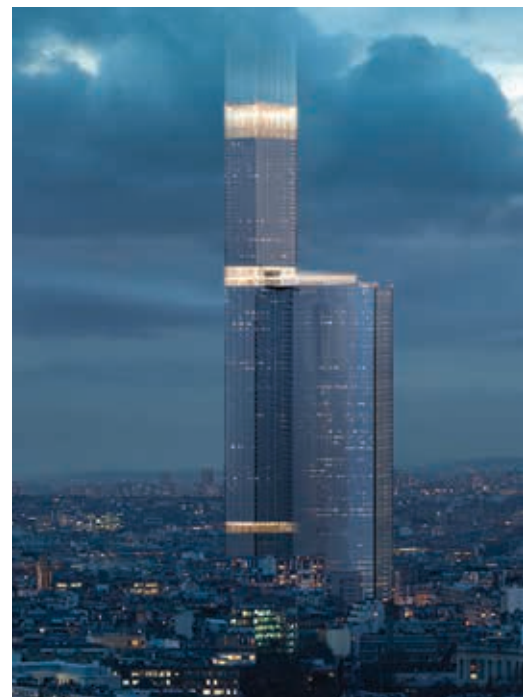


### Sine of the times

The likes of 17th century Italian Baroque architect Borromini influenced Domus' KAZA Concrete 'Liquid Forms' tiles; presumably more because it employs a complex range of carved and projecting curves in the architect's signature style than the fact it was always in black and ended up committing suicide. Not at all; there's 30 colours available here and not one inevitable but three possible finishes (matt, gloss or metallic), designed by architect Aybars Asci, founder of his 'Efficiency Lab for Architecture'. Efficiency's not a concept Borromini might have much of a grasp of; pervading melancholia had him walk away from a number of commissions.

### Perfect curve

Italy, gorgeous Italy, seems to have more ancient amphitheatres than it can shake a stick at; but that doesn't mean that seeing them lit up at night is any less breathtaking. The one at Taormina in Sicily is second only in size to that at Syracuse and was built in the third century BC. Italian lighting designer iGuzzini was commissioned recently to create non-invasive LED lighting so the theatre could be used for events at night as well as for visiting by day.



### The big C

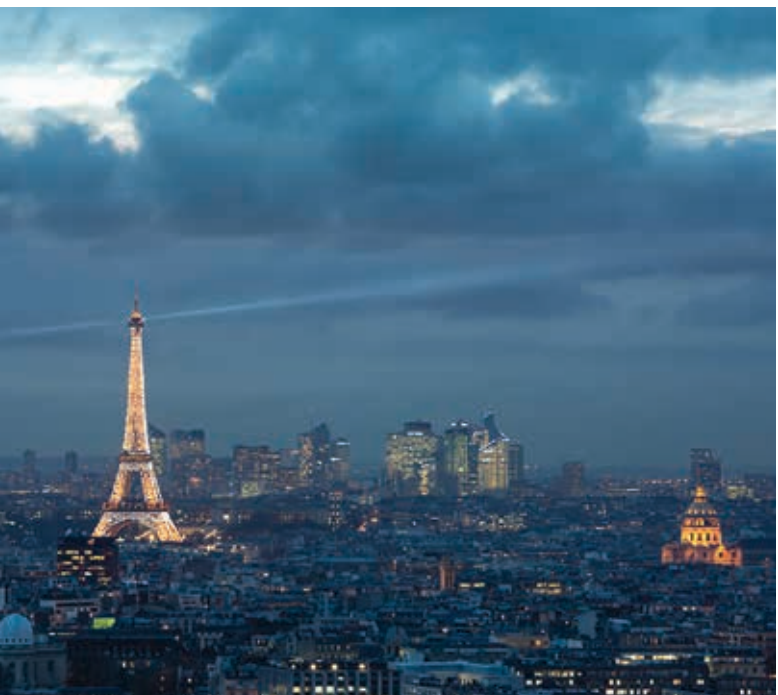
If cleanliness is next to godliness, then the Manser Practice is destined to pass through the pearly gates with its new NGS Macmillan Unit, integrating on one site all the Chesterfield Royal Hospital's cancer care services. The £10 million purpose-built structure is one of the first buildings in the UK to be clad in Corian, chosen by the firm because of its 'clean, contemporary look', malleability, robustness and low maintenance. Because it can be thermoformed, jointed and laser-cut, it could be used on the curved exterior facade as well as internally, creating a material link from outside to in.



### Look to windward

It might be six months since Herzog and de Meuron's new Philharmonie opened but that doesn't make the squalls that scud up the Elbe river's estuary any less dramatic seen from the Hamburg gallery, atop its brick warehouse plinth. You can see more of it too, as about a quarter of its glass curves seductively outwards to allow heads to tilt windward unencumbered. All courtesy of cladding company Josef Gartner and Guardian Glass.





### Oui or why?

Architect Dominique Perrault took an 'if you can't beat 'em, join 'em' approach, with his renovation proposal for the Montparnasse Tower in Paris, by making it bigger and taller. He wanted to change the programme too for the infamous block that triggered a 42-year skyscraper ban in the city in 1973. Adding 50,000m<sup>2</sup> to the tower, E+ Vertical City's purportedly sustainable agenda failed to impress the judges; Nouvelle AOM won the competition proposing to install a Walkie-Talkie-like sky garden – also increasing its height. Après, le deluge...



### Not too cool for pool

It's that age-old problem. If you're wanting to create seamless sense of space between your poolhouse and your garden, bigger is always better. But then, what do you do about the weight? Luckily, Reynaers has already thought of that, with its Hi-Finity thin framed glass cladding, that can hold a glass pane of up to 1,200kg in weight, such as at this house in Ukkel, Belgium; offering generous views out to anyone performing a front crawl in nothing but their budgie smugglers. The cactus sitting there in the corner needn't worry either; the system offers u-values as low as 1.0W/m<sup>2</sup>K, depending on the frame/ vent combination.



### Brick schtick

By the time you've got over the profligacy of the fact that this house sitting on a pond is in fact not a house in itself but a mere extension to a neighbouring manor house, you may have already forgiven the fact that the brick walls bookending it are not structural but a form of rain screen cladding. It's the steel and timber structure within that's doing all the work on architect Hamish and Lyons' design. But that wasn't going to create the contextual qualities the architect was craving; for this they looked to Michelmersh's Charnwood I-line Hampshire Red brick, which had a 'rich, uniform colour and extra length to emphasise the horizontal/ linear aspect of the building.' This was helped by recessing the mortar joints 'to highlight the materiality of each brick'. A neat, understated detail in a design that seems otherwise characterised by notions of excess.

DOMINIQUE PERRAULT

JAMES BRITTAIN

### Raising the bar

One wonders as to the height of your average Canadian barman, with the height of the bar feature at the new Shoeless Joe's Sports Grill in Ontario. Perhaps they're all semi-professional basketball players; they'll need to be if they're going to be able to reach the Canadian Club on the top shelf. And the bar's as high profile as a Harlem Globetrotter too. Part of Aristech's Studio Collection, the alluringly-named Tempest 8710, a polyester resin material, was specified not just for its translucence but the fact it is heat, stain, mould and pollutant resistant. Looks like, even backlit, it can take a slam dunk too.





# Great, but not the only tool



Digital technology is an incredible thing, allowing us to design more creatively, accurately and productively. Our maxim however is that it's just a tool, very powerful and enabling, but one that ranks alongside the pencil or the fine line black pen as a means of making promising ideas real.

To that end, we try to start every project by hand sketching the engineering challenges and potential solutions in logical steps. We often find ourselves sketching free form ideas which can only be delivered with a parametric modelling tool, but perhaps that reflects how more exotic ideas have become part of mainstream thinking and part of the lingua franca of everyday engineering design. Even hand sketching though is now embedded in the digital world. An iPad Pro, an Apple pencil and the Concepts app has replaced ink on tracing paper for 90% of the early stage brainstorming. Sketches can be fleshed out and corrected more easily but still retain their spontaneity.

Once the bones of an idea have been agreed

or to kick start new ones, we will model the structure in Rhino/Grasshopper. From time to time, an architect or artist will send us a CAD model; we will keep it and reference it into Grasshopper but will often regenerate the geometry ourselves from scratch.

If the task is 'normal' structural engineering analysis the default would be to use Karamba, a finite element analysis tool set for Grasshopper. However, we will increasingly turn to our self-written K2 Engineering component set as this gives a better sense of the behaviour of lightweight and bent active structures. K2 Engineering is a physics based solver built on the Kangaroo2 physics engine for Grasshopper. But we don't put all our trust in Karamba or K2E.

Once the design has reached a fairly resolved stage the geometry and loading data are converted to Oasys GSA, a popular industry standard structural analysis and design package via yet another useful Grasshopper plugin, Geometry Gym. Our heavy investment in

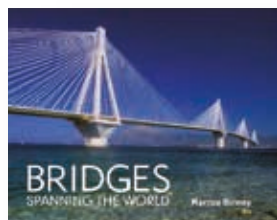
Rhino/Grasshopper also leans on numerous other self-written tools or downloadable components such as Weaverbird for mesh manipulation. Finally, our BIM output is via a Rhino model converted using the Geometry Gym IFC tools.

Perhaps, though, the massive range of generative modelling products should carry a health warning. Digital technology is held up as liberating, but is it? Are we introducing self-imposed constraints via the Grasshopper slider? Who is to say which are the best numbers to 'optimise' for? Does the cardinal sin of copying chunks of script from an old project – because it 'did the job' – merely propagate errors? And is the very human satisfaction in pouring energy into 'a neat script' and achieving a sense of closure stopping us from taking a step back, screwing up the metaphorical design on paper and starting afresh with a better idea rather than being locked into a particular symbolic relationship early on in a project? ●

**Stephen Melville** is director at **Format Engineers**

## Books

Buy at [ribabookshops.com](http://ribabookshops.com)



### Bridges spanning the world

Marcus Binney. Pimpernel Press. 256p HB £40

With Brexit impending, a wall going up on the Mexican border and a standoff on the Korean demilitarized zone, we need more bridges; thankfully Marcus Binney, founder of SAVE Britain's Heritage, provides them – in spades. Based on his 1997 lecture to the Institution of Civil Engineers, the book contains more than 200 global examples: Inca rope bridges, Roman aqueducts, Venetian sighing ones, Persian ones, iconic East River ones, Norman Foster French valley-spanning ones. In fact, if Wiki-Bridges was a webpage, this would be the hard copy. While the explanatory text is quite minimal (there are a lot of bridges), this coffee table tome is packed with photos. Roughly chronological in order, themes become more random as we move into the 20th century. 'Ingenuous moving', 'Bewitching', or 'Eclectic' anyone?



### The Construction Process in Architecture

Stephen Lees. SPEL Publications. 278p PB £9.74

This book, for Lees' lecture series for the Prince's Foundation, is a sequel to the author's Visions of Architecture book. Prepare yourselves: the Orders that the writer goes on to expound are based not on classical ones but rather more esoteric interpretations of the word in the construction process. They are Architecture, Religion, Engineering, Aesthetics, Economics, Psychology and Politics. Their overlaying has the author surmising that the Empire State building was due as much to Mayan Architecture as to the evolution of the steel frame, and that the St Pancras Hotel was motivated by fairies and the fear of death, though Anna Karenina might not agree with that last assertion. That said, the line drawings are quite lovely and homogenising; good for a distracting dip perhaps.



### Loose-Fit Architecture: Designing Buildings for Change

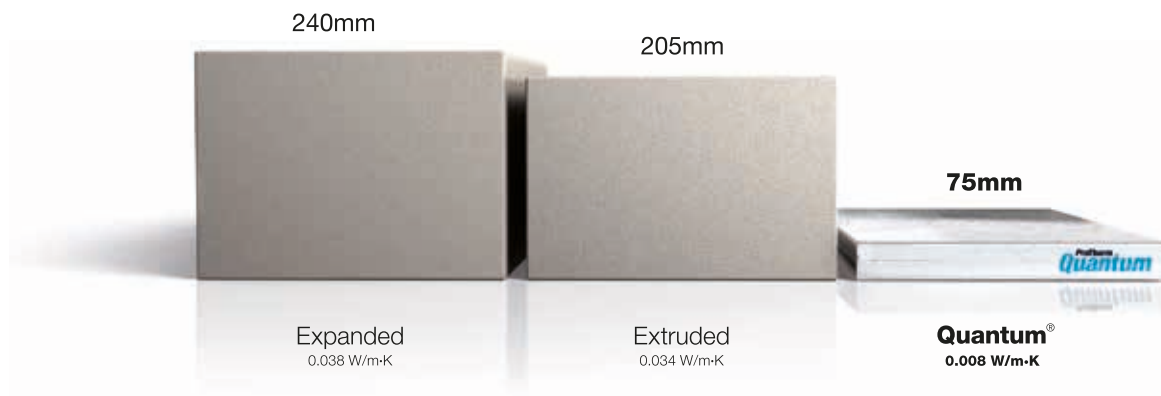
Alex Lifschutz guest ed. Architectural Design.

Wiley 144p HB £24.99

When it comes to the projects that they helped to design, architects rarely offer critical distance, but Alex Lifschutz does when talking about his involvement with Foster's Hong Kong and Shanghai Bank. His view is that the high tech movement appropriated Cedric Price's dream of flexible space, only to formalise and concretise it in the process. It's the core message in a book that's all about how our architecture needs to be adaptive to accommodate the high rates of technological change occurring now. This highly illustrated and annotated book collates key thinking from office space guru Despina Katsikakis, sustainability honcho Simon Sturgis, critic Edwin Heathcote and architect Clare Wright among others. A fun and info-packed 144 pages.



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# Sleep Event

Stoke yourself with Red Bull, as sleep is probably that last thing you'll be wanting at what's been described, albeit by the organisers themselves, as 'Europe's leading event dedicated to hotel architecture and design', with almost 5,000 people attending the two-day show in London. The British Hospitality Association has monitored a 7% year on year rise in tourism numbers to the UK – and all of those need beds. And with Brexit uncertainties driving down the value of the pound, guests are blessed with more choice for their money. Quality of bedroom design thus becomes a key factor.

So genning up on how the industry is moving with some of the 'foremost influencers shaping global hospitality' might be just the ticket. There'll be a nod to London's The NED hotel, sitting in Lutyens' former Midland Bank building in The City, with French interior designer Tristan Auer's 'Revival of a Myth' seminar, looking at how building histories can be translated

into design inspirations for refurbishment. This might apply to his own luxury works in Paris, rooted in his experience with Christian Liaigre and Phillipe Starck; whether he's going to mention its more political significance with regard to places such as Banksy's Walled Off Hotel in Bethlehem is open to question...

There'll be food for thought from Singapore-based WOW Architects, who will be giving a seminar on 'New Concepts of Luxury', based on efforts to create 'new meaning in hotel luxury'. That goes beyond ensuring that, as a designer, you're incorporating sustainability into an essentially profligate industry which is constantly encouraging us to use the same towel twice. Responsible for no doubt jaw-dropping resorts in the likes of the Maldives, WOW argues that it doesn't want to give into the culture of 'more', but 'memory creation, giving back and participatory design'. I'm all ears – the both of them.

Day two poses the question that rests on everyone's lips at some point in their lives, 'Does love lead to loyalty?' Admittedly, it's not your partner or therapist that's involved here, but what's good for the goose is good for the gander and it's hoped that panellists New York firm Stonehill & Taylor, London's MKV Design and Italian practice Il Prisma can offer some industry-focused insights into what you need to do as a designer to create the kind of hospitality experience that will have guests buying into the brand again and again.

There's got to be something to it: it sure worked for the BBC series Doctor Foster, and the Parminster Travelodge that the GP kept finding herself holed up in – a brand fidelity that far exceeded anything her philandering hubbie ever offered her...●

The Sleep Event runs at London's Business Design Centre from 21-22 November  
[www.thesleepevent.com](http://www.thesleepevent.com)

## PIP takes a look at a selection of products exhibiting at this year's show



### Kaldewei

Duo and Cono range

There's as much fun to be had off piste as on at the Gotthard-Zeit Hotel in Ötztal, the Austrian Tyrol, where Kaldewei was specified to fit out the luxury bathrooms at the four star ski hotel and wellness spa. And if the distant rumble of avalanches is distracting you, you can repair to Kaldewei's decadent Duo bathtub with integrated Sound Wave bathroom audio system. Its Cono luxury basins were also fitted in ensembles, allowing guests to gargle while in Obergurgl Hochgurgl.

Stand V10

[kaldewei.co.uk](http://kaldewei.co.uk)



### Perrin & Rowe

Traditional taps

Remember the good old days when everything was so much clearer and black and white? No crackpot communist dictatorships ready to go ballistic, no jumped up millionaires come TV celebs with their finger on the button. It's at times like these that staring at the mixer tap demands too many decisions from the world weary at their morning ablute. Thank God for Perrin & Rowe's Traditional range, whose 'on or off' design provides a stiff upper lip in a world that's falling about our ears.

Stand M7b

[perrinandrowe.co.uk](http://perrinandrowe.co.uk)



### Astro lighting

Void

Perhaps Astro was influenced by eccentric French writer Georges Perec's 1969 crime novel 'A Void' when it came up with the name for its latest minimalist trimless downlight. It makes for a strange read; more so with the slow dawning realisation that there is not a single 'e' in its whole 300 pages. Void, by contrast, offers a range of colour temperatures, sizes, colour rendering and bezels. Try taking all the 'e's out of that lot and still have it make any sense.

Stand M10

[astrolighting.com](http://astrolighting.com)



### Morgan




Goodwood collection

I'm reminded of lazy afternoons after a slap up roast watching the Sunday matinee, tea and biscuits on the nesting tables. The prosaic allusion might not quite fit in with furniture maker Morgan's aspirations for highly crafted, bespoke furniture, but at least there's an aspect of intimacy, which might serve it well in the bedroom department here. Workaday domesticity however is effectively countered with its decadent use of chamfered timber, glass and veined marble. Sweet dreams!

Stand M23c

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**Main** Craned onto site, iKozie provides independent living for a single homeless person. **Above** Living, sleeping and cooking spaces are separated by MDF partitions. **Left** Kitchen/ toilet drainage terminates under the front doorstep.

# Micro-home for the homeless

**What:** iKozie micro-home

**Where:** Worcester

The interiors of yachts and first class airline cabins were the unlikely inspiration behind a new pre-fabricated 'micro home' for the homeless, installed on a site in Worcester.

The iKozie is a self-contained, fully-fitted single person home, developed by charity The Homeless Foundation as a solution to rough sleeping, which has escalated dramatically in the UK since 2010.

With a footprint of just 17.25m<sup>2</sup> the unit is less than half the minimum set by the Greater London Authority and the RIBA, but it should feel bigger thanks to a 'zoned' and ergonomic open plan layout, by Eastabrook Architects.

The home features a bedroom, with a small double bed squeezed between the back wall and a built-in cupboard; an 'entertainment zone' with two-seater sofa, television and a table; and a narrow galley kitchen with a cooker, washing machine, fridge and work surface.

Spaces are separated by curved grey MDF partitions, to create a degree of privacy yet maintain a physical connection. The only separate room with an interior door is the shower room/toilet.

'We drew inspiration from first class suites in airlines which are compartmentalised, but still give a sense of privacy,' explains Kieran O'Donnell, trustee at The Homeless Foundation. 'Careful thought went into the ergonomics, for example when the front door is opened, the bed is shielded from view. The partition next to the sofa prevents visitors coming through the front door from seeing in.'

Materials and finishes were selected to be a step up in quality from hostel accommodation, the floor is made of engineered walnut, the walls of durable plasterboard. 'The silver coloured MDF is an amazing product in terms of ongoing maintenance, if it gets damaged or scratched you can simply sand it back to the same colour,' says O'Donnell.

The off-site manufactured steel frame

features reinforced corner columns designed to allow other units to be stacked on top, up to three (the maximum permitted before a lift must be installed under Building Regulations). Connections to waste, mains water and metered electricity terminate under the front door step.

The iKozie in Worcester cost £40,000 to build, but because it is located in the grounds of a shared house owned by the Homeless Foundation, the land came for free. The organisation is now looking at a site that could fit 29 units, pending finance and planning, says O'Donnell, who is eager to give youngsters a foothold on the housing ladder.

'Lots of homeless people end up in shared housing situations and never truly learn what it's like to be responsible for their own space. We want them to be able to cook and clean for themselves and pay their own bills. After six months to a year of learning those skills in an iKozie they will be ready to move higher up Housing Association waiting lists,' he concludes. ●

**Stephen Cousins**



# Made



**Dr Peter Barker**  
Colors product development  
manager, building envelope



**Mark Owens**  
Marketing communications  
project manager, construction



**Lindsay Andrews**  
Regional business  
development manager



**What:** Colorcoat HPS200 Ultra & Prisma, Tata Steel  
**Where:** Shotton, Wales

Shotton Steelworks in north Wales is one of the jewels in Britain's manufacturing crown. Started in 1895 by the Summers family, the site began producing galvanised nails and sheets, before becoming British Steel in 1965, Corus in 1999 and Tata Steel in 2008. Over time Shotton has made WW1 trench steel sheeting and Nissen huts, and was at one time home to nine blast furnaces. At its most expanded, 13,000 people worked at the steelworks and there was a pub just outside the boundary wall where landlords could be said to make their fortunes within only 10 years to retire early. The place was buzzing with energy and exceptional levels of technical skills and engineering expertise.

Today much has changed at Shotton, yet the engineering know-how and quality remain the same. Steel is no longer produced on

site, rather it is brought up from Port Talbot in south Wales by train as coils ready for processing. The 400ha area is quiet and peaceful, with so much greenery and clean air that no visitor would suspect the loud and busy activities taking place within its enormous factory line hangars. It's a green landscape with perfectly trimmed lawns between buildings more associated with high-quality office business parks than heavy industry. There are even lagoons of special scientific interest, protecting certain species of bird.

The plant at Shotton is responsible for Tata Steel's high-quality, long-lasting premium and branded pre-finished products for the construction industry, for which there is no competitor in Europe. Tata Steel's Colorcoat brand, which celebrated its 50th anniversary in 2015, and its Colorcoat HPS200 Ultra and Colorcoat Prisma are manufactured exclusively at Shotton, a process that is being continually upgraded to offer the most cost- and

**Above** Colorcoat HPS200 Ultra and Colorcoat Prisma pre-finished steel in use at Luis Vidal y Asociado's Vigo Hospital in Spain.

**Opposite** The 29 standard colours available as part of the Colorcoat Prisma range.

performance-effective products.

Tata Steel has, for example, recently upgraded the factory with a multi-million pound investment to produce the next generation of Colorcoat Prisma, which will now include a layer of an advanced UV-resistant clear coat as standard to provide the best pre-coated steel corrosion-resistance and colour on the market. This has involved a complete overhaul of the factory floor to ensure steel strips can pass through the paint cycle in one single action. As part of this upgrade, the paint factory line is now so efficient that it is operated by only 11 employees.

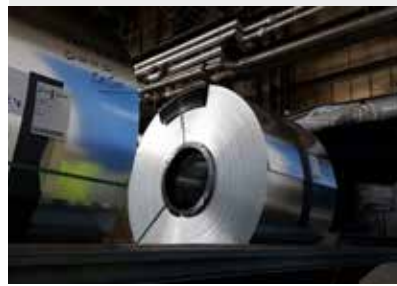
In terms of the pre-finished steel, the paint

layers provide extra anti-corrosion properties as well as aesthetics that can compete on look, texture and price with natural products such as zinc and copper. Tata Steel produces 40 standard colours for the Colorcoat HPS200 Ultra range and 29 for the Colorcoat Prisma range. The firm can also provide a colour-matching process to meet individual project requirements. Since mid-2017, all products have been chrome-free.

Colorcoat HPS200 Ultra and Colorcoat Prisma are used to manufacture roof and wall cladding products through carefully vetted supply chain partners, including Tata Steel's own panel and profiling lines. Colorcoat HPS200 Ultra and Colorcoat Prisma have been independently tested and certified by institutes across the globe, giving Tata Steel the confidence to offer an unrivalled Confidex Guarantee for up to 40 years directly to the building owner.

Working with all members of the supply chain, the technical team can find a suitable product for any application or location around the world. ●

This editorial is supported by Tata Steel  
[www.colorcoat-online.com](http://www.colorcoat-online.com)



### 1. STEELMAKING AND GALVANISING

Creation of the Colorcoat range begins in Port Talbot, where the steel is made into coils typically between 0.5 and 0.7mm thick. These are then transported to Shotton by train three times daily. The input steel is then metallic coated on the galvanizing lines, next to the painting line, using a special mix of zinc and aluminium. This adds an additional protective layer to give the end product optimum corrosion resistance.



### 3. CLEANING AND ENTRY ACCUMULATOR

Once loaded, the strip's surface is sprayed with an alkaline pre-clean chemical and dried off. It then joins the entry accumulator, a very tall section which works at a faster pace than the line, collecting and storing some of the strip to allow continuous operation. Staff working on the 'entry accumulator' are also in charge of monitoring the pre-clean, ensuring it is done consistently and to the correct levels. Communication is key throughout the line and is helped by a system of alarms, speakers and real-time cameras and screens streaming different parts of the process.



### 5. PAINT LAYERS

Now the strip is ready for the paint, beginning with the primer, followed by a middle colour layer and a new clear coat finish. With each layer, the strip passes through the respective oven, where the paint is cured rapidly by heating to around 240°. Each oven is followed by a cooling quenching system to enable it to carry on down the line. The strip then passes through a squeegee roll to dry off any water ready for the next section. If a patterned texture is required, this is embossed onto the surface of the steel on exit from the finishing oven, before the quench system.



### 2. PAY-OFF

The galvanised steel strip arrives on the Colorcoat line as 20-ton coils. The line operates continuously on a 12-day fortnight cycle. This line adds three layers of paint in one continuous process. The coils are loaded individually onto the production reel at the 'pay-off' which takes roughly 40 minutes. While that is happening, the next coil is being prepared for loading. This is then loaded and mechanically stitched onto the back of the coil in the production line.



### 4. TENSION LEVELLER AND ETCHING

After the entry accumulator, the strip enters the tension leveller where it is passed between static rolls to remove any elasticity and create a good shape in the final product. At this stage the steel enters into the final phase of preparation for the paint; the 'chem coater' section which is now located at first floor level. This part of the processes is designed to etch the steel using a titanium-based chemical pre-treatment layer, which allows the paint to stick to the steel. The chemical is applied and then the strip is dried at about 100° to remove the air from the pre-treatment.



### 6. TESTING, END AND DELIVERY

After painting, the strip travels via another accumulator through the testing area. Here it is inspected for defects, including evenness, thickness and colour of the paint. The strip runs horizontally under artificial daylight lamps for inspection. At the same time technicians collect information and test samples of the strip offline to ensure it corresponds with the specifications, stopping the line if needed. The fully finished pre-coated steel is loaded onto a reel, cut, packed and stored awaiting delivery to panel and profile manufacturers and on to building envelopes worldwide.







# Société Privée de Gérance, Geneva

Clad with 3,000 blades of glass, Giovanni Vaccarini Architetti's refurbished office block dematerialises by day and shimmers by night

Words: Stephen Cousins  
Photographs: Adrien Buchet

If the current global zeitgeist is one of political, economic and environmental uncertainty, then the fuzzy, reverberating glass skin of the new headquarters of Swiss property management company Société Privée de Gérance (SPG) in Geneva could be its ultimate architectural expression.

The triple-layered glass envelope contains over 3,000 glass 'blades' that serve to blur and de-solidify the perimeter surface of the converted office building. The facade is illuminated by white LEDs at night to create a bright, hazy nebulousness, a shimmering urban mirage for passers by to squint at in bewilderment.

The stratified glass is no cheap visual trick, Italian architect Giovanni Vaccarini Architetti saw it as crucial to the environmental strategy for the 3,540m<sup>2</sup> project, boosting levels of thermal and acoustic insulation, solar shading and natural ventilation, and maximizing visual permeability and natural daylighting.

Founder director Vaccarini told RIBA Journal: 'The facade system can not only screen light, but functions as a kind of sensor of solar

**Left** Thousands of glass blades fitted to the outside of the Geneva office block. The architect claims they not only screen light but, in the winter, catch it and direct it inward through subtle reflections.

**Below** The cumulative effect is a nebulous blur at the edges of the building.





**Right** Vertical striations in glass are emulated in the cladding of the steel colonnade at ground level.



light in dark periods, which are more common at this latitude. The blades catch solar light and orient it indoors to ensure higher quality spaces, the glass faces act as a multiplier of visions, reflecting and amplifying the landscape and colours of the surrounding environment.'

Stood on Route de Chêne, close to the historical centre of Geneva, the SPG headquarters involved the reuse and adaptation of an existing office block. The refurbishment 'penetrated deeply to the "heart" of the building', says the architect. The existing supporting concrete skeleton was reinforced to improve resistance to seismic forces and extended upwards by two floors to reach eight storeys, or 26m high.

#### On the inside

Internal office spaces and the functional layout were completely redesigned. A key concern was to improve the quality of workspaces by improving views, daylight and natural ventilation, which led to a complete redesign of the exterior facade.

'We wanted to realize a new outer coating, [optimizing] thermal and luminous aspects, based on a technological approach and the use of the transparent material par excellence – glass,' says Vaccarini.

The stratified glazing system has a 'warm' inner layer of triple-glazing covered by a naturally ventilated cavity containing micro-perforated venetian blinds designed to adjust natural light.

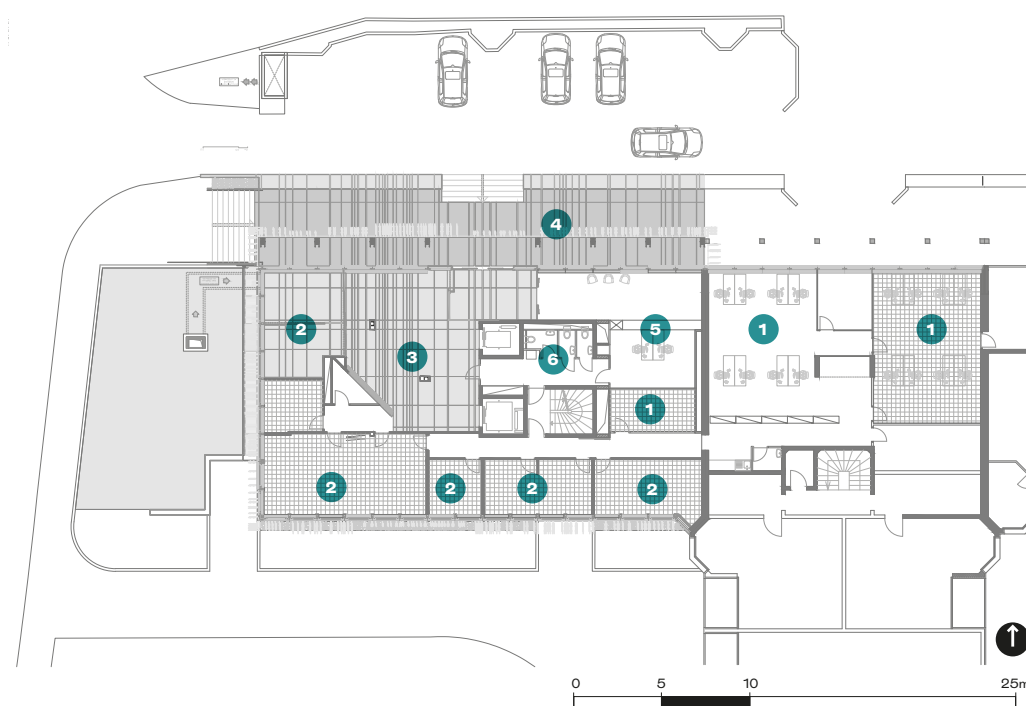
A dense sequence of vertically-oriented serigraphic silk-screen shades, or brises soleil, are anchored to the facade. These are designed to shield against sunlight and permit views out.

The glass fins vary in size based on dimensions of 20cm, 40cm and 60cm and are spaced at varying distances apart to create a simple repeated geometric pattern intended to create a complex visual effect. The same pattern is expressed in the functional layout of interiors, and in geometric patterns on floors, which are made from a local stone with stainless steel inserts.

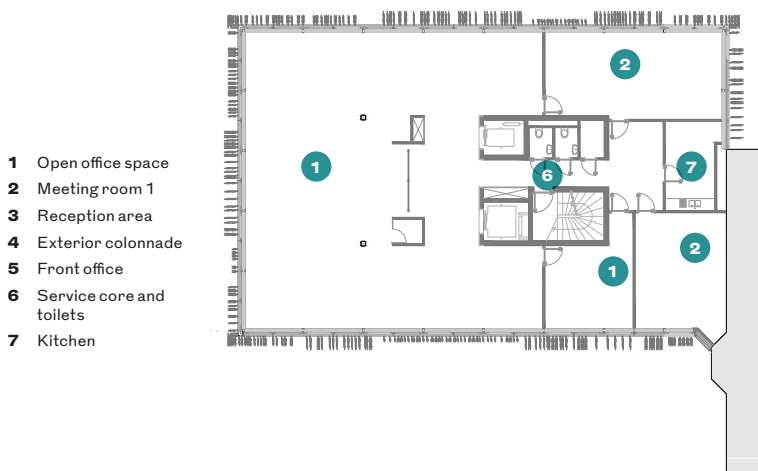
The architect was inspired by the principles of the abstract artist Kandinsky, and the idea that compositional rhythm, when viewed at different times, can shift the individual's perception of the architectural volume.

'The [screen-printed] pattern on the glass blades required meticulous work,' says

**Ground floor plan**



**Seventh floor plan**



- 1 Open office space
- 2 Meeting room 1
- 3 Reception area
- 4 Exterior colonnade
- 5 Front office
- 6 Service core and toilets
- 7 Kitchen



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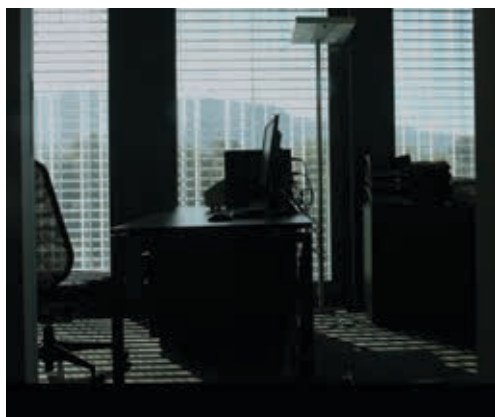
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The entire facade incorporates over 100 tons of glass, and had to be attached to the existing building with its own structural constraints

Vaccarini. 'The aim was to define a 'nebula' of the locations where light would settle and give substance and opacity to the ethereal surface of the glass blades. Put simply, the idea was to create a gradient, based on a pattern of square pixels, that moves from fully transparent (inner edge of glass) to fully compact (outer edge).'

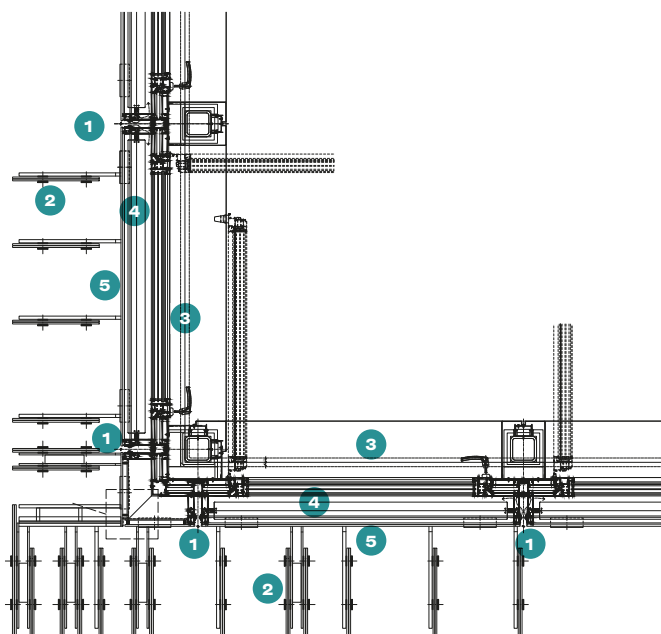
### Energy-efficient too

The layered glass skin has a U-value of just 0.6 W/m<sup>2</sup>K and forms part of a strategy to slash overall energy consumption compared to the original office block. The renovated office achieved a Minergie 'A' certification (Minergie is a registered assessment for new and refurbished low-energy consumption buildings widely used in Switzerland) and managed to save about CHF60,000 (£46,000) during its first year of operation, compared with previous office's consumption, says Vaccarini.

Other energy efficient features include perimeter floor profiles covered by 20cm of rock wool insulation, a 40cm thick layer of insulation on the roof terrace, a high efficiency air conditioning system, high efficiency electrical installations, LED lighting, and various



**Detail**



**Elevation**



**Above** Aluminium clamps fixed at storey height to the aluminium cladding framework hold the glass blades in place.

- 1 Aluminium profile with EPDM extrusion to glass
- 2 Glass fins 40-80cm depth held on aluminium clamps
- 3 Double glazed units (corner openable)
- 4 Horizontal blind zone
- 5 Glass screen forming ventilated facade behind
- 6 Exterior colonnade
- 7 Glass blade facade





recyclable and low-emissivity materials.

Italian facade specialist Stahlbau Pichler had its work cut out developing a robust and lightweight engineered system capable of supporting deep facade panels, which range in thickness from 40cm to 80cm. The entire facade incorporates over 100 tons of glass, and had to be attached to the existing building with its own structural constraints.

The aluminium panels are each 4m high, 1.5m wide and configured to allow each glass fin to be attached independently. The optimum amount of aluminium was specified to reduce visual obstructions.

'The glass blade assembly on site was very delicate, carried out by lowering each blade from above, starting with the ground floor then moving upwards,' says Vaccarini.

Vaccarini has described the glass envelope as an 'augmented window,' that amplifies, reflects and refracts blades of light to enhance views of the surroundings from the office floor. When seen from the outside, the 'thick' stratified facade with its screen-printed glass panels de-materializes the surface and increases its sensitivity to colour changes. When the LEDs are switched on at night the resulting prismatic blur could leave some passers by wondering if they should have gone to Specsavers.

'The result is extraordinary, in the literal sense of the term 'out of the ordinary', says Vaccarini. 'A simple system that, when reiterated, produces a complex multiplication of visions, both on the inside and on the outside of the building – a kinetic form of architecture,' he concludes. ●

**Top left** The glass blades also enliven the landscaping around, dappling light across its cobbled surfaces.

**Bottom right** By night, the effect of illumination of the outer skin is almost hallucinatory.

**Architect** Giovanni Vaccarini Architetti  
**Technical direction** Fossati Architects  
**Structural engineer** Wintsch&Cie  
**Facade engineer** BCS  
**Lighting design for facade** SIMOS  
**Facade manufacturer** Stahlbau Pichler



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# Specified



**1**  
**H18 Spanish natural slate roofing**  
**Cupa Pizarras**

I dreamed you and I were together again, windswept and desperate on the wild escarpment where once we would linger, abiding in love for as long as we dared before Mother would cry from the byre below and chase us back to the midden and toil. Then I awoke on the roof of one of these government-supported new-builds in Upper Longcross Garden Village, where Crest Nicholson have used Spanish natural slates for their longevity and setting sympathy. Glad to be in Surrey, but please send help.

[www.cupapizarras.com/uk](http://www.cupapizarras.com/uk)

**2**  
**Monarsound acoustic sheeting**  
**Monarflex**

How I weep to recall the noble scaffolds of yore, ornamented with those majestically streaming pendants of filthy polythene that are our national heritage. Surely, reducing noise in high-density locations and containing dust and particles are the very antithesis of what it means to be British? Weatherproofing, and insulating the workforce against harsh weather, in the all-encompassing way that Monarflex's Monarsound does here, is an insult to our ancient seafaring traditions! Are we to allow this intrusion on our treasured streetscape to pass unchallenged? I do believe we are.

[monarflex.co.uk](http://monarflex.co.uk)



**3**  
**Atlas Roof Lanterns**  
**Trade Access Panels**

I told him, I did, I said: 'You don't want to go calling them neat-looking lanterns "Atlas" 'cause who's going to want a load of mud and rock and oceans and that on top of their house?' But he said that Atlas was in fact holding up the firmament, that air exerted a pressure of only 14.7lb per square inch, and – get this – space was a vacuum and had literally no weight! I Googled it to be sure, but he was right! Looks nice with a bit of sky though, don't it?

[tradeaccesspanels.co.uk](http://tradeaccesspanels.co.uk)

**4**  
**Bespoke glass structures**  
**Caulfield Company**

I was feeling pretty smug about my artful arrangement of polythene and old windows, until I saw this bespoke German-made aluminium structure from the Caulfield Company. Designed to replace an Edwardian conservatory, it connects the house to pool-house and garden via link and bifold doors. Its noise cancelling and thermal values come up to Passivhaus standards, and the inbuilt weather station controls awnings and openings automatically. I do have a pole with a hook on the end though, and a rather stylish paraffin heater. Vintage, even.

[caulfieldcompany.co.uk](http://caulfieldcompany.co.uk)



**5**  
**Volume heritage joinery**  
**David Salisbury Commercial**

Even commissioning one replacement sash window is a challenge sufficient to induce a prayerful frenzy in the tight-laced chatelaine charged with such a project – but to completely refenestrate a project of the scale of Brighton's Grand Hotel? Now that is a righteous undertaking! For glasshouse specialist David Salisbury Commercial, however, whose Somerset works is geared up to produce precise bespoke casements, sashes, doors, bifold doors and roof lanterns in volume, orangeries are not the only fruit. I know. I await His punishment. [dauidsalisburycommercial.co.uk](http://dauidsalisburycommercial.co.uk)

**6**  
**Design pivot door**  
**Sky frame**

When planning your next Ville Radieuse development, please bear in mind that not all living human animals conform to Le Modulor. Some of us, in fact, are only 5'3". We will all, however, appreciate Sky-Frame's new Pivot door, combining expertise in frameless sliding doors with an axis system which allows complete operation with a light push. With thermal glazed panels at up to 2.5m wide and 4.5m high, these doors will nonetheless still allow graceful passage for the most freakishly modulaire character – even with both arms raised. [sky-frame.com](http://sky-frame.com)



**7**  
**Weather Defence sheathing board**  
**Siniat**

Weather: the final frontier. These are the voyages of the starship Weather Defence. Its continuing mission: to explore strange new worlds, to seek out new life and new civilisations, to boldly go where no-one has gone before – and to stay there, exposed on frame and protecting interiors for up to 12 months. In the year 2364, Euroclass A1 combustibility certification, ease of handling, dimensional stability, gypsum core and tough matt-coated facer will speed up interior timetables, and double allowable lead times for final enclosure, as they do now. Phasers set to stun. [siniat.co.uk](http://siniat.co.uk)

**8**  
**Spacia slimline double glazing**  
**Pilkington**

The chill of a fine house, we find, is readily solved by the simple expedient of burning well-seasoned hardwood furniture. If the mercury drops too far, we simply throw on a couple of shutters. Cedar goes up beautifully, and mahogany, my dear, stays in for hours. But apparently we now have to have sealed-unit double glazing so very thin that it can be fitted to the notoriously tricky rebates on old sash frames. Twenty-five percent reductions in heat loss! Have these people no backbone? [pilkington.co.uk](http://pilkington.co.uk)



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# The worrying state of the school estate

In our post-caretaker age, the fabric of schools is deteriorating and spending priorities are shifting. It's a challenge, but there are positive stories out there

Words: Josephine Smit

From Mr Griffiths in *Grange Hill* to Steven Berkoff's Mr Klackov in *Man Down*, the school caretaker has been a stalwart of every school-based television drama and comedy for generations, and the butt of endless pupil pranks. In real life, there was one big advantage of the caretaker: they had a detailed knowledge of their school building that was invaluable to head teachers and to anyone carrying out refurbishment works.

Now facilities managers or outsourced contractors can be found inspecting the corridors of England's 21,200 schools, and things are very different, says Steven Hale, managing director of consulting engineer, Crofton Design. 'The old caretaker who knew the school backwards doesn't exist any more. There's been a reduction in knowledge of the school as an asset.' The bigger picture was, however, clearly drawn in the National Audit Office's (NAO) report on capital funding for new and existing schools, released in February. It gave a less than glowing report of the existing school estate, drawing attention to the Department for Education's own lack of knowledge of its changing condition, and warning that deteriorating buildings posed 'a significant risk to long-term value for money'.

The NAO's report put a high potential price on rectifying that deterioration. It estimated that the cost of bringing all school buildings up to a satisfactory or better condition would be £6.7 billion, and that a further £7.1 billion would be needed to deal with less significant deterioration.

And that's by no means the only demand on funds, as many schools are having to add classrooms to accommodate rising numbers of pupils. A further 231,000 primary and 189,000 secondary places are needed between 2016 and 2021, with the greatest pressure in London and the South East.

These demands are equally urgent and weighty, and present some tough choices for clients and their designers in this era of extremely



**Above Newham Sixth Form College: School turned college campus, which is now going through gradual redevelopment**

constrained budgets. 'There is a recurring problem – particularly with urban sites – that they really need remodelling of the whole, but often there is only enough funding to carry out relatively easy projects,' says Steven Pidwill, director of architect Shephard Epstein Hunter. 'So a primary school can end up with a series of single storey buildings, when a better solution would be to rebuild it at three storeys.'

Newham Sixth Form College, nicknamed the New Vic, is one place where the architect has been able to remodel. The college has grown out of Plaistow Secondary School to become one of the UK's largest sixth form establishments with 2,700 students on a campus with a series of extensions. It now has a masterplan for refurbishment and redevelopment, and is a highly

complex project, says Pidwill. 'A project might appear to be only a refurbishment, but schools can be like a city in their own right. You can have a large university project that is simpler.'

Across the school estate, buildings range from cold and leaky high-ceilinged Victorian board schools to sprawling, single storey, flat roofed post-war examples and beyond, all with extensions, ancillary buildings and individual challenges. Small wonder that Ben Humphries, director with Architype, says, 'There are some schools that you walk into and despair'.

Getting from despair to a refurbishment programme takes a lot of initial input, interrogating budgets, drawing up lists of priorities and generating options for the client. These can range from minimal intervention, to some remodelling and replacement, as well as total replacement. Feasibility studies have to be coupled with phasing and relocation plans that minimise temporary accommodation, so that

PETER DURANT





**Far left** Upton Cross Credon School, Newham: A Victorian board school adapted and extended, alongside refurbishment to ancillary buildings, by Shephard Epstein Hunter.

**Left** Robert Fitzroy Academy: Edwardian, 1950s and 1970s buildings called for a combination of renovation, conversion and extension by Architype.

as much of the budget as possible can be channelled into the school. Architype also organises client and stakeholder workshops to establish key project values. Initial client priorities may not necessarily include potential refurbishment benefits like energy saving because, Humphries points out, energy accounts for a relatively small proportion of a school's running costs. 'A highly efficient new primary school might have an annual energy bill of £10,000, against £60-70,000 for an older building. That's a small difference in an overall primary school budget of circa £2 million.' The architect, therefore, routinely expresses such potential interventions in terms that resonate with the client. 'When you explain it to the school as representing the employment of two teaching assistants, the message becomes more powerful.'

#### What lies beneath

According to the NAO report, the areas most in need of attention in schools fall into two key categories: mechanical and electrical services and external walls, windows and doors. Asbestos also remains a potential risk in many schools built from the 1950s to the 1980s.

In the absence of the school caretaker, early inspection is often needed to track mechanical and electrical services, says Crofton Design's Hale. 'Pre-1990s schools have no drawings or records and quite often changes have been made in an ad hoc way with no logic, so we don't know how the school works. You have to roll up your sleeves and work out what these systems do. It's a logistical issue.'

'Often when you get under the skin of a building you find layers of services running wild,' says Architype's Humphries, but there can also be welcome discoveries. The refurbishment of Croydon's Robert Fitzroy Academy involved renovating, converting and extending a set of buildings from the Edwardian era, 1950s

and 1970s; the oldest example was found to have internal chimneys, allowing cross ventilation from the windows. The discovery suited the architect's eco-minimalist approach. 'We discovered them during our walk through and so adapted our approach to open some of them up,' explains Humphries. 'You often find suspended ceilings concealing high ceilings that can give good stratification of air. In another instance we revealed a fantastic arched window that brought daylight into a hall.'

And 21st century innovation is picking up where the Victorians left off. Architype has promoted Passivhaus principles in existing schools, combining natural ventilation with mechanical ventilation heat recovery at Highgate Junior, where a Victorian villa was integrated with a larger building, and Camden Centre for Learning, which comprises refurbished and extended Victorian buildings. 'It doesn't work quite as well as in a new build, but it can improve ventilation, especially where it is more problematic in winter,' says Humphries. The refurbishment of Highgate Junior's Victorian villa also incorporates breathable trowelled-on internal insulation, following research by the architect into internal insulation for use where heritage constraints rule out external systems. 'The product has given significantly better

performance while allowing moisture transfer,' Humphries adds.

In post-war schools, replacement of flat roofs can also allow modern systems with vapour control and insulation levels to be installed. 'Often in schools of the 1950s to 1970s it's one of the most important things you can do, alongside more windows and lighting replacement,' Humphries point out, 'because they are quite sprawling with high levels of heat loss.'

#### Deceptive appearances

Those post-war schools can also benefit from external insulation and render, a treatment that has transformed the thermal performance and appearance of schools like St Anthony's Roman Catholic Primary School in East Dulwich. But in some locations school exteriors are receiving attention to drive business.

Since 2011 central and local government have stepped up the delivery of new school places, both through existing and new schools, with the Conservative government supporting the development of free schools. Although school places are still in short supply in many areas, excess in others means competition to win pupils. For these, the school's attractiveness to prospective pupils and parents, and the funding they will bring, give an imperative to refurbish. 'Attractiveness from the outside has become a client priority, because of the free schools and academies,' says Shephard Epstein Hunter's Pidwill. 'Teachers are more aware of it and there is more pressure to be seen as a success, so you've got to have a school that looks exciting.'

That increases the demands on slim refurbishment budgets, says Humphries. 'There may sometimes be more fundamental issues that need resolving, but there is a key need to keep the schools viable. We worked on one 1950s school with inadequate roof insulation, where they were faced by a declining roll and wanted a new entrance. They did that, the school has thrived and it has expanded further, but fundamental flaws on energy have still not been addressed.'

When the NAO released its investigation its head, Sir Amyas Morse, said, 'Having enough school places in safe, high quality buildings in the right areas is a crucial part of the education system'. For many, the realities of school funding are making this a rather distant hope. ●

#### IN NUMBERS

£6.7 billion – the cost of returning all school buildings to satisfactory or better condition

£5.5 billion – the cost of repairing building elements exhibiting major defects/not operating as intended

£1.2 billion – the cost of repairing parts of buildings that are life-expired/at 'serious risk of imminent failure'

420,000 – the number of new school places needed between 2016 and 2021

60% – estimated share of the school estate built before 1976

Source: NAO Capital funding for schools

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LEIGH SIMPSON (4)

# System 22 puts views in the frame

Flexibility and sustainability were key requirements for a rural development that mixed newbuild and refurbishment

When you're surrounded by greenery and countryside you want to be able to look out at it. But building in such an area can also bring demands for high sustainability levels. To help answer both these needs, this residential development in a substantial private estate in East Sussex required new glazing for the refurbished 19th century oast house as well as for a new residential dwelling and a pool building which refurbished and partly replaced the derelict dairy.

The project was managed in two phases. First came the pool building, which was designed to

**Opposite** The home is part of the wider modernisation of the whole site: oast house, pool house and energy centre.

**Right** Glass to glass corners dematerialise the facade. Solar protection comes by way of metal brises soleil.

**Bottom left** With Passivhaus principles adopted elsewhere, it's the pool house that uses the lion's share of the home's energy demand.

**Bottom right** Sedum roof helps contribute the home's Code for Sustainable Homes level 5 attribution.

mimic the original dairy in size and appearance. To give the feeling of openness, the architect used Fineline System 22 for its glazing. The sliding doors were designed to slide into void pockets located at each opening, with level thresholds allowing uninterrupted access from the pool to the outside terrace. Fixed sections with glass to glass corners surrounded the spa and hot tub area. The entrance from the pool house was complimented by System 22 double pivot doors which were electronically operated.

The newbuild main residence was designed and located to enjoy surrounding views of the estate and lake. To make the most of its position, System 22 sliding doors were fitted in the ground floor kitchen. With opening corners using a floating mullion, two sliding panels on each elevation move across a fixed screen. With level thresholds and slim 22mm frames, views from this area are virtually uninterrupted. An additional opening for access was accommodated by a pair of System 22 pivot doors with complementary 22mm frames. Moving across the remaining openings on the ground floor, these were fitted with double pivot doors to give a uniform finish to the design. As well as the PAS24 locks, all System 22 pivot doors have an electronic lock in the head channel.

First floor accommodation was of similar design to the lower living area. As well as the floating mullion and opening corner of sliding panels, the design has sliding sections rather than anything fixed. These move across the corner pane when closed, and give the client the flexibility to move the system panels in either direction. Continuing across the first floor and to maintain the sight lines, a small opening using System 22 as a sliding window was introduced as an alternative to standard glazed units. To complete the first floor a set of sliding panels using System 22 profiles was fitted.



In the pool house, marine grade paint and specific electrics were used to ensure the longevity of the system. Given the location, solar control was introduced for all the glazing. For the main house, however, standard PPC grade was used and solar control film applied to the primary glazing.

Working closely with the architect, BBM Sustainable Design, Fineline helped complete the design and working details at an early stage. Installation was made easier by a level site, ease of access and excellent co-ordination between the builder and design teams. Fineline offers a comprehensive design and consultation package together with an in depth consultation process. All installations are completed by a network of employed project managers and their fitting teams and carry a comprehensive five year warranty. ●



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# Smallest rooms on the Stirling Prize shortlist

There may not be a Stirling Prize for washrooms, but no building with nasty loos will reach the shortlist. So how do the toilets in this year's final six shape up?

Words: Tom Ravenscroft

'Bathrooms have to be appropriate to the building and its function', says John McElgunn, partner at Rogers Stirk Harbour + Partners, architect of the World Conservation and Exhibitions Centre (WCEC) at the British Museum. 'Domestically, they are a place to relax, whereas in the cultural or commercial environment they must be much more functional.'

While bathrooms are an essential requirement in almost all buildings, they are often dealt with as a box ticking exercise of pragmatic solutions. Accessibility, circulation, services – tick, tick, tick.

However, the toilet is the one room in most buildings that nearly all users experience, and one that can often make a big impact – positively or negatively. And as every critic knows, a visit to the bathroom of a building can provide great insight into the architect's mindset and the overall quality of the project. You can guarantee, therefore, that the RIBA judges who drew up the 2017 Stirling Prize shortlist will have taken a peek in the loos before choosing their picks for best building.

From functional to relaxing, there are different strategies for bathrooms across building sectors, and the six Stirling shortlisted projects make up the entire range, varying from workplace to educational, public to residential. These award-winning spaces require excellence in every room, including the bathroom, but as McElgunn points out, appropriateness is key. Glamour and comfort aren't always the best fit, sometimes space, robustness and efficiency are what make the best bog.

Although the Barrett's Grove housing

## At a visitor attraction, the toilet is often one of first places people experience

scheme, British Museum WCEC, City Campus at the City of Glasgow College (RIBA 5, October 2017), Command of the Oceans, Hastings Pier, and Juergen Teller's Photography Studio will be some of the most publicised buildings this year, their loos will mostly go unmentioned. But for those spaces that are vying to claim the UK's top architectural prize, we examine these often-overlooked rooms, starting with the more public projects.

'At a visitor attraction, the toilet is often one

of first places people experience,' says Brendan Higgins, project architect at Baynes and Mitchell Architects. 'This is especially true at Command of the Oceans, as the dockyard is a family attraction.'

Here the architect worked hard to create washrooms that were suitable for the museum and this meant facilities that were cost effective and hard wearing – a vinyl floor and covered skirting to make it easy to clean, along with solid and robust fittings.

'The client didn't really care how luxurious the toilets were,' continues Higgins. 'It was about them being practical, accessible and easy to maintain. We delivered this, while considering the overall aesthetic of the project.'

City of Glasgow College by Reiach & Hall Architects and Michael Laird Architects, and

ALEX DERIUKO

**Far right** Seven gender-free toilet spaces are indulged with wide access windows and large picture windows to the sea beyond.

**Right** The new pier has reinvigorated Hastings' seaside promenade with a significant public amenity.









## Doc M compliance is now within reach.

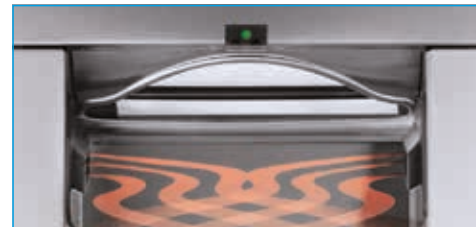


### **M** Bobrick's integrated 3IN1 is the only model on the market that meets Doc M accessibility standards.

Until now, combination towel dispenser, hand dryer and waste bin models were noncompliant because they did not meet the 800-1000 mm reach range requirement. Now you can specify the new Doc M-compliant B-38030 TrimLine recessed, stainless steel 3IN1. It is architecturally designed for a clean, flush look and provides a complete hand dry with one towel and five seconds of warm air. For technical data and BIM objects, contact [ukproducts@bobrick.com](mailto:ukproducts@bobrick.com).



Exclusive TowelMate bar dispenses one towel at a time, every time.



Dual-outlet airflow for a thorough and comfortable warm air hand dry.



BUILDING VALUE SINCE 1906  
BOBRICK.CO.UK



At Amin Taha and Groupwork's Barratts Grove housing, the rich, warm, timber cladding outside the bathroom is counter pointed by 2001-like stark whiteness within – tile free to cope with structural movement.



TIMOTHY SOAR (2)

dRMM's Hastings Pier, are two other projects that had to be extremely robust, but the pier toilet, in particular, was designed to be enjoyed. Here the WC was an important part of the strategy to create a well-serviced platform for events, as the provision was a requirement of the project's lottery funding.

'We wanted to create a better experience than the usual public toilets,' says dRMM director Alex de Rijke. 'We kept the space generous and created a large window that looks over the deck at the sea and St Leonards in the distance.'

Although the reflectivity of this window is normal, its height and the outside light mean no one can see into the gender-neutral toilet. Inside, the seven individual cubicles (including one that is accessible), each contain their own toilet and sink – which allowed the bathroom lobby to be accessed directly from the cultural area.

'The pier is a leveling experience, anyone can

come on to it. It is deliberately egalitarian; that includes the toilets which are easily accessed, gender-free individual rooms,' explains de Rijke.

Much like the rest of the pier, the fixtures and fittings are durable and strong, with a natural organic linoleum floor and all plumbing within the timber frame.

Sturdiness and usability are also key at the British Museum, as McElgunn points out: 'Our project is not a beautiful gallery. It is an industrial space and the toilets are appropriately straightforward.'

Although the project cost £135 million, the bathrooms were a victim of value engineering as they were in one of the last of 23 packages to be delivered – all too often the case with high value projects, says McElgunn.

Thankfully the plan was already finalised, allowing the architects to create a functional space for staff, with easy maintenance again a

priority. However, the finish is not quite up to the standard McElgunn would have liked. 'The doors, for example, are a little flimsy and close with a bit of a bang. They could have been more polished and glide to a stop,' he says.

This toilet tour now brings us to the two most domestic projects on the shortlist. At Amin Taha and Groupwork's Barratts Grove the bathroom design was driven by the choice of structural material. Each of 13 bathrooms were designed to anticipate any differential movement in the CLT superstructure and avoid failure to the tanking as a result of cracking, which can occur with conventional tiles.

The bathrooms were therefore designed as wet rooms, tanked fully to ceiling height around showers and waist height in other areas. A layer of rubber was applied in a continuous sheet to reduce joints and possibility for leakage.

While this is a highly practical solution, at





DAVID GRANDORGE (2)

**Above** A strong industrial aesthetic mixed with the discreet luxury of brass sanitaryware reigns at 6A's studio for Juergen Teller.

**Right** The sauna window facing a brick wall is a decadent touch.



The sauna includes a large window... users are simultaneously on show and out of view

6a's Latimer Road Photography Studio it is materiality that drove design. This has three bathrooms: an accessible, public shower room in the first building, a toilet adjacent to the communal kitchen on the ground floor of the third building, and a shower room above it.

The driving design principle in all three bathrooms was to use surface-mounted fixings and to express inherent material qualities. Vents for air extract are simply a composition of holes drilled into the concrete beams, avoiding the need for grilles. Blockwork is left mostly exposed and covered by patches of tiles only where required. The sink, cistern and loo are all fixed to the wall with visible metal brackets – nothing is integrated or hidden. The cement tiles introduce pattern and colour, and were manufactured specially for the space.

However, while stainless steel fittings are used in the two public spaces, the shower room, arguably the most private space of the studio, has a richness, with polished brass fittings.

'It is the last space you encounter, tucked away at the very back of the building, and contains Juergen's sauna,' says 6a's Aram Mooradian. 'Unusually, the sauna includes a large window that looks across at the brick elevation of the neighbouring house. Users are simultaneously on show and out of view'.

This is undoubtedly a beautiful bathroom, which would likely be competing with Hastings' Pier if the Stirling Prize was judged on bathrooms alone. And while these bathrooms are something a little special, the major takeaway from the toilets of this year's Stirling shortlist is that this room must be appropriate for the building's overall usage.

Toilets are essential to most buildings and worth concentrating on – planning well and specifying efficiently. Like most, I only really remember a toilet if it is bad. So although this room may not win anyone a Stirling Prize, a bad one could lose it. ●



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detail  
makes the difference





# Specified



**1**  
**Shower enclosures**  
**Aqata**

Ah, remember the honeyed days of romantic youth, when shared bathing with your beau could lead to anything... Well, Aqata is on your wavelength with its luxury shower enclosures, which offer tinted and even bespoke etched glass designs. Problem is, what's sexy at 21 is better left, four decades of life experience later, as a private world for careful preparation rather than feckless abandon. So in the room shown, which seems to offer no demure hiding place, a floor to ceiling tv screen rather than etchings might be an appropriate distraction – just not showing On Golden Pond. [aqata.co.uk](http://aqata.co.uk)

**2**  
**Hydrotap All-in-One Celsius Arc Zip Water**

It's that time again. Your phone's telling you its storage is full, and none of your apps is updating. OH THE WAITING! No such problems with the other thing that happens with such thrilling regularity: a new Zip Hydrotap, offering even more functions and finishes to have you quaking on the pavement overnight in your pop-up tent. The All-in-One Celsius Arc gives instant filtered boiling, chilled and sparkling water, plus unfiltered hot and cold for washing up. And no OS updates to wait for either. [zipwater.co.uk](http://zipwater.co.uk)



**3**  
**Mya bathroom furniture**  
**Burgbad**

'Come over baby! We got chicken in the ba-arn! Whoah honey! Come on over! We got the bull by the ho-orn!' So run the farmyard ejaculations of one Jerry Lee Lewis, and indeed in Jeannette Altherr's new collection for Burgbad, there is a 'whole lot of shaking' going on. Nonetheless, I feel celibate Shaker founder Mother Ann Lee might have blessed this Mya (Million Years Ago) freestanding bathroom furniture in natural or dark oak veneers since it, like her, it takes up 'a full cross against the doleful works of the flesh'. Which is more than can be said for Jerry Lee... [burgbad.com](http://burgbad.com)

**4**  
**Reflections range**  
**Gemini Tiles**

It is an accustom'd action with her, to seem thus washing her hands. I have known her continue in this a quarter of an hour – and not because she's racked with guilty paranoia, but rather since my Lady Macbeth had these Gemini Reflections tiles installed in her kitchen, whose returning gleam catcheth her gaze. All that 'the perfumes of Arabia will not sweeten this little hand'? There is no damned spot. She's on her second bar of Santa Maria Novella at thirty quid a pop. If she would only dry her hands, pop the knife back in the drawer, and looketh not so pale. [geminitiles.co.uk](http://geminitiles.co.uk)



5

**5**  
**Miena washbasins**  
**Kaldewei**

I journeyed to Nepal for my sacred prayer bowl, but couldn't get the cold-chiselled plughole to hold water. So in the end I found these lovely steel enamel 'Miena' fine-edged basins by Anke Salomon for Kaldewei. Offered in matt or gloss, and in rectangular or round versions, they don't quite have the transcendent hand-hammered look I was after, but the enamelled wastes work beautifully – and my, do they ping! I opted for a Yin and Yang pairing. Purity and balance are thereby achieved, Grasshopper.

[kaldewei.co.uk](http://kaldewei.co.uk)



6

**6**  
**Sinks and basins**  
**hi-macs**

I'm wondering, as I look at the next perfectly appointed high rise luxury living interior, if this kitchen with the seamless, hygienic Hi-Macs solid surface and sinks ensemble is actually in the same apartment as the washroom above. Think about it – glass walls, fabulous city-centre view, shiny monochrome surfaces and fittings (everything is so black and white nowadays isn't it – look at the whole page in fact). Even the views are night and day to maintain the colour scheme. Makes you yearn for the discordant humanity of a discarded dish of baked beans.

[himacs.eu/en](http://himacs.eu/en)



7

**7**  
**Michel Roux Jr range**  
**Moores**

A state of the art kitchen is critical to any house these days – and if you're wondering why yours isn't shifting when the Prendeghasts opposite got rid of theirs in three weeks, even in this market, then the Michel Roux Jr kitchen range could be your answer. Produced in collaboration with Moores, it is, says the Michelin man, 'A warm, luxurious minimalism you'll still love in years to come.' But, is this one just a little too minimalist? Surely there's an oven in there somewhere. Or is that what actually makes a perfect kitchen for today's armchair chef with the Deliveroo app?

[moores.co.uk](http://moores.co.uk)



8

**8**  
**Outline Cerafine basins**  
**Vitra**

Bathrooms have come a long way since those cheeky Aussies came up with the joke, 'Where does a pommie hide his money?' The answer of course was 'Under the soap', but today's stylish and functional washrooms make regular scrubbing a must. Vitra's Outline ultra-fine basins, made of new material Cerafine, might sport a petrie-dish aesthetic but you'll want to linger over the easy to clean range, secure in the knowledge that having forked out a well-worth-it £463 for the pebble bowl above, finding a hiding place for your spondoolies may be a moot point.

[vitra.co.uk](http://vitra.co.uk)



# Not just another day at the office

Office space is changing in step with the way we want to work. PIP's seminar discussed how to create rewarding and sustainable spaces

**Words: Ruth Slavid**

What is the first way to ensure the sustainability of your office building? Don't let it burn down. This insight, which is in the 'obvious once you think about it' category, came at the end of the PIP seminar on office design. The point was made by Tom Roche, secretary of the Business Sprinkler Alliance, which argues for the greater inclusion of sprinklers in office buildings. While other speakers had talked about energy efficiency and minimising embodied energy, Roche made the valid point that, if your building goes up in flames, all that embodied energy becomes ash.

Owners of office buildings are worryingly unaware of fire issues, Roche said. Some 70 per cent believe that if they follow Building Regulations they will be protected from fire damage – which is not the case. He also cited fears of flooding and concerns about cost. A study by WSP for the Business Sprinkler Alliance outlines the business case for installing sprinklers, which can bring advantages such as savings in glazing costs and increased flexibility in design.

## Different ways of thinking

If offices and the way we work are to change, then we need a new kind of thinking and, in particular, a different approach to flexibility. This was the reasoning behind AHMM's design of the White Collar Factory office at Old Street for Derwent London, an attempt to create from scratch the kind of successful found space that so many creatives have occupied in the last couple of decades. Stephen Taylor of AHMM explained that in fact many of the ideas were far from new. For example, the use of cold-water pipes in slabs for cooling was first used by Frank Lloyd Wright.

But what may be the most revolutionary aspect of this project is the fact that the design was developed before it was implemented anywhere. AHMM costed an 'ideal' building so it could identify the necessary add-ons that would be required on a real and, by definition, non-ideal site.

The heart of the idea is to have a concrete structure for robustness and high thermal mass, opening windows and high floor-to-floor heights which make densely packed office floors feel far more spacious. The 'factory' floors are offset by generous social spaces, including a rooftop running track which has become synonymous with this prominent building on the Old Street roundabout.

Less snazzy but more crucial is the relatively low amount of glazing – only one third of the south, west and east faces. 'We worked hard with the engineers to keep the sun out and the structure absorbing heat,' Taylor said. This is a hard-working building, where every element serves, ideally, more than one purpose, and there are no unnecessary frills.

Bennetts Associates took a similar approach on 40 Chancery Lane, another Derwent London project in an area largely occupied by legal practices. When the firm designed a new building, and incorporated an existing one, it was anticipating this sort of client, but in fact ended up with Publicis, the parent of advertising agency Saatchi & Saatchi. 'The building proved flexible enough to adapt to a creative environment,' said Alison Darvill, an associate at Bennetts.

## Thinner floors, higher ceilings

Whereas both these practices made a point of designing large floor to ceiling heights, in some existing buildings this is just not possible. Emmanuel Bizien of Halton Projects explained how his firm developed a super-slim induction unit for installation in a building in Paris called Le Greenelle. Floor to floor heights in the 1960s structure were only 2.7m but the floor to ceiling height needed to be 2.6m. The company was able to make the entire project feasible by creating a unit that was only 8cm high. It went on to turn this into a product it could market, assisting other developers and architects with difficult projects.

Ben Hancock of Oscar Acoustics explained



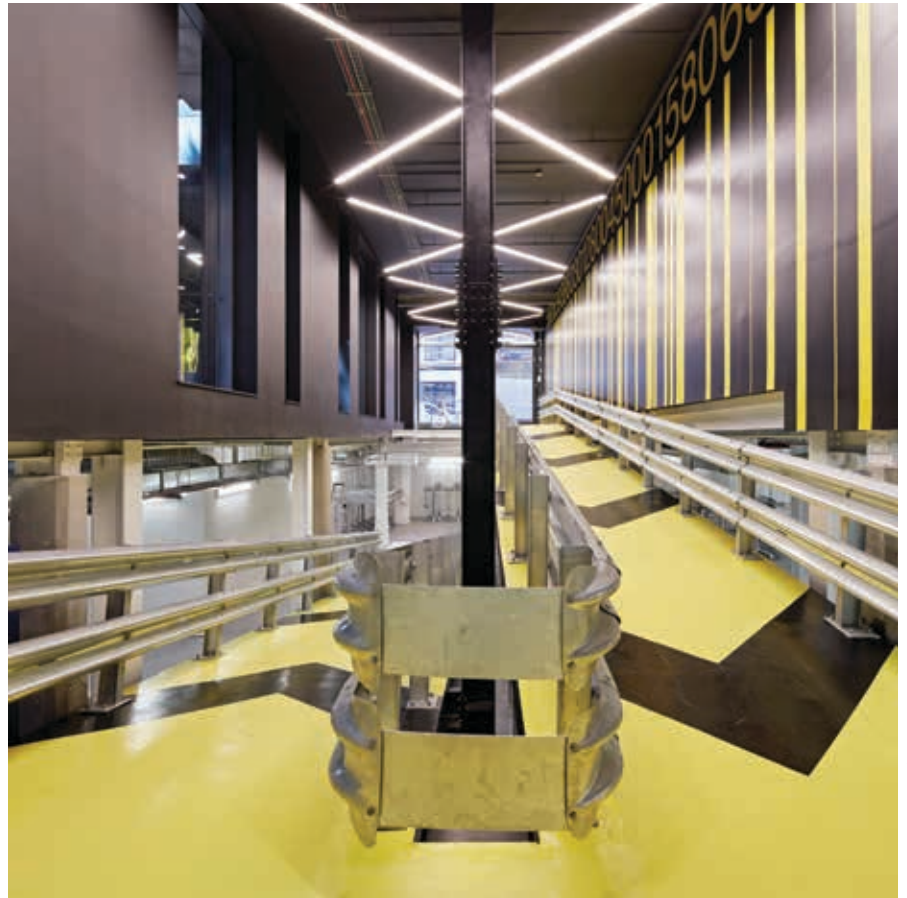
**Above** The aesthetic at AHMM's White Collar Factory formalises the 'found space' aesthetic of the millennial creative start-ups.

how his company can also supply space-saving solutions that allow architects to fulfil their dreams. Acoustic finishes can be anything from deliberately rough for that 'industrial chic' look to so smooth that you wouldn't guess their function.

#### Thorough job

There was one more project, the award-winning Alphabeta building by Studio RHE. This was an unloved late 20th century refurbishment of an early 20th century building, complete with a soulless atrium that would have looked at home in any middle-American airport. Originally employed to do a swift tart up before a 'serious architect' came on board, RHE's analysis of the building was so thorough that it became a major project. Its solution involved taking maximum advantage of the culture clash between arty Shoreditch and the staid City of London; it opened up views within the circulation and resulted in a lively and contemporary space which includes a ramp taking workers to the basement bike park.

RHE had no previous experience of office buildings. This project confirms that new thinking in the world of work can produce dramatic new solutions – and that just as work is changing fast, so the thinking of the best designers and manufacturers is keeping pace. ●



HUFTON + CROW (2)

If offices and the way we work are to change, then we need a new kind of thinking and, in particular, a different approach to flexibility

#### Above right

Celebrating the bicycle, RHE's ramp down to the bike park and large shower areas is Alphabeta's biggest USP.

**Right** Bennetts Associates' 40 Chancery Lane brings creative work space to London's legal services centre.



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# Zeitz MOCAA, Cape Town

Africa's first museum of the continent's contemporary art is a dramatic sculpture in itself, hewn from a concrete silo in a huge, bold technical feat

Words: Jan-Carlos Kucharek Photographs: Iwan Baan

Cape Town's Zeitz Museum of Contemporary Art Africa is as remarkable for what it isn't as for what it is. It is a 9,500m<sup>2</sup> gallery created in a wholly refurbished and remodelled 1920s grain silo on the Victoria and Alfred Waterfront pier area. What it isn't is the 4,600m<sup>3</sup> of volume that Heatherwick Studio has carved out of the centre of 42 cylindrical grain silos, 27m in height and 5.5m in diameter, to create the dramatic atrium.

The process of creating this cathedral-like space was complex and demanding, but aided by the use of state of the art slip form techniques when the silos were built nearly 100 years ago. 'The formwork slips were about 1.5m high and jacked up manually on screw jacks as the concrete was cast,' explains Heatherwick studio project leader Stepan Martinovsky. 'The walls of the silos were cast 170mm thick, and to deal with the sideways thrust of the grain horizontal steel rings were cast into the concrete all the way up.' While this obviated the need for bi-directional steel reinforcing, which would have greatly increased the difficulty of carving the silos out, he adds that it meant there was little redundancy built in to this structure; silos had

to be filled equally with grain to the same level to ensure lateral forces were evenly balanced.

But the carving out of the silos resulted in massive uneven loadings across the structure. It would clearly have to be reinforced; the issue was how to do it while keeping the integrity of the silos. The strategy they adopted ended up serving a dual purpose; strengthening the original structure while creating the template from which the new volume would be carved.

The form, based on the shape of a single grain of corn, was first modelled as a point cloud in the office and then blown up to building scale. Each point was surveyed and positioned within the silos; short steel dowels were then run into the structure to allow a 250mm new zone, comprising a 50mm gap and 200mm of new concrete to be cast inside the silo circumference. With the new wall cast as the exact final form, the gargantuan task of removing the existing silo structure to form the void could begin. Diggers smashed through at lower levels, while far above the old concrete was accurately cut through to match the line of the new. Hanging scaffolding stretched down as work

progressed, while sections of old concrete being cut away were lowered on chains. 'At one point it was nothing more than diggers, sunlight cutting through the dust and hundreds of workers cutting away on the scaffolding. The process and its scale seemed epic,' Martinovsky recalls.

Evidence as to how the form was achieved is there to see if you care to look, he adds. The aggregate of the old silos is riddled with the brown, green and bluish hues of the rock surrounding Table Mountain, contrasted with the starker, finer, whiter new concrete. And separating the two, a tiny void in the reveal of the concrete that intimates the gap full of nothing but steel spigots connecting the old and new structures.

The final result is Gaudi-esque in its effect. MOCAA's huge arcs and curves are reminiscent of the architect's experiments with hung chains that went on to generate his Art Nouveau domes. And Gaudi's inspiration from nature is also here. 'The silo was built to hold millions and millions of grains', Martinovsky concludes, 'so it seemed only natural that it inspire the new form; that a single grain, writ large, has been embedded within the building forever.' ●



**Above** At lower levels the distinction between layers of old and new structure are clear to see.

**Right** A six-storey hotel tops the museum building.



**Above** Each silo is capped with a 6m panel of laminate glass, fritted by African artist El Loko.

**Right** Carving out the 27m high site area has created a dramatic organic space reminiscent of Gaudi's work.







# Specified



## 1 Art Select Wood flooring Karndean

If you've any tissue-box surfers in your feline team, they'll initially be in heaven with Art Select Wood vinyl tiling throughout your space. Here in new Storm Oak, but also in 26 further wood designs, 21 stone designs, and tile options in plank (1219mm by 178mm), parquet (228mm by 76mm) and basket weave (305mm by 76mm or 114mm by 114mm); it will be a simple matter to specify to your exact taste and layout. But even if Tiddles has the ingenuity to convert his tissue box into a Cresta Run toboggan, he'll be disappointed; this floor's as slip resistant as a cat's tongue. [karndean.com](http://karndean.com)

## 2 Allura vinyl planks Forbo

'Anechoic'. Now there's a word (and an experience) to boggle the brain. Forbo's Allura planks aren't quite so effective at making a car door's closure sound like a symphony, but they're certainly good enough to have been chosen by audiologist Leightons for the common areas of its new Reading fit-out by SKK. Consulting rooms feature 23dB reducing Tessera carpet tiles, by the way. Even quieter, yet you could still sneeze in there without the use of tranquilisers – or suddenly requiring hearing aids. [forbo-flooring.co.uk](http://forbo-flooring.co.uk)

## 3 Office partitioning CR Laurence

Oh! To hear once more the 'Bok! Bok! Bok!' of wrist-snapping racket on bijou rubber ball! The clarion 'Boff! Boff! Boff!' of rubber ball on dystopian cliff-like walls of white! Alas and alack! For shall I hear those so-sweet sounds no more? Apparently not, thanks to the 42dB insulating properties of CRL's 28mm thick partition glass. That, plus of course the fact that those miserable you-know-whats upstairs have banned us from playing squash in the office during working hours. [crlaurence.co.uk](http://crlaurence.co.uk)

## 4 Underfloor heating system Gaia

Ecclesiastical under-floor aquatics have improved since my Sunday school days, when inner peace was once skewered utterly by the sight of a great parquet panel being lifted to reveal a kind of filthy sheep-dip: a sacrificial receptacle for the devout, apparently. Indeed, Beechcroft's conversion of this Pugin chapel into four dwellings at Fitzroy Gate is positively enhanced by Gaia's low-temperature hot water system, installed between original joists to retain the floor level, and reflected by Autron aluminium plates. They've also dispensed with shell art and tambourine tutorials. Refreshing! [gaia.co.uk](http://gaia.co.uk)

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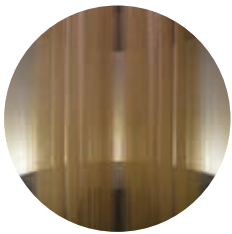
**Sandra Coppin**, of architect Coppin Dockray, gives us three of her specification favourites



## MOLO

To create the curved walls for an office conference room, we used a fine accordion-like partition system by Molo. It is a beautifully crafted product made from folded building paper and has the delicate translucent quality of rice paper. We made an angled cut into the wall to expose its cellular quality and create a shelf for books and documents.

[molotrader.com](http://molotrader.com)



## BOLON

For the entrance to our bathroom showroom, we needed a robust floor able to tolerate commercial cleaning as well as water splashing from the central waterfall installation. Bolon's woven vinyl flooring is much like fitted carpeting in that it is quick to install, has a textured surface and has good acoustic properties. Here we opted for a lively patterned finish called 'Create' in a dark blue and grey.

[bolon.com](http://bolon.com)



## SOLUS

As part of the refurbishment of a grade I listed flat in Lubetkin's Highpoint II, we used an inexpensive traditional ceramic floor tile which we laid with two joint sizes to give a rich check pattern. Solus ceramics has a broad range of tiles which allowed us to get the precise colour, matt finish and size to match tiles used elsewhere in the building.

[solusceramics.com](http://solusceramics.com)

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# ...Sign Off

**Jan-Carlos Kucharek** enjoys three of this issue's out-takes



## HOTEL-ETUBBIES

Nice to see the Manser Practice, sponsor of the Sunday Times British Homes Award Manser Medal, keeping its own hand in with domestic design. Here it's at Alton Towers' CBeebies Land Hotel; and it looks like there's been plenty of client consultation. Designed for children and any parents suffering from retinal cone and rod photoreceptor deficiency, each of the 76 rooms is based on the channel's shows. dormakaba cushion stop door closers were specified to protect the door leaf and frame 'in the event of slamming or violent use.' Quite why tempers might fray at CBeebies Land isn't stipulated but at least guests won't accidentally Ninky Nonk their Pinky Ponk.



## BACK TO THE PHOTOGRAPHER

A 2017 British Homes Award shortlister, Hyde & Hyde's Silver House on the Gower Peninsula shows appreciation by the architectural world but, one fears, less so by its photographer. Images supplied with the PR for the high-end residence suggest a childhood fascination with being Marty McFly in the 1985 movie Back to the Future; a predilection undergoing psychological transference in his photo shoot – with the client's car as the star. Cue shots like 'Silver DeLorean with house as canopy', 'Silver DeLorean next to blacked-out house' and 'Silver DeLorean illuminated by Reglit glass cladding planks'. And the Manser Medal goes to... the clock tower at midnight.



## ALL AT SEA

As Blackpool's Golden Mile is first choice for the UK's hardcore stag and hen nights, is it any wonder that its piers have joined the 2018 World Monuments Fund's 'Watch' list of 25 most threatened cultural heritage sites? I mean, this is where you end up when you'd rather invest your Easyjet air fare to Magaluf on a few more cocktail buckets in Tommy Ducks. And it's in endangered company: Aleppo's bombed-out souk, the Old City of Ta'izz in Yemen and earthquake wracked Amatrice (no, that's not an exotic shot), in Italy. Luckily, the drinks are on American Express, who's given \$17.5m to the Watch fund. Bear that in mind next time you get Dean-O to hold your chips...

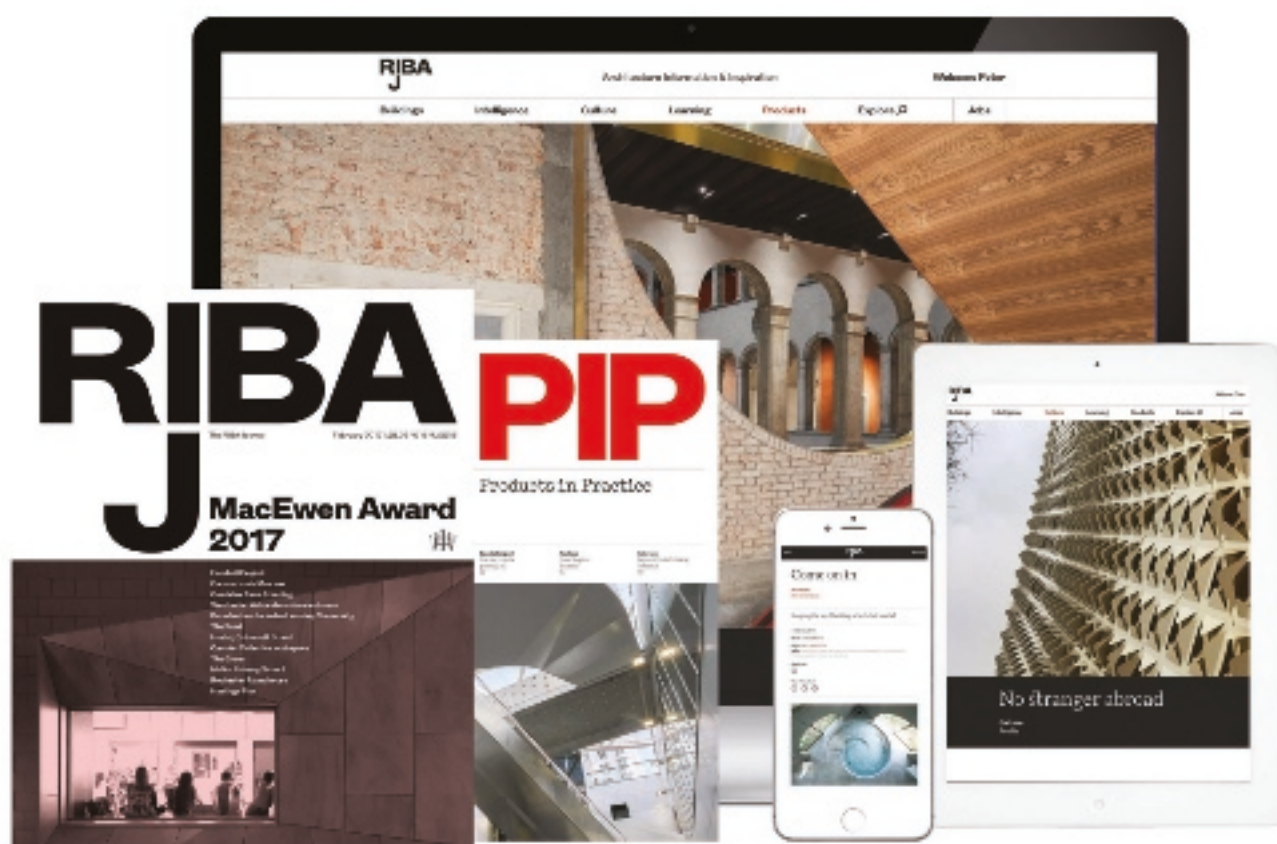
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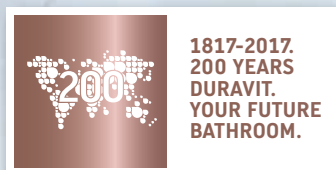
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