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...there’s brass. Apply that to the Thames riverbed and there’s a lot of it. TfL figures last month showed that London’s sunk £175m Garden Bridge project cost £50m – £45m of it put on the taxpayer. Stand out sums are £21m paid to Bouygues, £12m to Arup and £2.7m to Heatherwick Studio. It’s unlikely heads will roll over this profligacy; after all, this country swallowed the story of £350m a week going to the NHS if we left the EU; this is a drop in the ocean by comparison.

Speaking of which, as PiP went to press, Inside Housing reported that the Regulator of Social Housing had warned England’s Housing Associations to prepare for a No Deal Brexit. Key concerns were the housing market, noting ‘Bank of England projections which suggest a fall in house prices of up to 33%, risk of 5.5% interest and 6.25% inflation and reduced access to materials, with elements like boiler and lift parts EU-sourced and ‘not readily stockpiled’. And, the Regulator goes on, labour shortages. Something to bear in mind at Europe’s biggest building project – EDF’s Hinkley C nuclear power station. The site will require nearly 5,600 workers, drawing more than 20,000 people to Bridgewater in Somerset. The subject of a Radio 4 show ‘Not the Biggest Hotel in Europe’, the 1000-person residence they’ve built, the second biggest in Europe, to house the workforce is bringing prosperity to this sleepy town. But also some notoriety, with a local rise expected in ‘divorces and ‘pop-up’ brothels’.

This last concern is a reminder that construction should be seen in context. As old professions go; like the hotel, it’s still the runner-up.

Jan-Carlos Kucharek, editor
The world's thinnest inverted roof insulation.

The ProTherm Quantum® advanced Vacuum Insulation Panel system has been specifically developed for inverted roofs, balconies and terraces or wherever depth is critical to the overall construction. Quantum® can dramatically reduce the depth of a finished roof system, providing the solution to counter low upstands against the increasing thickness of traditional EPS & XPS products specified in order to meet more stringent thermal demands. It delivers an exceptional thermal performance and has been consistently proven to meet challenging standards required by home warranty providers. Quantum® is the first Vacuum insulated panel in the world to achieve BBA certification for inverted roof applications.

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Timber timbre
Italian luxury wall and floor surfaces designer Listone Giordano and Inkiostro Bianco has launched its Lineadeco collection by Aldo Cibic – three-dimensional effect decorative wooden surfaces inspired by geometry as well as nature and available in two large panel formats. Laser engraved and digitally printed, the ‘velvety, soft to the touch’ surfaces are, apparently, suited to bathrooms and kitchens, to offices, hotels and even ‘luxury yachting’. If you run out of wall to adorn, you can look to Listone’s Undici parquet floor range – also with enhanced, engraved decoration.

Dirigible defence
Fact is often stranger then fiction, and the establishment of the RAP’s ‘Balloon Command’ in 1938 seems to fit the bill. Set up to store the barrage balloons that were released to defend the UK’s cities from air attack, No 11 Balloon Centre was built in the Gloucestershire village of Pucklechurch to help defend Bristol. What’s left of the hangar structure, now grade II-listed, has been protected using over 4000m² of Tata Colorcoat’s Trisomet wall and roof panels, some original window positions ‘painted in’ to show where they would previously have been.

The do in fondue
They do everything better in Switzerland, don’t they? Chocolate, watches, nuclear bunkers, Peter Zumthor, banking, the list goes on. And water. Pictured is Swiss firm KWC’s ERA, an ‘ultimate sink and tap experience’ aimed at luxury developments. The stainless steel sink, sunk into the worktop, has an invisible overflow and bevelled waste cover, while water from the Gravity Spout tap will ‘cascade gracefully like a fountain or waterfall’. Bear that in mind next time you’re trying to soak burned-on cheese off your fondue pot.

Radical conservation
As Karl Marx said, you get the best out of workers whose labour is not just a commodity. That thought may have lingered in the minds of Rooflight Company’s Peter and Val King, as 25 years since they started producing the ‘Conservation rooflight’, they’re transferring the firm to employee ownership this month. They say it offers ‘higher productivity... 25% increase in operating profits... more resilience to economic turbulence...more engaged, fulfilled and less strained workforce.’ Someone might have taken a hammer to Marx’s grave in Highgate cemetery recently, but you can't knock those findings.
Plastic people
Creating one degree of separation between our plastic waste and its recycling, Dutch design studio The New Raw has launched ‘Print Your City’. Developed by founders Panos Sakkas and Fonteini Setaki with funding from Coca-Cola, Zero Waste Lab has launched in Thessaloniki, Greece. Locals bring plastic waste and help design custom urban furniture – and get actively involved in the process. Built by robotic-armed 3D printer, public seating can incorporate a bike rack, tree pot (pictured), dog-feeding bowl or bookcase - all based on the ergonomics of the human body. Check it out at printyourcitycoca-cola.gr

Rooftop
Craftworks recently won London’s Best Home Extension at New London Architecture’s ‘Don’t Move, Improve’ awards, which promote the designs of emerging practices on a condensed footprint. The firm’s winner, its imposing ‘Chapel’ in Southwark, features a new lower ground level for bedrooms and a large ground floor living space with an impressive vaulted ceiling and a new mezzanine space inserted for privacy. Constructed of beguiling drylined facets, it allows for flexible living while creating a cathedral-like space that draws light down into the space. Plaudits also went to Archmongers LLP, Russell Hunt architects and Gundry + Ducker (see page 9). The exhibition of the winners runs until mid-April at the Building Centre.

Platonic solids
Strong geometries are in for tile manufacturer Domus, which last month launched Pittorica with Milan design atelier Studiopepe. It comprises 14 plain solid colours in three palettes with a silky matt finish; all available in three different shapes - triangle, square and brick-shaped. They’re suitable for both walls and floors and each tile is stamped with a textured canvas weave print, offering, the PR states ‘unique, subtle, almost imperceptible variation’.

Light meal
High prices and a Brexit-sized drop in the market might have seen the higher flats at London’s Centrepoint taken off the market, but thankfully lighting design consultancy Nulty has been busy at lower levels. The firm has been working with Gordon Young Architects and hospitality group Rhubarb on its all-day restaurant VIVI, channelling the building’s 1960s design. Apart from Vibeke Fonnesberg Schmidt’s central chandelier, made from layers of custom-coloured plexiglass, the lighting is understated and concealed, generating a smoky mood and avoiding reflections that might occur across its enormous glazed facade.
VR makes itself indispensible

2018 was a good year for A-VR and with a surprisingly diverse range of completed projects the future for immersive technology feels very bright. We used virtual reality as an engagement tool for a major bank, and similar production techniques for an installation at Tate Modern just before Christmas. Due to the power of immersion, and the unambiguous nature of VR, we also found a great deal of value building content that supported the planning process.

The UK planning system is extremely rigid despite modest increases for approvals in recent years. However, we supported several new developments in 2018 where VR technology helped improve communication during planning.

One of the first projects in 2018 was a residential development in Slough for Click Above Properties which was seeking consent. We decided to pilot some 360° views to remove any ambiguity from the visual material; Verified CGIs remain fixed viewpoint images and despite their accuracy this can be dynamite to a review board. By rotating the viewpoint in a 360 image it was possible to assess the relationship between the proposal and the context around that point, which in this case was particularly important. The application was granted.

We used the process again on three developments within the M25 – the Chiswick Curve Enquiry (Egret West), Cross-Harbour (CZWG) and 225 Marshall (Make) – paying particular attention to the accuracy of the compositions and adding VR headset support. We developed a method for verifying the 360 for 225 Marshall (Make), which got consent and overwhelmingly positive feedback for the dozens of views we produced. Of particular note on that project was the ability to don a portable headset on site and see the building as it would be.

The inspector made an explicit reference to the extreme usefulness of the method to his understanding of the scalar juxtaposition in open inquiry and also made specific reference to it in the decision letter,’ commented Russell Harris QC. ‘He granted planning permission at least in part because he became comfortable with the nature of the juxtaposition he saw in the glasses.’

We are developing a planning package which will use immersion not only to remove ambiguity, but to engage its audience by layering all the key information into one experience. An example of this was the VR study we made for the Chiswick Curve public enquiry. We re-created a 2km by 1km area of the site, complete with a stretch of the M4, in VR. The simulation had day and night scenarios, and a virtual vehicle was added so the impact of the proposal could be assessed as if driving along that stretch of motorway. Finally, all the 360 views were added as nodes throughout the model.

Bringing the real world into 3D, creating a digital twin of a site, and using it to accurately develop and assess future developments, is the idea here as we begin to streamline decision making with virtual reality. •

Felix Dodd is founder director of A-VR

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Books

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The Housing Design Handbook: A guide to good practice
David Levitt and Jo McCafferty eds.
Routledge 354p PB £39.99

A co-founder and a director of Levitt Bernstein have done us all a service with the second edition of their handbook, which sets out all the design principles of successful housing covering placemaking, typologies and density, internal and external space, privacy, security, tenure, and community engagement. Over 20 other practitioners have been brought in to help cover and analyse the case studies, most of which are recent and hail from the UK. Page layouts are simple and clear, drawings of useful scale, and each study comes equipped at the beginning with a handy block site plan that explains the key information on each development. Taken together this publication can be read as a highly useful state of the nation view of the best of UK housing design; so a lot of content for the price tag.

Accessibility and Wayfinding
Philipp Meuser ed. DOM Publishers 416p HB £82

Publisher Dom’s candy-coated covers are certainly eye-catching and this latest volume on graphic signage and accessibility is no exception – and, as you would expect, it’s highly graphic in itself. The editor seems to have found a comfortable niche that bridges specialisations. The first quarter of the book is effectively split into three; the first part is an almost philosophical musing on wayfinding in history, the second a quite compelling breakdown of disabilities and diseases expressed in diagram as well as text. The last third analyses accessibility, like Neufert with pics. The rest of the tome gives copiously illustrated examples of both in practice, the only shortfall being that they mostly seem to be in Germany. Perhaps a Europe-wide study might have felt more, ahem, inclusive? A nice-looking addition to the office bookshelf – but then it should be at the price.

Concrete: Case studies in conservation practice
Catherine Croft and Susan Macdonald eds. Getty Conservation Institute 232p PB £45

The first book in a series looking at the challenges of preserving modern heritage, Croft and Macdonald, respectively director of the 20th Century Society and head of buildings and sites at the Getty Conservation Institute, prove worthy emissaries of best practice. There are 14 case studies here, all looking at notable concrete buildings from across the globe. Each has been written by experts closely allied with the projects over time and it’s a real roll-call; The Unité d’Habitation, Brion Cemetery and the National Theatre among them. Case studies are well-illustrated with photos, diagrams and contemporary drawings; and book-ending them is an introductory essay by the editors at the beginning and very helpful technical glossary at the end. Ostensibly not the most interesting proposition, the final result feels both engaging and authoritative.
It seems strange, for a show called ‘Futurebuild’, that the winner of the competition to design the RIBA’s 2019 stand should have looked so deliberately at old precedents. ‘We’d always had an inspirational image of James Lackington’s famous 18th century Finsbury Square bookshop in the office and wondered how it might be incorporated into one of our designs; this seemed the perfect opportunity,’ says Gundry+Ducker partner Christian Ducker. Arguably the first bookseller to the masses, Lackington’s shop contained an imposing upper level book rotunda carved out above the sales floor, helping earn it the moniker of the ‘Temple of the Muses.’

All an allusion
As a form of homage to it in the Amazon generation, Gundry + Ducker has echoed this sectional form in its design for the 100m² RIBA ‘Marketplace’. While initially inspired by library rotundas both old and modern, the firm was aware that the primary purpose of a stand is expositional and to sell books, so the ‘introverted’ nature of a rotunda wasn’t applicable. But, as with Lackington’s, it could be alluded to. ‘We also thought about small town market halls, covered open-air spaces where you could set up stalls beneath,’ adds Ducker. Both ideas proved key design drivers for this year’s stand.

In plan, book benches radiating from a central point will draw punters into the core stand area. They converge on a hexagonal ‘nut and bolt’ arrangement above, generating an imposing structural form that, with the RIBA logo running around it, more than tips its hat to Venturi and Scott-Brown. This, Ducker acknowledges, is very much ‘building as advertising’. Standing beneath, the nut and bolt should be an architectonic experience in the best, post-modern sense.

Open and intimate
Portability and ease of construction were major considerations, along with the use of products supplied by sponsors Rockwool and Rockpanel. Ducker adds that ‘Rockpanel is routinely CNC cut so we fabricated most of the stand from that and assembled it like a jigsaw.’ But the idea was thwarted by hall height limitations (maximum 4m) and the non-structural nature of the panel. The ‘bolt’ is supported on thin hexagonal Rockpanel columns; the nut similarly, though it’s augmented, Ducker says, with two larger, circular Rockpanel structures that constitute the stand’s ‘reading booths’. Solid on the outside and lined with Rockwool insulating fleece on the inside, they will, he thinks, counterpoint the open stand with more intimate spaces.

There will also be contrasts of solidity and transparency. A semi-transparent fabric will be stretched over the CNC cut nut – a conceit that will reveal itself once you are standing beneath it. ‘Though initially looking the same, the bolt will, in reality, be very different in nature from the ‘nut’. We didn’t want this to turn into a CNC fetish project; we thought it should be more nuanced than that,’ explains Ducker.

Once the panel elements have been fabricated, most of the stand is expected to be slotted together offsite and brought in as larger pieces, though, when PIP went to press, the logistics of raising the central structure on its columns was yet to be decided. But however that’s achieved, Lackington’s Temple of the Muses will have contributed to what might well turn out to be the stand of the show. •

Futurebuild runs from 5-7 March 2019 at Excel, London.
RIBA Marketplace is at Stand D55
Gone are the days since endless expanses of white ceiling tiles were de rigueur in offices. And in many cases, gone are suspended ceilings altogether as part of the dominant trend for less formal workplaces, which has driven greater variety in ceiling design from the exposed soffit to the statement installation.

‘In recent years the appetite of designers and clients has been for “more interesting” ceilings, particularly as different agile work-settings call for distinct aesthetic treatments,’ says Julian Sharpe, director of tp bennett, adding that designers are increasingly experimenting with features hung from exposed services and soffits.

Rather than flush ceilings throughout, clients crave variety, according to Helen Berresford, head of Sheppard Robson’s interior design group ID: SR. She puts this down to the digital disruption of the workplace led by tech companies looking for less conventional design solutions, resulting in what has become a new corporate of exposed ceilings or services.

‘The Big Taylorist office floorplate is moving on a bit. Now, more creativity is required in how you break down your spaces with a greater variety of ceiling types,’ she says, adding that this requires careful consideration of the acoustic role of the ceiling in each area.

This trend is increasingly the case in base builds as well as end-user fit-outs, according to Make architect Robert Lunn. The practice has been working with agents and space-planners on creating highly developed ceiling designs with flexibility to allow, for example, coffered areas of enhanced height within the office grid.

‘We’re trying to develop something a tenant will want to retain,’ he says.

The wellness agenda is also driving change. With more emphasis on how a building interior affects its users, the visual role of ceilings is gaining increased attention with the use of warm, cozy materials such as wood and felt, as well as a focus on creating acoustically-pleasant environments.

The dual trends of open-soffit/statement ceiling present challenges and opportunities for suspended ceiling manufacturers. Hunter Douglas’s Pieter Van Rees, business development manager ceilings, has noticed greater demand from architects for bespoke ceiling designs in general.

SAS International is responding by looking at providing standardised modular projects that can be used in a non-standard manner to realise the architect’s vision. This may include, for example, the flexibility to change profiles or use baffles in an unusual way while retaining acoustic performance.

‘It’s a very exciting time, with demand for human centric, visually interesting and flexible solutions. We have an open book to challenge accepted norms, to innovate and develop the future of the working environment,’ says SAS R&D manager Matthew Butchard.
**HUNTER DOUGLAS**

Hunter Douglas is extending its HeartFelt modular felt ceiling system (above), with products including a baffle option. It says HeartFelt fits with current well-being trends through both its cosy appearance and acoustic performance, which gives a warmer sound due to felt’s ability to absorb high frequencies.

‘Its selling point is good acoustics, but its aesthetics create a warm feeling just by looking at it,’ says Pieter Van Rees, business development manager ceilings.

HeartFelt is designed as cradle-to-cradle with pure polyester felt panels clipped into metal carriers without glue for ease of deconstruction and recycling at the end of its ceiling lifespan. The product comes in seven shades of grey and five earth tones in panels of 40mm width and 55mm height up to a maximum length of 6000mm. Absorption values are 0.45-0.70 $\alpha$ depending on the module. Material-only prices start from £53/m².

**SAS INTERNATIONAL**

Flexibility is the focus for SAS. As well as increasing the scope for architects to tailor existing products, the metal ceiling specialist has launched Polynode, a feature ceiling installation with adjustable multi-faceted contours designed to meet rising demand for varied ceiling surfaces.

Constructed from nodally-supported, equilateral triangular tiles, Polynode’s form can be tailored post-installation by lifting the nodes up or down to create complex geometric forms. Open soffits can be incorporated within the web of tiles for added visual interest as well as luminaires and other M&E services.

The patent-pending nodal system can also be used to transition from wall to ceiling. Standard nodes are mounted every 1000mm and tile dimensions range from 280mm to 1280mm. Prices vary, check with the manufacturer.

Another new launch is the deltawing acoustic raft, a high performance acoustic product.

**KNAUF AMF**

Knauf AMF’s latest product is Tacet, a jointless, homogenous suspended ceiling panel with noise-reducing acoustic properties compatible with the burgeoning wellness agenda for comfortable, calm environments.

Sacha Conte, Knauf SMF specification manager for the South East, says the market has found wellness easier to take on board than sustainability: ‘It can be grasped better, taking into consideration how you feel in a room and how things sound.’

Tacet consists of substructure, mineral wool base board measuring 580 by 1600 by 24mm and two layers of finish: plaster and an acoustic plaster top-coat. Typical price is £100-£150/m².

Knauf has also introduced a customised service for its Heradesign range (above) of wood wool acoustic textured panels. With Heradesign Creative designers can specify panels in any size or colour in any of the eight standard shapes, which can be incorporated as enclosed ceiling panels, rafts or baffles. The latter two are compatible with open soffits and exposed services.

**ROCKFON**

As a very white matt tile with high (87%) light reflection and diffusion, Rockfon’s Blanka (below) meets market interest in the wellness agenda by contributing to a ‘bright and comfortable’ interior environment.

‘Architects want a nice smooth finish that reflects natural daylight,’ says Jenny Brookes, marketing manager for Rockfon UK.

The Blanka tiles can be combined with a recently introduced, matt white, suspended grid designed to blend in with the tile. Price is available on application.

As well as a greater demand for customization of shape and colour, Rockfon has noticed an increased market interest in non-combustible products. The company has also launched Rockfon Metal, which combines its stone wool product with a metal finish to suit certain office applications. This has both an A1 fire-safety rating and Class A sound absorption and is available with two perforation patterns and various sizes and edge details.
Invisible retrofit

**What:** Period retrofit to Passivhaus standard  
**Where:** Manchester

Over 100 palettes of materials insulation, crack-resistant graphene paint and the world’s first Passivhaus-approved stained glass were among the pioneering technologies used to transform two draughty Victorian townhouses in Manchester to Passivhaus-compliant homes.

The 125-year old semi-detached properties, newly renovated by property developer and environmental consultancy Ecospheric, need no central heating and, thanks to an 11kW photovoltaic array on the roof, produce more energy than they consume. This is expected to save occupants £5,000 a year in bills and maintenance.

Ecospheric managing director Kit Knowles told RIBAJ:  'We focused on the mantra “build tight, ventilate right”, based on the use of a top quality mechanical ventilation and heat recovery (MVHR) unit to conserve energy at an extreme level. A lot of people fall in love with the charm of period properties then regret it during the first winter, especially when they see the energy bills, but that won’t be an issue here.'

Lime-based plasters and paints on the interiors act as a natural buffer to moisture and kill pathogens and mould. Graphene formulated paints prevent cracking and ensure airtightness. All the materials were selected to achieve a virtually petrochemical free building fabric.

Ecospheric took a multi-tiered approach to insulation, airtightness and the prevention of moisture build up. ‘Health was a significant factor in design,’ says Knowles. ‘High or low humidity is linked to the growth of virus’ bacteria and fungus causing conditions like rhinitis and asthma etc, so we tried to set the humidity of the internal environment at around 50%.’

The Paul Novus 300 MVHR extracts warm moist air from the kitchen and bathrooms and recovers around 94% of the heat to warm incoming fresh air. Passive cooling is provided by a thermostatically controlled roof light with rain sensor, by Fakro. The PV array powers a Mixergy hot water tank with a thermocline control that only heats the amount of water required, and re-heats much faster than a regular tank.

Ecospheric took a multi-tiered approach to insulating the front bay. Victorian facades on the homes conceal an intricate insulated wall build-up based on an interlocking structure of timber cassettes.

These replace the original inner leaf of brickwork and are separated from the outer brickwork layer by a 38mm cavity. They comprise a series of vertical 45mm-wide I-joists with an interior surface of interlocking wood fibre boards, coated in lime plaster and graphene paint, and an outer surface of Magply magnesium boards.

The Magply was something of a wonder material, strong and slim, waterproof to prevent water ingress from the porous bricks on the facade, yet also breathable, says Knowles. Cellulose insulation was blown into the cassettes before they were rendered to create highly insulated airtight modules. The end result was a high performance, natural, fully breathable solution that would also prevent cold bridging.

As an exemplar, the two and a half year build was expensive, costing £450,000 per property on top of the £408,000 purchase price. But significant overspend experimenting with the roof, bay frontages and lime technologies could be cut if the project were done again, says Knowles. Despite the many interventions both homes managed to retain their period detail and floor space – internal walls moved inwards by only 50mm.
Over 40 years proven success.

PermaQuik PQ6100 Hot Melt Waterproofing System has provided the main waterproofing protection for some of the UK’s most iconic structures for over 40 years. It is routinely specified as the preferred roofing solution for most building types including: inverted roof and zero-falls; beneath green roof systems and ground-floor plazas and in any area where long-term weather tightness is a necessity. BBA Certified and with a 40-year guarantee to last the life of the building, PermaQuik also delivers water-tight peace of mind. Visit radmat.com to learn more about PermaQuik and other Radmat products.

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Our Unity bathroom stalls were specified to ensure maximum privacy, offering a floor clearance of just 50mm. The fittings were stainless steel for a high quality, durable restroom with a discreet emergency access provision for added safety.

To match the décor, Unity’s seamless flush fronts, clean lines and floating appearance makes for a modern feel. This simple restroom design, specified in Iceberg fitted the project brief effortlessly.

“The renovation project included revamping the office restrooms, with a design that would incorporate the “Scandimerican” feel; minimalistic and simple. BIG’s focus was to modernise the infrastructure and provide first-rate amenities for its 250 employees.”

- Kai-Uwe Bergmann, Partner, BIG

Bjarke Ingels Group, New York, USA
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Bjarke Ingels Group, New York, USA
Banque de France logistics HQ, La Courneuve, Paris

Jean-Paul Viguier and Associates' Banque de France logistics building is a three-humped beast: a heritage conservation project, a strip-back and re-clad 1980s extension and a massive, monolithic new-build.
Strength, security and style too were provided by wrapping super strong concrete in sleek cladding for the Paris vault that stores and handles 1.1 billion banknotes

Words Jan-Carlos Kucharek Photographs Takui Shimmura

In a city known for some of the world’s greatest historical architecture and placemaking, drivers passing the Paris suburb of La Courneuve might raise an eyebrow on first seeing the sizeable new complex that has risen alongside the A86 artery and the rail tracks. A group of huge, dazzlingly white, cubic volumes has seen a derelict 4.5ha industrial site reborn as the new, €170 million, state-of-the-art logistical headquarters of the Banque de France. The second largest cash-handling facility in Europe processes 25% of the national cash reserve and includes the 28m high ‘La Serre’ – The Greenhouse – effectively Europe’s largest safe, storing 1.1 billion bank notes in denominations of €5 to €500.

On winning the invited competition in 2014, architect Jean-Paul Viguier and Associates faced something of a dichotomy. Arguably one of the highest security facilities in Europe, the main storage building in the 23,000m² design had to be impregnable, requiring highly controlled entrance sequences for both people and vehicles; massive walls, moats, fences, steel nets, cameras, lasers and aural sensors. But being at the
heart of this former industrial suburb, it also had to respond to its context and make a positive contribution to the regeneration of the area. It’s no surprise that the local mayor was on the design jury panel; especially since the handsome 19th century former Babcock boiler factory opposite was a future ‘La Fabrique des Cultures’; and the wider Seine-St Denis area, in which La Courneuve resides, is part of the proposition for the 2024 Paris Olympics.

‘The programme was about accommodating highly precise automated activities,’ Viguier tells me. ‘The building’s purpose is the secure, robotic receipt, transfer, sorting, destruction and redistribution of money. There was no lee-way—we had to make all that 100% possible. So a construction of high strength cement ‘impenetrable by a tank’ was a given. ‘Our problem was to make the complex visually acceptable for those both living around it and working in it.’ Most of the staff were moving, contentiously, from the bank’s prestigious Place des Victoires HQ in central Paris. ‘If these people are undergoing such a dramatic change to their working environment, we felt they deserved some kind of benefit in exchange,’ adds Viguier.

Part of the problem was unlocked on the site it was gifted. At its western end stood the 1929 old Babcock office, clumsily extended in 1980. Viguier retained and opened this up, placing administrative and service functions on the western side and high security elements to the east. The old building now has light-filled offices with new upgraded glazing, while the five-storey extension was stripped back to its concrete structure, remediated and given a bright, white aluminium unitised glazing system, with a light-filled triangular café appended to it. Facing south, its double glazing has UVB coatings to reduce solar gain and openable span-drel panels for natural ventilation. ‘As Paris has six months of temperate climate, fresh air augments the mechanical systems; it gives people a sense of personal control in an otherwise regulated environment,’ says Viguier.

The Babcock building is effectively a sop to the eye-watering levels of security in the vault complex. Lower-level security administrative functions are concentrated here, allowing large areas of glazing. The re-clad performed several functions, explains the architect, especially at lower level in the café: ‘It connects with the

Above The 1929 former Babcock offices have been restored and upgraded, connecting back to a radical new iteration of its 1980s extension.
Site plan

1. 1929 Babcock building
2. Remodelled 1980s extension
3. Cafeteria and reception area
4. Parking within secure area
5. Moat
6. Controlled access vehicle holding zone
7. High security vehicle zone
8. Truck delivery bay area
9. Pedestrian entrance to high security area
10. Open Courtyard
11. High security offices
12. Processing areas
13. The Greenhouse vault
14. Future ‘La Fabrique des Cultures’
15. Entrance to secure admin offices and parking

South elevation of site

South elevational section of Babcock building

West elevational section of Babcock building
existing heritage building, engaging with the urban context opposite and linking to the secure vault. Rising to 4.3m at its highest, this sun-filled, spacious, ground floor conservatory is one of the architect’s quick wins, providing an antidote to the cramped, dark, back-of-house areas staff would have experienced in the city centre.

Access to light was key in the vault building too; but here it had to be stolen from outside rather than availed of. It was an uphill struggle. Even accessing it requires negotiating an outer security zone of walls and a dry ‘moat’ to ensure trucks containing bank notes are securely vetted on entering and leaving.

The vault admin and note processing area, where notes are checked for authenticity (a thousand notes per day in France are identified as counterfeit) and quality (where they are destroyed and replaced) proved to be the only chink in the armour that Viguier could use to architectonic advantage. It results in the triangular plan that encloses a wire-netted open courtyard within both functions, albeit via large bullet/bomb proof Saint-Gobain Vetrogard Bullet Climaplus’ glass units, which are 100mm thick. ‘The courtyard was a means of introducing light into the offices,’ explains Viguier. ‘The way we get light into high security sorting rooms is vicariously, through glass clerestory lighting running along the courtyard’s perimeter corridor.’

Otherwise, the processing/vault building itself is an exercise in cladding effectively huge, blank, concrete volumes. Viguier reverted to modernism’s stark white, connecting the old Babcock office with the complex but giving each volume different facade treatments to break down their mass. The Moeding Alphaton HF white glazed ceramic cladding on lower level processing areas is striking. The facade’s 1.2m high panels are run vertically with irregular, angular striations that offer an interplay of shadow and reflection in the sun. Elsewhere, air handling and secure admin are handled with Alucoil Larson aluminium composite panels, solid and with vertical corrugations. All three variations break down the volume into its constituent elements while the white unifies them.

Constructing in high density concrete, with double floors and double walls 55m by 35m in area and rising to 27m, most imposing, and problematic, is The Greenhouse vault itself. Completely automated, unpeopled and storing the ‘European Strategic Stock’ for national emergencies, this cathedral of cash creates the greatest impression in the urban landscape. For this Viguier saved a sleight of hand, suspending the perforate aluminium panels from concrete spigots projecting from the solid box. It might seem a nominal gesture, but from below, the box dematerialises at the top, the sky, read through the cladding, creating a gauze-like effect.

It is a moment of lightness for a building defined by its impregnability, that has more in common with a nuclear power station than the classical Place des Victoires. A subtle conceit revealed in this overt anti-architecttural.
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1 MX curtain wall system
Technal

‘Now, pay attention Bond. This is the Schuster Annexe STEM hub, codename M13. It has a package of Technal systems, including MX grid and FXi65 aluminium punched hole windows. Here: the 18mm argon-filled cavity. Here: a 10.8mm laminated inner leaf. External digitally-printed 8mm SGG Cool-Lite SKN 14 bears what appears to be a simple artwork, but attach this cufflink, and the whole thing becomes a powerful electronic messaging system.’

‘Electronic messaging system, Q? You must be joking.’
‘I’m not, 007. And just make sure it comes back intact.’

[link to technal.com]

2 Dekton cladding
Cosentino

Nude modelling icon ‘Michelangelo’ has admitted to faking his own death in 1564, having shocked the world when he returned to public life with a fragrance line and MAC lipstick collaboration late last year. He has decided to open up about his journey as he becomes the face of Cosentino’s ‘Dekton’ zero-porosity sintered-particle ceramic slabs, a highly durable high street interpretation of his favoured Carrara marble. He hopes to become a role model to young specifiers who may be experiencing cladding problems and need someone to talk to.

[link to dekton.com]

3 Elegance 52 Curtain Walling
SAPA Systems

I gaze down through the bright walls at the city as it teems below at Mulberry UTC in Bow. I bless SAPA for the 100% recycled aluminium of its frames. I am warmed by the 1.4 W/m²K U-value of the glass. I recall the lost Jamaican B&Bs of my travelling youth. I wish for the day when the bauxite mines are gone, and I may return at last to the quiet verandahs where my dreaming heart once lay. I resign, sell my shoes, and take up the handpan.

[link to sapabuildingsystem.com]

4 Glazing systems
Kawneer

Kawneer’s zone-drained curtain walling, fixed and sliding windows and automatic thermal doors at the new Gloucester bus station development met an exacting brief on aesthetics, performance, and budget. We discern a strange synchronicity, then, with the only other exciting thing that’s ever happened on this site. That’s right: the thing with the aesthetically-pleasing Peter Wyngarde, the high-performance crane driver, and the affordable (if red-faced) seventy-five pound fine.

[link to kawneer.co.uk]
Mixed envelope package
Prater

“You asked me once, what was in Building 101. I told you that you knew the answer already. Everyone knows it. The thing that is in Building 101 is the worst thing in the world.’ Winston winced, and thought to himself, ‘Thank heavens then that the thing that is outside Building 101 is Prater’s envelope package, featuring unitised curtain walling, rainscreen cladding and glass reinforced concrete (GRC) feature panels. It’s lovely. And Building 100, next door, has a gym and vegan doughnuts. Maybe they’ll send me there instead.’ prater.co.uk

Suncool and Optitherm glass
Pilkington

Forget Keto, here’s ARSI! The hot new ‘Argon-Silica Diet’ has top-flight celebs like Kim Cardigan-Vest crunching their slabs for the ‘gleam eating’ trend. Taking a lead from Slimming World’s new British HQ, fans are using a blend of Pilkington Suncool 60/31 T solar-control glass and Pilkington Optitherm thermally-insulating S1 Plus to get lighter and stay hotter – fast! Kendal Mintcake’s Insta post, minutes before achingly glamorous stomach surgery at Cedars-Sinai, read: ‘Loving my daily bullit-blast of energy-efficient glass- I’m smashing it at the office gym! #light #warmth #EATGLEAM’ pilkington.com

MechSlip fixing system
Ash & Lacy with Ibstock Kevington

HM Govt. has progressed Brexit preparations with an innovative scheme to combat threatened skills shortages. Schoolchildren are to be issued with Spears Brickplayer and (proper) Meccano sets, while Ibstock Kevington and Ash & Lacy are to develop this cross-disciplinary facing system, where a variety of brick slips are slotted into an adjustable metal grid and then mortared by gun. The high-speed, high accuracy and low-skill plan ensures that, post March 29, expert Polish brickies can be easily replaced with British under-12s, thus guaranteeing our children’s futures. mechslip.co.uk

SF52 aluminium curtain walling
Senior Architectural Systems

Hand-drawn members, eh? Artisan-made to fit irregular mullions and transoms, indeed! This was the evidence we needed. It’s not well known that William Morris’ fantasy writing career was based on carefully-guarded private experiments in time travel, whereby he visited this mixed-use development and was wowed by the main building’s SF52 facetted facade. ‘SF52’, you see. SCIENCE FICTION. We can now say with certainty that The Glittering Plain (1890) was inspired by municipal development in 21st century Leicester. Oh yes. It’s all there. seniorarchitectural.co.uk

PiP specifieds are compiled from supplied company press releases
Award winning projects featuring contemporary composite windows

Some of the UK’s most respected developments feature VELFAC aluminium/timber windows, as these award-winning residential projects demonstrate.

MARSH HILL, ALDEBURGH, SUFFOLK
Mole Architects Ltd
Winner – RIBA Eastern Award 2017

Described by RIBA judges as a ‘contemporary house making a bold architectural statement’, Marsh Hill creator Mole Architects used composite VELFAC windows to punctuate the innovative, articulated zinc roof and white painted brickwork facades, and to frame the sweeping views of the nearby Alde estuary. Every room looks out through large, slim-framed VELFAC windows, installed in a series of punch-hole windows, roof level units (to bring extra light into the interior), and full-height glazed sliding doors in the living and dining areas. The distinctive, slim VELFAC frame design maximises natural light and enhances the beautiful coastal views. The highly durable VELFAC system is also ideal for the exposed coastal location. Designed to cope with extreme weather conditions including salt-laden winds, the external aluminium frame requires no repainting. The VELFAC system also guarantees low U-values and so excellent low energy performance.

Already a mark of quality in other sectors, VELFAC is breaking into the residential sector and applying the mark of quality there too. Architects specify VELFAC because they know the composite system offers quality construction, excellent design and competitive pricing which is backed by technical and design expertise. The external aluminium frames create sleek and stylish facades and are also low maintenance, requiring no repainting for the lifetime of the unit. Internal pine frames deliver the warm, welcoming interior which homeowners and residents love, along with slim frames to maximise daylight, and impressive insulation to keep heating bills low.
DALSTON WORKS, LONDON
Waugh Thistleton Architects
Winner – Evening Standard Eco Living Award 2018

Dalston Works, the world’s largest CLT building, features VELFAC full-height glazed units, punch-hole windows and glazed doors installed in both residential and commercial units, with the system specified for its high performance features, contemporary design and sustainable construction. Comprising 121 apartments over 10 storeys, set around two courtyards with housing, shops and restaurants, the project has received international attention for its pioneering architecture. It has become an exemplar project for high quality, high density, inner city housing, and uses VELFAC glazing to help deliver healthy, comfortable and attractive spaces in which to live or work. ‘Dalston Works is an ambitious project, and we knew that VELFAC could meet our challenging performance and design criteria,’ explains David Lomax, senior associate at Waugh Thistleton Architects. Excellent acoustic control was a priority, and ‘the VELFAC commitment to sustainability, in design, manufacture and performance, was an important benefit,’ says Lomax.

BRUYN’S COURT, THURROCK
Bell Phillips Architects
Winner – 2016 RIBA National Award

Bruyn’s Court is an architecturally innovative scheme comprising 25 apartments for over-55s wishing to downsize to a property which can also adapt to changing physical needs. The development, which features VELFAC windows and doors throughout, was described by the RIBA as ‘a positive landmark with the potential to kick-start a new era for the locale’, and as a social housing project is unusual in its use of high performance building products and contemporary design – reasons why the VELFAC system was specified, says Jamie Campbell, consultant at Bell Phillips Architects: ‘The slim, composite VELFAC frame ensures uniform sightlines, lets more natural light into the interior, and – as the system is better quality than many comparable products – is cost-effective for public sector projects. We also established an excellent relationship with the VELFAC team, another definite benefit.’

NELSON’S YARD, YORK
Mesh Architects
Highly Commended – RICS Regional Awards 2018

At Nelson’s Yard, Mesh Architects has created an innovative new-build terrace of six high quality townhouses, each offering beautiful views and generous outdoor spaces despite the restricted plot. VELFAC composite windows play an important role in the development’s success, offering contemporary design, quality construction and impressive performance to help developer Northminster Ltd gain maximum return on its investment. ‘Having specified the VELFAC system for a previous project we knew it was the ideal choice for this type of residential development,’ says Mesh Architects design director Ian Collins. ‘At Nelson’s Yard, we’ve installed VELFAC windows in every house, and used fully glazed doors to provide access to the rear gardens, balconies and roof terraces. The sharp, external aluminium section supports the contemporary aesthetic, and internally the wood frame provides a natural, comfortable finish which prospective buyers like,’ says Collins.

[Read more on VELFAC.co.uk]
Carbon control goes back to the office drawing board

Since the government pulled back from its zero-carbon ambitions, the industry has taken the initiative on sustainable office design and management

Words: Josephine Smit

This could have been a milestone year for zero carbon development. In 2008 the Labour govern-ment set a target for all new non-domestic buildings in the UK to be zero carbon from 2019, but it was dropped four years ago.

So is sustainability back on the agenda? The government’s 2018 industrial strategy suggests it might be, with the prime minister’s pledge to ‘at least halve the energy usage of new buildings by 2030’ and the construction sector deal. It is also reviewing whether energy performance certificate (EPC) data could help drive energy efficiency in buildings, and consulting on Part L of the Building Regulations. Meanwhile, London’s Sadiq Khan has signed the international Net Zero Carbon Buildings Declaration, which sets a target for new buildings to be zero carbon in operation by 2030. Greater Manchester has set out its plan to require all new buildings to be net zero carbon by 2028. The UK Green Building Council has launched Advancing Net Zero to define and drive net-zero carbon buildings – operational emissions and whole life carbon.

For the office sector, high energy consumption has focused business minds on how buildings operate. Rising environmental priorities, the changing demands of a fast-moving mar- ket, investor sentiment and the risk of stranded assets are among the factors playing into this focus. In the absence of a clear and stretching route within national policy, the industry itself is evolving passive design approaches, standards and renewable energy technologies.

Evolving passive design
Engage the architect early to reap the sustainability benefit, clients are told, but life doesn’t always work that way. As a client that doesn’t habitually commission buildings, the Royal College of Pathologists had appointed its design team by the time architect Bennetts Associates joined to work on its brick-faced, eight storey headquarters. Recently completed in Aldgate, east London, its flexible spaces can accommodate conferences, receptions and exhibitions as well as desks, and it offers a friendly public face.

There was a planning requirement for the building to target BREEAM Excellent. Although joining relatively late, associate director Rob Bearman says it brought its own aspirations for energy performance. ‘We wanted it to be robust and sustainable,’ he says.

The 4,500m² building has a double-height reception area with full-height windows and, above, large span spaces and a triple height void in one corner to bring natural light deep into the plan. The building management system opens and closes windows for natural ventilation and night purging, as part of a passive cooling strategy. Intensively used areas, like the 200-seat lecture theatre, have passive chilled beams.

The concrete foundation slab of a building previously occupying the site has been re-used. It is topped by a concrete structure with exposed coffered concrete slabs, the latter adopted for passive cooling and the internal aesthetic. The architect carried out research to refine the design of the coffered slabs to maximise the surface area of the concrete. ‘We did quite a lot of work to get the weight down and arrive at the correct profile,’ says Bearman. Its solution uses 0.19m³ of concrete per m², against 0.3m³ for a flat slab, almost half the embodied carbon, and Bearman adds: ‘It performs better and becomes a feature as lighting has been added to every coffer’. When optimising environmental performance and flexibility, it is important not to neglect the value that lies in giving charac-ter to spaces, points out Peter Fisher, director at Bennetts Associates. ‘There is a need to retain generosity,’ he stresses, ‘or we just end up with efficient but bland universal spaces.’

Such evolutions in passive design can appear quite subtle. ‘They build on what has been done before, and are tweaked to context,’ says Fisher. ‘But they don’t radically change.’ At King’s Cross, developer Argent’s new buildings routinely achieve an Outstanding BREEAM rating. Its 11-21 Canal Reach, now under construction, continues the approach with passive design measures, although its proximity to a railway line rules out fully natural ventilation. The project was also the subject of embodied carbon research, carried out with Sturgis Carbon Profiling. Like other buildings at King’s Cross, it will be able to access the site-wide district heating network, but a 1.5MWe fuel cell, will supply most of its heating, hot water and electricity.

Bennetts Associates was involved early in this project, which has allowed it greater influence over operational energy performance. ‘It gave us the scope to persuade the client to carry out TM54 analysis,’ says associate Ben Hopkins. CIBSE’s technical memorandum TM54 sets out how operational energy for a building can be estimated accurately, to address the gap between design and performance. It was used for full energy prediction modelling. ‘When TM54 is applied properly it works well,’ says Fisher.

The drive for verification
One industry initiative is going further to close the performance gap for new office buildings, by using the development process to deliver verified performance in use, rather than purely building regulations compliance. Some of the biggest names in UK real estate are backing Design for Performance (DfP), an initiative drawing on the model of Australia’s NABERS energy rating. The initiative, which is supported by 22 developer and other industry partners, has been prompt- ed by questions surrounding the transparency of asset performance. ‘Many buildings have been highlighted for achieving high standards of sustainabil-ity in their design, but rarely do these assets live up to their claims when occupied,’ says

‘With Design for Performance buildings on the market, others will have to improve to compete. It will drive the market through new build’
Sarah Ratcliffe, programme director at initiative sponsor and property network, Better Buildings Partnership. In Australia, NABERS has driven overall market improvement, affecting both new and existing stock. ‘DFP has a clear trajectory to net zero carbon,’ points out Ratcliffe. ‘With DfP buildings on the market, others will find they have to improve to compete. This will drive the market through new build.’

To date, DfP has carried out market research and a pilot programme involving six new build and refurbishment projects. The pilot provided the first UK test of the approach, which relies on such checks as advanced modelling, independent design review and ultimately measurement and verification of the occupied building. The pilot revealed the urgent need to target performance in use throughout the development process, and the potential benefits of doing so, including better plant sizing, smarter buildings, better building commissioning and management and ultimately better quality buildings.

The process is important – both to help limit the performance gap at first occupation, and to ensure buildings continue to perform well and respond to the needs of occupants. Ratcliffe explains: ‘The office market is going through a seismic shift and this is changing its occupational profile – understanding occupiers and how they use the office is fundamental to making buildings perform well – in terms of efficiency and investment performance.’ DfP, which includes advanced modelling, replicates as-built structures and their contexts to assess how a building and its services would respond to a range of uses, loads and weather. The independent design review advocated by DfP allows models to be objectively interrogated and enables the modelling to drive the design, not vice versa.

The pilot programme also picked up on collaboration, points out Ratcliffe: ‘We know the industry is incredibly fragmented, but the pilots further highlighted this. The delivery of outstanding performance requires a clear focus on outcomes by all disciplines, from investor and developer through to architect, engineer, contractor, agent and occupier. This need for connectivity in the design of the building, its services and ongoing management is critical.’

Following the pilot, last year the initiative entered a four-year phase to develop a rating system with seven ‘pioneer’ developers fully implementing DfP on at least one project in their development pipeline. Consultants Arup and Cundall have been appointed as DfP delivery partners, and MEP firms and architects are showing interest. ‘It is a major change in mindset, but the industry is going to demand it,’ says Ratcliffe. ‘There is quite a lot to be done in upskilling architects and engineers – as an industry we’re trained to deliver buildings that are designed well, but this does not translate to buildings that perform well. This is no longer good enough for developers and property owners who are beginning to demand better buildings.’

The industry may not be celebrating the delivery of the 2019 target, but these moves are, as the saying goes, steps in the right direction.

**MOVING TO ACTIVE OFFICES**

The future workplace could generate energy from sustainable sources and store it. Technology to generate renewable energy is already being incorporated into developments, but storage is far less commonplace. But with lithium ion batteries now being trialled in locations from Arsenal Football Club to Whitbread’s Edinburgh Premier Inn, you could be forgiven for thinking this is today’s must-have eco-technology.

Economics have made lithium ion batteries more attractive, says Joanna Clarke, architect of the Active Office for SPECIFIC Innovation and Knowledge Centre, an academic and industrial research consortium based at Swansea University. ‘The cost of the technology has come down and the reduction in feed in tariff makes it a smart option.’ Clarke has worked on SPECIFIC’s Active Buildings projects; these include the Active Classroom, which has two large salt water batteries, and the Active Office, which has lithium ion batteries.

The Active Office was funded by Innovate UK with support from Swansea University and the European Regional Development Fund through the Welsh government. Completed last summer, it is a demonstration building that showcases the potential for energy positive office space. In common with SPECIFIC’s other projects, it predominantly taps into the potential of solar energy, incorporating a photovoltaic roof and hybrid photovoltaic thermal (PV-T) tubes on the walls. The roof, from BIPVco, comprises thin-film solar cells bonded onto pre-coated steel roof sheeting. Its curved design shows the product’s flexibility, says Clarke: ‘It really opens up possibilities in design.’ Around a quarter of the building’s southern elevation is faced in 40 Naked Energy VirtuR T) tubes. Integrating all this technology into a building’s architecture is relatively straightforward, says Clarke. ‘You can combine them into cladding and fenestration quite easily, and the plant room simply needs to be sized to suit the storage systems. The really clever part is the integration into the building services strategy.’

The concrete soffits at Bennetts Associates’ Royal College of Pathologists are not only elegant – they contribute to the building performance too.
Hølmoy Maritime HQ, Vesterålenin, Norway

Snøhetta’s brightly coloured facades get this building noticed, but it’s the insulation to keep people warm and fish cold that really make it work.

Words: Stephen Cousins  Main photographs Stephen P Citrone

Above View of the south elevation from the shoreline: modern volumes inspired by the traditional vernacular.
Rugged snowy mountains and icy reflective waters make a beautiful backdrop for fishermen working in the archipelago of Vesterålen in northern Norway. But in the winter, when the daylight all but disappears and grey clouds fill the sky, a splash of bright colour on the horizon helps guide them home.

Fishermen’s houses in the region are traditionally colourfully painted, and now so are the sleek metal facades of Holmen Industrial Area, designed by Norwegian practice Snøhetta – a collection of four fishing buildings located on the eastern side of Sortlandssundet.

The complex brings together buildings for trawling, fish farming and fish processing, plus a new corporate HQ for the shipowner client Holmøy Maritime. A separate guest house provides a temporary base for employees working extended shifts at sea or on land, many of whom live many miles away near the company’s old base in the small town of Sortland.

Fishing is a one billion dollar business in Norway and the sophisticated 6,000m² hub will support local aquaculture by servicing a deep water quay connected to the Norwegian Sea.

The colourful buildings had to strike a delicate balance that did not impinge on the
impressive natural landscape, explains Knut Tronstad, senior architect at Snøhetta: ‘They are a bright focal point with clear colours and simple geometric shapes that are easily recognisable from a long distance by boats coming home after three weeks at sea,’ he explains. ‘To protect the surrounding landscape, we huddled them together on a clearly-defined footprint, similar to traditional Hanseatic brygge buildings (dockside commercial buildings), with the quay in front and a traffic area for trucks to the rear.’

The father and son company has been located in the region since launching its first small boat in the early 70s, but as the operation expanded over the years it grew out of the available space in Scortland.

Snøhetta carefully mapped the logistics of the new facility, including the fish handling process from net to freezer to ship, to optimise conditions for safe production and to ensure comfortable conditions for employees.

The industrial typology reflects the need for robust and durable materials in the harsh conditions, while avoiding unnecessary architectural flourishes or structural gymnastics. All the buildings are supported on regular steel frames with concrete floors and ‘straight forward detailing’, apart from the office, which is cantilevered from its entrance stair tower on a box truss beam at one end, and two concrete columns at the other. As a result, the block appears to hover over the quay.

‘The office was raised to improve views across the fjord, especially when a large boat is moored at the quay, to give improved sightlines and a sense of safety above the heavy goods traffic below,’ says Tronstad.

Corrugated metal was historically used to protect old barns and coastal brygge in northern Norway and here a ‘sharper version’ of the typical sine wave shape covers the elevations of various buildings. It contrasts with other elevations clad in flat Alucobond panels in spectral colours that vary in response to light and reflections.

The curtain wall system on the office block features ribbons of slatted Heart pine that wrap around the underside. The wood will turn slightly grey over time to add warmth and texture. Large windows maximise daylight, reducing the need for artificial light and heating. Light ash and birch woodwork are also used inside, juxtaposed against the exposed steel structure that is painted bright green.
South elevation

Section

Main level plan

Section AA

1 Offices
2 Garage
3 Roof terrace
4 Guest house
5 Light court
6 Corridor
7 Stair core down to ground exit
8 Meeting room
9 Kitchen
10 Breakout area
The low-slung rectangular massing of the buildings was conceived to camouflage boat and truck traffic shuttling between the facility, the sea and the mainland. Efforts to blend the complex into the location also include a small park for employees and visitors, created with surplus excavation from the site, where local vegetation and birch trees will be grown.

Involvement with local people and trades was also key, says Tronstad: ‘For Snøhetta, the project has been an adventure exploring a relatively new region where we have not built much before. We have come to know people, local firms and craftsmen who are skilled in all they do, used to rolling up their shirt sleeves and finding solutions to problems.’

Sortlandssundet might look chilly in photos, but its location on the Gulf Stream makes the climate relatively mild for the latitude. As a result, design specifications for insulation did not have to exceed Norwegian building standards, apart from in the raised office building where the exposed underside required two extra layers of rigid insulation.

Sun beats down on the complex during the long bright summers, so extra protection was required on the freezing terminal, the large yellow and grey building at the centre of the development. The facade is enclosed in an additional layer of corrugated metal sheeting, with an air gap underneath. Perforations at the base extend up to 2m and an opening at the top allows air to circulate. Behind the perforated section, LEDs illuminate the facades in winter.

The windows and sides of the freezing terminal are printed with a graphic pattern developed by the architect. Inspired by fish scales, it also features in Holmen Industrial Area’s new corporate logo.

The bright red, orange, yellow and green buildings provide a welcome sight for weary fishermen returning home, but the colours also function as a way-finding tool within the complex, extending into the interiors. Their main purpose, however, was to react with changing light conditions – from December to January the area is enveloped in a distinctive blue darkness, while in summer the 24-hour daylight is muted by near-constant rain clouds – and create a playful contrast with the surroundings. The building drops bright splashes on a canvas that has existed for millennia.
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1 ProTherm Quantum vacuum panels
   Radmat
   ‘Radmat? I’m calling from the Ministry of Literality about an issue with ProTherm Quantum.’
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   ‘Under the Trades Descriptions Act 1968, to call it Quantum it’s necessary to demonstrate it both exists and does not exist, and that it does so in two places at once – and here it’s only at Argent’s King’s Cross scheme. The Nobel Physics jury has been informed – you will be receiving a letter.’
   radmat.com

2 BauderROCK noise insulating slab
   Bauder
   Me and Mad Mick, right, we was installing this BauderROCK mineral slab on the flat roof of this recording studio under the Westway, before we did the waterproofing system.
   ‘It’s got about the same thermal conductivity as any other mineral material!’ says Mick. He’s a right card.
   ‘Can’t hear ya mate!’ I yell back, larfin me socks off: ‘The superior sound insulation of this material only really offers that 47-48dB reduction in noise transmission if you’re actually underneath it!’
   bauder.co.uk

3 Thermoblock thermal bridging
   Marmox
   The world of archaeology has been rocked by the discovery of this super-insulated site in Gloucestershire. Experts estimate the structure’s date to be c.2018, but this has yet to be confirmed by Carbon-14 analysis. Of particular interest are the 184 load-bearing Thermoblocks found at the base of the outer leaf. It is believed that these, crafted in encapsulated XPS insulation with tiny internal concrete columns, were deposited in a Vernal ritual celebrating cold-bridging’s death, and the thermally broken union of block walls with beam-and-block flooring.
   marmox.co.uk

4 EnviroVent ventilation loft units
   ATMOS
   ONCE upon a time there was a frog called Mr Jeremy Fisher; he lived in a little damp house amongst the buttercups at the edge of a pond. The water was all slippy-sloppy in the larder and in the back alley.
   But Mr Jeremy liked getting his feet wet; nobody ever scolded him, and he never caught a cold!
   Mr Jeremy appeared before Anglesey magistrates last week after barricading himself into his little damp house to stop the council retrofitting an ATMOS EnviroVent PIV system to the pond – wary of its success combatting condensation and mould growth.
   envirovent.com
How to put a spring in the office workers’ step

Designing a more efficient office building or improving the working environment? Often the two come together

Words: Ruth Slavid

The timing of the latest PiP seminar, on office design, could not have been better. Michael Jones of Foster + Partners presented the practice’s Bloomberg headquarters in London on the day the project won the Stirling Prize.

It is certainly an extraordinary scheme. Discussed last on the day, it was the culmination of a series of presentations, from both manufacturers and architects, that showed how much the world of work is changing and that imaginative thinking can both facilitate and encourage this.

First, Ben Hancock from Oscar Acoustics explained how his company’s SonaSpray treatments can offer a cleaner, more architectural finish with less clutter. The sprayed finish can, for example, sit between beams or be used with shadow gaps to follow the architectural intention.

There are a range of finishes, from coarse to fine. Some deliberately create a feature while others are ‘barely there’. An office with good sound levels but no obvious acoustic treatment may well have used one of these finishes.

David Lawrence of Flanagan Lawrence showed how the practice’s development at 101 Embankment, Salford, not only played a vital part in the city’s regeneration but also acted as a piece of placemaking in its own right. Part of a strategy to bring thousands of people back to live in the city, it plays its part by providing high-quality office space. The practice also managed to open out the site, both recreating links to the River Irwell and creating a welcome pavilion while reducing the length and depth of a tunnel beneath the site.

On the building itself, Flanagan Lawrence learnt a number of detailed lessons, including the importance of using ceramic wall and floor tiles in bathrooms instead of rubber tiles, for ease of maintenance, and the need to make sufficient shower provision for cyclists.

Above Chair Ruth Slavid opens the discussion out to the floor.

Right Foster + Partners’ Bloomberg building and the connecting ramp that unifies all the levels.
Karl Strauss of AET Flexible Space explained how his company’s underfloor air conditioning could make offices more pleasant to be in. The main advantage is space saving, as ceiling zone can be reduced from 600mm – needed to accommodate ventilation – to a lighting zone of just 100mm. With a floor zone of only 160mm to accommodate cabling, the win in terms of usable height is typically 15 per cent. Flexibility is also improved, as duct positions can be changed more easily below the floor. This is was a clear advantage at Grimshaw Architects’ transformation of the former Olympic press centre into the Here East innovation centre. At an office in Glasshouse Street, London, architect Buckley Gray Yeoman found an additional benefit: circular windows that were a feature of one floor were better preserved by the minimal ceiling height.

There is a tendency to think that the most interesting office designs are for the private sector, so it was refreshing to hear James Baker of BDP describe the practice’s design of One Angel Square for Northamptonshire County Council. The new building brought staff from 12 separate locations together in one place. It was, said Baker, ‘all about tipping upside–down established working practices – this building is akin to a giant studio rather than an office.’

The project was not straightforward, with a limited budget and challenges such as a significant fall across the site. But BDP managed to create two new public spaces and designed cladding with patterns that pay homage to Northampton’s traditions in shoemaking. In this way it created a building that both offered staff an excellent way to work and was a good neighbour.

These were also the goals for Bloomberg, where a ground-scraping design is cut back at key corners while also reinstating a through way and enabling a desire line. This is in addition to the preservation of the excavated temple of Mithras as a visitor attraction within the curtilage of the building.

Behaviour is influenced differently here to the way it is in Northamptonshire. On arrival at Bloomberg, everybody has to pass through the top-floor ‘pantry’ before descending a spiral ramp to their desk, facilitating sociability and mixing.

And the technical challenges were enormous. The petal-like pressed metal ceilings, while visually striking, were actually designed to offer enough surface area to allow natural ventilation to be effective within the deep plan. The practice used physical models to identify any spots where ventilation was reduced, and simulated a range of weather conditions.

As with all the other buildings and solutions discussed during the seminar, Bloomberg demonstrated that offices can change the perception of an area, and the behaviour that takes place within them. And that ambitious thinking needs to be backed up with a detailed understanding of technology and components. Collaborative work should ensure that today’s and tomorrow’s workers are happy and productive, thanks to environments that are as good as they can be.
Rich linings and autumnal fabrics beneath an elegant lumber roof make for a hard-wearing but sumptuous interior

Words: Stephen Cousins

Many of the nation’s aspiring actors, dancers and musicians will cut their teeth at Peter Hall Performing Arts Centre, a multi-functional teaching and live entertainment venue on The Perse School campus in Cambridge.

Named after the former director of the National Theatre, who attended the school as a pupil in the 1940s, the building stands at one end of a new landscaped courtyard. It includes a 400-seat auditorium, a triple-height galleried foyer space, a rehearsal and teaching room, an exhibition space, back of house dressing rooms, a workshop and a suite of classrooms.

Architect Haworth Tompkins took design cues for the interiors from local buildings, notably Kettle’s Yard art gallery and house (a collection of converted cottages extended in the 1970s) and a 50-year old school hall with timber parquet floors and a structural timber ceiling.

Double-herringbone brickwork on the courtyard floor continues seamlessly into the foyer through a facade lined with double doors. High glazing above the concrete ground floor blurs the boundary between interior and exterior and draws the eye towards an elegant diagrid timber roof that’s hung with metallic cylindrical pendant lights by Aether.

This innovative roof structure is a lattice of short lengths of laminated veneer lumber (LVL) bolted into steel connection nodes and supported on timber columns at the perimeter. The ‘Babuche’ beech LVL, manufactured by Pollmeier, is laminated in 3mm-thick layers to create high-strength, slim-profile beams. Rows of timber slats above the lattice are backed with a light grey fabric acoustic insulation.

Jessica Daly, project architect at Haworth Tompkins, told RIBAJ: ‘We are always keen to work in timber construction for environmental reasons and because it is such a beautiful, self-finished material. A similar exposed timber roof structure was developed on our extension to Bristol Old Vic.’

Robust materials able to withstand the toil of a school day yet also convey an opulence befitting of a cultural arts venue were called for. Tough natural materials that mature and patinate over time were specified where possible, including custom made buff bricks, by York Handmade, oak floors, balustrades and loose furniture, and exposed precast concrete.

A triple-height concrete wall divides the foyer from the ground floor exhibition space and first floor studio, hung with a colourful textile artwork, designed by Glasgow-based artist Victoria Morton and made at Dovecot Tapestry Studio in Edinburgh. It is visible from the courtyard through the glazed facade.

Pale timber in the foyer accentuates the large amount of north light coming through the high glazing. This is in contrast with the
rich, dark timber-lined auditorium.

Fabric in autumnal colours of red, orange, yellow and green is used on most of the fixed seating and helps to connect the interiors to the landscape. Auditorium seats are covered in a hard-wearing wool tweed by Bute, which also supplied a 5m-high red drape in the gallery studio that can be extended around the entire curtain wall façade.

Perse School’s holistic approach to teaching the performing arts is reflected in the large number of technical facilities. The professional standard theatre allows pupils to control lighting and audio visual equipment, while the flexible stage can contract or extend to seat an orchestra. Stage sets designed and built by pupils in the workshop can be rolled down a special corridor direct to the stage. Despite the demands on power and the associated heat, the entire building is naturally ventilated.

It’s a high tech, yet architecturally grounded, creative playground poised to nurture future generations of UK talent.
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SUBJECTS AND PROJECT MANAGEMENT SOFTWARE FOR ARCHITECTS
For us, the inter-disciplinary divide is real. Daughter Pleione (Astrophys, Cantab) resides in the attic, communications solely by drone-borne handwritten note. Sister Xanthe (‘poet’, ‘Instagram’) has stolen the cellar key and gone underground with a vapor and a litre of own-brand scotch. Luckily I have a contact at Grimes, whose British Gypsum partitions and linings for the University of Birmingham’s new cross-disciplinary lab building are involved but performative. If they can cope with the divisions within STEM, there’s hope for the two siblings yet.

british-gypsum.com

Zaphod: ‘Eesh, what the photon happened? Where are we?’
Trillion: ‘The Arte S buildings in Penang, I think!’
Zaphod: ‘But the Flowshield SL 1000 epoxy floors reflect the curves of the building, replacing reality with fantasy and achieving an ‘holistic creation’ as discussed by Kurtich and Eakin in Interior Architecture of 1993!’
Eddie The Computer: ‘An improbability level of eight million, seven hundred and sixty-seven thousand, one hundred and twenty-eight to one against!’

(Enter bowl of petunias and confused-looking whale)
flowcrete.co.uk/

Ah, you think you’re free – but you can never be free! Standing on a bit of ‘Classic Rough Oak’ herringbone? Forbo Allura Flex LVTs. Tessera Seagrass planks? Forbo carpet tiles. You think you’re in Savill’s new Cardiff HQ, but this is not about selling houses! Wake up, sheeple! YOU’RE IN FORBO. Stepping from the lift, waiting to be greeted, sitting in a sales room, even in a boardroom meeting – Forbo is at the root of the illusion. Smell the (reasonably decent) coffee! This is your life now.

forbo-flooring.co.uk/allura

Deco chinoiserie, darling. It’s kind of my schtick. The great and the good all come to me for the Deco Chinois thing. LaLa Land! Larvotto! PROPER LARVOTTO! Lech-Zürs for God’s sake! I’m in demand all over the world! Well I thought I was, anyway! Look at this. The smooth lines of that glorious Meisterstueck Centro Duo Oval steel enamel bath! What chancer ripped off my style? Eh? WHO’S DOING MY CHINOIS-DECO IN THE BLINKING KEMPINSKI SINGAPORE?
kaldewei.co.uk
CNC MILLED BREEZE BLOCKS
We were commissioned to do an installation in the RIBA window as part of the Regent Street Windows Project. The studio is interested in elevating mundane, off-the-shelf materials to ornamental architectural elements. For ‘BLOCKSHOP’ we wanted breeze block to compete with the vermiculated limestone of the RIBA’s neighbours. We worked with a stone mason to test carving methods and a CNC milling machine cut through the lightweight blocks like butter. We designed blocks of varying complexity to produce high definition ornament in an abundant and affordable material.

LATEX CURTAINS
For one of our first projects – the modest refurbishment of a 1960s semi – we were looking for a material for the maxi curtain that covered the wall around the entrance to the garden. We wanted to emphasise its wave profile so looked for a fabric as void of texture as possible. This led us away from traditional curtain materials and we happened upon latex at a fashion show. It fitted the bill perfectly with its super matte finish (when unstretched) and consistent colour. The usual market for latex is fetishwear manufacturers so we had an interesting time selling it to the client!

EXTERNAL TILES - GRESTEC CESANO G
We were looking for two robust and maintenance-free external materials for our Lomax Studio Project. We had already decided on a textured concrete block for the larger volume and wanted them to work in visual contrast to each other. We sought a high gloss square white tile – super flat and reflective, but we could find no external tiles in the UK that weren’t hung on a sub-frame. Grestec’s Cesano G range was the only option outside bespoke manufacturers – a ceramic, frost resistant tile with great consistency through manufacture. We’re still using the same tile in various sizes and finishes on some of our current projects.

Jan-Carlos Kucharek enjoys three stand-outs from the inbox

BOLEYN POINT
While retaining possession of her Loaf of Bread, Anne Boleyn must have loved growing up in 13th century Hever Castle in Kent. Any confusing ideas about her future would only have been compounded by its mazes – yew and more recently one of water. Anne Boleyn must have loved growing up in Hever’s high-end B&B? Unlike her ‘French style’ execution, by sword rather than axe, in a patriotic nod, sensors light up red and blue to heat and cool, and white when the shower reaches the desired temperature. All contributing to what sounds like a thoroughly dreamy place to lay your... er... head.

RUB-A-DUB DUB
Speaking of high levels of execution and cutting-edge technology, Hansgrohe’s Axor taps and showers have been specified at Prince Charles ‘Petit Trianon’ of a personal project, Poundbury in Dorset. Architect Ben Pentreath has just completed the Royal Pavilion, nestled in the bosom of blighty between Queen Mother Square and Pavilion Green. This 20-apartment scheme, inspired by Nash and Soane, looks out by Quinlan and Francis Terry, and features a large brick tower atop a stone triumphal arch. You’ll need lots of liquid assets all round – the cheapest flat trickles in just shy of £1m, with the penthouse eye-wateringly double that.

NIP, TURN AND RELEASE
Five generations of the Clifford family have been hammering it up at Willenhall-based architectural hardware firm Croft since 1868. So to mark its 150th year they went back to doing what they do best with the ‘Hammered’ series. Director Paul Clifford puts it down to their ‘accomplished hammering techniques, making each item truly unique.’ Of course, it wouldn’t be complete without the inevitable peening, so they’ve peened on some of their existing products, ‘adding a distinct rustic look and feel’ to the range. Architects stressed by luxury ironmongery schedules, who’d like to get hammered themselves, should double down to Croft’s website: croft.co.uk
SonaSpray K-13 black applied directly to concrete soffit with slatted timber installed below. Due to its through colour & speed of installation, the SonaSpray range is the perfect way to acoustically treat & renovate any space, whether as a finish coat or above a feature ceiling.
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