There’s been what seems...

... a string of wake-up calls over the last few months. On top of Covid-19, Black Lives Matter and looming global recession, but in the sheets of rain that fell on the UK over June and July was the fact that on June 20, the Siberian town of Verkhoyansk experienced a daytime high of 38°C. That is a grim record for inside the Arctic Circle. The EU’s Copernicus Climate Change Service registered Arctic Siberia’s May temperatures as 10º higher than average, increasing the likelihood of permafrost melt at the poles and wildfires everywhere else.

So the RIBAJ’s September issue, devoted to sustainability, is prescient and necessary; and in support, PiP is showcasing projects with different outlooks on the subject. Turner.Works’ Mountview Academy (p24) uses concrete to perform but binds into that the principles of ‘loose-fit and long life’. Maggie’s Leeds (p12), by the often seemingly extravagant Heatherwick Studio, not only embody sustainable principles in construction but push the mental health aspects of creating an oasis within an otherwise hard urban environment. And Tsuruta Architects’ wooden roof extension (p34) to a London home uses minimum material for maximum return.

Of course, these are new buildings and even if they did meet net zero carbon in construction, would still, over their lives, have to be net zero carbon operationally, so we are a long way off. Perhaps the best example of that approach would be the refurbishment and retrofit of Urmston Leisure Centre in Manchester, mentioned in our Special Report last month and reviewed in this RIBAJ. Quietly and efficiently returning an energy guzzling 1980s facility to the community as a Passivhaus exemplar, 5plus Architects is, to coin a much-used term, our unsung hero.

Jan-Carlos Kucharek, editor
Compendium

Edge of the orient
Anyone who’s experienced the deep cleansing properties of a Turkish bath will be aware of their famed skill at getting into all the corners – and maybe that was at the back of Ross Lovegrove’s mind when he came up with his Istanbul sanitaryware range. Designed for Turkish bathroom brand Ultra, the famously bloppy designer naturally chose to do away with corners altogether. Originally launched at Milan’s Salone de Mobile in 2018, he’s been adding to the range over time, notably with a new vanity basin with its curious ceramic Up and Flow metallic logo and a fantastic looking loo brush that looks like a 21st century reincarnation of the 19th Russian Stiilnak (or satellite). But PIP’s still enjoying the look of this water-inspired floor-standing washbasin, despite the suitably eyewatering £1483 pricetag.

Not your Nikkei average
These events might have rather caught up with it, but it seems bookings are finally now being taken at the new The Ivy Asia restaurant in Soho’s New Change opposite St Paul’s Cathedral – with, it seems, window views that are dashboard more public than it’s more private and demure celebrity relative in Soho. The venue offers flexible dining, as stylishly installed an artfully decorated, semi-automatic 6m by 5m by 3m high cracked, metal top of a 30m land dune in Belgium’s Hoge Mouw nature reserve near Kasterlee. Reminiscent of the famous last scene in the 1968 movie Planet of the Apes, a faceted, sizeable memento mori – this time at the top of a 30m land dune in Belgium’s Hoge Mouw nature reserve near Kasterlee. In Hungarian apparently, the word Illan means something temporary and fleeting, and it’s something given to young Hungarian designer Zsuzsanna Horvath’s new thin, flexible, plywood suspension lamp, which responds delicately to the movements of air in a room. Generating an effect that looks like a ceiling hung slowly, the lamp, which is available up to 1m in diameter, generates constantly changing light source in the centre. Finally going into production with Italian lighting firm Stilnovo – it highlights the power of self-belief – it’s been adding to the range over time, notably with a new vanity basin with its curious ceramic Up and Flow metallic logo and a fantastic looking loo brush that looks like a 21st century reincarnation of the 19th Russian Stiilnak (or satellite). But PIP’s still enjoying the look of this water-inspired floor-standing washbasin, despite the suitably eyewatering £1483 pricetag.

Heart of darkness
Back in Belgium, Stéphane Beel Architects was commissioned for the restoration and extension of Brussels’ Afrika Museum to bring the building up-to-date and to allow from better viewing of its collections. External blinds linked back to a BMS were specified to minimise any internal clutter around the perimeter glazing while ensuring low light levels were maintained if necessary. The architect wanted the blinds to be invisible when retracted so worked with screen manufacturer Guthrie Douglas and Helioscreen Projects to integrate roller mechanisms into the facade structure. Steel cables were used to guide the blinds, and a bespoke return pulley arrangement designed to give them additional stability in high winds.

Lockdown lounger
With Surgeonising still in the process of being wound down, contemporary design firm Established & Sons hasn’t been sitting on its hands during lockdown but has instead been actively promoting its own angle on how you can best park yourself. Its most recent PR featured a number of designer products and possible uses – the Barbarian chai longue by Konstantin Grcic for yoga, Felix de Pass’ elemental A Bench ‘for improvised workouts’ and the Bouroullec’s Quilt seating, brightly coloured and very plumply upholstered for… curl up on impossible to be within two metres of anyone, you can curl up on this one and feel as safe as a baby in a bouncer.

A bigger splash
Given the fact that half of Hollywood seems to have headed out to the shores of Italy’s Lake Como since George and Amal Clooney picked up, it was only a matter of time before a high-end Japanese eatery sprang up in the area to feed all those hungry little west coast mouths. Cue Moya in Mariano Comense, over 1000m2 over two floors, designed in the area to feed all those hungry little west coast mouths. Ciel Moya restaurant in Mariano Comense, over 1000m2 over two floors, designed by Italian architect Maurizio Lai. It’s the internal lighting that’s the star of the show here, with emerald coloured illuminated backdrops and 15 glass dividers that create waterfall effects, leaving any punters still craving the delayed remake of the 1984Splash angrily compensate...
The world’s thinnest inverted roof insulation just got thinner

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Specially developed for or wherever build-up thickness is critical to the overall construction, such as inverted roof and terrace applications, Quantum® PLUS® can dramatically reduce the depth of a finished roof system. It provides the solution to counter low upstands against the increasing thickness of traditional EPS & XPS products specified in order to meet more stringent thermal demands. Quantum® PLUS® delivers an exceptional thermal performance and has been consistently proven to meet challenging standards required by home warranty providers.

www.prothermquantum.com
Design presentations for a Zoomed-in world

Digital presentations to communicate design have moved from printed reports to PDFs, from AI boards to TV screens, and from punch-ups in the real thing to punch-ups in space, printing time or file size – it’s still PDF and PowerPoint. The outcomes were varied and the online presentations were a ritual. We build a storyboard of titles and bullet points using Word, PowerPoint’s Outline View, Dropbox’s Paper App or CrowTale. This stops us getting lost in graphics (we love doing that), or an expert’s guide, check-boxy AI cure for speechwriter Nancy Dart.

The second pitch is in creating and demonstrating the presentation. From the other side of the fence here are some key annoyances. We’ve used thousands of words of PDF for started documents in widescreens, lines of text running the full width of the screens, wanted text people scroll through thumbboards to find a drawing and read presentations surrounded by myriad menus and thumbnails – we anguish over getting a decent layout that you can’t flip and don’t get lost in graphics. Virtual presentations think about what your audience has to hand – generally Teams or Zoom, a laptop screen and some headphones. That’s why the ‘slide show’ is staple and remains the place we focus our effort. The rest is nice to have.

Bring back real life presentations!

Justin Nicholls is a partner, Fathom Architects. justinnicholls@fathomarchitects.com

CLT from waste wood

Demolition in the UK produces around 1 million tonnes of waste timber a year – more than half of it solid wood. A team at University College London has been working on repurposing it to make cross-laminated secondary timber (CLST), which could be used to build up to 100,000 homes annually.

No one is doing this yet. Sited near forests, the major European CLT producers have plenty of primary sources. But while Austria has 47% forest cover, in the UK it’s only 13%, so here secondary timber is more available locally at low cost. You might even be paid to take it away.

UK CLT is typically nested and restated to find the product for use in line with conventional CLT. Initial lab testing showed no significant difference between the compression stiffness and strength of CLST and a control. Modelling the defects typically found in secondary timber suggested only a small effect on panel stiffness in compression and bending. Calculations into the properties of panels containing timber of significantly lesser quality found very little drop off in performance when configured correctly.

In an agile project, cloud-based workflows were evolved from a 1970s housing block. As much timber from demolished buildings, its retail value was not of interest to salvagers. At the Rambouillet in Bruxelles, the boards were de-nailed, planed and ripped down – and joined to make layers which were laminated in a hydraulic press. Working with Papier HASCO and architects Seán and Stephen, these panels became take table tops for co-working spaces. This process plus a one-off labour intensive process, while automation promises big efficiencies, there is little point in competing head to head on scale with the big manufacturers. But two alternative routes could set the product apart.

One is to drive the circular economy, by maximising the amount of recovered wood that is used in the product and by designing panels to adapt and accommodate it to handle the building falls – and for upgrade and resource use in the building’s decommission. As with providing negative or low-carbon building components, the economic value of the material would be maintained at end of use. This is a particular relevance to buildings with a known lifespan, or ones that are likely to change function over their life, and to any client with a long term financial interest in the site.

The second route is working in a more tailored way with architects and clients who want to use CLT but who are looking for something distinct and bespoke. Special colours are available for large orders.

For use: CLT from used timber

For research into the use of secondary timber, Dr Colin Rose works at Reed Watts Architects, Dr Christopher Pendrich at Edinburgh Napier and Dr Penny Moss at the Bartlett.

Left: Specimens of cross-laminated secondary timber + lab testing
Top: Waste wood at a recycling plant. The material is getting cheaper as its use increases.

The climate change agenda can only strengthen the business case for CLST as environmental taxation rises, labour taxation falls, and production costs and regulation of white wood carbon values to such products. Additionally, the technology underpinning CLT is getting cheaper as its use increases.

Now, CLT has been tried in structural applications. Timber from old buildings is often of better quality than new wood, while strength grading and grading more complex with reclaimed timber. Researchers at Edinburgh Napier are looking into this. Investigations into mechanical performance of panels made from a mix of primary and secondary timber will be followed by research into performance, building strengths, and logistics of collection and fabrication.

The extent of waste generated by the construction industry offers huge possibilities. CLT presents an almost obvious case for reusing or up-cycling material at an industrial scale, using energy and logistics of collection and fabrication.
Spoilt for choice? How to specify high performance windows

Doors and windows play a critical role in a building – from inhabitants’ wellbeing, through security, to contributing towards environmental targets. Velfac’s specification expertise can help

From meeting sustainability targets to enabling design innovation, modern windows and doors play a vital role in creating energy efficient, well ventilated buildings, filled with natural light, while setting new standards in thermal and acoustic insulation, durability and security. Expert specification is required, however, to fully maximise their potential, and to ensure full compliance with often complex building regulations, especially if curtain walling or cladding is part of the design.

Window suppliers can often provide this specification expertise. At Velfac, services such as cost consultancy and sub-contracted design, for example, help provide early budget certainty and streamline the design process.

Performance calculators are useful in first stage specification planning. Acoustic modelling, for example, can ensure the precise placement of double and triple glazing within a facade, resulting in optimal (and more cost-effective) noise control.

Window suppliers should also have calculation tools for U-values and unit weight, and be able to supply to date-tested data ready for review, as required to satisfy building regulations. To meet sustainability targets, a suitably qualified expert is also needed to ensure full compliance with Building Regulations.

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Specifying does not mean compromise – doors and windows play a critical role in a building – from inhabitants’ wellbeing, through security, to contributing towards environmental targets. Velfac’s specification expertise can help.
The last patch of greenery on a tight urban site in Leeds, hemmed in by two roads and several large buildings, including a multi-storey car park, is far from the ideal site for a cancer support centre devoted to calm and healing.

Undaunted by the drab location and inspired by the brief to create ‘a home that people wouldn’t dare build for themselves’, Heatherwick Studio doubled down to create a nature-inspired building with a sweeping exposed timber structure immersed in lush British woodland greenery covering roofs and terraces.

The 442m² centre, located within the campus of St James’s University Hospital – also known locally as Jimmy’s – is the charity’s 26th centre in the UK and the first healthcare project completed by the practice.

It will provide an anticipated 110 visitors a day, including people with cancer, their friends and families, with free practical and emotional support as they come to terms with the disease.

Rather than dig into the steeply-sloping site, the building follows the natural contours, with three pavilion-type structures resembling garden planters stepping down in levels. These surround an open plan area comprising a kitchen, library and exercise room connected by stairs.

The gardens overlap as they descend and overhang to shelter communal areas; at the highest point visitors have views of the Yorkshire Dales to create a positive link with the world outside. The planting is based on the British woodland, with hardy native species that support the area’s existing biodiversity.

Nick Ling, technical design lead for the project at Heatherwick Studio, tells RIBAJ: ‘The hospital really valued the small patch of grass that the site takes over so, for the good of the entire hospital and the patients and staff who look out on it, we wanted to reinstate greenery, lift the gardens

Above Three timber pavilions with planter roofs running up the site now offer views out to the neighbourhood, city and the Dales beyond.

Left A valued patch of green space on the St James University Hospital site has been reborn as a ‘wilded’ Maggie’s.
Below Timber fins supporting the glulam pavilion roof are each unique to their specific loading. Recessed deflection headed roof edge slots the building to allow the structure to flex without compromising the structural glazing. Below right: Hidden clerestory windows allow daylight to illuminate the space in subtle and surprising ways.
up and improve on what they had before.’

A focus on ‘healthy’ materials conducive to patient wellbeing and sustainable performance enabled the Centre to exceed Part L requirements by around 12%, even though environmental targets were not included in the brief.

Energy consumption is based on the needs of a domestic home, using underfloor heating and passive energy conservation techniques such as thermal mass and insulation in the built-up roof.

Cross-laminated timber (CLT) buildings have become commonplace in the UK, but what sets Maggie’s Leeds apart is the sheer variety of engineered timber construction on display.

The superstructure is a sustainably-sourced spruce system manufactured in Switzerland and fixed together on site in just eight weeks. The walls of the planters provide stability and comprise 30% stressed skin timber with timber studs and a plywood exterior. A simple lime plaster finish allows the walls to breathe and encourages natural ventilation.

Concrete raft foundation and held at the top in a recessed de/ flection head channel within the CLT deck. This allows the timber structure to flex under live loads without affecting the glass.

The system doesn’t tie into the LVL column in the facade, which only support the timber beams and roof deck. The same structural glazing system was used to create a clerestory window sills and shelves can be filled with visitors’ objects and possessions, some are positioned across the tallest glazing panels to con - vey a sense of the timber handrails for the stairs so they feel nice to run your hand along,’ says Ling. ‘We feel it was very important to make sure any sunlight hitting the site could get into the space, warm it up and give people moments where they feel at home.’ More traditional aluminium tilt and turn windows are installed in the walls of the three planters. Heatherwick Studio wanted Maggie’s Leeds to provide respite from a clinical hospital en - vironment and therefore focused on a home - like feel with natural and tactile materials and soft lighting.

Window sills and shelves can be filled with visitors’ objects and possessions, some are positioned across the tallest glazing panels to convey a sense of the timber handrails for the stairs so they feel nice to run your hand along,’ says Ling. ‘We didn’t want the accessible toilet to look institutional so all the grab rails are timber-lined. A glass to use timber pull handles on the oth - er internal doors was abandoned due to ‘tech - nical issues’ with lamination and perceived maintenance problems, so instead steel lined handles from Aligood were specified.

The front entrance to the Centre has psychological signi - ficance as a threshold beyond which an individual might begin to accept a cancer diagnosis. To make the door less intim - idating to newcomers, it is positioned to the side under a lower roof, a nearby bench gives visi- tors an opportunity to pause and reflect before entering.

The planar glass of the entrance door is insulated against a rough bronze handle cut to match a branch taken from one of the plants on the roof. It’s another useful and welcoming touch to bring comfort to visitors who may face a difficult and stressful journey ahead.

With a strong emphasis on the innovative wood structure and planting, the glazed facade was conceived as a recessive element of the project.

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A series of glulam fins sprout from the planters to provide support for the CLT roof decks. Each fin has a completely different profile, shape and sized to handle varying loads, some are 300mm or 150mm wide, larger trans - fer fins are sized 210mm to deal with more significa - nt load from columns above.

‘It is a very finely-tuned engineering solu- tion that we worked up closely with our en - gineers and the timber fabricator to achieve,’ explains Ling. Circular columns in the facade were initially designed in steel, but the timber specialist developed a laminated veneer lumber (LVL) al - ternative with services running through a gap in the centre. The solution achieved the same diameter as steel, at a reduced cost, while the ‘curved cuts around the veneers produced a lovely texture’, says Ling.

“You can push a finger along the timber structural details

1. Timber cassette wall
2. Glazed timber fin
3. Glazing channel
4. Engineered timber column
5. Concrete upstand
6. Void former insulation
7. Timber cassette wall
8. CLT slab
9. Glazed timber fin
10. Concrete upstand
11. Lightweight aggregate soil
12. Glulam timber fin

Above The spatial quality feels almost proto - modern; like Victor Horta’s Art Nouveau.
Specified

1 Side-sliding red cedar garage door
Rundrum Meir

“When I heard I was going to be a Rundrum garage door, I was over the moon! Mum always told me growing up as a little Red Cedar I could be anything I set my heart on, and for a long time my dream was to be a beehive. But now I’ll be married to extruded aluminium running gear, and insulated – and even impregnated with an environmentally friendly base coat to guard against moisture! I can’t tell you what this opportunity means to me. I’m going to give this 110%.”

rundumgaragedoors.co.uk

2 Bespoke door handles
Samuel Heath

“The unquiet ghost of Richard Seifert stalks the corridors of Centre Point in search of souls to compliment his work. It has been a lonely few decades. But since the Mather/Conran residential conversion started in 2015, 'Sir the Seifert' has enjoyed himself more than even that time he was lampooned in Private Eye. His latest move in the restless trawl for applause is to adopt a Brummie accent and introduce himself as ‘Samuel Heath, foundryman’. Doors slam, wardrobes rattle, then comes the strangled cry: “Vhparserpithvoi mee conjm andles, chool? Buttin int thay?” samuel-heath.com

3 Centre pivot roof window
Keylight

SECURE COMMUNICATION
Regret to inform Operation Kipling aborted 00:46 20/8/20. Location co-ordinates denote private residence Mr & Mrs Ball. Target sighted on cooling rack beneath Keylight brand roof windows. These sealed clever integral expanding foam thermal collars and insect filters. Trickle vents mean rarely opened so chopper drop through three pane glass required; Health & Safety regs preclude unless liberating threatened UK Nationals. Cream horns/Bakewell fngers possible. Await direction.

keyliteroofwindows.com/

4 SPW windows and doors
Senior Architectural Systems

It was God’s design, my child, that the chapel neighbouring this former school should have been destroyed in the Blitz. It was also God’s design that the school should fall into dereliction and therefore stand ready until required by God to provide a new Ecumenical Hub for our Sheffield flock. It was, however, Senior Architectural Systems’ design that achieved SDS certification for the thermally-broken SPW600e windows and SPW501 aluminium doors we installed to keep the northern weather and the godless riff-raff out. My child.

seniorarchitectural.co.uk

Windows and doors are compiled from supplied company press releases.

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Covid-19 lessons for hospitals return

As the NHS moves to stress prevention rather than cure, its buildings must also start to pre-empt the future by designing in resilience

Words: Josephine Lim

Last September Boris Johnson promised 40 new hospitals in England under the government’s new health infrastructure plan. The first six hospital builds, from Whips Cross in Leytonstone to Leeds, were awarded £2.8 billion, while 21 more were under funding to develop their business case. But within months, project teams were building 10 new hospitals across the UK—temporary critical care facilities created in existing buildings for the pandemic response.

Nightingale hospitals and the many adaptations, improvements and change made to other hospitals and services over the past year have prompted questions for both the sector and their users. How can we learn from the experience and practices from other sectors and other users. The post-Covid sector may have to accommodate patients having treatments such as chemotherapy, blood transfusions and dialysis, and the capacity of the physical facility and what the outpatient department of the future will be.

Future flexible

Healthcare design must start to focus on people and collaboration. Architects and designers are working with healthcare organisations to define what they need and the patient journey. The hospice’s architect. This is the only UK facility to have been designed by the Sengetum model, pioneered in Norway’s St Olav’s Hospital in Trondheim. The model relies on creating a supportive, non-institutional environment with small, quiet rooms designed to give patients a sense of place and community while still allowing easy staff monitoring.

The hospice, in Bellahouston Park, has two clusters of six and 10 beds, support facilities and a corridor and relocating the women’s and children’s hospital. The architect refined that, reducing a long arc of corridors means you create villas that are much more approachable and easy to understand. The client used the time to understand the environment. The client used the time to understand the experience of patients and what they will remain in the village where they had a reference design with outline planning processes. The proposed design combined a ward with an open plan treatment area with floor-to-ceiling glass walling, with consultation rooms are now using dedicated telephony suites.

3Ps who would typically see patients in consulting rooms are now using dedicated telephony suites.

Left: The Prince’s Hospice in Bellahouston Park, Glasgow, is designed to accommodate patients having treatments such as chemotherapy, blood transfusions and dialysis, and the capacity of the physical facility and what the outpatient department of the future will be.

Left: The Prince & Princess of Wales Hospice in Liverpool by Hawkins/Brown working on the former and Nicky Macpherson on the latter. It was designed for a very specific business case, it may not stand the test of a decade and Covid has underlined that, says Barlow. But it is a project that has been completed in the early 2000s and is already not big enough. The estate has to be able to flex to handle the ageing population. The approach makes the most of a highly constrained urban context, where a new building has to be skilfully sited into a tight triangular site within sight of the Houses of Parliament.

Shell-and-core might be common in commercial buildings. But it remains rare in healthcare because of the complexity of its buildings. ‘We’re working with reasoning that buildings, projects and programmes of work are designed-in so that it will be possible to upgrade an area from medium- to high-tech.’

Cross will combine research and care, having laboratory space and an outpatient’s depart¬ment with six MRI scanners. The architect’s brief was to design a space to be adapted and reconfigured as research to translate to treatment. A new project at Guy’s & St Thomas’ NHS Foundation Trust’s Evelina London Children’s Hospital will go further. The planned Triangle building was built to allow flexibility on fit-out, with Hawkins/Brown working on the former and Barlow on the latter. It was designed for a very specific business case, it may not stand the test of a decade and Covid has underlined that, says Barlow. But it is a project that has been completed in the early 2000s and is already not big enough. The estate has to be able to flex to handle the ageing population. The approach makes the most of a highly constrained urban context, where a new building has to be skilfully sited into a tight triangular site within sight of the Houses of Parliament. 

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Innovation and political caution face housing boom

The government has put housing centre-stage in its efforts to combat post-Covid recession. As this webinar highlighted, there are plenty of issues and ideas to consider.

Words: Ruth Slavid

As we start coming out of lockdown, many of us have been thinking about our homes, having spent more time there than expected. So it was apposite that the RIBA Pip webinar on 1 July, in association with Kingspan Insulation, focused on housing and residential development.

Topics discussed included a batch of fascinating projects and a financial model to show the actual returns on increasing internal floor area always translates into a significant return on investment. As insulation standards continue to rise, the benefits should become ever more significant.

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Above Waterton Gardeins canal-side scheme in Bethnal Green incorporates shared open space and greenery.

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Acoustics were a major consideration from day one," says Turner Works’ Carl Turner of Mountview Academy, a £22.5 million new performing arts school in Peckham, south London. Shortlisted for an RIBA London 2020 Award, the Academy provides 10,365m² of teaching, rehearsal and performance facilities adjacent next to Will Alsop’s 2000 Stirling Prize-winning Peckham Library.

Working with theatre consultants and acoustician Charcoalblue, Turner Works certainly had an acoustic challenge on its hands. Site-wise, the team had to contend with street noise from its busy location in the centre of Peckham, but was also mindful of not irritating the Academy’s neighbouring residents.

In terms of programme, the building needed to accommodate a diverse mix of uses with all the acoustic complexities of adjacencies that these entailed — acoustic clash was a key concern as the configuration of accommodation was moved around during the design.

Arranged in two interlocking Studio and Theatre blocks, the Academy includes 21 studios for dance and drama, recording suites, offices, a café/restaurant, and a 200-seat main theatre and scenery workshop. Added to this mix is the noise and energy of some 400 performing arts students as they circulate and hang out in the main atrium. ‘It’s an incredible noisy show-case for the performing arts,’ says Turner.

And on top of all that, both budget and programme were exceedingly tight. At £2210/m², the budget was reckoned by Turner to be ‘about half’ what you’d expect for a typical performance building. In addition, the project took just three years from start to finish, including 18 months on site, despite several redesigns including one in response to safety concerns following the Grenfell fire.

One of the challenges we faced was finding a balance between the very tight budget, strict acoustic requirements and very fast build programme,” says Turner.

The pragmatic solution was to provide a sensible base level of acoustic performance for each space, on the understanding that as the building was occupied, some ‘hot spots’ might emerge that would need remediating.

The choice of concrete over CLT for the main structure was fundamental to achieving the acoustic performance required for such a density of sound-sensitive spaces. Concrete provided not only sufficient thermal mass, but also the necessary stiffness to dampen movement — a particularly important consideration given the inclusion of the many dance studios at the Academy.

Another key design factor was that the building was naturally ventilated. In the Corten-clad studio block, air is drawn through the studio via external louvres in the walls, and out into the atrium. This operates as a stack effect, drawing air up and out through louvres located on the sides of the roof light lantern.

Stiffness and space

According to Charcoalblue acoustics principal Byron Harrison, the two priorities for the acoustics were a stiff structure and the right spatial arrangement.

‘Our first thought was to understand where there’s dance, because the impact of that movement has the potential to transmit vibration through the whole building,’ he says.

Dance spaces were located at first and...
was avoiding sound leakage that could create a cacophony in the atrium. However some hints of studio activity could be a positive addition to the lively atmosphere of the school.

Respecting the ethos

‘We didn’t want to go too far as the ethos of the building is incredibly creative and the atrium is such an fantastic, vital space. Part of that experience is having bits of music and performance filling it. It was a balance,’ says Harrison.

The solution was a 1m deep louvre full of acoustic baffles to reduce sound leakage into the atrium. Both louvres and attenuators were provided by Gilberts. Such depth meant that these louvres could not be accommodated within the wall. Instead, they project into the atrium and are embraced as part of the industrial aesthetic of the space – the building is conceived as a ‘warehouse for the arts’. Acoustic insulation underneath the atrium walkways was considered but not implemented – in practice, the loudness dissipates upwards. The Academy also contemplated introducing some fabric wall hangings on the second floor level on the side of the building where spans were shorter. This gave a stiffer construction and care was taken not to place them above acting or tv studios. To further avoid movement, the dance studios have floating floors with Sylymer vibration isolation pads from Total Vibration Solutions. These provide a resilient layer and decouple the floor from the slab. This discontinuous floor construction also improves acoustic performance to the next door studio by reducing the potential for flanking transmission through the floor.

The strategy for the studio louvres was crucial to the acoustic success of the project. Sufficient acoustic insulation to the exterior was needed while maintaining air flow through the louvres.

There are two external louvres per studio. Charcoalblue and Turner Works collaborated with manufacturer Mach Acoustic on achieving the optimum solution, which was a fine balance of ventilation requirements and acoustic attenuation. This was delivered using 450mm deep louvres filled with Honeycomb Attenuator, a 3D structure laser cut from acoustic foam. Each louvre is 1140mm wide and 2000mm tall and is clad in plywood with external Corten rain screen cladding.

For the internal studio louvres, the challenge was avoiding sound leakage that could create a cacophony in the atrium. However some hints of studio activity could be a positive addition to the lively atmosphere of the school.

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to dampen down the acoustics if it proved necessary, but these haven’t been required.

Within the studios, acoustic rafts with Ecophon Solo panels are used to dampen reverberation and control noise levels. The design team was working towards the Building Bulletin 95 acoustic standards, although high acoustic performance was required in the recording studios and main theatre.

The recording studios turned out to be one of the areas that required remedial measures once the Academy was in use. With dance studios located above them and adjacent to the secondary theatre, these were always going to be vulnerable to sound intrusion. The retrofit dealt with this by greatly reducing the number of connections to the slab – just 15 spring hangers are used. Provided by Mason, these are DNSH acoustic ceiling hangers, and were used with three layers of 15mm plasterboard and insulation in the cavity. As well as these measures, independent stud wall linings were introduced.

In the main theatre, acoustic separation was achieved with the use of a separate steel frame to the main concrete structure. Above, a steel truss one floor deep provides storage, with a buffer space between the theatre and an upper level of rehearsal space.

Within the space, Harrison says the aim was to achieve a space that promotes both speech clarity and sufficient loudness. This required sound absorption strong enough to suppress reverberation and aid clarity, but not so much that it would hinder speech projection.

This approach required some hard, reflective surfaces to project sound back to the actors and across the auditorium. These were achieved with balcony fronts and side walls including vertically-slatted timber to the side of the proscenium stage wall. These create architectural interest as well as reducing the harshness of sound that can result from smooth surfaces. To enhance clarity, sound absorption is provided high above the technical grid on the walls and the rear portion of the ceiling. This is achieved with black Pyroform-PS1 parapet foam, contained within a protective wire mesh. Noise from the auditorium ventilation is minimised by the use of a slow air flow as it is drawn up from the stalls and through the theatre space.

The main theatre was completed this year after a £1 million donation from Cameron Mackintosh, more than a year after the opening of the Studio block. Cladin Court, the latter is considered a visual drape around the edge of the building akin to a theatre curtain. Torre describes the building as a Vase in a lifetime project. Building next to Will Alsop’s Peckham Library was a big responsibility; he says, adding that he had met Alsop a few times before he died, and that he had been a supporter of the new building. •
Costed

Nicola Herring and James Garner from Gleeds provide an overview of acoustic products

Building acoustics are an important consideration for projects as they can affect the productivity, wellbeing and communication of its users.

There are many factors which can influence building acoustics, including the shape and volume of a space; the characteristics to throw surfaces onto the line below, enclosing or separating the space in terms of sound absorption, transmission and reflection; generation of sounds and sound transmission and impact noise.

The reverberation time of a room or space is defined as the time it takes for sound to decay by 60dB, and it affects how a space sounds. It is linked to the volume of the room and the amount of sound absorption treatments incorporated – rooms designed for speech typically have a slower reverberation time than those designed for music which might have a higher reverberation time to add richness and warmth.

Sound absorption refers to the loss of sound energy when sound waves hit walls, ceilings and floors, and they are absorbed.

Sound insulation is a technique that is used to restrict sound from travelling between separate spaces through walls, ceilings and floors. The passage of sound into one room of a building from a source located in another room or outside the building is termed 'sound transmission'. Transmission loss or Sound Reduction Index, R dB, is a measure of effectiveness of a barrier (eg wall, floor, door etc) in restricting the passage of sound.

Part E of the Building Regulations sets minimum standards for design and construction in relation to the resistance to the passage of sound.

The following guide reflects the prices a client might expect to pay on a medium-sized project for some products or measures which may be specified in relation to acoustics.

<table>
<thead>
<tr>
<th>Price allowing for installation but do not include the contractor’s preliminaries, overheads and profit margin</th>
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<tbody>
<tr>
<td><strong>Shutter panels</strong></td>
</tr>
<tr>
<td>Rw 56dB, FR 30mins; 2700 – 3200mm High</td>
</tr>
<tr>
<td>Rw 63dB, FR 30mins; 2700 – 3200mm High</td>
</tr>
<tr>
<td>Timber flush single doors with solid high-density chipboard core; Rw 30dB, FR 30mins</td>
</tr>
<tr>
<td>Timber flush single doors with solid high-density chipboard core; Rw 30dB, FR 60mins</td>
</tr>
<tr>
<td>Class A suspended ceiling with rigid and demountable tiles</td>
</tr>
<tr>
<td>Class A monofrutal ceiling system composed of a stone wool panel (50mm) filler and acoustic render</td>
</tr>
<tr>
<td>Class B perforated plaster suspended ceiling</td>
</tr>
<tr>
<td>Specialist, spray applied noise reduction: 50mm metal sheet; 12.5mm plasterboard; 50mm acoustic render</td>
</tr>
<tr>
<td>Paint room acoustic wall lining panels</td>
</tr>
<tr>
<td>Suspended acoustic ceiling panel circle 800mm diameter</td>
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<tr>
<td>Suspended acoustic ceiling panel rectangle 2400mm x 1200mm</td>
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<tr>
<td>High load bearing screwed isolation; 150mm thick; impact rating 50dB</td>
</tr>
<tr>
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**Specified**

1. Dorma Happe VeriFiable movable wall Style

   *Don’t listen to the honkies outside the library of Birmingham. They’re not your friends, and don’t care like we do. Why else would they block their voices out? Their hanging on the door? Because we care. We were FIS certified for you! And this is how you repay us? By going outside?* *By going outside! Who’s been your only companion these past lonely months? Have we left you? Have we been anything other than accommodating? We’ve LITERALLY shaped our lives around you. That night you drank all that Sambuca and Bailey’s, we DANCED FOR YOUR style.*

   [partitionis.co.uk](partitionis.co.uk)

2. Mono Acoustic ceiling Rockfon

   *Listen, mate: *Some men say in many parts of England that King Arthur is not dead, but had by the will of Our Lord moved into a secret football management position and men say that he shall come again, and he shall win the Premier League*. *I will not say it shall be so, but rather I will say: here we be so, but rather I will say: here we be so, but rather I will say: here we be so.*

   [rockfon.co.uk](rockfon.co.uk)

3. Masterline 8 Softone window Reynaers

   *Neighbors last night expressed sadness at the sight. A successful hedge fund manager, Mr. Hartshill had been seen acting strangely, looking for a woman called *’Cathy’* who he claimed to have heard outside the window of his apartment on the 23rd floor of the exclusive Thameshouse Grand development. Resident Hindley Earnshaw, who does not know her, said: ‘Of course, that’s madness. These windows are Reynaers Masterline 8 Softones. Even open, they’re effective up to 55dB. You could literally shout someone out, and no one would hear a thing.’*

   [annabelkassar.com/home](annabelkassar.com/home)

4. Timber veneer suspended panel system Hunter Douglas

   *The birds they sang at the break of day but Hunter Douglas firm meant. I couldn’t hear them say ‘Oh no, old Leonard’s passed away’ Oh what is yet to be? The walls they will be upset by staggered grooves again This slit ceiling’s core of MDF it will be bought again veneered in European oak and sold And bought again Such quality is never free Ring the bells that still can ring We will not hear them through this handsome offering There is a crack, a crack in everything That’s how the light gets in...*
A sound solution – addressing acoustics in the home

We can never completely escape noise. More machines, more people, more technology – our world is getting noisier. But it’s the impact of the mundane ‘everyday noises’ in our homes that is affecting our wellbeing, according to recent research from bathroom designer and manufacturer, Geberit. Here Sophie Weston, channel marketing manager for specification and developer, explores the nature of this hidden noise and why it is now calling for a radical rethink of UK regulations around acoustics in the home.

Noise is everywhere. The World Health Organization, which has been tracking noise levels for a decade, describes noise pollution as an ‘underestimated threat’. But consider those less extreme noises that are acoustically daily. The ones inside our home – those that might not directly relate to volume or pitch. Consider, for example, the emotions that are stirred by a constantly dripping tap, how we feel if our sleep is interrupted by the hum of an extractor fan switching on or the flush of a toilet, even the constant sound of an electrical appliance on standby in an otherwise silent room.

We surveyed more than 2,500 adults across the UK to get greater insight on the impact of these ‘everyday noises’ – and it’s clear that it’s time to re-think UK regulations.

Amplifying internal noise?
Of course, specifiers are well aware of the need to mitigate the impact of external noises, such as road, rail and air traffic. Yet one could argue that this has perhaps served to amplify noise inside the home – and our survey showed that this does indeed appear to be the case.

More than third of respondents (38%) told us that noises inside the home, such as electrical appliances, bathroom noise or central heating, affect them more than traffic from outside does.

Even more concerning, however, was the real impact of this internal noise, with more than half of the respondents (51%) citing these unwanted noises as having a negative impact on their wellbeing.

Going beyond the wall
Let’s look at one of the main culprits of these sounds. Our research showed that one in four of us (28%) is regularly disturbed by bathroom sounds. Our research showed that one in four of us (28%) is regularly disturbed by bathroom sounds.

There are, of course, products available in the UK market to mitigate the impact of such noise. Sound optimised drainage piping such as Geberit’s Silent-db20 reduces noise transfer from flushing water, washbasins or showers. Likewise, wall-hung toilets with concealed cisterns and pre-wall frames, such as Geberit’s DuoFix, decouple from the construction, preventing noise travelling down the wall and through the floor.

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In a literal example of ‘thinking outside the box’, it was the view down over the original lower ground extension that inspired Tsuruta Architects’ view out of its new design. Appointed by a lawyer couple to trouble-shoot a leaking glass and steel back extension to their grade II listed home in an Islington conservation area, the firm’s design was driven mainly by the shortcomings of the original.

From the raised ground floor formal reception area looking over the garden, the filthy state of the prominent glass roof below suggested water ponding from bad drainage was causing the internal damp problems. With a large, mature garden beyond the roof line, the architect convinced the client that a sympathetic rebuild in timber was preferable to a patch-up of the existing extension. The result is a delicate but deep diagrid box of only 19m², whose roof deals with the drainage problem and takes account of a part-westerly aspect – the solution being the formal essence of the new project.

With the height of the adjacent boundary wall already dictating the maximum height of the roof in section, Tsuruta went with the low and followed its angular run in plan too, creating a timber diagrid below a glass roof of 23 triangular, double-glazed panels, their sectional zig-zagging creating the cumulative falls to deal with the flow rates that the previous shallow mono-pitch couldn’t. In what looks like a counter-intuitive approach, the firm ran the falls back to the main building so that the roof now drains to a rear gutter installed between the new structure’s perimeter beam and the face of the original wall, or off to the side. These perimeter gutters covertly channel water to the two drain points of the former extension, mingling discretion with practicality.

The firm had worked with Accoya timber on a couple of previous projects and had been impressed with the product’s dimensional stability and low thermal conductivity, so used it here fully as structure and cladding. Modelled in 3D and then CNC fabricated, the roof’s Accoya elements were assembled on site in small pieces using traditional carpentry methods, which enabled the diagrid cross-structure to interface without the need for glue or mechanical fixings. A 2mm thick ribbon of stainless steel ties the whole together, allowing the glazed panels’ structural silicon interfaces to bond to this rather than the top face of the timber.

For the elevations, a shou-sugi ban charred Accoya exterior is offset by the simple, milled inner faces of the Accoya perimeter ring beam, white-washed to reduce the timber’s green-grey hue and treated with a permeable Osmo oil finish. Read alongside fine internal European Ash panel joinery, the whole creates a volume that is formally simple but conceptually rich. This richness rewards the observer too. Mitigating the long, warm rays of west light helped generate the depth of the diagrid beams, which, come the afternoon, now create a mesh of complex shadows that play across the internal lining of the extension. For the Japanese Taro Tsuruta, the project was always going to be as much about darkness as it was about light. Yet achieving that conceptual strength has not been at the expense of practical benefits. From the garden the extension is now clear of gutters and downpipes, and from that all-important formal upper reception window, from which Tsuruta first considered the project, a roof no longer slides apologetically away but offers up its compelling configuration boldly to the viewer to reveal the more informal yet strikingly minimal social space below. And from down there beneath the glass, freed from its incarcerating dirt and detritus, there is now the sky. ‘And if you’re going to have a glass roof,’ remarks Tsuruta, as if needing to state the obvious, ‘it’s always better to see the sky’. •
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2. SAS800 Trucell open cell ceiling
   SAS International

3. Stardust So Small LED chandelier
   Contardi

4. Meisterstück Classic Duo oval bath
   kaldewei.co.uk

Such a tragedy. Dear Bill Shatner was declaiming away up there on the induction hob, treating us to his inimitable rendition of ‘Space Oddity’, when bloody Takai shouted ‘ENERGIZE’!

Everybody thought: it was hilarious – even me – till the LEDs behind the tempered glass screen started to pulse and the extractor motor began to make this funny ringing noise. Then – POOF! Poor Bill just atomised!

Like so much hot air. And 600m³ per hour means a lot of cultural icon gets sucked up through the nicotine/charcoal filters in a very short time.

I am Giacomo Napoleone Murat, King of Naples. In 1812, I closed down this monastery overlooking Vesuvius. And what do I see? This… how you say? Très belle bain nouveau? You put this in yourselves? How de rigeur!

Bien. It’s mine now. It has been 100 years, and I haven’t changed out of this uniform since I was executed. Pretty sticky, to be fair. Enamelled steel, you say? Lugged up into the Neopolitan hills for little old me? Too kind. And bubbles! Good job I take my rubber duckie everywhere. Close the door after you. I will dine at nine.

1. Vega ceiling mounted cooker hood
   Palmece

2. SAS800 Trucell open cell ceiling
   SAS International

3. Stardust So Small LED chandelier
   Contardi

“Yah, Dimitris? We had to let him go. It was quite fun to start with, you know… that Mediterranean colour he lent life on the super-yacht, but some of his more ah… shall we say… authentic? Habits? They were causing problems.

‘So annoying. The worst – and last – was when he used this very exclusive Contardi LED chandelier as a lobster pot. We didn’t realise till MBS came for drinks and spotted a big kelpy dangler overhead. So yah, we let him go.

‘Dimitris, that is. We kept the lobster.’

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STUART COWLEY, director of MICA Architects, chooses three of his specification favourites.

ENGINEERED OAK
We have worked on many projects with Andern Hedges, which specialises in bespoke engineered oak. Its craftsmanship includes floors, parquet and furniture. The material is rich, characterful and beautiful to detail. It is uniquely stable and defines the negative image of engineered timber products. It combines two hard layers of oak with a marine plywood core. The timber is sourced from the sustainable-logging of native French Napoleonic forests, which is crucial to the woodlands’ health.

 Unlike solid timber selection, most of the oak is used as timber rejected for knots or visual imperfections can be used for the invisible balancing layers.

FRAMELESS GLASS
Working with glass is in our practice’s heritage. We enjoy its spectacular qualities; what it provides; the joy of detailing its junctions and overseeing it, blurring its edges. We use large-format glazing specially and judiciously to signal activity, frame a view or promote visual connections. We work with expert partners such as Kronerley D’Callaghan and Seela and specify Skyframe, Vitrocon and Rollin who share the same objectives and produce extraordinary solutions. Our Hertfuegos Oxford project, currently on site, has a singular oversized frameless picture window, high in a new gatehouse, giving spectacular views of the Oxford skyline.

PATINATED STEEL
On our Hay Castle project we are working with Capisco, a Leyton-based workshop of artisans that specialises in patination, including patinating facades, and finishing small installations and art pieces. Capisco has developed recipes to patinate copper-based alloys and is using a blackening process at the Castle for a structural steel-plate staircase – a contemporary feature of the East Wing. A hard rain finish will provide both a solid sheen and long-term durability. The final process, completed in situ and entirely by hand, will give the staircase a unique texture and depth of colour, which will contrast with its raw stonework setting.

TAKING THE OZONE
“Taking the ozone” was a quaint Victorian term used by those visiting the tracing coastlines of Britain’s seaside resorts through the nearest modern urbanites might get to it standing in Tube station inhaling electric air filtered through the tunnels. Lockdown has done away even with that vicarious experience, so hurrah for British perfumer Penhaligon’s “Wish You Were Here” campaign, linking one of its signature fragrances to half a dozen of Blythgton’s much-loved seaside towns – though anyone stumbling along with the Stag and Hen nights of Blackpool’s Golden Mile of a Saturday might be sniffling perfumes of a very different sort.

IT’S NOT EASY BEING GREEN
That’s right… but it’s official: the global pandemic has a colour – and it’s green, Ermill! At least so says research by paint manufacturer Dulux, curiously looking into colour trends. It comes to big new futures, claiming we haven’t seen a societal behavioural shift like this since the 1950s when we finally get rid of ration books. In seems lockdown Colour of the Year is ‘Tranquil Dawn’, ‘a soft green hue with a balancing, soothing quality… designed to create a feeling of calm and contemplation’. That may be so, but personally, I’ve spent so long in my home office staring at the same four walls that I’m about to be driven up any one of them, green or not. 

LOCATION, LOCK AND ANOTHER LOCATION
We had time to contemplate the daring cults of May in fine weather, but ‘Tune and July were a washout, so you’d be forgiven for abandoning ‘summer’ and embracing the winters. It’s what designer Owen and artist teacher Rosie’ did with their ‘world’s first houseboat made of sustainable Corten weathering steel. And very nice it is, with interiors of FSC certified and reclaimed timber but being in a ‘continuous cruising’ license, you can’t stay moored in any one place longer than it takes you to officially self-isolate. It certainly proved too much for the owners, who are selling up to get to dry land in a move that’s less ‘Grand Designs’ than ‘Flog It’!“
BECAUSE YOU CARE ABOUT INSPIRATIONAL DESIGN

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You want your designs to stand out. To inspire, protect and exceed expectations. We understand this, which is why Reynaers is a high-quality partner for your building facade. With 50 years of expertise, we’ve developed solutions which enhance aesthetics and energy performance, together with support which enhances projects. We take time and care to get it exactly right. We take time and care to get it right. Because that’s what you care about too.