...has been the order of the day, the 'undeter-
mined' finding of the Scottish Fire and Rescue
Service’s report earlier this year into the cause
of the Glasgow School of Art fire on 15 June 2018
still grates. Barely a year before, we’d watched
the Grenfell Fire in horror, its spread captured
on phones and CCTV cameras at different times
and viewpoints, helping later analysis of the
fire’s pathology – if not the wider industry and
cultural causes, still being looked at now.
So, I thank to accept that we can sift through
the school’s burned-out embers, reach no
conclusions, and just move on. I blame asking if
the event could be interrogated by architect Eyal
Weizman’s Forensic Architecture? It might not
come to a different answer but at least it would
result in a worthy artwork to help us reach clo-
sure on the loss of Mackintosh’s masterpieces.
Some succour for feelings of needless waste
may come in the form of the government’s Clean
Heat Grant, being introduced this April to ince-
tivise uptake of sustainable domestic heating
technologies. The Green Homes Grant scheme
was taken up by less than 10% of the 600,000
homes it was meant to target, due mainly to
over-complex application processes and puni-
tive timescales for installers to fit insulation and
kit before being able to redeem vouchers for pay-
ment. Only £3.5bn of the £6bn fund was paid out:
£50m of that in admin fees. Here’s hoping les-
sons have been learned and the public claim-
ing voucher for your air source heat pump will
be less challenging. But remember, to be grant
eligible there must be no recommendations on
an EPC for loft or cavity wall insulation. Happy
retrofitting...
Compendium

Precious metals

Move over Pandora – there’s another show in town. New York-based designer Elizer Avni, creative director of her jewellery company Anna, has just opened her stealth bomber-like flagship showroom in Lower Manhattan. With its plentiful black, rolled steel panel exterior and interior, it’s cool to think the industrial material merely acts as a backdrop for her high-tech lab-grown diamonds, the key elements of her jewellery designs. The designer, Amsterdam/Tel Aviv architect Baranowitz + Kronenberg (B+K), was inspired by Soho’s typical undulating cast iron façades. That local detail helped it go global – the store won the World Special Prize for Interiors at the 2021 Prix Versailles.

Punch + foodie

Product design firm Buster + Punch has come a long way since the amuse-bouche of its initial offerings in lighting design, now serving up a hefty three course meal of a custom-built, modular, freestanding kitchen. Configured online, the design is available in two frame options, with three cabinet colours and three worktops, all using industrial black, rolled steel panel exteriors, it’s cool to think the industrial material merely acts as a backdrop for her high-tech lab-grown diamonds, the key elements of her jewellery designs. The designer, Amsterdam/Tel Aviv architect Baranowitz + Kronenberg (B+K), was inspired by Soho’s typical undulating cast iron façades. That local detail helped it go global – the store won the World Special Prize for Interiors at the 2021 Prix Versailles.

Feeling grounded

Look at this photograph. Does it make you feel calm? You’d hope so as it’s Denmark’s largest dedicated psychiatric hospital, in the Zealand city of Slagelse. The 5A/005 complex, with five-storey mood hospital block within a complex of low-level buildings for up to 194 patients, all set around calming courtyards, was designed by Danish firm Einarson Architects and VLA. Extensive use of timber gives the facility a humanitarian, tactile feel helped, says the facility, by some very special materials.

The Cradle to Cradle Gold Standard firm produces a paint containing Graphene, a form of pure carbon discovered by two Nobel Prize winners at Manchester University in 2005. Added here, the firm says it “exponentially enhances hardness, durability, compression, tensile strength, elasticity and coverage”, while being inert. And it’s carbon neutral – as the paint cures over 22 lifetime Graphenstone lime coatings absorb 5.5kg of CO₂ per 15litres. Plus it says its porous nature improves air quality. What’s not to like?

Not normal for Norfolk

If a paint could be two degrees of separation away from a Nobel Prize, Norfolk-based sustainable paint company Graphenstone might lay claim to the award by association. The Cradle to Cradle Gold Standard firm produces a paint containing Graphene, a form of pure carbon discovered by two Nobel Prize winners at Manchester University in 2005. Added here, the firm says it “exponentially enhances hardness, durability, compression, tensile strength, elasticity and coverage”, while being inert. And it’s carbon neutral – as the paint cures over 22 lifetime Graphenstone lime coatings absorb 5.5kg of CO₂ per 15litres. Plus it says its porous nature improves air quality. What’s not to like?

The globe or not the Globe

Not the Southwark Globe, birthplace of the Bard’s great plays, but not far off. This is the Art Deco Globe in Stockton, in its day hosting The Beatles, Buddy Holly, The Rolling Stones and even Cilla Black – whose belting rendition of ‘Anyone who had a heart’ clearly couldn’t halt the venue’s decline, which closed for 45 years. Stockton-on-Tees Council, helped by the National Lottery Heritage Fund, has restored architect Percy E. Showers’ 1934 building, making it again fit for up to 3000 revellers – Covid past or not. The originally installed Crittall W20 windows have been replaced, all finished in a handsome Turkish Blue. Crittall also supplied its Cold Forged Doors for the main entrances, including a power-assisted one, ensuring that when it throws open its doors again, it really will be to everyone.
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The Forge, Upton Park, uses an innovative Blue40 Roof System that restricts and delays runoff from the site, equating to 60% of the equivalent green field flow rate.

ARCHITECT: RM_A ARCHITECTS
Photo: Ben Luxmoore
A data-driven route is needed to net zero

In 2020, we started the third year of a crucial decade in which to mitigate the worst effects of climate change. As we write, the government has released its five year report outlining the risks posed by climate change. It puts the impact in terms that politicians can understand: effect on GDP. Though ministers say more must be done more quickly, politics does not allow for much long-term thinking. What government would not rather leave their successors to manage a 1°C reduction in GDP? Though, of course, climate change is about much more than money.

According to the 2021 Committee on Climate Change report there has been almost none of the necessary progress in upgrading the building stock – second only to surface transport as the largest emitter of CO₂ in the UK. In particular, owning our buildings of gas used for heating is a significant challenge, particularly where electricity is a significantly more expensive.

It is encouraging that in my role I have to speak to various organisations that have declared a target of net zero carbon in their estates by 2030. I am often dismayed that Energy Performance Certificates (EPCs) are proposed as a primary indicator of progress. It is effectively an extension of the theoretical assessments that underpin the building regulations, EPCs are subject to the performance gap we see between design estimates of energy use and reality.

Research by the Better Buildings Partnership elegantly illustrates that EPCs can no more be relied on as an indicator of energy bills. The actual performance of a building will be a product of how effective the fabric is, how efficient its systems are and how occupants behave. To make performance improvements, all three of these factors must be understood in real terms.

Alatea advocates a data driven approach to net zero. Basically organisations need to know how much energy their estate uses in order to record improvements toward net zero. Beyond this it is important to collect data on energy consumption, environmental conditions and occupancy patterns, the more granular in terms of spaces the better. Analysing these parameters can reveal whether the users are selecting appropriate temperatures, whether systems are performing effectively and most importantly whether they respond to occupancy.

The key is for sensor networks to be simple to deploy data in actionable insights. Since the update to Part L in 2006 included a requirement for energy sub-metering, many buildings have extensive networks of meters where the data is not being reviewed meaningfully. A starting point is surfacing it to a data platform for analysis.

Government buildings require Display Energy Certificates as well as an EPC. A DEC is based on actual energy usage and is easier to produce than an EPC, though the EPC remains compulsory in the private sector. The government is seeking to address this in large commercial buildings, however, consulting last year on a performance-based policy framework.

But the principle of data-driven decision making an route to net zero applies to buildings of all sizes. Around 60% of energy use in the non-residential sector occurs in buildings under 5,000m², and with extremely high energy prices, don’t we need more data before deciding how to decarbonise the heating in our homes?

Dan Cash is a building services engineer and director of consulting at Mace

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**Spacious Walls: Structure & Expression**

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Glass storefrontfront

What Recycled glass panels
Where Bulgari, Shanghai

‘There might be a few champagne bottles in there,’ says MVRDV founding partner Jacob van Rijs of the spectacular recycled glass storefront created by the Dutch practice for Bulgari’s Shanghai flagship. It would be inappropriate, given the luxury nature of the Italian jewellery brand, to allow too much of the jaded appearance of the glass, which is used in a site-specific-inspired composition that channels with both Bulgari’s vintage collections and Shanghai’s 1930s architecture.

The project is the third storefront by MVRDV for Bulgari, all inspired by the distinctive vocabulary of the luxury label, its rich heritage and traditions, and the client’s love of Recycling and sustainability. The aim was to create something that ‘stands out from the crowd.’

Moritz van Rijs, CEO of Magna Glaskeramik, is also pleased with the project, which was unusual in scale for Magna, whose products are often used for countertops and tabletops. The design comprises an arrangement of 372 different shaped panels, each trimmed with brass and with a maximum size of 150mm by 3150mm. Architect and manufacturer experimented on their optimum thickness to achieve the desired degree of luminosity, testing the samples with backlighting to simulate the final effect. While Magna’s typical Glaskeramik panels are usually 15-20mm thick, weight and lighting considerations informed the final thickness of 12mm for the Bulgari project.

The panels are created using several shades of green and clear recycled glass to give variety and a mysterious depth of appearance. ‘We wanted a material with translucency and which resembles jade with its natural effect, and didn’t want any two pieces to be the same,’ says MVRDV associate director Aser Gimenez Ortiga.

In the manufacture, the fragments of glass are not melted but heated to a carefully-controlled temperature in a sintering process. This distorts and fuses them together, and gives a ceramic-like strength when cooled. The green and clear recycled glass to give variety and a particular richness and depth when backlit by LEDs. The overall effect certainly achieves MVRDV’s aim of creating something that stands out from the crowd. Jacob van Rijs is also pleased that the project has been able to upcycle the glass in a way that is not only sustainable but ‘sexy and slick.’ Both the glass and the steel structure could be dismantled and recycled again.

Each panel was manufactured in Germany and transported to Shanghai for assembly in situ. All are mounted on a steel substructure attached to the store’s concrete facade. The gap between the panels and the 225mm steel and ceramic LED lights range from 20-50mm as a result of a slightly layered arrangement. This gives a va-
Established in 1926, Rugby Radio Station, just east of Rugby was, in its 1950s heyday, not only the communications centre of the UK but the largest radio transmitting station in the world. The very low frequency transmitter station and its power hall lay at the centre of a huge, flat site, surrounded by 57 aerials, 12 of which were 250m high, guyed steel-frame masts. Part of the Imperial Wireless Chain, these sent telegraph messages to the Commonwealth, and later, during the Cold War, were the sole means of communicating with the Polaris submarine fleet. Decommissioned in 2003, most of the masts were gone by the time it was grade II listed in 2005, which did nothing to prevent the loss of the last four or arrest the buildings’ decline. Until 2015 that is, when strategic developer Urban & Civic – having bought a swathe of nearly 500ha of land, including the station site, to create a new residential quarter for Rugby – approached van Heyningen and Haward for help to convert the derelict site into a 1200-pupil secondary school, part of the social centre of its new suburb of Houlton. vHH partner James McCosh recalls the power hall’s massive DC motors feeding 50000v across to the transmitter hall’s huge glass amplifier valves and octagonal copper ‘tuning coil’ – cooled by a water tower that is now the centre of the school campus. That it would be a campus was a given, says McCosh, as the spaces’ proportions – one 60m by 12m by 12m – made it wholly unsuitable for conventional classrooms.

Looking at both halls and the later ad hoc infill between and alongside them, the firm knew that to realise a working school, it needed to have meaningful discussions with specialists about which buildings should stay and which should go. The early involvement of Historic England was key. ‘It was grade II listed but Rugby Council didn’t have a conservation officer, so we approached HE as we felt it would give Rugby the intellectual backup to be braver than it otherwise might have been,’ says McCosh. It also helped with calming the nerves of the DfE, which had given vHH its standard output spec and budget to work on a listed, industrial building – ‘the kind of thing they’d usually run a mile from. They just wanted nice straightforward buildings at lowest cost; a lot of our work was convincing them that it could be done.’

Despite the constraints implicit in working with such a complex brief, vHH has done it, creating a school that generates critical mass at the centre of a large site. Constructive discussions with HE resulted in the clearing of later accretions between the power and transmitter halls, leaving only their outer walls. Now facing south to the future neighbourhood square, its open brick arches give students access to the north of the site past the water tower, to where vHH has built two science and humanities blocks of classrooms and labs. In the transmitter hall are art, drama, music rooms and top floor sixth form area, with central loos, support, and lifts. Bookending it all are two red-painted steel staircases offering pupils a visceral sense of the building’s original scale. The power hall, stripped of generators, has been transformed into assembly hall, refectory, kitchen and general education spaces. To the west, a new sports hall served as needs of the school’s community.

Interestingly, the old buildings had a direct influence on window specification, not only in

Window specification played a surprisingly large part in vHH’s challenging conversion of a 1926 transmitter station into a school

Words: San-Carlos Kucharek
Photographs: James Brittain

Houlton School, Rugby

Above West elevation of the 1926 Power Hall, now containing Houlton School’s large refectory, kitchen and assembly hall. Behind it, at a facaded row of aluminium panels clads the Transmitter.

Left The former main east entrance of Rugby radio station, between two of the remaining, smaller transmitter masts. These have all been repurposed as external lighting rigs.

Below left Archive image of Rugby Radio Station from the south east, complete with its original 250m high aerial masts.
their new iteration, but on the new blocks too, driven their listed status, vHH knew thermal compromises were going to be made in both halls, so the new blocks’ performance would have to be good enough to offset that. But specification was also dictated by the nature of the buildings. McCosh explains that the transmitter hall windows were all timber-framed, with a form of flakelike bolts used throughout to prevent the possibility of arcing from the equipment. The power hall, meanwhile, a steel-framed structure, had steel windows. As far as possible, vHH worked with this logic, making the interventions readable – as it did in the ‘corrugated’ brick of the new stair access blocks in the transmitter hall’s west side.

In both halls, the strategy of window replacement ran alongside considered thermal upgrade of the fabric. With the transmitter hall’s Edwardian, arched, timber single-glazed fixed light windows deep set into the solid brick skin, secondary glazing was considered, but McCosh says the feeling was that it would visually impinge on the view of original windows. The decision to use double glazed replacement was, he says, set by Historic England’s wish that the building have no visible plant, so reducing the cooling load demand on the MVHR to keep kit compact meant openable lights were a prerequisite to provide free cooling, installing the new windows instead interfacing with the firm’s insulation strategy for the solid brick walls, developed with consultant Etudes; a fully ‘moisture sensitive’ layering of lime parget coat, sprayed mild steel brise-soleil span between piers.

In the transmitter hall windows were all timber-framed, with the interventions readable – as it did in the ‘corrugated’ brick of the new stair access blocks in the transmitter hall’s west side.

New humanities and science blocks form the northern border. The old water tower is now a gazebo, and the new blocks’ performance would have to be good enough to offset that. But specification was also dictated by the nature of the buildings. McCosh explains that the transmitter hall windows were all timber-framed, with a form of flakelike bolts used throughout to prevent the possibility of arcing from the equipment. The power hall, meanwhile, a steel-framed structure, had steel windows. As far as possible, vHH worked with this logic, making the interventions readable – as it did in the ‘corrugated’ brick of the new stair access blocks in the transmitter hall’s west side.

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Glazing Vision are technical experts in the design, manufacture and supply of precision engineered, architectural glass rooflights. We have one of the most experienced, specialist design teams in the industry, so whatever your concept might be, Glazing Vision can make it a reality.

Wood fibre insulation and Fermacell, new first floor windows inserted into the west wall and picture windows in north and south walls were set in line with the brick faces. Wall insulation overall could have been thicker, McCosh notes, but they were mindful that differences in thickness at reveals could result in condensation, and that to avoid it, consistency of insulation was a priority. At north and south sides, the thermal boundary is behind the new steel staircase walls’ inner face; the void they sit in residually heated to 16°C, the original brick able to be read beyond a simple lime wash.

The power hall’s Crittall arched steel windows were replaced by an AluProf aluminium system, as vHH found that, as elsewhere, thermally broken steel frames were too expensive. While they did find an aluminium frame that replicated the original’s outer mouldings, it too was not thermally broken and needed a large transom to stiffen it. vHH compromised by adding an extra aluminium flat on the frame to provide some sectional relief to the system. In new computer spaces above the kitchen, original stripped glazing was copied, resulting in a ‘lovely’ quality of light in these spaces.

With the walls stripped back to reveal the original glazed brick faces, new ground floor openings in the refectory’s west wall were filled with a proprietary SAS triple-glazed grey-painted sliding door system, capable of being locked open to allow al fresco lunching on the new paved terrace. On the roof meanwhile, the original rooflight openings proved a good means of ensuring free cooling in the summer through clerestory venting. vHH had hoped to use a self-supporting rooflight, but due to the opening size, it introduced a 100mm by 50mm welded RHS stiffening frame around to support the actuated Roofglaze system specified. The space packs a punch, light pours into the industrial-scaled refectory volume, and with elements of the original electrical kit still installed, the place has a special, one-off feel. McCosh says of the new Humanities and Science block design that its north-south orientation helped with energy efficiency and made for a glare-free teaching environment. The flat north elevations, where windows are flush with the brick facades, are contrasted on the south with a deep facade that shades the glass. McCosh points out that the brick fins doing this are not.

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Doors, Windows & Ironmongery

**Top** The water tower and playground looking north with new teaching block beyond.

**Above** The brick fins of the deep-set facade are not structural but part of the solar shading strategy for classrooms.

**Above right** View looking north to the sports field through the new blocks’ triple-glazed, fixed light windows. Note the opening vent panel to the left.

**Right** New staircase in the transmission block with new first floor aluminium-framed double-glazed picture window at bottom left.
structural and are tied back to a long, thick, insulated brick skin, ensuring wall/window interfaces are kept simple as possible. DuPlus-installed large SAS PURe triple-glazed fixed lights to classrooms have hinged opening vent panels on each side for summer cooling. Blocks were specified to be as airtight as possible, resulting in only two small MVHR units on each. ‘Energy use intensity here is 67kWh/m²/yr and the LETI guide for zero carbon schools is 65, so it’s high performance,’ says McCosh, adding: ‘Windows are designated air permeability Class 4 – about as good as it gets.’

But it was also about aesthetics. Keen to complement the industrial buildings’ industrial nature, vH settled on a German clinker brick, whose more highly-fired versions have a slight sheen, particularly in the south light. With the specified stainless steel lintels, the contractor offered shiny versions but the architect chose those that dull over time. And in the facade’s depth, the practice ran a concrete bench so kids can sit and appreciate the water tower gazebo that acts as the fulcrum for the campus.

For now this lies empty, needing £500,000 more than they had to insert a room behind its Diocletian window. I hope they raise it; for despite having only one form, there’s a potentiality to this school. On a DfE budget, vH has not only returned a disused building to good use and made it perform to the regs demanded of a newbuild, it has also generated a palpable sense of place in the process. In 2026, when the first cohort enters sixth form, Houlton will be marking a centenary; and it too, like the famous private school in town, will be hardwired into a legacy.

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**Costed**

Gleeds’ Nicola Herring and James Garner provide supply and fix costs for a range of commercial and industrial windows and doors.

The UK market for doors and windows is large, mature and evolving. Windows and doors are supplied to a variety of markets including domestic/home improvement, public sector housing renovation, housebuilding and commercial/non housing. The upgrading of existing buildings is expected to play a key part in reaching climate targets. Research shows that the UK’s housing stock will need to reach at least IEPC band C by 2051, but 71% of homes, including more than four million social housing units, do not yet meet this standard. Measures including replacing doors and windows will be critical to improving performance.

Specifiers must consider several factors, including thermal efficiency (U value), solar gain (G value) and air leakage (L value). The British Fenestration Rating Council (BFRC) combines these in the WER rating (Window Energy Rating) to show how well a window performs. It is also important to consider acoustic performance (especially for premises near roads or flight paths) and aesthetics; for instance, in conservation areas, double glazed sashes can be considered as well as secondary glazing. The UK market is characterised by strong competition and a fragmented supply structure. Lead-in times have lengthened and prices increased due to challenges with raw materials supply and it is unclear how long these issues will remain. The following notes include the supply and hang of doors and windows, complete with all frames, architraves, typical medium standard ironmongery set and appropriate finishes. Nicola Herring is UK insights and research lead, and James Garner is global head of data and insights and analytics at Gleeds.

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Doors, Windows & Ironmongery

Specified

1 Conservation rooflight
Keylite

John Alexander Carfrae here, just walking the ramparts, returned to haunt my big, beautiful purpose-designed Boroughmuir High School. For it has become a most unnatural block of flats! Yes, sir! Flat!: I say DO! I LOOK AMERICAN! I like these roof windows though. Had we these in 1914, just imagine the number of snooty-nosed orphans we could have crammed into our attics for forcible improvement! Solar opening? Fresh air keeps lethal miasma at bay! Electric blinds? Sunlight cleanses the soul! But what, pray, is an ‘expanding thermal collar’? Some kind of disciplinary tool?

2 Abingdon bespoke room divider
Draks

‘What you mean, this not wardrobe? Is good wardrobe! Door is nice! Very nice!’

‘Ivan Loadsamonivitch, sir: this is a Haringey studio flat. We just walked from the corridor into the main living area, and this, yes, magnificent Draks room divider is simply to conceal the sleeping area whenever your beautiful daughter, Vulga Parazitova, entertains her friends or uses the bijou kitchenette-cum-wetroom.’

‘Ah. Kakoy pozor. Shame. Well, I suppose you cannot expect much PCL for eighteen and something million English. Or nineteen? Nineteen. Is not St Petersberg that is for sure!’

3 Skyfold moveable wall
Style

‘Well yes, I know ballroom capacity is 850 seated, but we can still say it’s sold out at 350 if we have to. Why? Because it’s great press if we announce our big fancy Leicester Square thing’s completely sold out – and terrible press if we fizzle and die! What? Oh! I see what you mean! Skyfold, darling! Secret weapon! Flick of a switch, we just bring down this massive Skyfold acoustic moveable partition thingy and voila! “The Ballroom” becomes “Ballroom A”! This place is so new no-one will ever know the difference!’

4 Adaptable wall
Optima

‘Adaptability, girls and boys, is the first thing you gotta learn in business. And you failed! Why d’you think I asked you to work with these new adaptable wall partitions in the first place? Not for the good of my health!’

‘I’m sorry, Lord Sugar. We completely overlooked the easy installation, demountability and reconfigurability of the aluminium track and acoustic living wall, fabric, glazed and natural wood panel combinations, and no-one even thought about the concealed cabling and tech mount potential, and that is definitely why we lost the task.’
Velfac versatility: one glazing system, multiple specifications

With numerous considerations to satisfy on the widest range of different project types, windows must work hard. Velfac shows how to do it.

The increasing complexity underpinning many building projects – from ambitious design to challenging location – requires the tailored specification of high performance building products. This is especially true for glazing, where the same window system can be expected to deliver room-specific levels of insulation, opening function, security and ventilation provision while maintaining a coherent and positive aesthetic inside and out.

Versatility is fundamental to the success of Velfac composite glazing, which has established an impressive reputation for design flexibility without compromising performance. The slim Velfac frame combines timber and aluminium to create a ‘floating’ frame design that adds impact to any facade. Velfac windows are renowned for their uniform tightness across all units, whether double or triple glazed, fixed or opening, manually operated or motorised. Each such cavity can be divided with glazing bars – horizontal, vertical, cross or T-shaped – to support a specific design intent, again without compromising the uniformity of the external finish.

Facades can be further enhanced with creative use of frame finish, and especially with a combination of high impact external colour with a more neutral interior palette, especially for residential or educational settings. With Velfac, different frame finishes can be specified inside and out – the full RAL colour range is available in both matt and gloss powder coatings, with a textured or anodised finish also an option.

For more on Westwood Mews, see page 28. Right & above [Image 339x52 to 609x233]

Across the site we had to specify 14 variations of Velfac window units, in three different sizes, with a more neutral interior palette, especially for residential or educational settings. With Velfac, different frame finishes can be specified inside and out – the full RAL colour range is available in both matt and gloss powder coatings, with a textured or anodised finish also an option. Expertise is key to complex specification success. Our dedicated team of design consultants offers more than just standard interface details but can also work closely with architects to maximise the design potential of the Velfac system. Our in-house experts can even oversee the entire design process – a ‘no risk’ route to trouble-free installation.

Products in Practice March/April 2022

Velfac versatility: one glazing system, multiple specifications

With numerous considerations to satisfy on the widest range of different project types, windows must work hard. Velfac shows how to do it.

The increasing complexity underpinning many building projects – from ambitious design to challenging location – requires the tailored specification of high performance building products. This is especially true for glazing, where the same window system can be expected to deliver room-specific levels of insulation, opening function, security and ventilation provision while maintaining a coherent and positive aesthetic inside and out.

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Products in Practice March/April 2022
As long as the planning system fails to get a grip on live/work, the model – given new life through the pandemic – will continue to be elusive

Words: Josephine Smit

The 1990s was the decade that gave us the High Street and the Jurassic Park. In property development, it also saw the emergence of a way of combining home and work, so-called industrial or light industrial buildings and sites of Hackney and Deptford.

The live/work concept was based not on existing heritage, but on the idea of mixing different conducts as part of a residential home. It was more about the quality of housing than about how people will use it, says Jay. ‘I’d like to see policies to encourage spe- cialist forms of housing, but we need clearer guidance from a national perspective to do it.’

Policy change doesn’t happen fast. ‘While working from home is definitely happening, our planning system is not designed to help it,’ says Grant Leggett, director and head of the London office of planning consultant Boyer.

Another solution could be for developers to provide more local work hubs, similar to the co-working spaces or business suites in some upmarket city centre apartment schemes. ‘That doesn’t trouble local planning authorities, and could be a way of getting employment use for sites,’ says Leggett, adding, ‘The office mar- ket in some secondary locations is booming, so more local work is already a thing.’

He recognises that local halls present their two viable challenges for developers, but he sees the idea appealing to forward-thinking players. ‘A number of big developers are start- ing to look at bringing more housing use on sites that used to be industrial. They’re rising the bar, say, Leggett.’

Bigger is better

Housebuilder Barratt last year commissioned planning consultancy Lichfields and mar- ket researcher Savanta to ask people about home-working experiences and how they might translate into new homes. ‘It’s really failed on governance issues. In planning authorities outside London it wasn’t even a thing.’ But whereas in new homes has taken the form of a study or spare bedroom. ‘That’s live/work without a starchy definition,’ says Patel. ‘It became complicated, inflexible, there’s so much, she says, but fundamentally can be divid- ed into those with a single front door, a second “work” front door or a workspace a short distance from the home, such as in an outbuilding. ‘The idea is that developers want to operate within conventional space standards. “Consideration is being given to lifestyle but the emphasis is on an amending existing typol- ogies, rather than making bespoke sets.”’

PR senior partner Manisha Patel. The practice, which has long believed that it’s important to get fine- grained mixed-use across the board because it seems probable that the changes we’re seeing in our high streets and central business districts will be permanent.’

One aim is to start a conversation and grow awareness and it would be helpful for government to provide a steer in policy and guidance. And a word on the need for a more flexible approach to planning and employment. ‘Better to provide people with a space in which to work from home, was influenced by home-size and quality, with only half seeing their home was well-suited to working. It is 35% of students that live in a home that is “work from home friendly” with an additional room as dedicated office space, says the survey. July at the end of the pandemic, there have been shifts in the UK, with 64% of students saying they are looking at the possibility of working more from home, and 60% of students saying they would like to continue working from home as much as possible.

The survey also found that 75% of students are looking at the possibility of working more from home, and 60% of students said they would like to continue working from home as much as possible. The survey also found that 75% of students are looking at the possibility of working more from home, and 60% of students said they would like to continue working from home as much as possible. The survey also found that 75% of students are looking at the possibility of working more from home, and 60% of students said they would like to continue working from home as much as possible. The survey also found that 75% of students are looking at the possibility of working more from home, and 60% of students said they would like to continue working from home as much as possible.
Anvil metal cladding has something for every project

Anvil metal cladding comes in many guises, all with safety and performance at the forefront.

Designed for facades, Anvil metal cladding is a range of innovative aluminium rainscreen systems that allow precise and efficient installation, with perfect joint lines and accurate tolerances. More and more developments are calling for fast track construction techniques to improve build times and programmes. As well as strong demands for reduced build times, changes in building regulations now prohibit the use of combustible cladding on relevant buildings. Anvil metal panels are suitable for newbuilds and projects where high-rise buildings. Anvil metal cladding is the use of ‘combustible cladding’ on relevant designs and installation requirements.

Alongside the A1 pre-coated finish, Taylor Maxwell’s team can provide advice and guidance to help you select the appropriate format of expanded mesh or perforated panels. They can assist with advice regarding acoustic, light transmission and ventilation requirements and offer suggestions to suit individual budgets, designs and installation requirements.

Colours and finishes

Depending on your desired finish, Anvil metal panels can be produced in a range of colours, including standard RAL colours that are available in either smooth, satin or gloss finish. The mineral textures range provides an affordable solution to mimic the look of natural materials such as stone, similar to the anodised look PPC finishes which provide the material with a three-dimensional quality. It can be completely opaque when viewed from one direction and transparent when seen from an alternative angle. In addition to its aesthetic qualities, expanded mesh screens are extremely strong and flexible enough to be manipulated to achieve unusual and striking visual effects. Expanded mesh is available in a variety of weights and aperture sizes to suit different project design requirements.

Expanded mesh

Expanded mesh screens are extremely versatile, ideal for creating a contemporary facade, and offer an instant transformation on both refurbishments and new developments. Expanded mesh is created with zero waste and is therefore a good option for projects with a sustainable focus.

The cladding system is usually constructed from 3-5mm thick metal sheets, with the individual design of the panel being shaped by the embossing process create a much stronger work hardening properties that result from these methods. Expanded mesh screens are a critical factor for consideration in the design process.

Perforated metal

Perforated metal panels are produced by punching holes of different shapes and sizes into cold sheets of metal to create various patterns. This gives designers and architects the freedom to create a diverse range of patterns and designs. The amount and size of the perforations are a critical factor for consideration in the design process. We can supply round, square or special-shaped perforated systems as well as bespoke perforated or embossed patterns to suit your project design requirements. A range of tools can be used alongside punching machines to create different perforations or emboss patterns, which can be either convex or concave. The material work hardening properties that result from the embossing process create a much stronger panel. As well as these aesthetic properties, perforated panel systems supply an effective method of satisfying ventilation and solar shading requirements. Perforated metal panels are available in PPC, anodised or natural metal finishes.

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Anvil metal cladding has something for every project.
‘Architecture should be light, bright and joyful,’ according to Coffey Architects founder Phil Coffey. That’s true of Digi-Tech Factory, an eye-catching new teaching building by the practice for City College Norwich.

He hopes its delicate, white appearance, achieved with the use of an aluminium mesh screen as part of a double-skinned facade, will bring a ‘bit of delight’ not only to the 500 students who will study there but to those using the campus in general.

‘Architecture can lighten things up both experientially and aesthetically,’ he says, keen to encourage a sense of optimism.

Screens have become something of a regular motif in the practice’s work, most recently at the 22 Handyside Street offices at King’s Cross and in housing for London Square in Bermondsey.

All exemplify the practice’s long-held interest in the manipulation of natural light through depth and layering.

At Digi-Tech Factory, the screen plays important functional and aesthetic roles, with the control of light a key priority, especially for a building serving the college’s technology, engineering and design courses.

‘The building’s full of computers. Moderating light and glare is very important,’ says Coffey. Situated at the entrance to the City College Norwich campus, the 2877m² building needed to fulfil a secondary role as a welcoming public face. Alongside the black timber-clad Creative Arts Building – designed by BDP in 2013 – the distinctive whiteness of the Digi-Tech Factory certainly creates something of an ebony and ivory moment.

Coffey was keen to create a building that not only combined specialist teaching facilities and flexible, general working spaces but encouraged social interaction through the provision of both internal and external informal social spaces. The practice visited a number of higher education colleges with less institutional atmospheres as part of its research. The result was the idea of a factory, a narrative referenced externally with the saw-tooth roofline.

The site is bounded on the east by an impressive mature cedar tree. To the west is the Creative Arts Building. Accommodation is arranged on four levels, with a sheltered piazza for...
outdoor socialising formed by a lofty undercroft adjacent to the tree. Students pass through the undercroft to access the main entrance, with links at ground, first and second floor levels into the neighbouring Creative Arts Building.

The lofty, largely glazed ground floor accommodates teaching space for electronics, robotics and hardware. At the south of the building, corrugated aluminium panels by ArcelorMittal clad laboratory accommodation.

On the upper three floors, classrooms are arranged around a generous central corridor with break-out spaces for hot-desking and socialising. The top floor studios benefit from the extra height and light of the saw-tooth roof. Double-height light wells enable further visual transparency through the building.

“We worked the budget very hard, not in terms of expensive finishes, but in terms of the spaces the architecture creates,” says Coffey. Key to this is the effect of layering and perforation created by the double-sided facade, which allows the architect to deal with the light issues as well as creating what he describes as a playfulness through the treatment of the ‘shroud’ of the screen.

Coffey says the use of a double skin was a bold decision: ‘There’s twice the material to achieve the layered facade, so you have to get it right in terms of transparency, depth, composition and finish.’

The main structure is an exposed steel frame with a concrete floor deck. For the thermal barrier inner skin, the architect’s research into off-the-shelf carrier panel products used for large-scale industrial sheds led to a specification for Eurobond Rockspan, a lightweight composite steel-faced insulating panel with an average size of 750mm wide and 3500mm long. The panels cover approximately 70% of the inner facade layer, which is completed by judiciously placed curtain wall glazing, Kawneer’s AA100 product.

The outer layer is a screen of aluminium mesh. Raised one storey on steel columns, this gives a unifying appearance, covering approximately half of the glazed area as required – on the north elevation for example only 40% is covered by the mesh.

The screen – made by Imar through Just For A Cladding

A great deal of attention went into the bespoke design of the screen, in particular the size of the laser-cut perforations, with the

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<td>Detail section through mesh facade and cladding face</td>
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The architect conducted tests with varying sizes when viewed from various distances. The final design is an arrangement of 16mm perforations with a 1mm radius, with 6mm spacing. As well as their role as light screens, the perforations are conceived as a reference to binary code and historic computer tape.

The aluminium is polyester power coated in white RAL 9100. As well as being striking visually, the all-white colour of the facade has the advantage of being more forgiving of any potential inconsistencies. The interior is also largely white, with some flashes of yellow highlights.

The architect varied the distance between the two layers to get the lighting effect it wanted for each elevation – for example this ranged from 225mm for the north, south and west elevations to 750mm for the east. Where the screen is used to enclose the ground floor plaza and colonnade, the distance is respectively 12000mm and 2850mm.

Inside, the light is softened and diffused during the day, with large enough perforations to enable good views out. A night, the elevation is highlighted with illumination from spaces within the building. Features on the inner layer are exposed and visible through the screen, an approach carried through to the inside, where the structure and services are also exposed.

“We wanted to achieve something that looked veil-like from a distance and read more like a mesh closer up,” says Coffey.

Although half the proposed saw-tooths in the roofline were lost to maximise cost efficiency, the external effect still creates a distinctive skyline. Coffey specified that Digi-Tech Factory “look like a crafted building” while at the same time being “humble and straightforward.”

The project achieved BREEAM Excellent at Stage 1 design stage. Completed on a tight schedule of just two and a half years from tender to completion, despite the pandemic, it is the first to be completed as part of the government’s Town Deal programme, which part-funded it.

**Credits**

Client
City College Norwich

Architect
Coffey Architects

Interior fit out
UrbanXR

Contractor
RG Carter

Facade contractor
Varla Cladding

Planning consultant
LanPro

Cost consultant
Real Consulting

Structures
Clancy Consulting

MEP
Clear Consulting and Design

Landscape
LanPro

Arboriculturalist
AT Coombs

Acoustics
AD James Acoustics

Above The main entrance, with staircase up to first floor. The white theme continues inside, with light permeating down from rooflight slots.

**Right** The skin creates an even more ethereal effect by night.
RAK-Des is a new concept bathroom suite that pays tribute to the Bauhaus school by which it is inspired, the collection includes bowls and freestanding washbasins with the essential minimalist lines. The rectangular washbasins can be installed suspended, individually, or combined with the RAK-Joy vanities.
Moving on: how we get around

From debate on how to handle the demands of cars, via elegant bridges and through a few stations to White Hart Lane, Michelle Woodger comments on a journey across recent infrastructure

To access site was increasingly problematic. The resulting bridge is six times 5m and lever spans over a 6m drop with a 40m gap between them. There is a novelty to this bridge – the idea that the two landmasses are reaching out towards each other across a bustling romantic sea, in keeping with the setting, indulging with Arthurian legend and Victorians. Beyond that, however, is a structural advantage: cantilever construction is built in segments without formwork required and is more stable over short distances. Upper and lower abutments anchor the cantilevers into the rocks at a depth of 5m and do not disrupt the site archaeology. Local Pyrmont brick saw its saw tooth masonry. Our Tamar rail bridge now has a Cornish rival in terms of elegant engineering. To shamelessly use Brunel himself as a bridging device – Paddington Station is the site of a significant redevelopment on account of the Elizabeth Line (Crossrail) – Raffaella Rospo, partner associate and project lead architect at Weston Williamson + Partners, next takes us through the practice’s achievements here.

To keep the historic context, existing arches were opened to improve pedestrian flows and a parallel experience to the Victorian-era passengers who would have approached it in a similar way. The designers also convinced the relevant authorities to pedestrianise a road – no mean feat in central London. A well-vetted and studied underground station improves the commuter experience; the sky canopy connects the station to the public realm and creates a parallel experience to the Victorian-era passengers who would have approached it in a similar way. The designers also convinced the relevant authorities to pedestrianise a road – no mean feat in central London. A well-vetted and studied underground station improves the commuter experience; the sky canopy connects the station to the public realm and creates a parallel experience to the Victorian-era passengers who would have approached it in a similar way. The designers also convinced the relevant authorities to pedestrianise a road – no mean feat in central London. A well-vetted and studied underground station improves the commuter experience; the sky canopy connects the station to the public realm and creates a parallel experience to the Victorian-era passengers who would have approached it in a similar way. The designers also convinced the relevant authorities to pedestrianise a road – no mean feat in central London.

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How do you make your design for a single house special? PiP webinar panellists discuss sustainability, the impact of lighting, heritage and context. Michèle Woog reports

From the Villa Farnese to the Farmworth House, private homes have offered inspiration to architects for centuries. Such a house in the city founds its way to the high street, such architecture parades into our own domestic extensions. Shining a light on house design, whereas lighting designers imagine how the rendering for a comfortable environment. The indices which can be used to measure colour and complexities of LED selection, the effects of design, explaining the technical considerations design guide to transforming the home, begins. PiP editor Jan-Carlos Kucharek, hosting this latest webinar on one-off house design.

Dennis Pederesen, author of Inspired by Light: A Colour specialist at the Paint and Paper Storey uses ample illustrations to elucidate: Sally Storey’s new book, inspired by Light. How do you make your design for a single house special? PiP webinar panellists discuss sustainability, the impact of lighting, heritage and context. Michèle Woog reports

GBOLADE DESIGN STUDIO

Above: Gbolade Design Studio’s r-House was inspired by Moroccan riad courtyard houses. FACILITIES: Tony Tonkin’s Water Tower has a clock that addresses the village across the field. The Croft’ in Smethwick, a ward with high social housing facing traditional construction. PiP webinar panellists discuss sustainability, the impact of lighting, heritage and context. Michèle Woog reports

Tomkinson Liu’s Water Tower has a clock that addresses the village across the field. The Croft’ in Smethwick, a ward with high social housing facing traditional construction. PiP webinar panellists discuss sustainability, the impact of lighting, heritage and context. Michèle Woog reports

Our webinar speakers clockwise from above: Tara Gbolade, Mike Tonkin and Andrew Brown.

One-off house design

How do you make your design for a single house special? PiP webinar panellists discuss sustainability, the impact of lighting, heritage and context. Michèle Woog reports

formulating paint, and colour consultancy in historic interiors. He observes that many current domestic trends -- such as colour drenching -- when an entire room, architects, ceiling and walls painted in one dramatic colour -- in fact have historic precedents: colour drenching was a Germanic practice. He also notes a move away from colour drenching to more story shades within a natural colour palette. People are becoming more adventurous, he notes, with some social infection.

Tonkin’s Water Tower by Tonkin Liu forms the basis of co-founder Mike Tonkin’s presentation. Sited in rural Norfolk, among medieval ruins and barley fields, the house is simple, but highly considered, it is an innovative eco-home constructed from industrial steel truss. The timber stair tower houses the stairs and lift up to the new roof. The building acts like an instrument by which you appreciate the old house are cellular bedrooms, working with what was there. Linking old and new is a glass space. The house sits comfortably within the topography and the forest surroundings. As a sense of restraint into the landscape does that talking.

Vario by Velux director Frederik Gierding rounds things off with a case study of his own home, a 1905 Dutch single-family house renovation in which Vario – the bespoke glazing products division of Velux – was used. Designed by an apprentice of Arne Jacobsen, the home’s many levels present numerous opportunities for natural light to be incorporated and maximised in open-plan living spaces. The glazing also improved energy efficiency and ventilation, capitalising on a well-designed planned orientation. The confidence to use the glazing in his own home is testimony to his faith in the form of a cantilevered barn-like volume. The stone cladding was reused as a solid plinth. The plan is simple on the ground floor is generous, utility and plant; above are social spaces and in the old house are cellular bedrooms, working with what was there. Linking old and new is a glass space. The house sits comfortably within the topography and the forest surroundings. As a sense of restraint into the landscape does that talking.

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Live/work reaches its apogee in Flower Michelin’s elegant rebuild of a London home that includes a “weapons grade” composer’s studio in the newly-dug basement.

Words: Jan-Carlos Kucharek
Photographs: Ståle Eriksen

If Sir John Soane were a Bond villain, then Arch House would be his pied-à-terre. The radical refurbishment of a south London townhouse, carried out by architect Flower Michelin for a movie composer and his family, required complete demolition of the building behind its Victorian facades and the digging out of a new basement to contain the composer’s new work studio, playroom and ‘guest’ WC – though those simple appellations do little justice to the actual nature of the subterranean spaces created.

At ground and upper levels, the firm was charged with creating spaces that had the requisite level of formality for entertaining industry clients and guests, while at the same time having the sense of domesticity that would make it an everyday functional and comfortable home for the family. This the firm achieved via the clever insertion of a ‘Club Room’ space that has not only broken down the scale of the ground floor areas that it connects to, but whose nature emulates the Soanian spatial ‘flow’; a caesura of outrageous opulence in an otherwise relaxed, if highly considered, set of spaces.

Faced with a complete refurb, which would involve interior designers as well as themselves, Flower Michelin stuck to simple themes and spatial moves, which would allow others – client included – to intervene on the home while the architect maintained control of the bigger story and the small details that run throughout.

And, according to Flower Michelin associate Ben Ellis, it was the two arches that appeared in the fanlight of the home’s entrance that proved the inspiration for almost everything that occurs behind it. Past the arch of the hallway leading to the large kitchen diner at the back of the house are seen the three large brick arches of its garden elevation, but on the way to that view are clues in the details that speak of the same provenance – from the fluted panels of cast plaster that form the wall and dado-height inner lining to the hallway, and catch the light in...
massive ducts and low velocity air flows fed and deadened sound was achieved, says Ellis, with build-up, within which the timber-frame room wallpaper, is a distraction for the main event lain, and hung with hand-stitched de Gournay room of black marble and weighty white porcelain lustrous, duck egg lacquer work; even the flow wall and fluted inner door leaf hand-painted in counterpointed by its ostentation, with every fast room. With doors on three sides and able critical open plan area, ultimately giving rise to of the house. The client had eschewed the typ- quietly luxurious, living room facing the front of the family home above it. •

Down a timber stair, the ‘guest WC’, a throne but its ostentation, with every fast room. With doors on three sides and able massive ducts and low velocity air flows fed and extracted via a bespoke coffered ceiling. With a huge, drop-down cinema screen running along one wall served by a Dolby Atmos system, all other auditory life is dampened via the studio’s huge, drop-down cinema screen running along one wall and fluted inner door leaf hand-painted in a special way, to the Cremo Delicato and Grey Monopoly, Balineum Sanitaryware / Litespeed 202 Design Kitchen / Joinery / Clarksons Builders Ltd / Alfred Newall De Gournay Ironmongery: Danico and Charles Edwards Timber flooring Desmond & Sons Acoustic consultant: Equippd Audio visual consultant: Structural engineer: Blue Engineering Interior designer: Salvesen Graham Flower Michelin Architects


'Hello, and welcome to The Great British Dig, where we rip up punters’ gardens for a fortune about. This week we’re in Oswaldtwistle, in the grounds of Stockley’s Sweets Peardrop Academy, where pupils playing netball on a soggy Tuesday recently unearthed this amazing ancient vinyl sheet. The mysterious forms drawn on it are even puzzling teachers, so we’ve brought in experts from the Gettyvera Games Institute to tell us what they might mean – though they think they’ve called ‘tile’ lines. As for the vinyl, looks good as new doesn’t it?’

‘Well, to be honest with you, I’ve never had a dream Neo - real or otherwise! Larry Morpheus, I’ve never had unwanted blue pills. Fabulous functional design, from a Matrix user’s POV at least. If I actually believed in dreams and whatnot, my dream D-Neo would probably be a lot like this.’

‘Have you ever had a dream Neo that you felt was just too good to be true?’

‘Yes, I’ve had a dream Neo that I felt was just too good to be true!’

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Forbo Sportsline flooring

‘So hey everybody, welcome back to my channel! Guys, I’ve got to tell you I just love LOVE this new shopping destination here in South Korea, and Covid or no Covid disclosure: I have no Covid! I just had to be here because we are amazing, and will you look at that paving! There’s metal effect “Relate Flame” in “Veil”, stone effect “Portraits” in “Versilia”, “Shades of Italy” in Intrarci, and cement effect “Vino” in “Masurca”. That’s 246,000cm² of very cool resin and cement! This is a sponsored post, guys, don’t forget to like and share!’
BO RULES WALLPAPER

This is a modular range of wallpaper that avoids the need for registration and exploits the potential of juxtaposing decorative motifs. The themes and colours have been carefully orchestrated and are enabled us to combine diverse segments to create intriguing and dynamic feature walls. The BO Rules Wallpaper provided cost effective and creative build backgrounds for atrium seating at the award winning Bin Plaza restaurant and bar at Heathrow Airport. Such well designed simple interior products enable us to balance the cost and quality of our schemes and meet our clients’ aspirations.

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SAFE BET

Los Vegas might be bang in the middle of the Nevada desert, but that doesn’t mean it can’t be sustainable, right? Digital Peri-developer Cityzenith announced that it has completed its ‘base twin’ model of the city and is now creating on with Phase 2. The aim is to help building owners – read ‘Casinos’ – transform ‘buildings, air quality, noise pollution, water management and emissions’, aiming to make the city net-zero. But last time I was in Sin City, Britney was packing in the jet set for her nightly residency, the Bellagio's Swirled swimming ballet was firing off every 20 mins and the city was drowning in lights, outside and in, 24/7. Good luck with that.

CRAPS TO CRAPPER

When it’s 5am and you’ve bet your house on a throw of the dice, the proximity of a well-functioning WC might be just the ticket. Luckily, Thomas Crapper has had our backsides since 1900 when his company patented the ‘Valveless Waste Freewaster’, precursor to modern syphonic flushing. Since then, Crapper’s gone through several hands, with latest owner Hartford Holdings wanting to delve into luxury sinks on the strength of the brand. Should be a shoo-in; it’s been on lips in polite circles since it famously did the plumbing at Sandringham in 1886. Winning four warrants and proving itself fully deserving of the Royal ‘We’.

BOVINE ISSUE

Forget Andrea Arnold's new film 'Cows', where life is viewed through the eyes of a Friesian called Luma, this is GLOBAL. Prince Charles has teamed up with the RCA's Tony Jew to announce the TerraCarta Design Lab, an RCA student-led initiative aiming to deal with planetary challenges through innovative design. TheREAM being modelled as part of EHRH Sustainable Markets Initiative is ZELP, a wearable device for cattle to neutralise methane emissions in real time. Says student Francois Henry: ‘5.8 billion cattle, each exhaling 400 litres of methane per day, are one of the single scaling causes of global warming’ (sic). Seems it’s not only Luma who smells of BS...

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Dare to dream and we’ll help it happen.