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Design for Education & Student Accommodation Supplement

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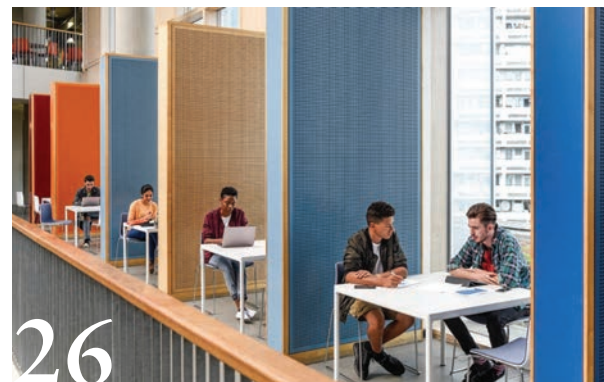
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FROM THE EDITOR



The education sector, like the railways and NHS, is one of the main planks that keeps our society afloat. Arguably, it's the most important, training our future adults in a new array of technology focused mental weaponry to cope with the coming decades. One of those weapons being how to remain a viable productivity 'unit,' in competition with AI rivals soon to flood into various marketplaces, while you grapple with the realities of unaffordable 21st century life.

I don't envy the kids, in short. They need more support, and by that I mean funding of the education sector in general. However, MPs might well think they're the last striking professionals that they're likely to give in to, as nurses get more headlines. They announce a pay offer, knowing full well that teachers won't be able to afford to live with it as costs rise left, right and centre.

The strategically important place education holds in the UK is why the strikes that have recently bedevilled the sector are particularly difficult to deal with. It's also why it's a sector in which the staff wield so much power to disrupt things.

They not only disrupt education, already hampered post-pandemic, but they also cause issues for parents with their own working schedules, as kids off school means parents often can't work.

But arguably what disrupts kids' lives in school even more, is buildings which are not fit for purpose, or not even safe.

Surveys of the sector over the years repetitively show that repair needs are consistently huge – the most recent in 2022 showed that 90% of the 20,000 buildings surveyed required urgent maintenance to one aspect. The Government has long since binned the Building Schools for the Future campaign to create new schools, preferring a more austerity-friendly 'make do and mend' approach, with piecemeal repair programmes.

Last year, it announced that there would be "transformative" new buildings from 239 school renovation projects, to add to 161 projects previously green lighted in the 500-scheme School Rebuilding Programme. This also includes making buildings 'net zero in operation' apparently. The Government is continuing to throw serious money into the repair black hole (over £13bn since 2015), but 500 projects is a drop in the ocean if the 90% findings on repair needs in 2022 are borne out across the nation's 32,000 schools.

Our news report in this supplement shows the pretty alarming consequences of failing to instigate a proper strategy for dangerous buildings, with outdated lightweight RAAC concrete roofs still in existence across the sector.

It's fairly simple, divert money to invest properly in our future, including the buildings they are expected to learn in. Maybe such an explicit sign of valuing education might help to prevent future damaging strikes too.

James Parker, Editor



ON THE COVER...

Designed by FCBStudios Belfast's Ulster University boasts three interconnected buildings and connects to the university's existing Schools of Art and Architecture, providing an educational hub for 16,000 students.

Cover image © Donal McCann

For the full report on this project, go to page 12

INFANT SCHOOL

NVB Architects design inspiring infant school buildings in Swindon



NVB Architects have designed a building and outdoor spaces centred around learning for Royal Wootton Bassett Infant School in Swindon, Wiltshire.

The brief sought to replace life-expired buildings with a new teaching block, library, and play spaces for pupils aged four to seven. The school's ethos, 'Learning is Fun,' informed the architects' response to develop the idea that the buildings and landscape should provide a "practical, dynamic, and joyful backdrop to learning."

The site is steeply sloping from north to south and so the design developed as

two connected buildings accessed via an arrangement of bridges from the upper playground level. These bridges connect the main school, new classrooms and an elevated library reminiscent of a tree house.

The principal block is carefully crafted with two double pitched roofs running perpendicular to the sloping site creating a well-proportioned elevation to the high street while protecting the school boundary. The building houses four classrooms, cloakrooms, WCs and SEN support rooms.

The second building is a raised timber library or 'tree house' with a sun deck reached via a jungle-like bridge with views over the landscape. The upper playground and timber library are reached from an access deck running the full length of the building, with views into the canopy of a grand existing oak tree.

The practice's architectural and landscape design expertise made use of the sloping land by integrating a soft landscaped amphitheatre, set into the hillside contours, providing a new place for play and whole school gatherings.

STUDENT ACCOMMODATION

Maccreeanor Lavington wins approval for Elephant & Castle student accommodation

Maccreeanor Lavington's design for a student accommodation building in Elephant & Castle has been awarded planning permission. The proposed block – for the student housing company Alumno Group – will provide up to 244 student bedrooms over 24 storeys with two staircases and 67 m² of commercial spaces at ground floor level.

The scheme sits on a “challenging” vacant triangle of land at the junction of Rockingham and Tiverton Street and includes three of the adjacent railway viaduct arches in the London Borough of Southwark – a key component of the design.

The single tower has a slim profile, incorporating high quality materials and low-level green walling, which would have a positive effect on the surrounding properties' outlook.

The first, second and third floor levels are a larger footprint than the ground and mezzanine levels, cantilevering beyond the



two base storeys on the southwest and northwest frontages.

The 19 uppermost storeys are larger still, cantilevering beyond the base five storeys on the southern corner and along the east (Low Line) frontage. Glazed brick frontages are provided at ground and mezzanine levels. The upper



22 storeys are clad predominantly in vertically bonded red brickwork, complemented by white brickwork. Windows and doors are framed in bronze-effect metal.

It is hoped that the brownfield constrained site will help optimise the wider housing delivery targets in the borough.

RAAC CONCRETE

Report finds RAAC roofs liable to collapse in UK schools

A report released by ITV News in March concluded that reinforced roofs made from lightweight Reinforced Autoclaved Aerated Concrete installed in schools between the 1960s and 1980s are now in danger of collapsing.

The report covered 68 schools, and was the result of a freedom of information request to 5,882 English schools, which also revealed that 1,466 schools did not know if they had RAAC or not. The roofing industry issued a national warning after an RAAC roof collapsed

at a primary school in Kent in 2018, and the Department for Education published a document in December 2022 that stated RAAC panels “increase the risk of structural failure, which can be gradual or sudden with no warning.”

Dampness increase the risk of collapse due to corroding the steel reinforcement, and poor quality control of construction using RAAC in the 1960s and 1980s has made the possibility of leaks more likely. This form of precast concrete was frequently used in public sector buildings

in the UK from the mid-1950s to the mid-1990s, but is less durable than traditional concrete and has a shelf-life estimated to be around 30 years, according to the Standing Committee on Structural Safety.

The Department for Education published guidance for schools' estates departments in December 2022 for identifying RAAC in their buildings, and how to seek specialist advice to assess it, as well as how to develop management plans to address the problem.

The DfE emailed school heads in February regarding surveying their schools, and the National Association of Head Teachers is urging the Department to take “urgent action to ensure that checks are carried out in every single school where the use of RAAC is identified.”

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COMMENT



Dialogue by design

Oliver Moore of Design Engine Architects looks at how the design of Sixth Forms is evolving to harness the ability of non-hierarchical classrooms to foster more communal dialogue and learning

Dialogue is fundamental to the way that Design Engine Architects approach the design process. As designers we will seek to develop a response to our client's brief through a structured series of conversations with project stakeholders, including the eventual users of the building. The benefit of investing time in this early stage is a resultant design based upon a better understanding of those end users' values; against which the completed building's performance will be judged and its success appraised.

There is a parallel between this dialogic approach to design and a trend observed among our education clients. Increasingly, UK schools are aiming to teach at Sixth Form level in a way that supports students' learning through promoting discussion and the collective exploration of ideas. 'Non-hierarchical' classroom design seeks to create spaces in which teachers sit alongside members of the class, who all contribute and share responsibility for the learning that takes place.

This facilitates a pedagogy which is believed to result in a deeper level of engagement and appreciation of the content matter. It is an approach which builds on the legacy of US philanthropist Edward Harkness, who funded the development of a radical student-centred method of learning in New Hampshire during the 1930s. The hallmark of this method was collective discussion centred around an oval central table, which became known as the 'Harkness' table.

There are challenges to designing space that facilitates a 'Harkness method' of teaching and learning. The first relates to classroom size. As a practice we find that much of our work within the schools sector is for independent school clients, for whom the typical teaching group size is around 12 pupils, a number more conducive to enabling this group discussion type of learning.

Class sizes do vary, up to a maximum of around 16, and so the dimensions of the classroom are sized accordingly. This means there is a need for flexibility of layout and format within this footprint – provided by the modular nature of the furniture. For instance, desks can be nested centrally to form a polygonal version of the oval Harkness table. They can then be flip-folded to be stowed at the classroom edge or in cupboards, along with any surplus stackable chairs. This allows the classroom capacity to shrink or grow to

meet requirements, while allowing for a variety of desking layouts to suit the desired teaching format.

Berkhamsted School

While the Harkness table is a key feature of our classroom designs developed for a new Sixth Form centre at Berkhamsted School, there is also value the ability to move focus away from the table, in support of the central dialogue. For instance, participants may wish to introduce content for discussion via wall-mounted screens. Integrated IT connectivity solutions can allow both students and the teacher/facilitator to connect their devices wirelessly to one or both of the dual screens either side of the classroom, further dissolving the notion of a front/back, or singular spatial focus for the space.



Classroom interior upper floor at Berkhamsted Sixth Form
Design Engine Architects



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Artist impression of approach to Berkhamsted Sixth Form
Design Engine Architects – Image © iCreate

The ability to communally record ideas, discussion and thoughts associated with the learning activity using writing is also important. At Berkhamsted, the specification developed includes a floor to ceiling, magnetic and writable wall surface. These walls feature a back-painted glass finish which provides durability, resilience and ease of cleaning. The writeable surface is provided on two opposite sides of the classroom. This creates a dynamic space for creating and recording content, which is 'agile' to inputs from any group participant wherever they are in the room.

When the focus of the lesson is on discussion, the acoustic performance of the room is, naturally, key. Control within the space can be achieved in a number of ways. For instance, where wall space is at a premium, by mounting a high-level frieze of acoustic-absorbent material. It means that this essential, but permeable and less durable, material finish is mounted out of reach, reducing the risk of damage from impact and wear at the occupier level. In other areas we instead can conceal acoustic-absorbent material behind timber slats, allowing the noise to pass through a more resistant finish, while also providing a decorative and attractive wall surface.

We have also explored more nuanced spatial effects that can support the desired functionality of a classroom. An example is in articulating the external roof forms to provide central height and volume to the classrooms. When formed using a timber CLT construction, the ceiling expresses a distinctive finish, and draws attention and focus into the centre of a space, rather than the periphery. This central volume gives credence and gravitas to the voices within the room, rather than the information presented around the exterior.

At Berkhamsted, each classroom typically shares aspect onto an adjoining common study area, separated by acoustically-rated glass walls to permit views between the spaces. The intent is to promote

the discourse within the classroom as a model for behaviour to those inhabiting the non-timetabled study spaces beyond. This feature is also intended to signpost vacant classrooms to encourage independent group use between structured lessons.

In addition to creating positive learning experiences, our designs also seek wider benefits in terms of students' personal development. The school was keen to model interiors upon a more 'grown-up' aesthetic, familiarising students with scale more akin to professional work and higher education study spaces. This encourages students to assume greater responsibility for their own learning, developing aptitudes such as resilience, entrepreneurship and independence; key skills for the world beyond education.

Indeed, entrepreneurship is an increasing prominent feature within the Sixth Form demographic. One aspect of the brief emerging from consultations at Berkhamsted School was to define a dedicated space within the floor plan for students who are actively working alongside their studies. This space is conceived to also be available as coworking space for recent graduates based in the local area. As such it offers an aspirational view into the world of work for current pupils, while presenting opportunities for mentorship and interactions with industry contacts alongside the Sixth Form curriculum. This brings yet another complementary strand of dialogue to further enrich learning spaces within the building.

Conclusion

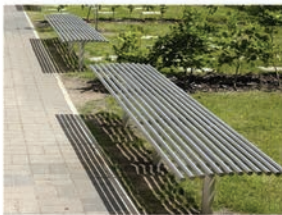
As construction of the new Berkhamsted School Sixth Form building moves towards its opening in 2024, we are looking forward to seeing how the building will hopefully provide space to support the education of students in the manner to become independent, confident, open and collaborative learners. Skills that will effectively equip them to flourish in the next steps of their lifelong learning, whether entering higher education, or starting up their own business, with all the challenges and opportunity these choices bring.

Oliver Moore is senior associate at Design Engine Architects

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ULSTER UNIVERSITY BELFAST CAMPUS
NORTHERN IRELAND

A centre of learning

Ulster University's new campus is a significant and complex achievement that knits a formerly suburban education provision into a busy part of Belfast's city centre. Feilden Clegg Bradley Studios describes the scheme to *ADF's* Tom Boddy

The historic and newly vibrant Cathedral Quarter in Belfast has recently become home to Ulster University's expanded city campus, situated beside Saint Anne's Cathedral.

In a deliberate effort to benefit both the city and its educational institutions by bringing them closer to the centre of Belfast, the University's 1970s suburban campus in Jordanstown has been strategically relocated to the capital.

The new 75,000 m² development boasts three interconnected buildings that host four faculties. These include Computing, Engineering and the Built Environment; Life and Health Sciences; Arts, Humanities and Social Sciences; and the Ulster University Business School.

Designed by Feilden Clegg Bradley Studios (FCBStudios), it connects to the university's existing Schools of Art and Architecture, providing an educational hub for 16,000 students.

FCBStudios, in collaboration with McAdam Design, won the commission for the design competition in 2010 and led consultations with the university and community stakeholders to bring the project to life. The project reached practical completion in mid 2022, and was fully occupied by the university by Q3.

The logistical challenge of moving 16,000 students and staff "relates to the management of immense detail," explains Sam Tyler, partner at FCBStudios. From thousands of pieces of specialist lab equipment to storage for academic books, every detail had to be meticulously co-ordinated, room by room.

A significant move

Ulster University is a multi-campus institution in Northern Ireland with locations in Coleraine, Derry/Londonderry, Jordanstown, and Belfast. The main sites were originally in Jordanstown and Coleraine, both considerably less urbanised areas. According to Tyler, this pattern was typical of the late 1960s in Northern Ireland, and relates to the political turmoil of the period and the "exertion of control" needed.

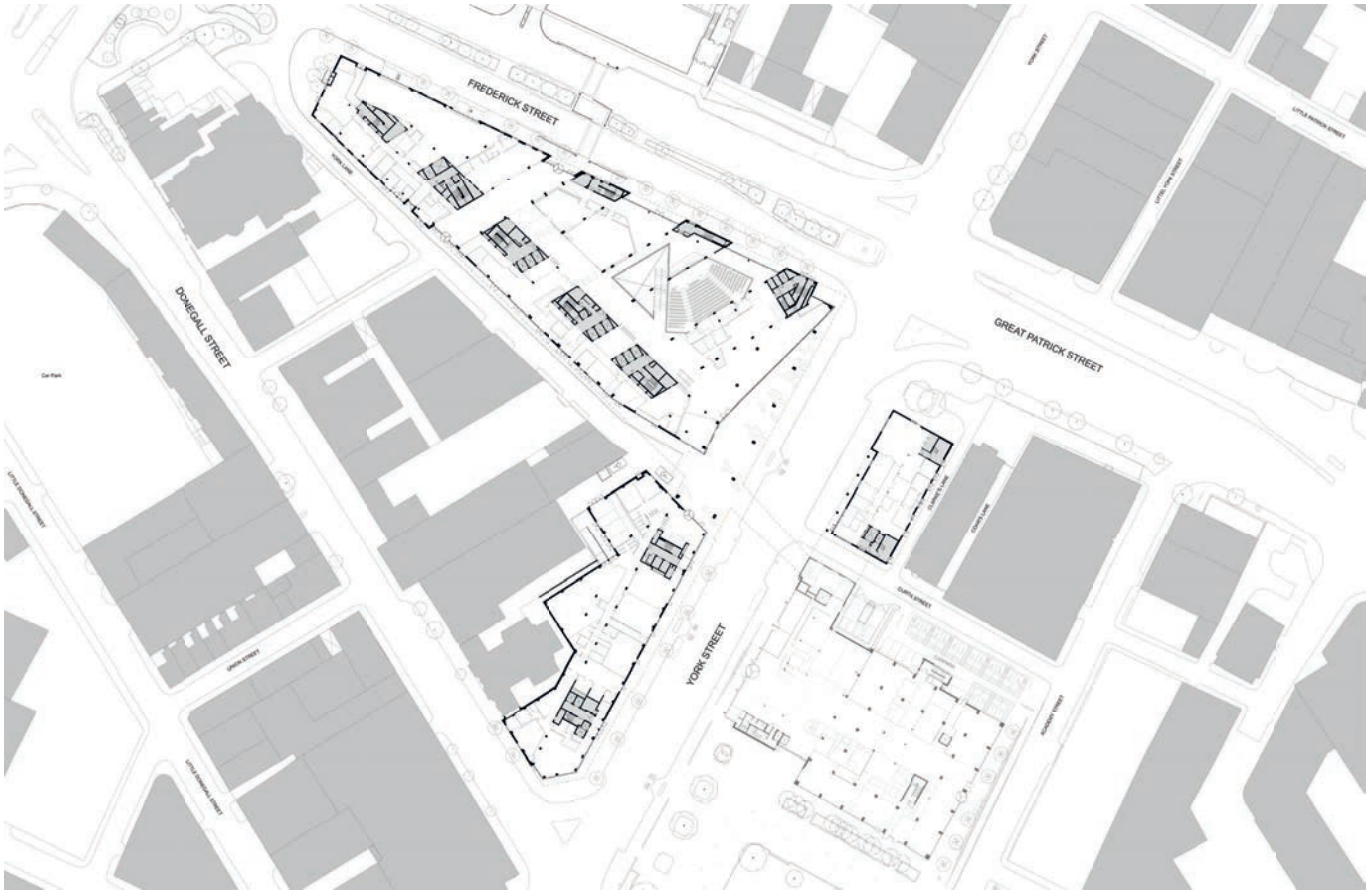
Tyler says Belfast has suffered decades of "anaemic" levels of investment, with the Troubles having a significant impact on the city's growth and development. Not only that, but deindustrialisation in the city hasn't been an easy process, with high levels of unemployment and economic stagnation.

More recently, however, Belfast has undergone significant change, and is a vibrant and dynamic city with a thriving tech sector and a growing tourism industry. The university's new campus is indicative of this process of regeneration.

The campus sits in the north of the city centre, at an interface between the harbour, city centre and residential neighbourhoods. To the north west of the site, divided communities live side by side, in areas where higher education is not "commonly embraced," states Tyler.

The shifting of the campus to this area represents an important focus on improving access to higher education for these communities. The move reflects the university's commitment to providing opportunities for all students, regardless of background, and the institution's

The campus sits in the north of the city, at an interface between the harbour, city centre and residential neighbourhoods



A NEW LEGACY

The campus is located at an intersection of three streets with distinct histories: Donegall Street (one of Belfast's oldest), York Street (Victorian) and Frederick Street (20th century)

desire to contribute positively to Northern Ireland's future.

Augmenting the student presence with Queens University located on the south side of the city, the influx of students to the new campus is "already having a dramatic" impact on the local economy, contributing to greater occupation of the centre and steady local investment, according to Tyler. The city is seeing a surge in the establishment of small local businesses such as bakeries and cafes, as well as large-scale student housing developments.

Design development & form

Tyler, along with fellow FCBSTudios partners Keith Bradley and Alex Whitbread, assessed various variations on the brief during RIBA Ssstage 1. These options were then presented to the University Council to ensure that the design met functional and aesthetic requirements. Although several options were considered, the final design "closely resembled the original competition proposal," says Tyler.

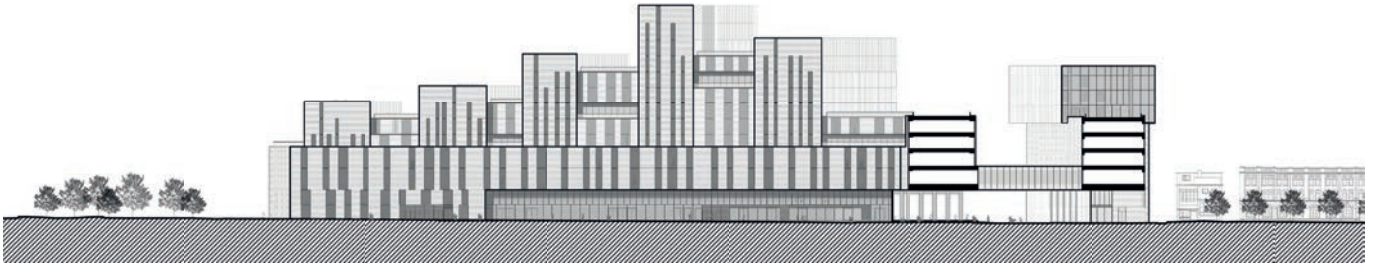
Due to the sheer scale and ambition of the project, the team reviewed examples of

large urban universities from the US, UK, and Europe to inform their work.

In terms of the local infrastructure, the site presented an "adverse urban context" that FCBSTudios saw as both a challenge and an opportunity. The campus is located at an intersection of three streets with distinct histories: Donegall Street – one of the oldest planned streets in Belfast, York Street of the Victorian era, and Frederick Street – what Tyler describes as a "monstrous" road built during the 20th century when spending on car infrastructure was at its peak.

The building proposals needed to manage the present condition of the car-dominated York Street and Frederick Street, while "anticipating a city that could be transformed by a modal shift towards active travel," said the architects.

From the outset, to combat this precedent, the designers looked to create a more pedestrian-focused area in the project. FCBSTudios have achieved this by designing a series of activated frontages that bring vibrancy at street level. Here are located various activities



such as the Centre for Sustainable Technologies, teaching kitchens, catering outlets, small shops, classrooms, gallery displays and engineering workshops, all showcase the campus's diverse educational opportunities.

The campus's central location also meant that the project faced several height restrictions and density challenges, with the planners being initially worried about changes in scale being proposed by the project. But thanks to FCBStudios' "careful manipulation" of its form, the building reflects various existing height datums in its four volumes, while going beyond them in other areas.

The architects established a "vertical campus" concept with the client to promote "natural interaction" between its various faculties. Height has, however, been very contentious in the city over recent decades. The architects promoted the concept that the campus could "stitch" into datums in historically sensitive locations while also celebrating its height. This allows the civic institution to take its "rightful place" on the skyline as a

significant piece of the cityscape, reflecting its importance to Belfast.

As well as the building's form deriving from the local context and building height, its largely glazed facades prioritise natural light. Deep-planned areas, punctuated by glazed atria, were adopted – creating good form factor in order to reduce thermal losses.

The "sculptural articulation" of the project's mass has also been influenced by the surrounding Antrim Hills and the Belfast Lough which can be viewed from the north facade. The lough is "one of the great natural features in Ireland" according to Tyler, yet its presence next to the city is often overlooked. FCBStudios were determined to connect the occupants of the building to this "spectacular natural environment." The glazing frames views of the landscape, Tyler adds, creating "one of the great pleasures of the campus's experience".

The campus' facades use white brick and red multi as their primary cladding material, reflecting the historic buildings found on York Street – clad in masonry of

The campus's major circulation routes act as a connecting spine, facilitating easy movement throughout the building



BRIDGES

The four separate buildings are linked by three bridges which also reconnect York Lane to York Street

similar tones. According to Tyler, it is the “natural choice for the largest industrial city in Ireland.”

On the upper levels, gable ends of brick give way to long flanking walls clad in glass. This reduces the impact of the building’s mass and reflects the “dramatic skies which are frequently present in Northern Ireland,” adds the architect.

Structural details

As a way of providing long term flexibility for future change in this busy location, the building is based on a 12 x 6 metre clear span RC structure in which floor plates can be used for offices, classrooms, labs, and “social learning environments.”

The four separate component buildings are linked by three bridges which reconnect York Lane to York Street. The main pedestrian bridge, spanning York Street, is supported by a three-storey bridge over York Lane, achieved using vierendeel and warren trusses that interconnect and support each other.

This structural feat is dramatically displayed on level two, where a massive

warren steel truss is expressed on one side of a “social learning gallery” adjacent to the library. This display of engineering “highlights the intricate interplay between form and function in the building’s design,” say the architects.

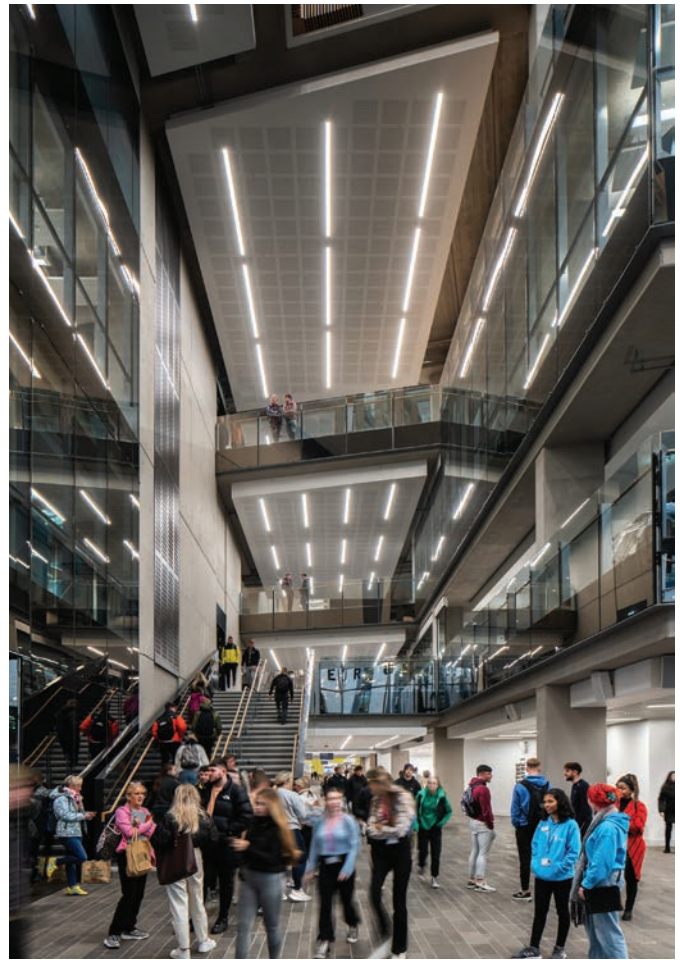
The new art school building is designed with an impressive feature at the upper three storeys known as ‘The Lantern’. This triple height glazed volume is perched on top of a six storey brick plinth and houses a painting and sculpture studio.

These upper levels cantilever 6 to 9 metres from the main structure. Again, this is achieved through the use of an internally exposed warren truss that supports the extended floor slabs. “We worked with the structural engineers to refine the truss members, integrating them into the industrial aesthetic of the workshops and framing views to the lough and historic shipyards,” says Tyler.

Programme & functionality

Originally the project was going to house six faculties, but this was consolidated down to four during the course of the build:





The university established a 'vertical campus' to promote natural interaction among its various faculties

Computing, Engineering and the Built Environment; Life and Health Sciences; Arts, Humanities and Social Sciences; and the Ulster University Business School.

As well as ensuring each faculty includes the “necessary functional adjacencies” to formal research, study and teaching areas, the design also offers a diverse range of social learning hubs dispersed throughout the buildings. Other areas include spaces for quiet personal work and focused group learning, with “IT-rich” collaborative study zones, informally arranged soft seating, and breakout areas for impromptu events.

Throughout the building, innovative design solutions cater to the needs of an educational environment. On the upper levels, movable folding partitions subdivide the larger classrooms while meeting the acoustic requirements. These areas also feature simple, multi-purpose desks that provide flexibility and can adapt to different learning and teaching approaches.

At the lower levels, the development boasts two “state-of-the-art” lecture theatres with capacities of 350 and 250 people. Located down through two basement levels, the theatres are connected by a “generous” two storey break-out area that doubles up as an event space and can accommodate overflow from both halls.

The significant amounts of break-out space within the buildings help orient users while promoting gathering and interaction. In addition to the triple-height entrance and ‘urban porch’ on York Street, the design incorporates indoor ‘plaza’-like spaces on level 3. The north-facing atria serve to bring natural light deep into the building.

The campus’s major circulation routes act as a connecting spine, linking the break-out spaces and facilitating easy movement throughout the building. Accessed from these circulation spines are the flexible 12 x 6 metre grid floor plates. This design approach allows the spaces to evolve in line with the changing needs of the university.



The 'front of house' areas have high quality finishes while the 'back of house' spaces are more utilitarian in nature.

Another goal of the scheme was for the campus to be recognised as a community asset, which FCBSudios has fully embraced in their design. The university has six catering outlets, as well as two small shops, and a gallery on its ground floor, all of which are designed to welcome visitors to the campus. The main entrance on York Street is linked to an internal concourse that spans the entire length of the primary building. These spaces and amenities are intended to be easily accessible to the general public, as they serve as connecting points to various other facilities, including the lecture theatres and library.

With a design that features a significant amount of glazing, the challenge of overheating had to be addressed. To mitigate this issue, the large atria were oriented to face north, thereby avoiding direct sunlight and glare. This not only

enhances the thermal performance of the building but also provides a constant diffuse light, reducing the need for artificial lighting and associated energy consumption.

Sustainability

The project has achieved a BREEAM Excellent rating, a significant accomplishment considering its size. This achievement was made possible by the dedicated efforts of the design team, client, and contractor, who worked collaboratively to achieve this standard, states Tyler.

Large glazed rooflights have been installed at the top of each atrium, along with a high-performance facade; a strategy to effectively reduce lighting loads while preventing glare, and importantly minimise overheating for users.

The use of locally sourced stone for the external paving and internal circulation routes that define the publicly accessible areas of the campus is one material example of the project's commitment to

ATRIA

The projects has several atrium spaces, orientated to the north in order to provide diffused light to their interiors





sustainability, according to the architects. The roof is equipped with a combination of planted green roofing and photovoltaic cells, which not only provides sustainable energy but also provides a habitat for insects and birds.

Conclusion

FCBStudios has been instrumental in easing the transition of the campus to create a centrepiece for the regeneration of this historically challenged area of Belfast. While the building itself is significant, Tyler explains how the most “critical aspect” of the scheme is how the brief reflected the university’s drive to support research excellence, learning and engagement with local communities. The design from the outset has been about integrating the campus into the city, promoting these ambitions and “fostering inclusive regeneration.”

Post-WW2, industrial decline, social upheaval and the dominance of the private car led to universities which were once embedded in cities moving away from key central locations, to more suburban

areas. While this offered a measure of control and even a “respite” for challenged areas such as what is now the Cathedral Quarter, the universities were unable to benefit from the vibrancy a capital city like Belfast could offer.

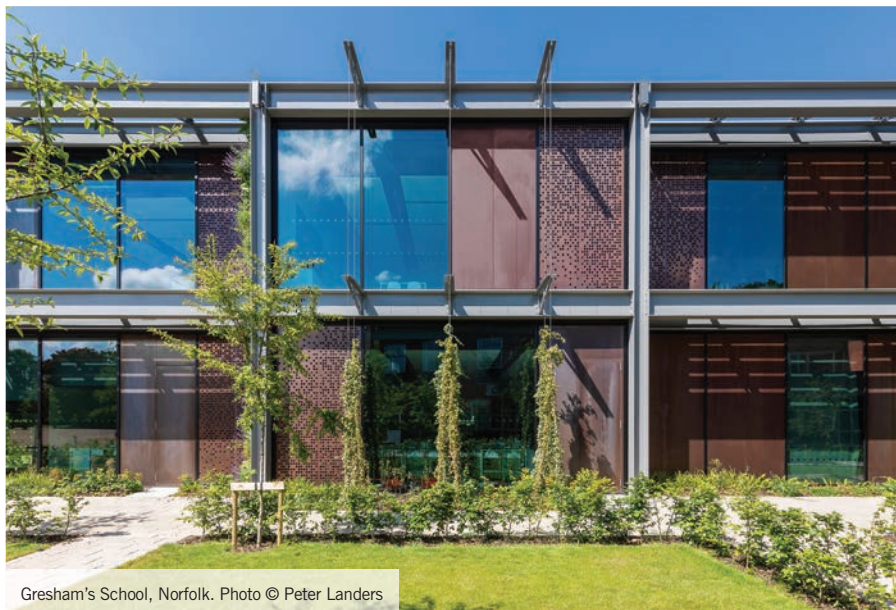
Acutely aware of this important need, FCBStudios developed a design that sought to benefit from and contribute to the bustling central area of a rejuvenated Belfast, while boosting the local economy and expanding access to higher education. A visible sign of this connection is the inclusion of entrances onto every surrounding street and lane; the principal entrance expanding the current city core to encourage people to navigate the entire district and populate the city. The facilities face the city streets, and lend their activity to them.

To mark the 25th Anniversary of the Good Friday Agreement in April, the President of the United States Joe Biden visited the campus to give a keynote speech. Speaking about the project, he says: “Where barbed wire once sliced up the city, today we find a cathedral of learning.” ■

The influx of students is “already having a dramatic impact on the local economy”

Educational copper

Copper has seen a dramatic change from its historic place in roofing to a leading role in today's facades, particularly for academic structures. Here Chris Hodson from Aurubis provides some striking examples



Gresham's School, Norfolk. Photo © Peter Landers

With an exceptionally long life, copper requires no maintenance or decoration.

As a lightweight and flexible covering, structural demands are reduced with lower carbon and 'whole of life' costs and copper is also fully recyclable utilising long-established practices.

Traditionally, copper cladding and roofing utilise thin sheets with formed joints and fully supported by a substrate. But other techniques are also growing in popularity, such as copper shingles, panels and cassettes. One of the most exciting developments being explored by innovative designers is the diversity of forms of copper including surface textures and perforated, expanded or woven mesh material for transparency.

Modulated facades

The architectural clarity of a new teaching facility at Gresham's School in Norfolk – with facades combining pre-oxidised copper and full-height glazing – typifies an innovative approach to school design.

The centre for Science, Technology, Engineering, Arts and Mathematics (STEAM) education is a state-of-the-art structure at the heart of the school campus.

WilkinsonEyre's design develops and refines the evolving STEAM building typology, and follows a modern aesthetic integrating industrial components with landscaping and low energy systems. The two-storey exposed steel frame envelopes a mixture of large panels: some glass and others pre-oxidised copper – either opaque or with square perforations adding transparency while screening glazing behind.

The architects commented: "This building will provide contemporary teaching spaces for the investigation of the sciences and the arts simultaneously, enhancing critical thinking and promoting innovation. The building itself – through the clarity and honesty of design and construction – becomes a teaching tool in its own right."

Oxidised & patinated copper

Pre-oxidised copper provides – 'straightaway' – the same oxidised brown surface that otherwise develops over time in the environment. The thickness of the oxide layer determines the colour and the darkening oxidation process continues to develop naturally in the environment. Pre-patinated surfaces have also been developed with properties and colours based on the same brochantite mineralogy found in natural patinas all over the world. As well as the solid green or blue patina colours, 'Living' surfaces are available for each colour with other intensities of patina flecks revealing some of the dark oxidised background material.

This technology is exemplified by bespoke perforated solar screen facades, formed from pre-patinated copper, defining the Senior Learning Centre building at Ravenswood School for Girls in Gordon on Sydney's North Shore. Architects BVN's design for the multifunctional Senior

Learning Centre differentiates the upper two floors with blue 'living' pre-patinated copper screens, creating a transparent skin enwrapping the building and jettied out over the lower levels. Large window openings with deep, copper-clad reveals 'punch' through the copper screen to break up the elevations, enable clear uninterrupted views across the grounds and introduce coloured light via glass bricks.

The architects said: "Our material palette required high proportions of recycled content and low embodied energy. High quality materials, such as copper, were selected for the exterior with longevity a key consideration – materials that are robust, beautiful and will stand the test of time."

Being set in front of the thermal envelope of the building, the copper screens mediate light and thermal penetration, reducing cooling load while allowing the interiors to feel light and airy. The resulting combination of colours from framed areas of amber and blue glass bricks, vignettes of clear open views and areas with filtered light from the perforated copper screen give each space a unique feel and view. At night, the building undergoes a transformation, acting as a lantern illuminating outwards to the community.

Copper alloys

Of course, copper alloys have also been used throughout history and bronze and brass – which can also be pre-weathered – remain popular for architectural applications. But, in addition, an innovative alloy of copper with aluminium and zinc gives a rich golden through-colour which is retained, simply losing some of its sheen, as the oxide layer thickens with exposure to the atmosphere to give a protective matt finish.

A perforated skin of this golden copper alloy was used to enwrap The Deptford Lounge in London, combining Tidemill Primary School and a state-of-the-art library. Pollard Thomas Edwards architects' scheme creates a highly innovative mix of co-located uses on a single site. The complex houses facilities shared between the new primary school and the whole community via the Deptford Lounge, including a rooftop sports pitch, a flexible suite of assembly spaces and a dining hall and kitchen.

For the golden wrapping applied to the facades, rigid folded cassettes of the



Ravenswood School for Girls, Gordon, Australia. Photo © Tom Ferguson

copper alloy provide sharp, clean joints between clearly defined panels, set-out in a stretcher bond pattern, referencing historic timber hull construction in ship-building associated with Deptford. Different levels of perforation and solid panels are used, so that the transparency of the wrapping adds another dimension to the play of light. The architects commented: "From a distance the golden form appears solid but close-up reveals itself as transparent and light-weight, floating above its glazed base."

"On a functional level, the wrapping provides solar shading to the large areas of glazing, while also allowing suitable levels of light in. We sought an inspiring material, with reflective properties that would give the building a jewel-like quality set against its main street context. Copper and its alloys have sound sustainable credentials with exceptional durability and lifespan. The weathering characteristics of this copper alloy are important: the material is virtually maintenance free and provides a surface that will change very little over time."

Chris Hodson is architectural consultant for Aurubis

One of the most exciting developments being explored by innovative designers is the diversity of forms of copper including surface textures and perforated, expanded or woven mesh material for transparency



Storing up future benefits

Tony Huggins from David Bailey Furniture highlights the importance of the humble cupboard and fitted storage unit within a modern educational setting, and offers some key pointers for architects to consider

Teachers are frequently disappointed by the lack of storage space

There is no doubt that schools are striving to be more welcoming, but that is difficult when you have buildings in serious need of refurbishment and where space is critical, possibly due to overcrowding and the need to create more classrooms.

These challenges are well documented, and it would be easy to ask what this has to do with something as modest as a storage unit? The answer is simple – clean, well-organised, vibrant units provide essential facilities for teaching professionals, but more importantly, well maintained colourful fitted units help to create the right ambience for pupils and their mental health.

The challenge for architects

The most important focus for every school facility is of course, the students. How can we make the education experience better and create an environment that promotes wellbeing?

The challenge is to meet the needs of a modern education environment where no two projects are the same. On one end of the scale, modular construction is continuing to play a more important role with the need for classroom space while at the other, a designer could be looking at buildings more than 100 years old, and in need of renovation to bring them up to standard.

Pressure on schools to meet ever increasing demands and challenges – exacerbated by the recent pandemic – means that staff are having to work with units which have been installed for many years. In many cases these have become chipped or damaged, making them difficult to keep clean resulting in the potential for spreading infection. Modern units are designed to minimise this risk and should be a major consideration for architects when designing new interiors for schools.

It is also said that there are reports that teachers are frequently disappointed by the lack of storage space, particularly at a time when schools and colleges are being asked to be more flexible in their response to student needs.

The answer

Quality fitted furniture and robust storage solutions play a crucial role in creating a conducive and functional learning environment. Schools and academies need well-designed and organised spaces that promote learning and support the needs of students and staff.

Well-designed fitted furniture and storage solutions promote a sense of order and organisation, making it easier for students and staff to access learning materials and equipment. This can help to reduce stress and anxiety levels, improving the overall learning experience.

Good fitted furniture and storage solutions can also enhance the aesthetics of the learning environment, producing an attractive and engaging space for students to learn. This can be achieved through careful selection of colours and materials, creating an inviting and comfortable environment that supports learning.

Architects and specifiers should also consider colour choices and the need to develop attractive environments for students because these factors can have a significant impact on the learning experience. Colours and materials that are too bright or too dull can be distracting or uninviting, making it difficult for students to focus and engage in the learning process.

Because every school has unique needs and requirements, a one-size-fits-all approach may not be suitable. Instead working closely with manufacturers can help to identify the best solutions for each school's specific needs, including customised storage solutions.

Storage choices

The best choice of fitted furniture for schools and academies should include flexible and modular designs that can be easily adapted to changing needs. For example, modular furniture can be configured in different ways to support various learning activities, while flexible storage solutions can be easily reconfigured to accommodate changing storage needs. Additionally, furniture and storage solutions should be designed with safety



and durability in mind, with materials and construction that can withstand the wear and tear of daily use.

Sloping tops fitted to fixed storage units ensure dust is unable to build up and surfaces can be easily wiped clean. This also deals with the safety consideration of staff potentially storing boxes on top of wall units – which would constitute a health and safety risk.

While good design, colour and materials all play a key part, it really all comes down to the working relationship between the architect and the school, while working closely with schools to provide solutions that serve their individual needs. One of the primary benefits of fitted furniture in schools is its flexibility. Fitted furniture can be designed to fit the unique requirements of a classroom, with shelves, drawers, base units, wall units and tall units customised to store educational materials and supplies in a neat and organised way.

Durable fitted furniture is an ideal choice for the wear and tear of school use. Made from high-quality materials, such furniture can withstand heavy use and remain in good condition for many years. This durability means that schools do not have to worry about continual replacement, which can be costly and time-consuming. In short, fitted furniture is a cost-effective option for schools, providing long-term value for money.

Tony Huggins is managing director at David Bailey Furniture

Clean, well-organised, vibrant units provide essential facilities for teaching professionals

Modern heating solutions in higher education

Dawn Simpson of Contour Heating provides some key attributes of modern heating solutions and why it is important to consider them while selecting a heating system for educational premises



Choosing the right heating system for educational buildings is essential as it directly affects the comfort and performance of students and staff. With energy consumption and bills being significant ongoing cost factors, selecting an energy-efficient heating system is crucial to ensure thermal comfort while reducing operational costs.

In the UK, space heating accounts for 49% of the non-domestic stock's energy use, making it the most dominant end-use of a building's energy consumption. Higher Education estates, which are often quite extensive, can spend a significant amount of money on maintaining a comfortable temperature. For instance, universities in Europe can spend an average of £8.10 per square metre annually for heating. Selecting an energy-efficient radiator will not only significantly reduce operational costs with energy savings but has a positive impact on the environment as well.

Apart from the financial implications, the impact of thermal comfort on students' academic performance is also worth noting. A stable heating system in the learning environment can improve student learning performance. A study conducted by Healthy Schools found that students in classrooms that are either too hot or too cold tend to experience discomfort and distraction, which negatively affects their performance in academic tasks. Therefore, maintaining a stable and comfortable temperature in classrooms is fundamental for creating an optimal learning environment that promotes student engagement, productivity, and academic success.

While the primary function of a radiator is to provide heat, a modern heating solution should offer more than just the basics. A high-quality heating system typically comprises three key elements: safety, sustainability, and style.

The safety of students, staff, and visitors is of utmost importance when selecting a heating system for educational facilities. Without appropriate safety measures, burn injuries can lead to severe consequences, including hospitalisation and long-term medical care. From 1 April 2021 to 31 March 2022 alone, NHS Digital recorded 863 admissions for burn injuries caused by contact with heating appliances, radiators, and pipes – this figure represents an approximate 6% increase compared to the previous year. The statistics highlight the importance of choosing a low surface temperature (LST) radiator. An LST radiator ensures that the surface temperature does not exceed 43°C, which significantly reduces the risk of burns while still providing sufficient warmth to the room. Other safety features, such as rounded corners and edges can also help to mitigate the risk of injury in case of a trip or slip. These features should be incorporated into the design of the heating system to provide a safe and secure environment for everyone in the educational facility.

Sustainability is another factor to consider while selecting a heating system in Higher Education settings. As previously mentioned, energy efficiency plays a vital role in modern heating. Space heating constitutes a significant portion of the energy consumption and running costs for universities and colleges. Installing energy-efficient radiators with features such as low water content and fan assistance can bring substantial positive impacts both environmentally and financially. These features can facilitate rapid heating and a more even distribution of heat throughout the room, which will in turn reduce energy usage, carbon footprint, and operating costs. According to a study by the National Energy Foundation, radiators with low water content and fan assistance features can heat a room up to 20% faster than traditional radiators, resulting in a remarkable amount of energy savings.

While style and aesthetic appeal may seem less of a priority when it comes to heating, it is in fact a pivotal element one should not overlook. Students' satisfaction with the learning environment is strongly linked to their perceptions of the facility's aesthetics and spatial organisation and whether a facility reflects their school's mission. Campus appearance influences the decision of up to 80% of prospective



students, and savvy institutions recognise the role the physical environment plays in their marketing efforts and how it drives investment in their facilities. Showcasing iconic elements can establish a sense of place and honour campus traditions, unique identity, and history. The last thing you want is a radiator that has an unpleasant design, which would detract from the overall aesthetic you've tried to establish. A sleek design allows the radiator to blend in seamlessly and enhances the aesthetics of educational premises by adding a professional touch to the space. The use of colour can also further articulate intention and build cohesion within a campus palette, making it crucial to be able to colour-match radiators to match the theme of the space.

That being said, to create a conducive learning and working environment in higher education, select a heating solution that is not only safe and efficient but also encompasses a range of styles and designs that meet the unique needs and preferences of each institution. Solutions are available that provide both functionality and aesthetics, providing a variety of options to complement a project's interior decor and specific requirements. This enables institutions to select the best-suited option for their needs. Investing in such a heating solution can enhance the overall experience of students, staff, and faculty by creating a comfortable and visually pleasing environment that supports learning and productivity.

Dawn Simpson is managing director of Contour Heating

A study conducted by Healthy Schools found that students in classrooms that are either too hot or too cold tend to experience discomfort and distraction, which negatively affects their performance in academic tasks

Keeping cool naturally

Alex Hill from Whitecode Consulting looks at fabric-based approaches to balancing thermal performance and comfort in UK school buildings, in the context of a range of challenges



Given the current climate crisis, it is imperative that we adapt our current approach to building design

We are currently experiencing unprecedented levels of heat in the UK, and British buildings are not designed to accommodate this. According to official sources, Western Europe's 2022 heatwave may have caused 20,000 excess deaths. In England and Wales 3,271 excess deaths were recorded from the start of June to the 7 September (Office for National Statistics), this is 6.2% higher than the five-year average with Covid-19 deaths excluded.

The government's introduction of new overheating regulations should warn the industry of the severity of this issue, and suggests that the industry needs to change its approach. Commercial buildings must comply with CIBSE's TM59 to reduce overheating. For domestic dwellings, all previous regulations on overheating have been brought together into Approved Document O, to highlight the importance

in the design of limiting solar gains through windows and providing adequate opening areas to remove excess heat.

Matters are made worse by the fact that we are facing a climate emergency. In 2022, our highest temperature was 40.3°C which exceeded the previous record of 38.7°C. We have now arrived at the point where the purpose of energy efficiency is to drive down heating costs and we are looking to mechanical cooling to deal with our overheating problem, which should not be the first port of call.

These temperatures we have faced are comparable to a Spanish summer. The Spanish prevent overheating by keeping doors and windows shut to keep out hot air in the middle of the day, shutting blinds and utilising mechanical cooling in the evening to lower inside temperatures. We are experiencing temperatures that you expect from Spain, and yet we are not adjusting our architecture to accommodate this.

The Spanish approach to preventing overheating

In the UK it is imperative that we design the building in a way that is sympathetic to the higher temperatures that we have been experiencing in our recent summers. Spanish designers consider high temperatures in building design. Their buildings feature hard ceramic floors and hard concrete ceilings to reduce the heat. Moreover, 'persianas' or exterior shutters, used as an external shading solution are commonplace.

This Spanish approach to keeping buildings cool would be an excellent start to dealing with our overheating problem and meeting the relevant standards. It is pertinent to start having a discussion within the built environment about exterior shading for buildings and moveable shutters that you often see on Spanish apartment buildings, as these features could be the solution to the British overheating problem.

Preventing overheating in schools

Schools generally have a lower heating demand than other types of buildings. Typically, schools need to be warmed in the mornings before the pupils arrive. As human heat output contributes to building temperatures, we should consider that a class of 30 pupils would contribute approximately 4.5 KWh of heat energy to the building. Therefore, in a well-insulated building less heating is required throughout the day, and good ventilation to counteract the effect of human heat output is critical for large periods of the year. Although term time does not usually coincide with the UK's hottest temperatures, there have been occasions in May where temperatures have been excessive, making it difficult for students to learn.

Often, schools expand their sites with the addition of a series of boxy, lightweight classrooms which are low cost. This design is often implemented due to budgetary reasons but we as designers could be doing more. Sometimes this is done due to limited budgets but capital infrastructure cost bears little consequence when we consider overheating and the associated operational costs of having a mechanical cooling system running constantly due to poor building design.

Unfortunately, schools rarely receive enough capital investment. We need only look at the current state of the education sector where schools are losing teachers as they cannot afford to pay both energy bills and teachers' salaries. Having exposed concrete soffits as increased thermal mass, exterior shading to keep the building cool, and securely opening windows at night to cool the building are the best strategies to deal with overheating in schools.

What's the solution?

If the government goes ahead with the gas boiler ban for new builds, will this ban extend to the retrofit market? If so, will hydrogen energy become the replacement? Ostensibly, there hasn't been enough investment in hydrogen energy or incentives from the government to make this viable. As a result, we are likely to see a lag where purchasers are going to potentially face a ban on gas boilers, without a real alternative to consider, other than heat pumps.

We must also look to fabric improvements as this can greatly affect occupant comfort. Consider glazing



for example, which can contribute to overheating. We must first get the building fabric right and then maximise natural ventilation. Then, and only then, should we apply mechanical means to solve the risk of overheating that could not be designed out by fabric first and natural solutions. We must begin designing our buildings in a way which is sympathetic to heat. Architecturally, in the UK we are keen on buildings with low ceiling heights, and small compartments which overheat very easily.

In addition to Spanish building design, the built environment sector could refer to Victorian buildings, as architects of the time designed structures which were excellent at preventing overheating. Consider any Victorian building with its high ceilings, spacious interiors and top-opening windows that allow for single-sided ventilation in a room.

Given the current climate crisis, it is imperative that we adapt our current approach to building design, and we must start solving these problems that are all too often characteristic of modern British buildings.

Alex Hill is managing director at Whitecode Consulting

We need only look at the current state of the education sector where schools are losing teachers as they cannot afford to pay both energy bills and teachers' salaries



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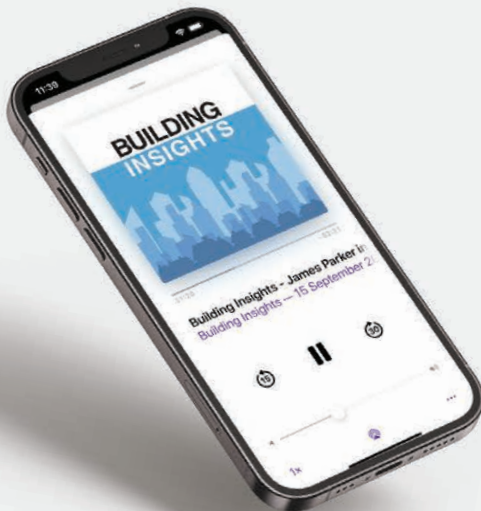


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Why do the world's leading dance universities and schools choose Harlequin floors?

Dance students can spend hours working in a dance studio, it is their place of work and should offer a safe environment fit for purpose. The floor is a dancer's most important work tool and dancers need reassurance they are not going to slip and fall, that lifts can be performed safely and on landing from jumps the response of the floor consistently returns the right amount of energy absorption.

It is a common assumption that a well-designed sports floor will suit the needs of dancers, but this is not the case.

There are some critical factors that distinguish the requirements of dance from those of sports played on a sports floor. Unlike sportsmen who wear increasingly high-tech air-cushioned shoes to give grip and protect against impact injuries, the modest ballet shoe has barely changed in design since the mid-18th century. Made from soft leather, canvas or satin, the ballet shoe is very flexible, has a thin sole and offers little protection for the wearer.

But not all dance floors are the same, only a floor developed specifically for dance will do. There may be a temptation to specify floors for aesthetic or budget reasons, or to specify sports floors in the mistaken belief they will be suitable for dance but there have been some high-profile examples where floors have had to be replaced by a dance company after the building is complete and dancers have their first experience of dancing on the floors.

Harlequin is widely recognised as the world's leading authority on dance floors. As an enlightened manufacturer Harlequin has always worked closely with the dance



community to develop floors that dancers want to dance on. There is no doubt, the choice of flooring is critical. For over 40 years Harlequin has been the performance floor of choice for the world's most prestigious dance and performing arts companies, theatres, venues and schools.

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Delabie set to deliver £30k+ annual cost savings at Birkbeck, University of London

A recent trial to reduce water consumption – following the installation of Delabie’s Tempomatic 4 intelligent urinal control plate – demonstrated 99% in water cost savings at Birkbeck, University of London, and is set to transform not only how men’s urinals are managed going forward but also, men’s and female toilets across the estate.

Birkbeck’s Building Services Manager, Spensa Wheeler, responsible for technical services contracts and facilities is constantly striving for improved sustainability and savings, doesn’t hold back: “It’s fair to say the results have been outstanding and exceeded our expectations.”

Birkbeck is a large estate of 18 separate buildings in central London, including a mix of Grade 2 listed town houses and eight-storey 20,000 ft² more modern buildings, where much of the learning is delivered during the evening, with its premises used during the day on a commercial basis. Fluctuations in attendance means there’s always a requirement to have buildings ready for an influx and full occupancy.

Gaining control

Spensa says it was during the pandemic things came to a head: “We became even more conscious of our water usage and in particular the urinals near constant water

flow, although functioning with no occupancy for extended periods. There would always be a trickle and then an automatic flush and we had no control systems to manage this. So, we started a conversation with Delabie to gain greater control over water usage in our urinals and investigate the potential for significant savings.”

Outstanding results

For one week’s test normal water consumption was 10.5 m³. After installation of Delabie’s new Tempomatic 4 urinal flush valve it was 0.102 m³. A 99% water saving. Representing a saving of £25.93 per week for just two urinal installations*.

Spensa continues: “The results were significantly better than we imagined and were beyond expectation. We were saving an eye watering amount of water and when we look at potentially rolling Tempomatic 4 across 18 buildings, likely millions of litres of water in a year, which translates to several thousands of pounds worth of cost savings in water consumption alone as can be seen here:

	£	m3
no. of urinals	50	50
saving /week	12.97	5.205
saving across estate/week	648.5	260.25
per year (x52)	33,722	13,533

“These figures just reflect the water savings. In addition, we know there will be a reduction in on-going maintenance costs. We don’t expect to be having to react to leaks etc. Installation and maintenance are low. Plus, with a system that has no manual intervention it’s also more hygienic for users too.”

“In terms of payback, we are looking at 10 months for these two installations to have paid for themselves. Each system cost just a few hundred pounds to purchase, and we used our in-house labour. This means Tempomatic 4 is a really viable option. Our business case is going to the business panel with a recommendation to roll out installation across all 18 buildings, with a payback period of just six months, and a potential saving of over £30k per year. The trial has more than convinced us to progress with this, coupled with the ongoing support Delabie has provided throughout.”

The Tempomatic 4 – intelligent rinsing

The Tempomatic 4 urinal control plate is an intelligent urinal valve that detects high-frequency periods and no activity, adapting its rinse accordingly. During peak periods only the urinal bowl is rinsed between two users. At the end of the busy period, an additional rinse takes place to clean the bowl



Spensa Wheeler and Alex Wishart from the technical services team sought greater control over water usage



A meter installed on the original installation allowed a pre- and post-installation comparison



Tempomatic 4 urinal valve features intelligent rinsing to adapt to usage patterns and save water



Rolling out Tempomatic 4 urinal valves across the estate will deliver a potential saving of over £30k per year

completely and renew the water in the trap. The Tempomatic 4 urinal valve offers three programmes according to the urinal type, each with an optional hygienic duty flush. The duty flush can be programmed to take place every 12 to 24 hours after the last use to flush the pipework and prevent the crystallisation of uric acid, water stagnation and back flow due to system vacuums.

The trial

Birkbeck chose to retro fit and trial the Tempomatic 4 urinal plate in two locations in one building. One in the Men's on the 5th floor, where there was a higher use facility with access to the library and from staff, and the second in a much smaller footfall area. Birkbeck measured the output during a normal term-time/working week, taking metre readings to quantify the results.

Full roll out – more savings

"We are very pleased." Reaffirmed Spensa. "This one product will deliver significant savings; it looks nice and is easy to install – I can't find a downside to the system. The range comes in multiple streamlined finishes that work well in all our buildings and with multiple colour schemes. All maintenance is accessible from the front. All in all, we would recommend the product. I'm a member of the Association of University Engineers

and I will be sharing the positive results we have achieved within that forum, as well as endorsing a roll out across our multiple sites."

"We will also be looking forward to other Delabie systems that can bring us further benefits and savings, which will include direct flush for all facilities. We are keen on minimising water storage and all that goes with that, including minimising the legionella risks. We are

currently amid a survey of all our assets with a view to plan some big revisions and bring both environmental benefits and costs savings to Birkbeck."

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A new ventilation with heat recovery option can achieve performance up to 35% better than anything else on the market. It means potentially £1/4m/year savings on energy bills- even against other similar systems. MFS-HR is the concept of one of the UK's leading independent air movement specialists, **Gilberts Blackpool**, who was instrumental in pioneering hybrid ventilation with its core MFS unit. The latest evolution achieves up to 75% heat recovery- against 40% as offered by alternative similar systems. That outstanding performance means that for a typical 12-classroom school/600 m² commercial space, energy bills could be cut by almost £5,000 per week in cold winter months, by recovering heat that would otherwise be wasted, while ensuring a indoor air quality compliant, well-ventilated space. With its heat recovery capability, MFS-HR will provide up to 4 kw heating and 2 kw cooling capacity while still delivering airflow rates of up to 470 l/s. An optional additional LPHW coil can provide heating, potentially negating the capital expenditure, plant and running costs associated with a separate central heating system.

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Sto helps keep the noise down for new university swimming pool



A significant milestone of a University's Estate Masterplan has been completed with the use of an acoustic system solution provided by **Sto**. The company's StoSilent Distance system and StoDecosit interior plaster now provide a practical and comfortable acoustic environment for the new 25 metre, eight lane pool at the University of Portsmouth's £57m Ravelin Sports Centre. The StoSilent Distance system was installed as a suspended ceiling using Sto's specially protected sub-construction, which is epoxy powder-coated to protect against corrosion. StoSilent Distance acoustic boards were then fixed to the sub-construction, which can be adjusted to any shape of room to form a homogeneous, seamless surface. These high-performance acoustic boards are manufactured from blown glass granulate and are bonded to a backing laminate. This prevents any air from flowing through them and causing marking or staining on the completed ceiling, but still allows them to attenuate sound waves. For this project the boards were finished with StoSilent Décor M – a sound-permeable silicate acoustic coating which creates a seamless, clean and attractive appearance.

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Innovative student breakout space from Style



Northeastern University London recently relocated to a brand new, 21st century campus within Devon House, St Katharine Docks, where students enjoy a vibrant, collegiate community that delivers academically rigorous degree programmes. **Style** was asked to create flexible, collaborative space in the main foyer of building. Delivering an innovative partitioning solution that enhances the contemporary, open plan feel of the room, a series of panels with decorative cut-outs can be manoeuvred to any point along a track system to form a cordoned off area within which small groups can gather. With sound absorption properties, the panels reduce reverberation levels which is essential in a wide-open area such as this. When not required, the panels can be simply stacked to one side. "Rather like our already established Working Wall system, this is less to do with formal room division and more to do with creating a solution that offers an aesthetic divide within the space," said Michael Porter, Style's group sales director. "The end result is perfect for informal collaborations, breakouts from lectures and brainstorming sessions."

www.style-partitions.co.uk

St Brendan's 6th Form College, Bristol



NVB Landscape Architects wanted modern brightly coloured street furniture for the amphitheatre-like courtyard makeover of a busy sixth form college. **Benchmark Design's** Centerline range, with its flexibility to be made to follow any required curve and ability to be powdered coated in any RAL colour was the perfect choice. The Architects were able to develop a creative design and build package, knowing that Benchmark could match their concept and requirements. The vivid steel CL007s produced for this project are robust and add a bright modern feel to the overall scheme.

info@benchmark-ltd.co.uk www.benchmark-ltd.co.uk

Senior's innovation recognised



Senior Architectural Systems, one of the UK's leading manufacturers of aluminium fenestration solutions including doors, windows, and curtain walling, has become one of the first ever winners of the King's Award for Enterprise. The company has been honoured in the innovation category in recognition of the design, development, and delivery of its market-leading PURE[®] aluminium window system that features a patented thermal barrier to reduce heat loss and provide exceptional energy-efficiency. Senior is one of only 148 organisations nationwide to have been recognised with the prestigious King's Award for Enterprise.

01709 772600 www.seniorarchitectural.co.uk

School uses time wisely to protect interiors with Yeoman Shield

Cardinal Wiseman Catholic School, which caters for 700 pupils aged 11-16, has corridors and break-out areas throughout the school where walls and corners especially are exposed to marking and impact damage caused by the everyday movement of pupils, staff and equipment.

The damage not only detracts from the smart image the school strives to up hold in all areas, but also becomes a strain on the maintenance budget with constant requirements of repair and redecoration.

With the aim to reduce such damage and expenditure, after research and receiving samples, Head Teacher, Robert Swanwick, contacted Yeoman Shield to supply and carry out the installation of a complete wall protection system.

Yeoman Shield's directly employed fixing operatives installed Yeoman Shield FalmouthEx Wall Protection Panels, (after boarding-out some of the brickwork to provide an even finish), at 1,250 mm high to corridor and dining areas in a Dusty Grey colour to complement artwork decoration applied to the upper walls.

Staircase walls were also fitted with the wall protection panels with the addition of Yeoman Shield 50 mm Dia. Guardian Handrail in Timber with attractive Stainless Steel accessories.

Vulnerable wall corners were protected with 75 x 75 mm corner protection in a matching colour and Yeoman Shield 110 mm White PVCu cover over a solid timber core skirting was added.



This full Yeoman Shield wall protection system will abolish the future need for repainting walls and skirting with cleaning being the only maintenance required, reducing budgets spends.

The rigid PVCu material that Yeoman Shield products are manufactured from are easy to clean, do not promote the growth of bacteria or mould and are not affected by the use of commercial cleaners, assisting in the up keep of high hygiene standards.

Mr Swanwick commented: "The quality of the product is exceptional. It has been installed for six months in some places

and shows no signs of wear or tear yet. I also cannot speak highly enough of the professionalism of the installation teams, who understand the challenges of working in a school environment and get on with things quietly and efficiently. I am a very happy customer."

For more information on how installing wall & door protection products can help save on building maintenance and help keep interiors looking smart and clean get in contact on 0113 279 5854.

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