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# FROM THE EDITOR



Trends towards modular design and construction in state schools are an inherent feature of the government's Priority Schools Building Programme as the country strives to meet growing demand.

While the need to meet the highly individual needs of schools within this highly prescriptive, constrained framework is challenging for architects, they enjoy greater design freedom in the private and higher education sectors.

These tend to be less fettered by political considerations and benefit from more diverse and flexible funding options. In this issue we feature three such projects, where architects have designed buildings exuding character and flair, creatively meeting core functional requirements.

Southampton Solent University's new hub building, The Spark, is striking in many ways, not least for the huge, bright red pod that dominates the atrium at its heart and is serving as both a sculptural statement and a fully operating lecture theatre.

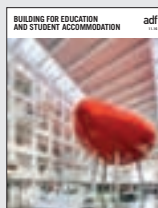
We look at the new auditorium and reception at Wellington College private school in Berkshire. Cleverly blending with its wooded surroundings and complementing an adjoining theatre building, it forms a superb meeting and performing space.

And sitting on a former factory site once belonging to a world-famous British brand, the aerofoil-clad Ingenuity Building on the University of Nottingham's Innovation Park manages to project the image of a vibrant new technology hub, yet subtly acknowledges a great industrial past.

Elsewhere inside, our commentators consider the value of teacher-led design and question why more zero-carbon, zero energy schools aren't being constructed, and industry experts offer advice on the latest developments on cladding, ventilation, exterior lighting, soundproofing, washrooms and playground equipment.

We hope you enjoy the read.

**Ray Philpott**  
Editor



**On the cover... © Studio Seilern**

The Pod, a feature of the atrium at The Spark at Southampton Solent University designed by Scott Brownrigg  
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## CULTURAL PROJECTS

# Carl Turner Architects to design new Peckham theatre arts school



Carl Turner Architects has received the go-ahead to deliver the Mountview Academy of Theatre Arts in Peckham, London.

The scheme, the practice's first cultural project, will be built on a brownfield site adjacent to the Stirling Prize-winning Peckham Library.

The 10,180 m<sup>2</sup> campus will consist of two blocks – a brick-clad saw-tooth teaching block and a Corten-clad theatre block. There will be a public rooftop dining area and a cafe and commercial space on the ground floor as well as an events platform at the entrance. The school will overlook Peckham Square, to be redeveloped by the same practice.

Carl Turner said: "It's a delight to be working on our first cultural project, having diversified over the past few years as a practice to now be able to deliver substantial regenerative architecture."

Peckham Library architect Will Alsop

added: "Although initially I was sceptical about the project, on more careful study I realised that the provision of a dance facility adjacent to the library is a very positive new addition to Peckham, and I see in the future that there could be great synergy between the two facilities."

Internally, a central atrium within the teaching block rises four storeys, bringing natural daylight deep into the plan. The main 200-seat auditorium will be lettable and serve primarily as a teaching theatre. The rooftop bar and restaurant will be accessible to the public via a separate staircase, enabling the space to function out of hours.

The academy is the latest in a series of community regenerative projects in south London by Carl Turner Architects, following their design of Peckham Levels – nearly 4,000 m<sup>2</sup> of artist space in an underused carpark – as well as Pop Brixton, a 'mini



city' made up of shipping containers and recycled materials that has provided affordable work and leisure space.

Mountview Academy is due to complete in September 2018.





## REFURBISHMENT

# Hawkins\Brown completes Ark Putney Academy

Hawkins\Brown has completed the refurbishment of the Grade II listed Elliott School, now renamed the Ark Putney Academy, in Wandsworth.

Hawkins\Brown was appointed by Lendlease to redevelop the school into a new academy which would meet the requirements of 21st century teaching in a listed building.

The works included the restoration of the facade, remodelling the teaching facilities and building a new community sports hall. The internal layout has been remodelled to modern teaching standards and to improve accessibility and people flow.

John Jeffery, architect at Hawkins\Brown, said: “The challenge was to collaborate with Wandsworth Ark Schools and Lendlease to develop a solution which balanced the desire to retain as much of the original while ensuring the reimaged building met the teaching needs of the 21<sup>st</sup> century.

“The result reflects the aspiration to create a new identity while retaining the unique character of the original.”

The original school was designed by G. A. Trevett of London County Council and was opened in 1956. Inspired by Scandinavian welfare state design, the campus provided a modern comprehensive facility for the post-war era. The building features three main terrazzo circulation stairs, with hardwood balustrades and spiral stairs to the concrete roof pavilion. The assembly hall has a distinctive caravan form with generous roof lights.

Hawkins\Brown designed a new environmentally responsive facade to the building, updating the colour palette with a pattern generated using shades from the original colour panels and features of the building.

The internal layout has been transformed to accommodate 1,050 pupils and now includes a ground floor dining area and a

**The result reflects the aspiration to create a new identity while retaining the unique character of the original**

John Jeffery, architect at Hawkins\Brown

new art department relocated to the rooftop ‘waveform’ pavilion with large areas of glazing that provide attractive views of London.

Alison Downey, principal at Ark Putney Academy, said: “I firmly believe that the work of Hawkins\Brown has allowed us to build on the legacy of the school and provide students of varying backgrounds and abilities an opportunity to study in an amazing building once again.”



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## GREATFIELDS SCHOOL PROJECT

## Surface to Air appointed on Barking school

Barking & Dagenham Borough Council has picked Surface to Air Architects to design the Greatfields School in Barking.

The £35m scheme will take a prominent position in the wider Allies & Morrison-designed Weavers Quarter masterplan and include a 700-pupil primary and a 1,800-pupil secondary school.

Roger Leighton, who is chief executive of Partnership Learning, a local

### The school is at the heart of a dense urban regeneration scheme

multi-academy trust, commented on the demands the project will place on the design team: "Greatfields School will have its challenges – particularly its location at the heart of a dense, urban regeneration scheme – but we are confident that Surface to Air will develop a design that meets our educational vision."

Surface to Air director Heidi Moxon commented: "This facility will be a key civic project for Barking & Dagenham."

She continued: "Surface to Air's broad experience in designing educational establishments has taught us that space and environment play a pivotal role in the way children learn and develop – so it's very important to get right. With the needs of the local community at the forefront of our design process, our aim was to create a contemporary building that will allow pupils realise their full potential."

Once work is complete, Greatfields School will open to students in September 2019. It will become part of a successful group of Partnership Learning schools in the borough, which also includes the Sydney Russell and Riverside schools.



## REFURBISHMENT

## Old and new to meet at revamped Oddfellows Hall

Penoyre & Prasad have been granted permission to extend and refurbish the Grade II listed Oddfellows Hall in Manchester.

The building forms part of the Mecanoo-designed Manchester Engineering Campus development (MECD) at the University of Manchester.

The development, which has a target of being completed by 2020 – will become home to the university's four engineering schools and two research institutes from the Faculty of Engineering and Physical Sciences.

The three-storey extension will be adjacent to the existing building and have a brick and glazed-patterned facade which corresponds to the whole university campus.

Large-scale patterned panels on the facade will feature a design inspired by architectural

features from the listed building. The main entrance to Oddfellows Hall will be retained and a new accessible one will be added to it. New circulation routes via the glazed enclosed light wells give visual and physical connection to the cafe, conference facilities and academic spaces.

The architects said their project "will transform the way in which the University educates future engineers."

In addition to the designs for Oddfellows Hall, Penoyre & Prasad's collaboration with Mecanoo includes Workplace Design and acting as the overall sustainability architects for the project.

Gillian Horn, partner at Penoyre & Prasad said: "This is an important milestone for a project that will effectively create a new city quarter."

She added: "We have transformed and substantially extended the Grade II Listed Oddfellows Hall to make it an integral part of this urban campus and contributed to the creation of the highly sustainable, state-of-the-art research and teaching facilities."

Demolition on the site is currently underway and main construction works are scheduled to begin later this year.

### The scheme is part of the university's plan for a world-leading campus for the engineering and scientific community



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## COMMENT

# Knowledge is power

Teachers know schools best and their input can be vital during a redesign. Pellings partner Nicolas Maari argues for the benefits of encouraging teachers to have a say in the design of UK schools

**T**he soaring demand for school places throughout the UK and the cut-backs in public expenditure have created a dilemma for government policy makers – whether to impose prescriptive design rules or allow teachers to have a say in how schools are laid out.

As architects, we firmly believe that in designing schools we should work closely with teaching staff to understand their teaching methods and to create as near an ideal teaching environment as possible.

We have to take into account the scarcity of affordable land and the budgets that local education authorities are able to allocate to the provision of additional facilities, whether remodelling and expanding existing or creating new build schools.

**Teacher-led design can improve efficiency because teachers often understand the space usage better than the design consultants**

Teachers know what works and understand how to operate, which helps form the characteristics that make a school unique and enables successful education. A failure to have input from teachers during a school redesign can risk eroding these benefits to the detriment of both pupils and staff. However, this needs to be balanced against the Education Funding Agency's need to have flexible space to deliver a range of teaching styles.

## Standardised designs

The Education Funding Agency's baseline design for schools guidance was introduced in 2014 to promote standardised design specifications across a range of educational facilities and providing guidelines on how the schools can be delivered within restricted cost and area allowances.

Although well intentioned, the guidance encourages rigid design, is unsuited to complicated school refurbishment projects, and often leaves little room to incorporate the individual school's approach or teaching methods. The guidance focuses on cost, rather than involving teachers in the design process.

But teacher-led design can improve efficiency because teachers often understand the space usage better than the design consultants. For example, with the advent of multiple meal sittings, teachers can provide intelligence that helps designers to create more



**L-R**  
Goat Lees Primary School, Willow Dene School





## Teachers know what works...which helps make a school unique

Nicolas Maari

efficient dining spaces. Teachers are often imaginative and can creatively plan the teaching day around the flexible use of space and effective pupil circulation.

While Building Bulletin 103 (BB103) had been praised for being a significant improvement on its predecessor BB99, because it allowed the overall space allocation to be used more flexibly, the recent launch of the Schedule of Accommodation has to some extent reversed that by prescribing specific floor plate sizes to pupil numbers. For example, for a two-form entry school the area should not exceed a total of 2,072 m<sup>2</sup>.

In some respects standardisation of design makes clear what can be delivered within constrained budgets, but at the same time it allows little input from teaching staff who know best. This is particularly concerning with the larger academies and free school

trusts where teacher input would be invaluable before they are rolled out nationally.

### Positive approach

Where there has been a more positive approach to teacher input has been with the recently launched BB104 for special schools and special educational needs which has replaced BB102.

It gives various design ranges depending on the extent of the need in terms of behaviour and health of the pupils. For this reason the Department of Education gives more flexibility for teacher input into the design. Some schools may have more teaching areas while some will have more main hall, dining and ancillary spaces.

A further consideration in the years to come will be the maintenance during the building life-cycle of schools that have been designed in BIM and that will require input from schools maintenance and facilities management teams.

At Pellings, we believe that while some aspects of standardisation are positive in driving efficiencies and sharing out constrained budgets the 'default' approach must surely focus on input from a teacher-led design body and a thorough investigation of curriculum needs together with a creative approach to compromise. ■

*Nicolas Maari BA(Hons) Dip (Arch) RIBA ARB has recently joined Pellings as a Partner, bringing with him over 10 years' experience in delivering a wide range of expansion, refurbishment and new build schools. Nicolas comes from Arcadis where he was the lead Design Manager for the Education Funding Agency Free school and Priority Building Schools Programme projects*

## EDUCATION

# Pupils create 'lab of the future'

A futuristic science classroom was designed by Year 11 students from Birmingham as part of a nationwide competition.

Four pupils at the King Edwards VI Camp Hill School for Girls developed a mixed-science lab combining the features of a working classroom and laboratory in a single space.

The girls, who were awarded £20,000 worth of science lab furniture on top of the option to realise their dream lab, invented horseshoe-shaped desks arranged so that each student would face the teacher.

Interior company Innova Design Solutions, who sponsored the contest, translated the designs into a flexible layout with desks organised in a semi-circle, a practical lab in the middle and the teacher wall at the front.

The company also installed gas taps and electric outlets towards the edge of each bench. Sinks were located at the perimeter with deep work benches for practical lessons.



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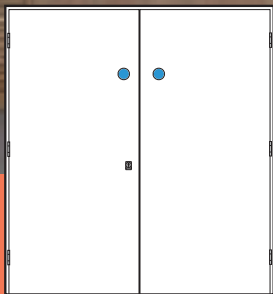
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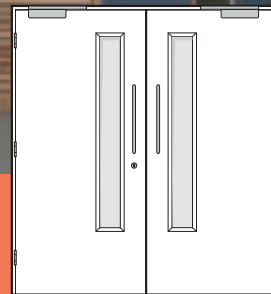
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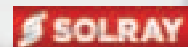
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## COMMENT

# A lesson to learn

Creating educational buildings with zero energy usage and carbon footprints is perfectly possible. So why aren't we building more? Neil Smith of design firm UK Energy Partners shares his thoughts

There's no doubt the way we design and construct buildings consumes huge amounts of the world's energy and generates potentially catastrophic global greenhouse emissions.

It seems only fair that we roll up our sleeves to sort it out – and new schools, colleges and universities, all those special places that teach and inspire millions of students every day, are a great place to start.

In fact, it's relatively simple to design net-zero energy and net-zero carbon educational buildings, but only customers with deep pockets and a sense of environmental stewardship are happy to pay the price premium this involves. Likewise, only a fool wastes time designing and building products nobody wants to buy.

So the destructive cycle is perpetuated by design. The market won't pay for net zero solutions so people continue to churn out buildings that promise a lifetime of carbon emissions, locked in from day one – by design.

The solution to the problem is to eradicate the price premium associated with net zero energy and net zero carbon school buildings. Once we reach that point, the market will queue up to buy them and the damage can slowly be reversed.

But the industry is not structured in a way that is conducive to achieving this outcome.

The traditional approach to construction with traditional materials assembled on site invites programme delays, cost uncertainty and waste. So it's pretty clear the problem won't be fixed by going down that road. The traditional approach to design necessarily involves collaboration between contractors, architects, M&E and structural engineers, but the collaboration is not as deep, integrated and aligned as it needs to be to deliver what is required.

The process is often inefficient and dysfunctional; a lot of time is wasted justifying design decisions and solving the problems they beget.

Moreover, there is plenty of opportunity for conflict especially when it comes to cost control. Fixed consultancy fees deliver inflexible solutions and time-based fees promote lengthy debate. There is usually a seat at the table for a carbon/energy consultant, but their input is relegated to the periphery rather than the heart of the project.

We're not going to eradicate the price premium unless we change the way we design as well as the way we build.

**There is usually a seat at the table for a carbon/energy consultant, but their input is relegated to the periphery rather than the heart of the project**

## Solution

The answer lies at the crossroads of off-site construction and in-house design.

Assembling an integrated team, with energy, carbon and value at its core sets the tone and direction of travel. Employing this team in full-time permanent posts ensures alignment and removes any potential for commercial and professional tension.

Committing to an off-site construction methodology informs design by narrowing the palette of construction materials down to those that can be moved in large format safely and economically.

Building off-site delivers meaningful cost savings when compared to other methods of construction. The savings can then be spent on the integration of renewable energy technology with sufficient capacity to ensure net zero energy and net zero carbon performance.

At UK Energy Partners, we have been employing this approach in designing energy efficiency upgrades since 2014. We have been continuously refining our designs and construction techniques and it's exciting to be able to report that it is working.

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*Neil Smith is chief operating officer of UK Energy Partners*





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# Hi-tech meets heritage

Bond Bryan's new hi-tech hub for a leading university is a forward-looking base for innovation which also gives a nod to the site's industrial past. Ray Philpott investigates

The University of Nottingham's brand new Ingenuity Centre is one of those rare buildings that looks cutting edge yet captures a sense of heritage.

At first glance the centre appears to be a hi-tech structure that would not look out of place in a sci-fi movie, with a complex array of metal fins forming a metallic bronze-coloured circular envelope that seems to float around a central core.

Keep looking though and some of the design cues are clearly industrial – the metallic external envelope echoing the form of some finely machined, mechanical component or even the patterned tread of a tyre.

It is located on The University of Nottingham Innovation Park (UNIP), formerly the site of Nottingham's famous Raleigh bicycle factory that also manufactured ammunition and armaments during World War II and is now home to an array of innovative modern buildings.

The new centre will be home to start-up enterprises and entrepreneurs creating businesses based on cutting edge technology and research – including big data and digital, advanced manufacturing, aerospace, and energy – and liaising with university research departments and post-graduate students.

It was part-funded by the Department for Business, Energy and Industrial Strategy under its pilot University Enterprise Zone scheme, with matched funding from The University of Nottingham and the Haydn Green Charitable Trust.

Bearing in mind both the function of the building and the site's significant cultural history, a combination of 'hi-tech and heritage' was part of the design philosophy from the outset for architects Bond Bryan.



Associate director Matt Hutton explains: "The Innovation Park is one of just four University Enterprise Zones in the UK with the original masterplanning done by Hopkins Architects and Make Architects. When we started design in 2014, the park already contained lots of bold architecture set in attractive landscaping with a river running through it.

"We're lucky to be designing a building for such a fantastic location, but that clearly meant we needed to create a building that equally made a visual statement. Something box-shaped and conventional looking was simply not going to cut the mustard," he adds.

"As well as wanting to create an iconic structure, it was also important that it reflected the historical significance of the site. By coincidence, I have some personal insight regarding this aspect, as my grandmother worked in the old factory making aircraft bombs during the war."

## Collaboration at heart

A core element of the university's brief for the £5.2m project was for the design to encourage and support innovative and collaborative working and learning.

In order to establish how that could work best, the practice embarked on an lengthy period of extensive consultation



and discussion with end-users and the university.

Hutton says: “This site is about bringing people together and our whole approach is about collaboration. We saw the Ingenuity Centre as a hub, a multi-faceted, multi-entrance circular building that would draw people in.

“It’s a standalone structure, with no obvious ‘natural’ entrance areas and a circular design worked because it needed to look striking from all angles, working like a pebble dropped in a pond, creating rings of interest around it.

“This relatively deep-plan, steel-framed building form maximises the limited available site area to limit the overall height needed and create efficient floor plates.”

He describes the core elements of the three-storey building as an “easily constructed” cylindrical, glazed core with a well-lit atrium space at its heart, completed by an exoskeleton of creatively positioned, anodised aluminium blade cladding.

“There’s no doubt that it’s the exterior cladding that really defines this building,” says Hutton.

It’s constructed from 350 mm wide x 50 mm deep, angled, aerofoil-shaped anodised aluminium fins, bolted between black concentric steel rings. This structure mounted on vertical, curved ‘hockey blade’ frames attached to the central cylinder. Each individual aerofoil blade is manufactured off-site but has to be cut to exact size by hand on site before installation.

The curtain wall of the central core is glass and a black aluminium cassette cladding, while the support structure behind the blade cladding is also black.

“We chose to use dark colours to make the central core appear to recede so the bronze blades stand out more – and at night you just read the light coming out of the windows and reflecting from the blades,” Hutton points out.

Extensive modelling was carried out by the architects using Building Information Modelling (BIM) to ensure the blade design was neither obstructive nor oppressive when viewed from the inside and did not impede sufficient light from entering the building at different times of year.

“The blades have been carefully positioned so the thin edge faces inside, minimising their profile from an occupant’s perspective,” adds Hutton.

A double-height, ground floor main entrance is approached via existing



pedestrian pathways on the park and, further round, there’s a breakout area with a wider, two-storey glazed frontage complete with outdoor seating area.

The internal collaborative spaces overlook attractive landscaping designed and delivered by the university’s own landscaping team, a lake and a pedestrian bridge over the water.

A reception and some small administrative office spaces compete the layout on the ground floor.

## Flexibility

Internally, the emphasis is firmly on flexibility as Bond Bryan’s project architect, associate John Hope, explains. “We used lightweight partitions for flexibility, with floor plates of cast in-situ concrete floor decks.”

The mechanical engineering has been designed so that, whether there’s a start-up or an international business in there, the partitions for the spaces inside can be easily

reconfigured to make smaller, cellular space and larger open spaces.

Office accommodation is mixed specification, running over two floors. Some face the interior, benefiting from shared light from the roof and entrances and, separated from these by a shared corridor, the remainder have views outwards.

Hope adds: “The atrium has a hexadecagon aluminium-framed roof light while its sides feature a series of glazed screens with modesty blinds to give office occupants greater privacy. There are a mix of cellular and open-plan spaces at the first and second floors of the building and at the ground floor level there are more open, shared areas for social and public engagement including the atrium, seminar spaces and collaborative hub space.

“Overall it feels like a very modern, ‘clean’ office space. As you walk in the interior immediately opens out to the external view through the breakout space. There are herons and lots of other fabulous wildlife to be seen out there.”

He continues: “The businesses based here are from a variety of industries, but are all technology driven and cutting edge. We felt that while they obviously require their own spaces, it is important to provide breakout areas where people from different organisations could mingle and share ideas over a coffee and in a relaxed environment.”

### Distinctive and exciting

While it has been necessary to use mechanical ventilation and heating throughout, the building’s carbon signature and energy usage has been reduced through use of low-E glass – with higher specification glazing in the atrium area – LED lighting and 25 m<sup>2</sup> of photovoltaic panels on the roof.

The centre is also connected to receive heat and power from its large zero carbon-zero energy neighbour, the GlaxoSmithKline Carbon Neutral Laboratory for Sustainable Chemistry, enabling the Ingenuity Centre to achieve BREEAM Excellent status.

Construction has been something of a challenge, with Bond Bryan sitting on the client side of the project; the main contractor Robert Woodhead employed Core Architects of Lincoln to implement the job on the ground.

“It’s a slightly different role to building out the project ourselves, as we’re used to, because you are remotely managing the design process,” says Matt Hutton. “But we developed a good relationship with both



Robert Woodhead and Core.

“Construction has been something of a challenge. The site is a tight one and there was lot of soil to shift, so it’s been a bit of a jigsaw and things have had to move around fairly constantly. Fitting the blades has also been one of the more demanding aspects of construction in terms of time and complexity.”

**We needed to create a building that made a visual statement. Something box-shaped was simply not going to cut the mustard**

Matt Hutton, associate director at Bond Bryan









Construction and fit-out has recently been completed and the building opened for business in October with the first five new start-up tenants and operations team from UNIP Management having moved in already.

Hutton concluded: “We sought to economically create a distinctive and exciting structure that provides a high-quality statement building for the university. We’re looking forward to watching it develop and deliver as a high-profile hub for innovation, technology and entrepreneurship.” ■

#### PROJECT DETAILS

**Client:**

The University of Nottingham

**End User:**

The University of Nottingham  
Innovation Park

**Architect and lead design:**

Bond Bryan Architects

**Project architects:**

Bond Bryan Architects

**Project manager:**

Thornton & Firkin

**Civil, structural and M&E engineer:**

ARUP

**BREEAM assessor:**

Anderson Green

**Main contractor:**

Robert Woodhead Construction

**Steelwork:**

Price & Myers

**Aerofoil blades and other cladding:**

LouvreSol

**Glazing:**

Schuco

**Internal glazing partitions:**

Planet

**Paving:**

Tobermore

#### FAST FACTS

**Construction began:** September 2015

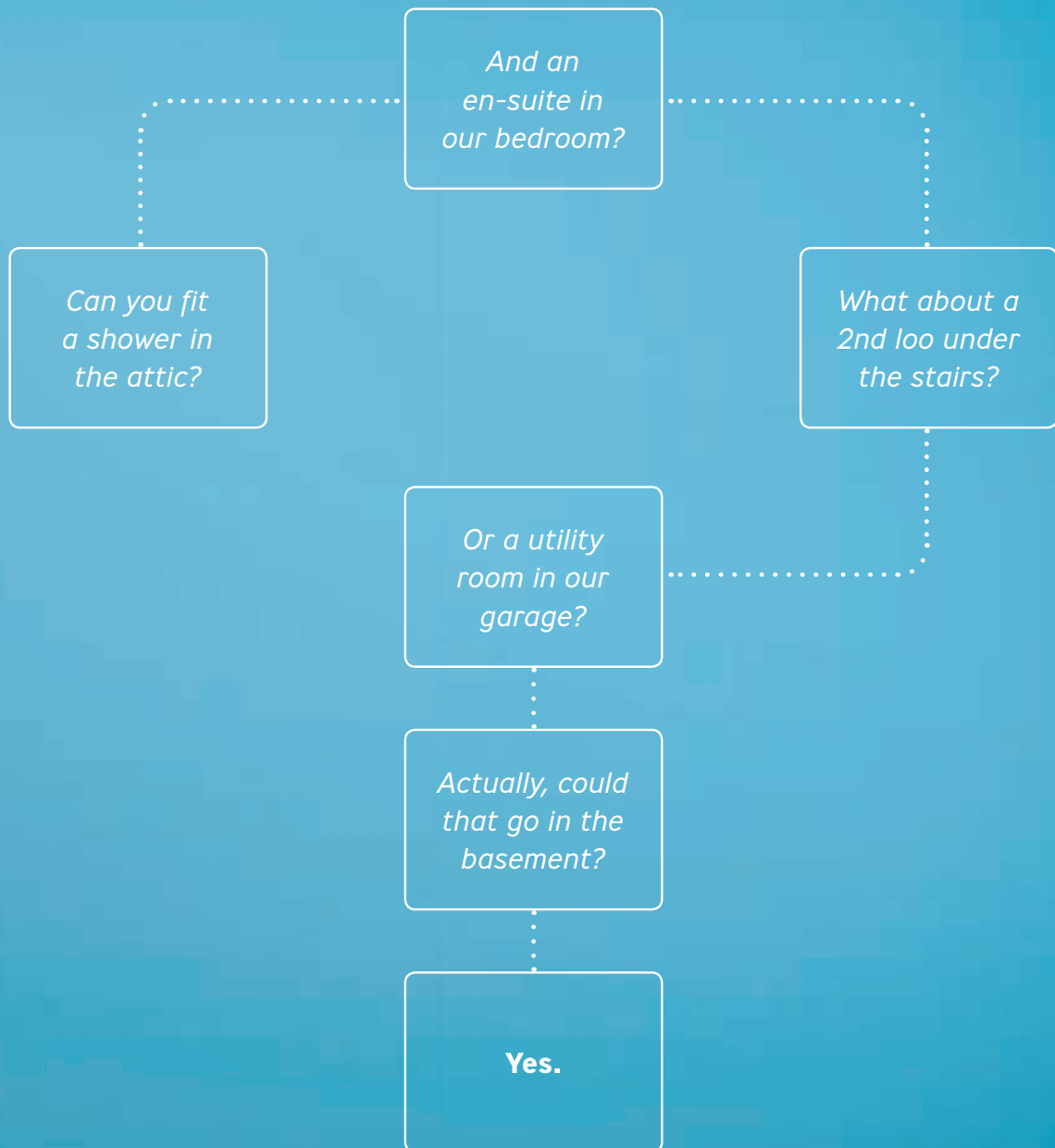
**Completed and opened:** October 2016

**Height:** three-storeys/12 m

**Building footprint:** 808 m<sup>2</sup>

**Lettable space created:** 1,600 m<sup>2</sup>

**Number of aerofoil blades used:** 1,218



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BUILDING  
PROJECTSWELLINGTON PERFORMING ARTS CENTRE  
BERKSHIRE

# Theatre in the round

Connecting two different buildings, bringing together a school community and linking new structures with the natural and historical setting were the challenges for a theatre project at Wellington College. Jess Unwin finds out more



Connectivity is an important part of the architectural ambition for the new £15m performing arts centre at Wellington College in Berkshire.

A new auditorium with capacity for 1,400 people will not only provide the independent school with a new theatre but also serve as an assembly hall for 1,000 plus students.

The auditorium (pictured to the right of the above image) must also connect visually and physically with its existing neighbour, the Christopher Lee Theatre, which was named after the late actor, and which is to be refurbished into a smaller theatre and dance studio.

Both structures, part of a plan to create an Arts & Cultural Quarter at the college, will

feature an exterior finish that connects them to their immediate wooded surroundings on the edge of Bracknell Forest.

On what is a sloping site, clever design will connect the different levels of the buildings – both inside and outside. And finally, the project must combine appropriately with the school's nearby Grade I listed historical buildings.

To put all this in context, the college stands on a 160-hectare estate that includes sports fields, a golf course, woodland and a Site of Special Scientific Interest, containing species of mosses and liverworts uncommon or rare in southern Britain.

Project architects Studio Seilern won the commission after an invited competition.





## The Cultural Living Room was partly inspired by Seilern's work at the Curve Theatre in Leicester

Principal architect Christina Seilern says: "We were a late invitation, so had just 10 days but that was surprisingly useful because it forced us to focus us on what the issues were."

### Unlocking the project's potential

Studio Seilern persuaded the college to go with changes to the original brief that would, according to Seilern, 'unlock' the potential of project and the area around it. At the heart of the rethink is a covered area that connects the new auditorium and the old Christopher Lee Theatre.

Some might describe this space simply as a foyer for the two structures either side of it, but it's much more than that, as Seilern explains. "We wanted to give the college something more than they asked for and create a highly flexible, multi-purpose social and performing space, which we're calling the Cultural Living Room."

Partly inspired by her work at the Curve Theatre in Leicester, where the foyer is also a performance space, the Cultural Living Room is a place where students will be encouraged to stage concerts, poetry readings and art exhibitions. It could also serve as an informal teaching area or the

green room to activities in the adjacent buildings. Seilern adds: "There's a lot of waiting time when you do rehearsals. Students can relax, do homework or use the coffee bar that will be located there as an alternative place to socialise."

To aid these multipurpose uses, the Cultural Living Room will feature retractable and tiered rows of benches plus a theatre grid, from which lighting and sound equipment will hang.

The Cultural Living Room's two glass walls play an important part in connecting the project to the outside world. Seilern explains: "It should feel like it's part of outside even though it is fully enclosed. The glazing allows views of the historical college buildings on one side and woodland on the other. We really wanted to reveal the beauty of the trees and the fact we're on the edge of Bracknell Forest."

### At peace with nature

For the auditorium itself, Studio Seilern chose a round design: "Without corners and constantly recessing it should merge comfortably within the woodland and not compete

#### FAST FACT

Wellington College is named after the first Duke of Wellington and its public opening was 1859



with neighbouring historic buildings,” explains the architect. To further lessen the structure’s impact, half of the ground floor will be below ground level, taking advantage of the site’s natural slope.

Constructed using a steel and Metsec system framework, it will be clad with stained timber. Seilern adds: “The idea is that the building feels like it has emerged out of the forest and timber cladding is the obvious choice.”

The dark-coloured stain will mimic the age of the nearby mature woodland – but will importantly also help visually tie the auditorium to the Christopher Lee building as the latter will be covered with identical cladding.

### Transparency

Both buildings are also united by Studio Seilern’s aim to improve movement between and within the two structures – and to bring the project to life by making movement visible both inside and outside of the structures.

To this end, perhaps the most eye-catching feature of the auditorium’s design includes use of cantilever support to allow a

column-less perimeter. The result is cladding that stops well short of ground level, allowing people to see in and out through glazing. As Seilern says, “We created a recess structure so that the building appears to be gently hovering above the ground.”

She continues: “By lifting the cladding and having this ribbon of glass at the bottom you can see people walking around outside and see activities and performances inside.”

Explaining the way Studio Seilern’s designs help people move about the site, Seilern explains: “We want the auditorium to feel alive and not be a big box sitting on the site with no activity around it. The thing about theatres is that it’s very much about negotiating different levels: balcony level, stalls level, stage level, you’ve got stage in and out, you’ve got deliveries, road level and pedestrian-access level.”

The architect continues: “We’ve created this periphery circulation that works with the landscaping and the site levels and that brings you from the Cultural Living Room up to the balconies and up to the entrance area. The gentle sloping we’ve incorporated is a way to negotiate the levels without having

**We wanted to create a highly flexible, multi-purpose social and performing space**

Christina Seilern

### FAST FACT

John Shaw Jr – who had also previously worked as an architect for Eton College – designed the college’s first buildings



The Cultural Living Room is a space where students can both perform and stage exhibitions

any steep stairs or aggressive slopes.

“With our plan the circulation becomes much easier, but also opens up everything so that you see people circulating in and out and up the building and around the building and that is very important to our design.”

### Historically sound

The circulation was also a factor in how the new performing arts centre will fit in with the college’s older architecture. Seilern reveals: “We walked the site with English Heritage and with the planners. It was important the height of the new building shouldn’t overwhelm the historical structures and the views between the two sets of buildings were important too.

She adds: “Our perimeter ribbon of circulation is a promenade through the new auditorium that takes you around the building but also focuses your eye towards the historical buildings. As you progress down and around it you then see the forest. The circulation within the building is very much designed to work with the existing historical setting and buildings.”

### Acoustic challenges

Of course, a crucial factor for a successful auditorium is acoustics. At Wellington College, the building’s circular shape can accommodate 950 seats but this could cause unwanted acoustic effects. To counter that, several methods have been adopted.

Some of the ceiling and the walls feature acoustic reflectors while the sectional

geometry and spacing of the plywood-cladding on the balcony and elsewhere has been designed to spread acoustics evenly through the interior. A striking element of the interior is a hanging acoustic reflector (plywood again) above the balcony that’s also been shaped to even out sound performance.

The auditorium must be adaptable for different kinds of performance – from voice to musical theatre and concerts – and this is achieved by changing the volume of the auditorium through retracting certain curtains and panels. Again, Seilern was able to draw on her experience at the Curve Theatre to help contribute to solutions for variable acoustics.

Mindful that the auditorium will not be in use during school holidays, its design means it can also be set up as a flat floor configuration. This entails the removal of seats in the stalls and allows for it to be rented out as function space.

### Tribute to Christopher Lee

Its next-door-neighbour, the 300 plus-seat Christopher Lee Theatre – named after the late actor and Wellington College old boy – will be extensively refurbished as phase two of the project. While the steel frame and precast concrete cladding superstructure will be retained, the existing interior will be demolished.

This will make way for a black box studio, dance studio, music rehearsal rooms and recording studio facilities for musicians and Wellington College’s student TV station.

The sustainability target for the project is BREEAM Very Good. To help achieve this, photovoltaic panels will be installed on the auditorium roof – enough to power itself as well as other buildings on the college campus. All materials will be sourced to high environmental standards, while solar gain will be tackled by the passive design of the auditorium envelope and protective coating on glazing. Work on phase one (the auditorium) began in August and completes in 2017. Phase two (the theatre refurbishment) is due to be completed in 2018.

Seilern concluded: “Because this is a school and not a Broadway theatre we had to reconcile all the different elements of design on a tight budget. It was challenging on a big building to do that without compromising the brief but we believe we’ve found the way to make it work.” ■

### PROJECT DETAILS

**Project manager:** Thornton Firkin

**Theatre consultant:** Charcoalblue

**Structural engineer:** Peter Brett Associates

**Quantity surveyor:** Thornton Firkin

**Landscape architect:** TLG Landscape Design

**M&E consultant:** Hydrock

**Acoustic consultant:** Bickerdike Allen

**Lighting consultant:** Hydrock

**Fire engineer:** Buro Happold



BUILDING  
PROJECTSTHE SPARK  
SOUTHAMPTON SOLENT UNIVERSITY

# Creating a red-hot seat of learning

The Spark, Southampton Solent University's striking new academic focal point, is firing up a lot of interest. Ray Philpott explains why

Since being awarded university status 11 years ago, Southampton Solent is establishing a growing reputation across many academic disciplines, including its industry-renowned maritime, media and sports courses.

In light of its growing stature, the University realised it needed a new academic hub to really showcase its excellence in learning, teaching, research

and innovation and to project its spirit of success and ambition.

And it has achieved that in style with the Spark, its newly opened, striking flagship building on East Park Terrace Campus – an unmissable statement that also brings something unique to Southampton and cements the University's relationship with it.

At its heart is a bright red, 20 m-long,

curvaceous 'Pod' raised on slender angled columns in the centre of the building's light-filled, five storey-high atrium.

Linked by glass-sided bridge walkways to the main building, this eye-catching sculptural form is designed to capture the imagination of those who see it. Yet surprisingly, it's also a fully functional, enclosed 55-seat lecture space with a viewing platform on top.



**The idea for the pod was born from discussions about what the University brand symbolises: ‘confident, bold, ambitious, dynamic, distinctive, imaginative, warm and welcoming’**

Ian Pratt director, Scott Brownrigg

The Pod is overlooked by glass-balustrade walkways and projecting balconies, serving as break-out spaces set among the white-walled atrium, designed to create a bright ‘welcome space’ for visitors, students, academics and university staff.

Beneath the Pod, exploiting the site’s topography, a broad stairway leads to the lower ground floor levels featuring two large lecture theatres boasting 150 and 200 seats respectively, along with classrooms, kitchens, offices and a plant room.

The building contains more than 30 teaching rooms, a cafe, a fine dining area and new conference facilities.

### **The journey**

The Spark is the culmination of a four-year journey for the building’s designers, international architects Scott Brownrigg, to capture and realise the vision for the future of teaching and learning and to facilitate wider campus development.

After being awarded the project in 2011,

the practice ran a programme of extensive consultation and engagement at all levels with the University and its key stakeholders to develop the project brief and design proposals. Planning was granted in May 2014 and work began on site in June 2014.

As well as being a hub for learning, Scott Brownrigg and the University were keen for the Spark to have a strong civic presence, enjoy a positive relationship with the park and be accessible by the community and businesses.

With no significant congregational space on the existing East Park Campus the University was using courtyard space and marquees for major events, a situation the Spark needed to put right.

To fulfil the University’s requirements, Scott Brownrigg director Ian Pratt and his team embraced some significant design challenges as opportunities.

The Spark is situated on the University’s former campus vehicle access ramp, accessed via East Park Terrace, the road



that runs along the front of the campus. Not only was the vehicular access unattractive to look at, it effectively severed the development site from the rest of the campus.

Furthermore, the multi-level, stepped site is immediately adjacent to the 1960s-vintage Sir John Everett Millais Building, one of a varied mix of structures forming the nucleus of the institution.

Pratt explains: “The first step was to free up the site by moving the vehicular access to the periphery of the campus, using land to the north acquired for development, also helping to reduce traffic flows along East Park Terrace.

“The building needed to be set back from the road with view across to the park. We proposed an L-shaped building adjoining the wall of the existing building, creating a three-sided atrium space at the building’s heart, the central circulation area. It’s lit by day by large linear roof lights and the west-facing fully glazed main entrance.”

The structure is flat-slab reinforced concrete with off-site, precast and pre-glazed concrete cladding panels from Techcrete. This enabled the envelope to be made weather-tight and insulated in just six weeks, saving time and money.

### Engineering challenges

“There were complex engineering challenges throughout, such as avoiding the Southampton geothermal main – running within a metre of the eastern edge of building – during piling.

“Integrating the new building with the existing one was certainly demanding. We needed to modify and back-prop parts of the 1960s building to install the atrium floor, while the East Park Deli cafe has been built inside the ground floor of the older structure as part of an entire redevelopment of that floor.”

A completely new, facade mirroring the exterior of The Spark was added to the external envelope of the old building to form the third ‘side’ of the atrium, enabling





## The building's huge attention-grabbing central atrium has brought a genuine wow factor to the campus

Professor Graham Baldwin, vice-chancellor, Southampton Solent University

services, ducting and utilities to be run behind it.

Pratt adds: "And all this happened while the University operated as normally as possible. The main contractor Interserve was very helpful and proactive in this area and throughout the project."

### The Pod

Undoubtedly though, the greatest design and engineering challenges centred around the eye-catching Pod in the atrium.

Pratt says: "The idea for the Pod was born from discussions about what the University brand symbolises: 'confident, bold, ambitious, dynamic, distinctive, imaginative, warm and welcoming'. That's the kind of response we wanted to generate in people and we drew our inspiration from that.

"We wanted it to be functional but felt it needed to be a captivating sculptural feature. You can see elements of the University's maritime heritage in there but



## PROJECT DETAILS

### Client:

Southampton Solent University

### Architect and lead designer:

Scott Brownrigg

### Project manager:

Gleeds

### Main contractor:

Interserve

### Civil and structural engineer:

Scott White and Hookins

### M&E engineer:

WSP (pre-contract),

Arup (post-contract)

### Acoustic consultant:

Hann Tucker Associates

### Fire engineering consultant:

International Fire Consultants Ltd

### BREEAM assessor:

Gleeds

### IT/AV consultant:

Turner & Townsend

### Town planning consultant:

Turley Associates

### Highways, traffic and transportation consultant:

Scott White and Hookins

### FF&E consultant:

Broadstock

### Cost management consultant:

Faithful+Gould

## FAST FACTS

**Project cost:** £33m

**Six storeys high**

**Floorspace covered:** 10,000 m<sup>2</sup>

**80 seats inside pod**

**350 seats in two lecture theatres**

**30 tuition/learning rooms**

**Completed summer 2016**

**First students September 2016**

**Rated BREEAM Excellent**

people have compared it to many things; for example an alien craft from in War of the Worlds film, a pebble, a bean, an egg and even a sweet. To us, that shows people are engaging with it and pausing for thought.”

Constructed in the Netherlands by CIG, the Pod is made from 10 mm-thick, cold-pressed British steel panels, weighs some 67 tonnes and was fabricated using a hi-tech process.

Individual panels are cut by laser and

shaped – mostly by computer but also using highly skilled human press operators. These components were welded together and ground smooth to create a single structure which was then cut into panels using hand-held angle grinders, taken into a car paint workshop and sprayed ‘Solent red’.

In the UK panels were lifted into place, bolted together and to the innovative steel superstructure designed by civil and structural engineers Scott White and Hookins





## BIM was crucial to the success of the project and a fundamental design tool from the outset

Ian Pratt, Scott Brownrigg

with 6 mm shadow gaps between each panel.

The inner lining comprises reinforced red painted perforated aluminium to reduce reverberation with shapes and lines reflecting the exterior geometry and comes complete with a curved video screen.

“When you step inside it’s a bit like boarding a spaceship or a boat – you really do feel like you are about to embark upon a journey. It’s a destination in itself,” comments Pratt.

### Strategy

Situated on an island site, surrounded by roads, The Spark has a sealed facade to minimise noise and air pollution, necessitating use of mechanical ventilation and air conditioning. Yet Scott Brownrigg and the University achieved their joint ambition and the building achieving BREEAM Excellent status.

“The strategy has been to utilise the thermal mass of the concrete frame to balance out the heating and cooling,” explains Pratt.

Concrete soffits are exposed in the main teaching spaces, which feature prefabricated, multi-service ‘active chilled’ beams carrying the air supply and connected to air-handling units on the roof. Exhausted air leaves the classrooms through attenuated louvres and up into the atrium louvres where heat is extracted and reused.

This system is complemented by a battery of photovoltaic cells on the atrium roof and extensive use of low-e glass, while most of the classrooms are north facing, reducing solar gain.

The details of this system were captured in the Level 2 Building Information Model (BIM) produced by Scott Brownrigg and the other design consultants and used to generate all design and construction drawings.

“BIM was crucial to the success of the project and a fundamental design tool from the outset. It helped us to test out and successfully demonstrate our ideas, commission 3D printed models, produce fly-through animations and gain buy-in, understanding and finalisation.”

The Spark’s success can be measured by the reaction from the University leadership. As Professor Graham Baldwin, Southampton Solent’s vice-chancellor puts it: “The building’s huge attention-grabbing central atrium has brought a genuine wow factor to the campus.”

Director of estates, David Corless, adds: “Scott Brownrigg have been instrumental in helping shape the future plans for estate development on the city campus.”

He continues: “Their bold, ambitious and innovative design encapsulates the University’s strategy and vision. The internal configuration of varying classroom types and sizes, and informal and formal social space demonstrates their understanding of the needs of teaching and learning for a modern university.”

And the Spark is already making an impression overseas, too.

Pratt comments: “One University lecturer told us that during a talk in China he showed the audience a picture of The Spark they all spontaneously stood up and applauded. I think we can take that as a compliment.” ■

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# Raising standards in play

Julie Pearce of Sovereign Design Play Systems highlights the importance of using a specialist playground provider

**With building a relationship with a playground company comes trust, because you get to know one another and develop a certain style for projects**

Planning for a playground as part of a new-build project or enhancing an existing play space for a school upgrade can be very time consuming. With almost 10 years' experience in this industry, believe me, I know.

Time restraints and deadlines make it all too easy to cast a search online for play equipment, followed by the temptation to buy it, have it delivered to site and install yourselves. While in essence choosing an off-the-shelf solution may be quicker, there are factors that are vitally important to consider during a playground development, at times missed without the knowledge and experience of an expert. This research and information collection, coupled with the understanding of our industry is what makes the use of a specialist playground provider worth their weight in gold.

Here we cover some of the key reasons as to why a specialist playground company can help you in reaching the projects goals for an exceptional outdoor space.

With building a relationship with a playground company comes trust, because you get to know one another and develop a certain style for projects. This in turn means

the provider can identify and recommend products that are the most suitable for a project and they are always on hand to offer advice when needed most.

## Safety standards

Recognising the importance of play and risk, the British & European Safety Standards are designed to prevent injury (while not being able to prevent all injury necessarily). By having a playground specialist on hand, we can identify risk and design all play provision to meet the strict BSEN 1176 and 1177 standards, to ensure that the playground is designed appropriately for the project and the available space; not just aesthetically, but practically and with consideration of safety. No two spaces are ever identical and with that in mind, no two projects I have ever designed have been identical either.

## Experienced installers

Utilise the experience of a playground specialist's installation team – fully trained and experienced constructors who work to the most exacting standards. It ensures that all important factors are met during the





build and that the life expectancy of the playground is as great as possible.

### Design

Ensure the play provider is fully understanding of the school's teaching framework and curriculum, which leads directly on to 'learning outside the classroom' and the understanding of 'zoning' a space. It really is so much more than placing equipment in spaces that fit.

The understanding of a school's approach and teaching of the children will enhance the designer's ability to create a space perfect for encouraging learning outside, not just play.

This could be by creating a zone for physical activity, a creative space for learning and development, an area for role play and fun, or an educational zone for literacy, numeracy and language development. The list is endless.

### Quality and experience

A specialist play provider's quality of craftsmanship and installation ensures that a play space is built to last. This, coupled with the warranties that accompany an installation all makes for a durable and sustainably sourced play space that will last for many years. I would always look for a 20-year warranty on timber, with five years

of product warranty on surfaces and five years on playground markings (covering not only the performance of material, but also the application).

### The offering

Understanding a play specialist's full offering can provide significant value to a project. I recently met with an architect and the project team of a new-build school who had called me in to look at some equipment for them. They had done the same with a canopy supplier, a surfacing provider and a markings company, without knowing that a specialist play provider has the unique ability of delivering an entire project — particularly if they manufacture. This means both time and money saved, with one person responsible for the whole playground development.

I cannot begin to tell you how invaluable a relationship with a play provider will prove to be.

You build relationships, get fantastic value for money, but above all — you can be confident in them delivering a playground project that will thrill children, safe in the knowledge that everything has been thought of and taken care of.

*Julie Pearce is a consultant play specialist for Sovereign Design Play Systems*

### ABOVE

Areas can be zoned to encourage outside learning as well as play

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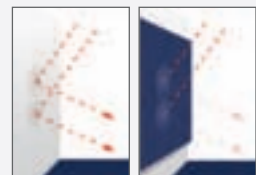
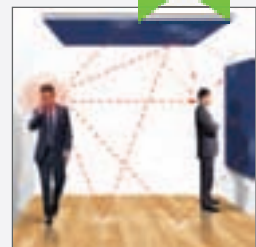
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# Quiet please!

Collecta's Richard Hillman offers some sound advice on achieving high acoustic performance in student accommodation



**S**tudent accommodations can be noisy environments which can disrupt sleep, add to stress, infringe on privacy, and generally compromise quality of life.

Achieving a high acoustic performance throughout a building where there are lightweight walls and many social break-out spaces is a task that needs to be done right from the off.

As developers and clients are more frequently choosing modern methods of construction, such as off-site and modular building, the need to get the acoustic specifications right has become more important than ever. When designing these types of mixed-use multi-occupancy living, there are a lot of factors that need to be considered at the planning stages to ensure the design brief is met.

## Beyond the minimum

Keep in mind the minimum requirements under Part E of the Building Regulations are really just that – the bare minimum of

what needs to be achieved. Most complaints made about noise issues can occur in properties which only scraped passes through onsite pre-completion testing. Therefore, always look to design for at least a 5 dB improvement on the minimal values set out in Part E as a safety factor, for effective levels of sound proofing and also to allow for any workmanship issues during installation.

Even if your scheme doesn't qualify under the Robust Details (RDL) scheme, you should still look to adopt these construction methods in to your designs. Having been rigorously tested on many projects before gaining RDL Part L compliance, they exceed the minimum requirements under Part E. Adopting commonly used details such as E-FT-5 (timber frame) and E-FS-3 (light gauge steel frame) will help speed up the design process in the knowledge that either system gives you peace of mind in your materials choice.

**Seek advice from relevant product manufacturers to ensure the materials are compatible and have been tested together before**

## Build to last

With fast-build projects, choosing materials that are not necessarily the cheapest yet offer the best value to the whole build process can prove to be invaluable to meeting tight build programmes. Most new student accommodation projects will look to install high-quality vinyl floor finishes, and these cannot be laid to a 50 mm screeded floor until at least 50 days after it has been installed and allowed to adequately dry out.

By nature, student accommodations need a hard-wearing, robust acoustic flooring





**Design for at least a 5 dB improvement on the minimal values for effective levels of sound proofing**

build to deal with everyday life in a halls of residence. Multiple floor finishes such as vinyl, ceramic tiles, laminate flooring and carpets may have to be installed in addition to the acoustic floor.

Always seek advice from the relevant product manufacturers to ensure the materials are compatible and have been tested together before. Additional floor preparation, such as overlaying a chipboard-based acoustic floor with plywood and flexible levelling compounds can sometimes add substantial costs to individual packages to cause further delays on site.

### Environmental targets

There are several solutions within the market place that can be considered, but only one dry screed treatment board product that is manufactured from 100 per cent recycled content, a significant benefit for architects and specifiers aiming to achieve maximum BREEAM points.

### Managing deliveries

Further delays to the process can be caused by restricted site access on university campuses and city centre developments. In truth, timed deliveries and poor site

locations really don't mix well. An example of this is a failed flowing screed delivery that typically needs to be installed within hours of leaving the production plant. It could best to select solutions that can be stored on site and accessed as and when required.

Some companies will allow you to call-off the product when you need it, while others will deliver the complete job at once. To avoid issues, it's worth asking your chosen suppliers how they operate as you may have little room for large pallets.

Easy to handle 1,200 mm x 600 mm boards are ideal for storage and distribution around the site. As they are just under 20 kg per sheet, it's a one-man lift compared to the flowing screed that typically needs to be installed within hours of leaving the production plant.

Asking for advice before your project gets fully underway could save you and your client valuable time and money – so make the most of the knowledgeable technical teams available.

*Richard Hillman is ScreedBoard manager for Collecta*

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# Clever with cladding

Paul Richards of Aquarian Cladding Systems, explains how ever-increasing demands from the education sector are fuelling fresh innovations in construction solutions to meet the sector's needs

**B**uilding for education comes with its own set of challenges, often including term date-dictated timescales.

In common with most construction projects, budgets are strict and site constraints are often testing too. Schools, colleges and universities are under pressure to minimise running costs and improve efficiency, leading them to make provable performance demands of their buildings.

These factors are contributing to an exciting shift towards the use of smarter materials such as lightweight, offsite-manufactured cladding systems, which bring big advantages to developers, contractors and building managers, as well as allowing architects a freer design rein.

Take Hampshire County Council's ongoing schools refurbishment programme as an example. The council needed greater efficiency, lower running costs and improved learning environments from their outdated prefabricated school buildings. Large windows and inefficient wall construction meant heating and maintenance bills were rising. But the steel-framed structures remained sound, meaning that cladding could be installed onto the existing frames, enhancing external aesthetics and internal space while reducing costs.

When considering materials for the build programme, conventional brickwork was ruled out as excavation would have had to take place to construct new foundations. So, the Council's Property Services design team opted for light-gauge steel infill panels with a lightweight, insulating brick cladding system to provide a quick, clean and cost-effective solution, removing extensive site works from the extremely tight build programmes.

Using a cladding system proved to be quieter, faster and less disruptive and the contractor estimated a time reduction of 33 to 50 per cent compared with conventional masonry construction, enabling a brick facade to be delivered for a fraction of the time, cost and work involved.



## Speed of installation

But lightweight cladding systems are not just ideal for refurbishment. Construction of the new-build Buckinghamshire University Technical College (UTC) in Aylesbury also benefitted from the predictable build times such systems can offer. The use of a brick cladding system meant a handover four weeks ahead of schedule was achieved, with the construction process benefiting greatly from the predictability that a modern cladding system brings.

Project constraints dictated an innovative approach to construction, as did the fact that the contractor's start date was delayed by six weeks due to planning issues. However, the use of cladding enabled them to take the external facade off the critical path, so that the building was weathertight as soon as the steel framing and external sheathing were installed. The brick cladding system effectively replaced the traditional bricklayer's role of having to blend three different brick types from packs on-site and also meant that work could carry on in almost all weather conditions.

## ABOVE AND BELOW

Lightweight cladding brought many benefits for the construction of this student accommodation in Stratford, East London







All images © Barry Pearson

## Using a cladding system proved to be quieter, faster and less disruptive

### ABOVE

The use of cladding brought a welcome level of predictability during the build for University Technical College in Aylesbury

### Building light

Brick cladding systems also provide an intelligently simple solution to large-scale inner-city buildings such as student accommodation. Unite Students, the UK's leading provider with over 44,000 rooms across 26 cities, recently experienced the benefits on its new-build accommodation block at Angel Lane in Stratford, East London, where the project was completed under budget and on time, ready for the start of the academic year.

The Angel Lane project was not all plain-sailing: issues included a delayed start due to late land purchase, complex architectural specifications, complicated site access and a fixed completion date – the start of the academic year.

Despite this, the landmark 14-storey build went so well that in 2016 the CIOB Project Manager of the Year Award was won by McAleer & Rushe project manager, Paul Marlow, in part because of his adoption of a lightweight cladding system for the scheme.

### Cost cutting

The entire project, comprising 759 student bedrooms and commercial space around an open courtyard, was built in 18 months, with the cladding installation taking around seven months. Having switched from a

post-tensioned concrete frame to reinforced in situ, the critical benefit of using lightweight cladding was that it eliminated the extensive tower crane hook-time required by a precast solution, as it could be installed from scaffold, mast-climbers and cradles.

The system's light weight also meant cost savings for the contractor, reducing the building from around 200 kg/m<sup>2</sup> of brickwork to around 50 kg/m<sup>2</sup> of cladding. In addition to the lower scaffold and structural support costs, cladding also contributed to a reduction in preliminary costs, thanks to its speed of installation. Although access was restricted by the site being flanked by A roads and a railway line, the cladding system's efficient load size reduced the number of deliveries by 75 per cent compared with brickwork.

On these few recent examples and countless other projects across the UK, modern materials and methods of construction are helping to meet the very specific needs of the education sector.

They can help deliver robust buildings on time and on budget that are low maintenance and produce stunning learning and accommodation environments for future generations to share.

*Paul Richardson is managing director of Aquarian Cladding Systems*

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# Breathing new life into schools

New standards for ventilation in schools are set to transform approaches to design and system choices, as James Hammick of Passivent explains



**ABOVE**  
Typical Passivent hybrid system in recirculation mode

**Designers should be engaged in the ventilation strategy early in the design process**

Changes to the Department for Education's ventilation guidance Building Bulletin BB101 are imminent, with the new bulletin 'Guidelines on ventilation, thermal comfort and indoor air quality in schools' replacing the current 2006 edition.

As the title suggests, the changes are being introduced to improve thermal comfort and indoor air quality.

The Priority Schools Building Programme has piloted the new guidelines in BB101 and has shown direct benefits to schools through lower capital costs, improved comfort conditions and reduced energy costs.

## The changes

A major change to BB101 is the emphasis on indoor air quality (IAQ). Referring to the World Health Organisation's Indoor Air Quality Guidelines (2010), the update covers internal pollutants and external pollutants in air coming into the building if it's naturally ventilated.

Carbon dioxide is identified as a key indicator of ventilation performance for the control of IAQ. For natural and hybrid ventilation systems, the daily average of CO<sub>2</sub> has been set at 1,500 ppm and not to exceed 2,000 ppm for more than 20 consecutive minutes each.

For mechanical systems the daily average is 1,000 ppm not exceeding 1,500 ppm for more than 20 consecutive minutes. This means a manual opening windows strategy must be replaced with automated products that sense CO<sub>2</sub> levels and react accordingly.

For thermal comfort BB101 (2006), ventilation guidance is based around air flow rates for background and rapid ventilation, the latter being used to cover the overheating criteria. In the 2016 update these ventilation rates have been removed.

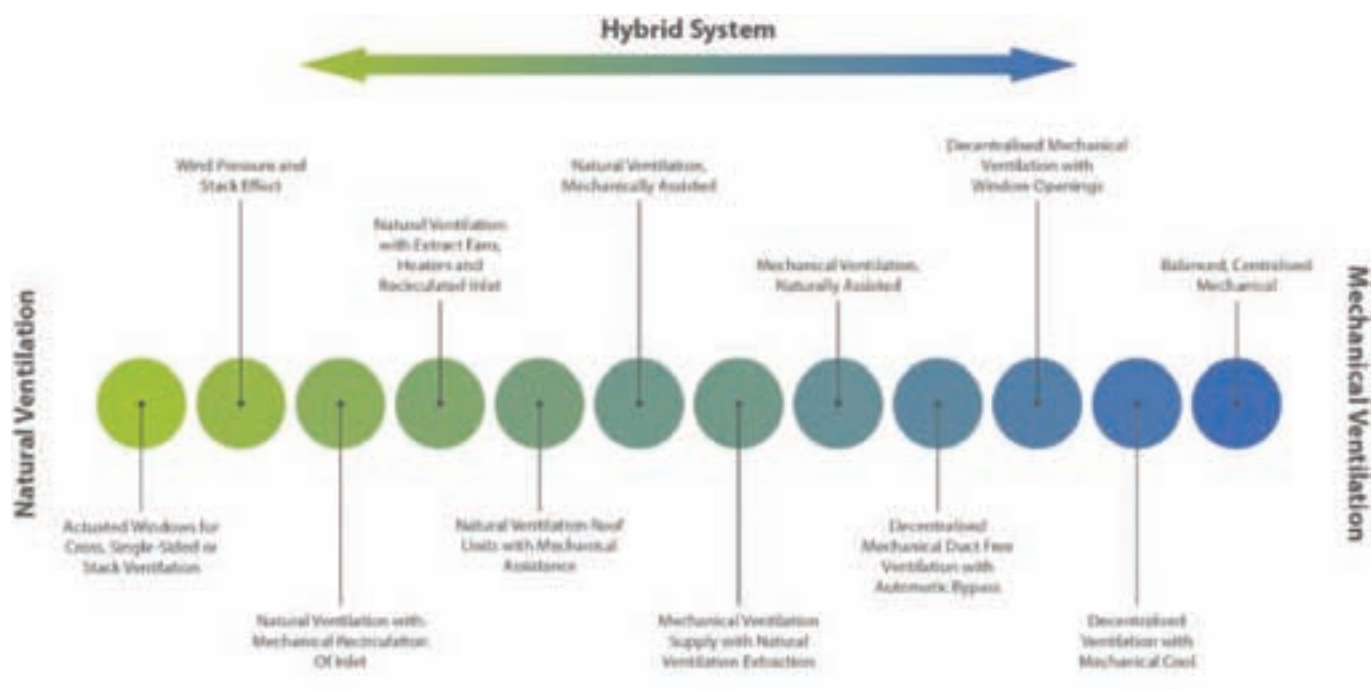
Instead, to avoid summertime overheating, the new guidance requires buildings to be thermally modelled in line with CIBSE's TM52 'The limits of thermal comfort: avoiding overheating in European buildings'.

More stringent weather file criteria must be used, specifically CIBSE Design Summer Year (DSY) data rather than Test Reference Year (TRY) data. In a change to working practice, designers must also look at adaptive comfort and operative temperature within the school.

During the winter and mid-season months, classroom occupants may be subjected to cooler external air entering the building. Guidance is given on acceptable internal temperatures depending on the room classification and the location of ventilation systems to avoid discomfort being an issue. Additionally, the update covers the heating system in the building to ensure this also doesn't adversely affect the occupants.

## Implications for design

The maxim is: design early, design right. Designers should be engaged in the ventilation strategy early in the design process. The correct specification at the conceptual



design stage should prevent mistakes from being carried through to the final design. Working closely with M&E consultants and experienced systems manufacturers will enable designers to conceive a robust solution from the outset.

It is also essential that ventilation is considered in relation to the mass of the building and that the openings required to achieve the correct levels of ventilation are designed in to ensure the right quantity, size and location of the products will suit the requirements of the school.

The new guidance places greater emphasis on thermal modelling, requiring ventilation and thermal comfort design to be proved using such tools. Calculations at both concept and scheme design stages must be carried out for summer, winter and mid-season design conditions to prove that the design will operate throughout the year.

At the detailed design stage it is desirable to use dynamic simulation tools particularly for night cooling. Choosing a systems manufacturer with this capability is therefore imperative.

### Ventilation strategies and products

A move to hybrid ventilation systems is anticipated (see diagram). While the revised BB101 continues to promote natural ventilation in schools, due to the known benefits such as night-time cooling

and good indoor air quality, the use of hybrid demand-controlled products are also cited.

Hybrids offer a mix of both natural and mechanical ventilation when required, for example, a naturally ventilated system with a low-power fan to enable a summer-time boost in times of low wind speeds or to assist with mixing cooler air with warmer room air during winter.

The energy required to temper the outdoor air in the cooler months can be significant. To maximise energy efficiency, the design of ventilation systems should wherever possible use the heat gains from occupancy and equipment to warm incoming ventilation air.

Designs should also meet the DfE Acoustic Performance Standards for schools in Building Bulletin 93 to minimise noise transfer between different areas of the school building. This is especially important between noisy areas such as atria and quieter teaching areas, and there are now products to suit this need.

BB101 (2016) will transform ventilation design in schools. A flexible and collaborative approach between designers, M&E and systems manufacturers will ensure the most appropriate ventilation solution.

*James Hammick is design manager at Passivent and a member of the BB101 Advisory Group*

**Hybrid ventilation systems offer a mix of both natural and mechanical ventilation when required**

# Washroom design for the well-educated

With so many rules and regulations surrounding the practicalities of washroom design in educational settings, Daniel Ward of Twyford talks us through the dos and don'ts of sanitary specification for the school environment



**Energy and water make up a major part of non-staff costs in educational buildings, with over 20 per cent of energy being wasted**

Specifying products for washrooms in the education sector may seem a fairly straightforward task – but ensuring regulations are met and the space is well designed, comfortable and practical is challenging.

Lack of privacy, vandalism and inadequate cleaning and maintenance can make a visit to the toilet an unpleasant and unhealthy experience for students. In fact, recent research undertaken by charity Education and Resources for Improving Childhood Continence (ERIC) highlighted that the quality of school toilets has a huge impact on pupils' health, education and happiness. Therefore the design of washrooms in education premises needs to be about a lot more than simply providing enough toilets and washbasins.

## Layout

The overall layout of school washrooms is a good place to start. As well as adhering to regulations regarding wheelchair accessible cubicles, all standard cubicles

must have a minimum 450 mm-diameter manoeuvring space that is clear of the door swing. Moreover, when designing spaces for growing children, the sizes and fixing heights of sanitaryware must be suitable for the relevant user age groups, too.

Short projection WCs offer a good solution here, creating the necessary space while still ensuring user comfort. Wall-mounting the pan with a suitable framing system will enable the height of the WC to be easily adjusted during installation to better meet the needs of the user.

## Hygiene first

Aside from layout, hygiene in this environment is extremely important too, with ease of cleaning being key to students' health and well-being. So much so that the Department for Education offers guidance on the issue, stating that to avoid build-up of dirt and germs, the toilets in schools should be wall-hung or back-to-wall.

This also offers a solution with regards to ensuring plumbing work is tamper-proof, a particular point of note when specifying for colleges and universities which serve older children and young adults. The cistern and pipework should be concealed within the framing system, preventing interference, while being easy to access for maintenance purposes.

A dual-flush cistern sitting neatly behind the wall will also help to significantly reduce the amount of water used, while not affecting overall flushing performance. This is particularly important in educational establishments, which are high-traffic areas with the potential for toilets to be flushed literally hundreds of times in any one day.

It is also worth noting that in schools, particularly where younger users are present, the recommendation is also to avoid urinals, but where they are specified



to opt for individual bowls rather than a trough, with modesty panels for privacy.

### **Saving water pays off**

The washbasins in school washrooms should also be subject to a number of practical considerations. Ease of cleaning for hygiene reasons remains imperative, making ceramics that are coated with an easy to clean glaze a particular benefit, while the choice of brassware is also important. Not only should mixer taps for washbasins be robust and tamper-proof, but they should be ideally fitted with an automatic shut-off too, either through a built-in timed delivery feature or infra-red sensors.

Energy and water are a major proportion of non-staff costs in schools, colleges and universities and a major part of their environmental impact. While some schools will have greater scope for savings than others, overall more than 20 per cent of energy is wasted, and a school that is equipped with water conservation devices, such as taps with automatic shut-offs or flow restrictors, plus dual-flush WCS, typically use less than half the amount of water used in schools where such features are not present.

### **Longevity guarantee**

Keeping maintenance levels as low as possible is an important requirement in school buildings, where downtime in washrooms can be at best inconvenient for staff and students. This makes the specification of quality sanitary fittings that will be hard-wearing and durable, of particular significance. To limit the frequency of replacing such fixtures and fittings, their life expectancy should be around 15 to 20 years, with a manufacturer's guarantee providing the best scope for this.

There are undoubtedly a lot of things to consider when designing washrooms for educational establishments, with all elements really carrying equal weight.

The trick to ticking all of them off and achieving a successful design is to establish a strong relationship with a manufacturer who is able to respond to all aspects of a washroom's design, from layouts and dimensions to styles and materials as standard, so that there is never any need to compromise.

*Daniel Ward is product manager – ceramics for Twyford*



# Chamberlain student accommodation

The University of Birmingham's new Chamberlain Hall Student Accommodation is an impressive example of regeneration which is in keeping with the landscape as well as providing all essential capacity growth for the future. Consisting of two linked tall towers at 17 at & 21 stories and five "finger" blocks.

The facade had to provide function as well as form. Day-lighting is vital to aid with studying, no dark gloomy corners, a light and airy interior is desirable. Natural ventilation was a must, however, in keeping with the structured facade open-in windows were required fronted with ventilation panels, to allow ventilation yet not impact on the facades integrity, maintaining the clean lines and sleek elevations.

Continental Installations worked closely with Comar Architectural Aluminium Systems and main contractor Balfour Beatty on the complex facade. The team designed a bespoke capping profile which was extruded with re-enforced walls capable of fixing the copper panels directly to it. A heavy duty pressure

plate with a fixing port arrangement, was used to mechanically fix the capping to the pressure plate. Subsequent regular fixings then transmitted the applied loads back to the rear structural mullion member to ensure there was no thermal bridging. All connections were fully isolated to prevent bi-metallic corrosion.

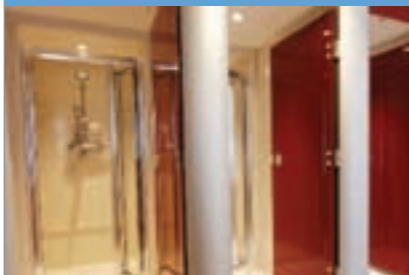
This bespoke design then included inward full height opening windows which sat

behind the facade, Comar SPi Advanced Tilt/Turn open-in windows were selected. These were perfect for the application as they offer slim sight-lines, thus maximising daylighting as well as the profiles themselves have thicker walls that provide robustness and large spans to ensure they stand the test of time.

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# Flame-free roofing solutions for all your needs

There is growing demand for improved safety within the education sector, especially in relation to refurbishing school and academy buildings. In response, flat roof manufacturer Bauder has developed various high-performance waterproofing solutions over the years that can be installed using flame-free methods; removing the need for a naked flame or hot bitumen at roof top or ground level.



offer lightweight, fast track, flame-free solutions that are installed using hot air welding techniques with mechanical fastenings or adhesive bonding to provide high-performance solutions, which are durable and give excellent fire resistance. The membranes deliver strong and flexible polymeric waterproofing that is resistant to weathering, chemical oxidation and UV radiation.

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application, fast cure and durability without using any hot works, making them suitable for use in all kinds of flat roof, balcony, walkway and terrace applications. All Bauder LiquiTEC products are solvent and halogen free; and unlike many other systems do not contain styrene and isocyanate, which are linked to serious health risks.

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UK designed and manufactured, Powermatic controlled, concealed door closers from Samuel Heath deliver a host of benefits for educational learning and accommodation buildings.

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Being totally invisible when the door is closed and having few parts on show when the door is open, Powermatic is less likely to be vandalised than surface-mounted devices. This reduces the risk of a fire door being rendered inactive by a damaged door closer and means that maintenance or repair costs are minimised.

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## Yeoman Shield's education 'hot spot'

**K**eeping a School looking smart, tidy and clean can be a daunting task when faced with budget constraints.

Continual re-painting and repair of walls and doors damaged by general use of a building can become a drain on the maintenance money pot.

Yeoman Shield wall and door protection can provide a solution to the problem with products such as corner protection angles, wall and door protection panels and protection rail which will prevent the damage from happening and over the lifecycle of a building will drastically reduce the need for re-decoration, re-painting and repair.

Establishments who have used Yeoman Shield have seen a year on year saving on repair costs as well as noticing a retention of a smart and clean appearance persuading them to roll out protection into other areas of their school buildings.

The new Yeoman Shield 'hot spot' indicator can be found on Yeoman Shield's website.

The indicator pin points the areas where damage is most likely to occur to the interior



fabric of a school. Hover over these points and the Yeoman Shield products which can be installed to prevent such damage from happening will be highlighted.

The areas depicted are typical vulnerable points found in an education building. However Yeoman Shield has a wide range of products including skirting, frame and architrave protection as well as heavy duty

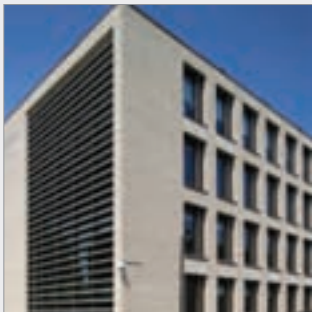


rubber wall protection rails and angles that can cover most eventualities.

For more information on the protection solutions Yeoman Shield can offer building such as Schools, Colleges and Universities contact our team or alternatively send us your solution requirements.

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## Senior's SF52 provides the smart solution for the University of Cambridge



As the new hub for innovation and invention at the University of Cambridge's Department of Engineering, the James Dyson Building has become the latest high-profile scheme to benefit from the slim slight lines and enhanced thermal efficiency of Senior Architectural System's SF52 aluminium curtain walling. A key part of the building envelope is Senior's SF52 curtain wall system that has been fabricated and installed by Glass & General Maintenance for main contractor Morgan Sindall, with whom Senior has an established trading agreement. The system's slim 52mm sight lines provided the perfect solution to creating an attractive uniform appearance for the new building as well as maximising the flow of natural light into the largely open plan interiors. The robust construction of the SF52 curtain wall system and its exceptional thermal performance was also key to its specification and meeting the requirements of reducing the building's overall energy and life cycle costs. The SF52 system is available as a mullion drained system which removes the need for visible drainage slots and can also be specified as capped, silicone sealed or as a combination of the two.

[info@seniorarchitectural.co.uk](mailto:info@seniorarchitectural.co.uk)

## Reducing noise in the first Welsh Passivhaus School



The Burry Port Community School is the first Passivhaus School in Wales. In a design collaboration between Carmarthenshire County Council and Archetype architects, this ground-breaking project unites the town's infant and junior schools, accommodating 210 pupils and a 30-space nursery class. Its aesthetically pleasing, comfortable and noise reduced environment is also a showcase for the use of Trolldtekt acoustic panels. The original school building has been refurbished, while the extended block accommodates four new classrooms, as well as two further teaching spaces, staff and meeting room facilities. Sitting between the new and old buildings, a dynamic multi-use 'pod' offers group recreation and performance space. A major contribution to the pleasant environment was the choice of Danish manufactured Trolldtekt acoustic ceiling panels, especially in the classrooms and potentially noisy open spaces. Specified throughout the UK and Europe, the benefits of the 100 per cent natural wood fibres panels include high sound absorption, high durability, natural breathability, low cost life cycle performance and sustainability documented by Cradle to Cradle certification at silver level.

[info@trolldtekt.co.uk](mailto:info@trolldtekt.co.uk)



## Platon system waterproofs iconic fire HQ in student accommodation conversion

**T**riton supplied 3,000m<sup>2</sup> of Platon P8 cavity drain membrane to waterproof several basements at the iconic West Midlands Fire Brigade building at Lancaster Circus in Birmingham. The membrane forms part of a Type C drained waterproofing system (as defined in BS 8102 2009) to the area, which has been converted to residential accommodation for 463 students from Aston University.



The system was installed by Triton approved contractors, Protectahome, working for Watkin Jones Construction. Cavity drain membranes work by allowing any water ingress to continue to enter the building through the walls, but then controlling it and diverting it down the wall to the Aqua Channel perimeter drainage conduit. In this project, the conduit diverts the water to one of 10 sumps, each housing a Triton Aqua Pump Pro Plus kit (each comprising mains powered and battery back up pumps).

Moisture had been penetrating into parts of the basement for several years through the wall/floor joint and various cracks in the original floor slab. Although large floor areas have been excavated to allow for greater head height and replaced with new floor slabs, many of the original floors have been left in situ. As the Platon system allows moisture to enter the structure there is no hydrostatic pressure



on existing floor slabs and no need to replace them.

Triton's technical team has worked closely with the architect, main contractor and specialist basement contractor from design inception through to overseeing installation and testing of the system.

01322 318830 [www.tritonsystems.co.uk](http://www.tritonsystems.co.uk)

## Fermacell does the maths at Lane End



Fermacell's gypsum fibreboard panels have saved construction costs for a new school. Gypsum fibreboard from fermacell was used to dry-line a new primary school to enable the main contractor, Interserve Construction, the international support services and construction group, to accelerate the construction programme. Fermacell's 12.5mm square-edged panels have been used throughout the £5.5 million Lane End Primary School in Beeston, Leeds, which now caters for 420 three to 11-year-olds. Using gypsum fibreboard panels enabled the dry-lining at Lane End to go ahead with just a single layer of fermacell, in effect negating the need for one layer of plasterboard and one layer of plywood pattressing, saving money on materials and manpower. Gypsum fibreboard panels are resistant to impact, moisture and fire (Class 0, Class 1 surface spread of flame / Euroclass A2) and also perform acoustically – a partition with a single layer of 12.5mm gypsum fibreboard to each side achieving 54dB Rw of sound insulation when combined with appropriate insulation materials.

0870 609 0306 [www.fermacell.co.uk](http://www.fermacell.co.uk)

## Energy efficient ventilation systems reduce harmful condensation



iMEV continuous mechanical extract ventilation systems from ventilation specialist Passivent offer a low energy, automated approach to optimising air quality and reducing the risk of harmful condensation and mould. Requiring minimal maintenance and no user intervention, iMEV systems are 'intelligent': they automatically detect rises in humidity and respond accordingly. Extraction is only increased in areas where humidity has risen resulting in less energy usage as the central fan is not running at a higher speed unnecessarily. Heat loss is also reduced as the systems rely on demand control, that is, extraction when and where required. Two iMEV systems are available: 'Local' which senses humidity change at the ceiling extract in a 'wet' room and allows a greater extraction rate, so providing local control; and 'Total' which senses humidity change again at the ceiling extract in a 'wet' room and also pressure differences in the system to allow greater extraction rates when needed by increasing the fan speed automatically, providing total control. They are suitable for multi-residential properties such as student accommodation and care homes and also apartments and houses.

01732 850 770 [www.passivent.com](http://www.passivent.com)

## Neaco balustrade featured at landmark



Neaco has supplied an extensive balustrade specification for a landmark development as part of East Riding College's new Beverley Campus and Environmental Technologies Centre. Architects Jefferson Sheard designed a modern facility which acts as the face of

the institution and concentrates on the Beverley Minster as an inspirational focal point, sense of place and historic context for students and staff. Neaco's balustrade with glass infills is featured within an impressive atrium space and multi-functional hub.

[sales@neaco.co.uk](mailto:sales@neaco.co.uk)

## Compact courtyard solution



Langley Design was asked to provide a compact street furniture and cycle storage solution in a tight courtyard space, to match this high quality student accommodation project in Birmingham. Collaborating with the landscape architects, Langley achieved the required amount of secure covered cycle

parking needed to satisfy planning and link it with the benching and picnic tables for the attractive outdoor area for students to take advantage of. The plinth mounted benches were designed to have a slight curve allowing them to follow the flow of the walkway.

01793 759461 [www.langleydesign.co.uk](http://www.langleydesign.co.uk)

## Enhanced student living at West Village



The West Village residential student scheme on Glasgow's Beith Street developed by Downing and designed by Falconer Chester Hall, features a landmark curved facade constructed using Metal Technology's System 17 high rise capped curtain walling.

The entire building features THERMAL range System 4-20Hi+ casement windows. System 17 provides structural integrity, weather performance, thermal enhancement and complete design versatility. The 4-20Hi+ casement window system offers polyamide thermal break technology and impressive acoustic performance.

028 9448 7777 [www.metaltechnology.com](http://www.metaltechnology.com)

## VMZINC roofs Passivhaus school



The £3.8m Burry Port Community School is set to become the first Passivhaus school in Wales. The 1,993m<sup>2</sup> timber-framed building is a collaborative design partnership between Carmarthenshire County Council and architects Architype.

They specified a VMZINC® QUARTZ-ZINC® PLUS standing seam vented roof on plywood in a project which added two new timber-clad buildings and renovated the existing 1980s structure. The project has received RSAW Welsh Architecture, Sustainability and Project Architect awards.

01992 822288 [www.vmzinc.co.uk](http://www.vmzinc.co.uk)

## Architects Datafile website



The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. [architectsdatafile.co.uk](http://architectsdatafile.co.uk) is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital

issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

[www.architectsdatafile.co.uk](http://www.architectsdatafile.co.uk)

## Space to interact, study, learn and enjoy



S+B UK as been at the forefront in researching and developing new, innovative and compelling specialist science furniture systems for several decades. The SpaceStation shape along with the size and configuration options

facilitates and promotes collaborative group learning but is not in any way restrictive of a teacher wishing to have all students faced in one direction for whole class address and demonstration. SpaceStation eliminates the inflexibility, safety and restrictive circulation issues associated with old fashioned fixed forward facing bench rows.

[sales@splusb.co.uk](mailto:sales@splusb.co.uk)

## Welsh Slate helps students with a new roof over their heads

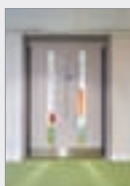


Some 32,000 Welsh Slates have been used to roof the £13 million development of new student accommodation at Newcastle University. The 500mm x 300mm Penrhyn Heather Blues from the Lagan group company were used on Park Terrace, an exciting development situated in a prime location on campus. Accommodation is spread over up to six floors with lift, on-site entry-phone systems and CCTV. The existing buildings on Park Terrace were demolished to make way for two new buildings including a mews block to the rear of the existing terraces. The external finish of the buildings is largely traditional masonry and slate, similar to the buildings they replaced. Park Terrace was the first phase, with Kensington Terrace following a year later. Welsh Slate sales representative Alex Grant said: "The job was specified as second hand Welsh but due to the large amount required it was not possible to source enough material of quite the right quality and so new Welsh Slate was used, some 2,000m<sup>2</sup> of it." The Welsh Slates were installed by M&C Roofing for main contractor Graham Construction and were supplied by Burton Roofing Supplies.

01248 600656 [www.welshslate.com](http://www.welshslate.com)



## Top marks for Ahmarra!



Specialist timber fire door manufacturer, **Ahmarra** have re-launched their popular 'Education Range' of doorsets for schools to include even more product information and technical guidance. Ahmarra's Sales Director Sam Doran said, "The re-launch of the Education Range has generated a great deal of interest from architects and contractors in this sector." Ahmarra's range of high performance timber

doorsets and glazed screens are particularly suited to school environments and areas of high footfall that often have specific fire, acoustic and safety requirements.

0239 238 9076 [www.ahmarra.co.uk](http://www.ahmarra.co.uk)

## Polyflor helps create new extension

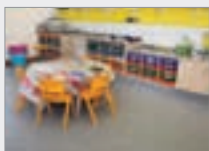


High performance commercial vinyl flooring from **Polyflor** was recently installed at Llwynnwrn Primary School in Beddau, Wales. Cardiff based flooring contractors CS Flooring Solutions fitted around 600m<sup>2</sup> of Polyflor vinyl flooring

throughout the new school building. Wood effect vinyl flooring from Polyflor's Forest fx PUR range in the Classic Oak design was installed in the school hall and meeting rooms, whilst high design Polysafe Verona PUR safety flooring in the light blue Skyline shade was selected for the classrooms, cloakroom, kitchen, and toilets.

0161 767 1111 [www.polyflor.com](http://www.polyflor.com)

## Flooring helps create a greener school



Decorative safety flooring from **Polyflor** was recently installed at the new home of Ysgol Dafydd Llwyd, a Welsh language primary school in Newtown, Wales. Polysafe Vogue Ultra PUR safety flooring in Woodland Grey was installed in the school's classrooms and toilet areas.

Polysafe Vogue Ultra is a high durability safety floor with a multi-chip design which, like all Polysafe flooring ranges, features safety particles through its performance layer to provide increased traction underfoot, ensuring sustainable wet slip resistance.

0161 767 1111 [www.polyflor.com](http://www.polyflor.com)

## Ceiling adds architectural feature



A new London school's high-rise play area includes a striking ceiling from **Hunter Douglas**. Hunter Douglas was appointed to manufacture and oversee the installation of a bespoke ceiling on the covered multi-use games area (MUGA) and informal play area on the school roof. The £106,000

ceiling comprises solid timber larch grill and was completed in 4-70-20-40 module. It is secured by premium quality sendzimir galvanised steel suspension rails and has a drop of hangers up to 1500mm, plus bird netting over the carrier system.

01604 766251 [www.hunterdouglas.co.uk](http://www.hunterdouglas.co.uk)

## High outputs. Low running costs



The innovative aluminium and copper emitters in every **Autron** LST, contain less than a third of the water found in a typical flat panel emitter, producing the same wattage. As a result less energy is required to generate heat output. Plus, heat transfers to a room far quicker, and in a more controllable manner, than

with both flat panel radiators and underfloor heating systems. In addition, the safe-to-touch casings make them the ideal choice for use in schools and care home environments.

01952 290498 [www.autron.co.uk](http://www.autron.co.uk)

## Gerflor produce Welsh Wonder!



The Abertillery Primary School north of Newport in Wales has been built on the existing school site and serves pupils from the existing Abertillery and the Blaentillery school catchment areas. Willmott Dixon were awarded the contract to carry out pre-construction works. It would be a project where they would demand the highest standards. This provided a perfect opportunity for **Gerflor** to showcase a number of their products including; Taraflex® vinyl sports flooring, Tarasafe™ Ultra vinyl safety sheet flooring and their outstanding homogenous Mipolam Symbioz™ vinyl flooring.

01926 622600 [www.gerflor.co.uk](http://www.gerflor.co.uk)

## Acoustics within education... explained

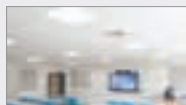


It is crucial for modern day education environments have good acoustics. To ensure effective soundproofing, all acoustic products used should comply with Guidelines BB93 of the UK Building Regulations Approved Document E, Section five of the Scottish

Building Standards and Approved Part G (Northern Ireland). **Hush** provides comprehensive guidance on education build projects of any size. Hush explains how individual areas within an education building can be affected by sound and can give expert advice on how to reduce reverberation, airborne and impact noises.

0151 933 2026 [www.hushacoustics.co.uk](http://www.hushacoustics.co.uk)

## Exmouth Community College



**Luceco** has recently supplied an LED lighting solution for new buildings at Exmouth Community College in Devon. Specified by Hamson Barron Smith, Luceco supplied dimmable LED luminaires for new classrooms and circulation areas. LuxPanels from Luceco offer a unique design, the high efficiency Backlit panels has a completely frameless appearance and boasts a market leading efficacy of 147 luminaire lumens per watt. Carbon Downlights were also installed in circulation areas providing an ideal replacement for compact fluorescent downlights, offering running cost savings of up to 60 per cent.

01952 238100 [www.luceco.uk](http://www.luceco.uk)

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