

Design for education and student accommodation

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ARCHITECTURAL ALUMINIUM SOLUTIONS

Design for education & student accommodation supplement

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Cover: Burntwood School, winner of the RIBA Stirling Prize. © Timothy Soar See Page 6

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Editor's letter

Welcome to the latest Architects Datafile supplement, focusing on innovative design and architecture in educational buildings and student accommodation.

The education sector today is highly active. Phase 2 of the Government's Priority School Building Programme (PSBP) continues to see many new schools built and refurbished, while universities and other institutions are actively increasing the quality and provision of residences for the country's burgeoning student population.



This offers plenty of opportunities for architects and designers, and some tough challenges, too. Strict criteria and standards have to be met within demanding timescales for builds and tightly controlled budgets, particularly in the case of state-funded schools.

In this supplement our contributors and commentators look at how ingenuity, inventiveness and willingness to think outside the box can overcome these constraints to deliver interesting, innovative design solutions.

Alison Harmer explores a contemporary-looking, new-build student accommodation that's been successfully integrated into a heritage area in Liverpool to encourage students to live in the city centre.

In Leeds, we spotlight the smart-thinking architectural approach that's delivered a design for a new state-funded free school that's clearly a cut above the average, despite a strict brief and challenging urban location.

A new School of Veterinary Medicine for the University of Surrey, comprising three very different, and unusual buildings, each with their own unique challenges, is showcased by journalist Jess Unwin.

Also inside, our industry experts offer ideas and guidance on flooring, toilet facilities and heating solutions for the education sector, along with options on school playground shelters and modular room interiors for student accommodation.

Plenty of food for thought there, we think.

Ray Philpott

COMMENT

Why architects need to bring the inside out when it comes to school design

By Peter Smith, director, Innova Design Solutions



They say it's what's inside that counts, and for UK schools, this has never been more true. Figures from the office for National Statistics indicate that from next year the number of pupils in state-funded secondary schools will start to rise as a result of the baby boom of the early 2000s.

With a 20 per cent increase in secondary pupil numbers between now and 2024 and impending cuts to funding, schools with tight budgets and full classrooms face the pressure of finding extra space for these students with precious little money for new builds or refurbishments.

The Priority Schools Building Programme (PSBP) has helped to cut costs with a pragmatic approach that's replaced dark, cramped 20th century classrooms with light, bright, contemporary spaces fit for modern learning.

However, as the main aim is to accommodate a rising number of students, PSBP focuses on buildings' exteriors and the provision of essential features, such as heating, lighting and acoustics. With little money left over, the interiors of these new classrooms is often overlooked, or basic at best.

Earlier this year, RIBA's response to the House of Commons Education Select Committee on PSBP stated that time pressure meant architects often received inconsistent, inaccurate briefs for PSBP projects. RIBA also suggested that the baseline standards PSBP sets out for classroom design are inflexible and result in public areas of schools being squeezed for space, resulting in increased incidences of bullying and vandalism.

So to say architects on PSBP projects focus on the exterior of the building at the expense of the interior would be a lazy and counterproductive argument: RIBA's comments show they

feel just as much frustration with the restrictions that are placed on them as we do as education interiors specialists.

Standardised design may be restrictive, but what we need is for architects, schools, contractors and interiors specialists to work together and think outside the 'functional boxes' of PSBP to create learning spaces fit for an educational landscape that's undergoing profound change.

Teaching and learning have changed radically in the last decade, and developments in technology mean school buildings will need the ability to evolve to prepare students for the 'brave new world' that waits for them beyond the school gates in the next twenty years.

Offering an empty box-style classroom that can be filled with chairs, desks and students is one solution, but not one anyone involved in education design would see as ideal.

Studies by Salford University have found good classroom design can boost a pupil's performance by up to 25 per cent and features such as distinctive floor plans, breakout areas and providing space to display work, can all impact on how students develop academically.

Our own experiences in asking secondary school students to design the school science lab of the future showed us just how design savvy and technologically aware today's teenagers are: a basic classroom lacking in creativity and complexity simply won't stimulate or inspire them.

When time and money is tight and the guidelines we have to work to even tighter, it's easy to create work that meets the brief and forget about the people who really matter – the end users. Today's students are the architects, educators, contractors and yes, the education interiors specialists of tomorrow.

Not every classroom we create together can be another Sterling Prize winner like Burntwood School, but by shifting our focus to what's inside our schools we can create learning spaces that are truly outside-the-box.

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AWARDS RESULTS

Burntwood School wins 2015 RIBA Stirling Prize



Burntwood School, a large comprehensive girls' school in Wandsworth, London by Allford Hall Monaghan Morris (AHMM) has won the coveted RIBA Stirling Prize 2015 for the UK's best new building. Now in its 20th year, the RIBA Stirling Prize, sponsored by Almacantar, is the UK's most prestigious architecture prize.

The presentation of the RIBA Stirling Prize trophy to architects AHMM took place at a special ceremony on Thursday 15 October at the Royal Institute of British Architects in London.

AHMM's transformation of Burntwood School reimagines a 1950's modernist secondary school campus for 2,000 girls and 200 staff. The architects created six new faculty buildings and two large cultural buildings linking original buildings by renowned 1950s/1960s architect Sir Leslie Martin. Every building is full of light and air with double height spaces at the end of each corridor to increase natural daylight and create well-framed views. It offers a range of teaching spaces from conventional classrooms to interactive open spaces. Already a very sculptural building, AHMM worked closely with an artist to use large, colourful murals throughout the buildings – cleverly combining signposting with modern art.

The judges commented: "Burntwood School is the clear winner of the 2015 RIBA Stirling Prize. It is the most accomplished of the six shortlisted buildings because it demonstrates the full range of the skills that architects can offer to society.

It encompasses great contemporary design and clever reuse of existing buildings as well as superb integration of artwork, landscaping and engineering. It is a genuine collaborative project. There was a wonderful working relationship between the head teacher and the architect: a true partnership of equals.

Burntwood is technically sophisticated in its use of prefabrication, its

low-energy strategy and the minimal disruption to teachers and pupils during construction. It even has its own high street with a covered walkway formed from off-the-peg bus-shelters.

Furthermore, the sculptural quality of the finely modelled concrete facades and the lush campus setting enhance the sense of the place.

Burntwood sets a standard in school design that every child in Britain deserves. It is a culmination of many years of creative toil by Allford Hall Monaghan Morris in designing schools up and down the country. This is their masterpiece."

This is the first time AHMM has won the RIBA Stirling Prize. They have been shortlisted three times for previous projects: Westminster Academy (2008), Kentish Town Health Centre (2009) and for the Angel Building, London (2011).

Speaking on the night, RIBA President Jane Duncan said: "Burntwood School shows us how superb school design can be at the heart of raising our children's educational enjoyment and achievement. Allford Hall Monaghan Morris, experienced school architects, have created a stunning campus. They have produced delightful, resourceful and energy efficient buildings that will benefit the whole community in the long term. With the UK facing a huge shortage of school places, it is vital we learn lessons from Burntwood. I am delighted to present architects Allford Hall Monaghan Morris with the 2015 RIBA Stirling Prize."

Paul Monaghan, Director, Allford Hall Monaghan Morris said: "Schools can and should be more than just practical, functional buildings – they need to elevate the aspirations of children, teachers and the wider community.

For more information, please visit www.architectsdatafile.co.uk and enter reference number 96359.

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NEW CAMPUS



Stride Treglown welcomes the opening of Swansea University's new Bay Campus

The new £450 million Science and Innovation Campus at Swansea University has officially opened for the new term. Almost 5,000 students and 1,000 staff will be based at the new campus including the University's College of Engineering and School of Management.

Stride Treglown has undertaken a number of the new build projects the College of Engineering including the Engineering East home to the Swansea Bay Innovation Hub, Engineering Central home to the Engineering Manufacturing Centre, the Institute of Structural Materials Building and Energy Safety Research Institute (ESRI). The four principal Engineering buildings house advanced research facilities, including Nanotechnology laboratories, Clean rooms, Wind tunnel, jet cat engine, metrology and laser scanning lab, flight simulator, Rheology lab, specialist coatings labs, weathering and degradation lab, spectroradiometer labs, CNC workshops, as well as standard wet and dry chemical labs.

The 3,970m² Energy Safety Research Institute (ESRI), which combines world-class research and faculty with flexible lecture facilities and general teaching space, received an Outstanding BREEAM rating and forms the centrepiece of Swansea University's research into renewable and alternative energy production.

Stride Treglown led two separate consultant teams to deliver the Engineering East and Central on time and to budget. The design intent of the original consented scheme has been delivered with the aesthetic intact.

Pierre Wassenaar, Regional Director at Stride Treglown commented: "The Stride Treglown team had to guide the project through various hurdles including contaminated land, a breakneck programme, BREEAM requirements and a 30m wave tank, so we are very pleased that, after 2 years of work, the ESRI design has delivered on all levels and is now operational."

Eric Wright wraps up £2.6m college design and build

Eric Wright Construction, a division of the Eric Wright Group, has completed a multi-million pound extension at one of the UK's best performing colleges.

The 48-week project saw the design, build and fit out of a new four-storey teaching facility on campus at Cardinal Newman College, Preston, Lancashire.

Delivering pioneering education facilities for the college's 3,000 students, the scheme consisted of purpose-built seminar rooms, plant rooms, open learning and study areas and a fully-equipped IT suite.

Designed by Ellis Williams Architects, the new facility comprises a 1,569m² steel frame construct and concrete floorings, complete with brickwork and rendering detailing

to the external elevations.

The works form part of a multi-phase masterplan to improve student facilities at Cardinal Newman College, which is ranked in the top two per cent of schools and colleges in the UK. Included in the masterplan were a two-storey extension to the St Mary's Building and a five-storey expansion which is the St Cecilia Building.

Eric Wright Construction was also involved in internal refurbishments to the second floor of the West Wing and upgrades to the external facades, including replacement of the existing Larkhill Road entrance and the introduction of a new feature staircase, entrance and glazed link.



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NEW SCHOOL

Skanska to build new Alderwood Middle School in Lynnwood, USA, worth \$39 million

Skanska has signed a contract with its existing client, the Edmonds School District, to build the new Alderwood Middle School in Lynnwood, Washington. The contract is worth US\$39 million, about SEK 330 million, and will be included in the order bookings for Skanska USA Building in the third quarter 2015.

The facility will be approximately 11,000 square meters with a two-story main building adjacent to a one-story gymnasium. Additionally, the project includes work such as parking areas and significant new storm water management facilities.

Construction is under way and will be completed in January 2017.

Skanska USA is one of the leading development and construction companies in the country, consisting of four business units: Skanska USA Building,



which specialises in building construction; Skanska USA Civil, specialised in civil infrastructure; Skanska Infrastructure Development North America, which develops public-private partnerships; and Skanska

USA Commercial Development, which develops commercial projects in select U.S. markets. Headquartered in New York, Skanska USA has more than 9,600 employees and its 2014 revenues were SEK 43.5 billion.

Norwich University of the Arts BA (Hons) Architecture recognised as a Part 1 Prescribed Course by the Architects Registration Board

Norwich University of the Arts (NUA) is delighted that the Architects Registration Board (ARB), which was established by Parliament in 1997 to regulate the architects' profession in the UK, has prescribed its BA (Hons) Architecture qualification. This means that graduates from the course will be exempt from taking the professional qualifications that are the first step to becoming an architect (Part 1).

As part of its duties contained in the 1997 Architects Act, ARB is responsible for prescribing – or 'recognising' – the qualifications needed to become an architect, keeping the UK Register of Architects,

ensuring that architects meet their standards for conduct and practice and that only those on the Register are able to offer their services as an architect.

In order to achieve prescription NUA was required to present documentary materials which were scrutinised by the ARB to ensure that on graduation students had met all the criteria necessary to satisfy the Part 1 examination requirements. The process involved additional consultation with a number of industry related bodies. Dean of Arts and Design, Professor Hilary Carlisle, said: "We are delighted to have met the criteria and be able to offer students a

course which has been prescribed, subject to ARB's rigorous and continued monitoring, from November 2015 until November 2019.

"This prescription provides the course with the external endorsement it needs as it moves into bespoke studios in the refurbished Boardman House (designed in 1879 by renowned architect Edward Boardman) with the new intake of students later this month."

RIBA award-winning architect and NUA Visiting Professor Anthony Hudson extended his congratulations: "It's very exciting to have an ARB recognised course firmly established in Norwich. Well done NUA!"

NEW STUDENT CENTRE

Planning approval for UCL's new student centre



'The New Student Centre is a flagship development within our estate transformation programme'

Andrew Grainger, director of UCL Estates,

The London Borough of Camden's Planning Committee has resolved to grant planning permission for the New Student Centre for UCL, designed by Nicholas Hare Architects.

UCL is one of the world's leading multidisciplinary universities, with a global reputation for excellence. The flagship project reinforces UCL's commitment to creating the most exciting university in the world at which to study and work. The building will enhance UCL's rich heritage of distinguished architecture and its commitment to strengthening the public realm and character of the Bloomsbury Conservation Area.

The New Student Centre will create a progressive and adaptable environment that includes 1,000 study spaces for students, a Student Enquiries Centre, a cafe and space for exhibitions, and a roof terrace with views overlooking the dome of UCL's Grade 1 listed Wilkins Building.

It will have four floors above ground, plus two basement storeys. The learning spaces will vary in character and size, creating different types of individual study and group environments. None of the spaces will be used for formal teaching. Dedicated to the needs of the students, the building will deliver spaces and

furniture that are flexible, adaptable, and IT resourced. Transparency and daylight will define the heart of the new building. Generous space through the publicly accessible ground floors will give a sense of welcome and inclusion. The building will extend a new high quality civic realm through into the Bloomsbury campus, and will redefine the existing Japanese Garden establishing a tranquil urban courtyard for London.

A highly sustainable agenda for the project becomes manifest through a palette of durable high-quality materials that will age gracefully. Brick and reconstituted stone will frame the exterior of the building, whilst an exposed concrete frame will characterize the interior. Embedded cooling pipes set within the floor slabs will contribute to a low-energy mixed mode strategy that supports 24 hour use. The New Student Centre is central to delivering UCL's Masterplan vision for the long-term development and improvement of the Bloomsbury Campus, and will be built on the last piece of undeveloped land on Gordon Street, set between the Bloomsbury Theatre and listed buildings.

The design has been developed through collaborative engagement with a broad range of UCL's stakeholders

and neighbours, and has gained strong support from Design Council CABE, Historic England, and Camden Council's design and conservation officers. Deloitte Real Estate acted as planning consultants for the scheme. Construction is expected to start in 2016.

The project will be ready for students for the start of session in Autumn 2018. Andrew Grainger, director of UCL Estates, said:

"The New Student Centre is a flagship development within our estate transformation programme, which exemplifies UCL's commitment to be good custodians of this fine heritage estate in central London. This last undeveloped brown-field site in the heart of Bloomsbury will be transformed into a centre for student learning for the benefit of students and the wider public. The new building will showcase quality architecture and our commitment to improving the public realm across our campus."

James Eades, Partner at Nicholas Hare Architects, said: "We are delighted to have built broad support for the project and for the quality of our proposals. The building will enhance the character of the public realm, and bring significant benefits to students and the community within Bloomsbury."

COMMENT

Re-educating ourselves about space for staff

The interior design of office space within educational buildings is starting to become more innovative. Joel Barker, designer at Hunter Patel Creative Group, argues that architects, schools, colleges and universities increasingly need to be imaginative when it comes to creating staff areas

“As designers, we are no longer hampered by practicality or conservative ideals”



Office space design for educational buildings is undergoing a revolution. As the way we work becomes more mobile and our ‘paperwork’ paperless, the practical ergonomics are becoming less important and instead the psychology behind the design is considered.

With the practicalities that have previously hindered creativity gone, isn't it time we started to inject some much needed innovation into the design of educational office spaces? Gone is the need for floor to ceiling filing cabinets or designated desk spaces with furniture acquired from the classroom or surplus stock, and instead carefully planned, multifunctional areas are home to bright, comfortable furnishings that aim to encourage creativity and dispel any hierarchical formalities.

The overall concept can be thought of as a non-uniform day; it's designed to make you feel less like you're at school, and more like you've entered into an informal, relaxed space that is designed to put you at ease and, in turn, stimulate productivity and conserve morale. The area should take inspiration from its own design brief, rather than take elements from educational areas; there's no room for orange plastic chairs or laminated chipboard tables.

I recently saw a great design feature, which used swings around the conference table and in our own design of ‘The Hive’, the student union offices at Plymouth University, we installed seating pods to replace the traditional meeting space and used artificial grass as the flooring finish. These elements mirror the psychological shift from the formal office space to a

comfortable, fun working environment.

As designers, we are no longer hampered by practicality or conservative ideals, and we need to alter our perception of what is needed from a work space. Over the last five years, the wide use of laptops, iPads, and other portable devices mean people are no longer attached to their desk space, allowing us to stretch our creative muscle and develop ways of using the space in a different, more radical way.

Google was one of the first companies to start the revolt against conventional office design, and the use of colourful finishes and pockets of comfy relaxation areas has certainly had an influence on our own designs. The welfare and morale of the workforce is now being considered, with climate control settings and bags of natural light, and design is more aesthetically driven. This mentality is starting to infiltrate into mainstream workplaces, and universities are perhaps the ideal champions for the education sector. Their staff are often made up of students, who challenge traditions and have a modern work ethic that promotes enjoyment and creativity at work, and they have more freedom over their budget, whereas schools are advised by their Local Education Authorities. However, it will only be a matter of time before modern office design techniques, which have proven to improve productivity and staff retention, infiltrate through to schools and colleges.

The response to the forward-thinking finish may divide opinion, but design is subjective, so it should encourage debate and create conversation. Once the dust has settled and normal service resumes, the impact of the design concept should reflect on the overall efficiency and wellbeing of the workforce, something that interior design has been allowed to have little impact on in the past.

New buildings arrive for Seaford Primary

An Elgin primary school grew in size today with the installation of 17 pre-fabricated classroom modules.

Seaford Primary gained two extra classrooms and a new nursery in the space of 24 hours thanks to the advanced planning and site preparation.

The site has been prepared for

the installation during the last few weeks, with the delivery and fitting planned for school half term to minimise disruption.

The work is part of a £17million refurbishment programme of four Moray primaries; Seaford Primary in Elgin Apple Grove in Forres, Millbank in Buckie and St Gerardine

in Lossiemouth.

The refurbishment has been funded by a £10million government grant, with the rest coming from Moray Council.

The buildings have been in use from January 2016 when refurbishment works on the existing nursery building commenced.

Living in Hope

Respect for local context is central to the design of new student accommodation in Liverpool, reports Alison Harmer

Rising numbers of students and increasing demand for better accommodation in Liverpool have led to a boom in purpose-built developments in the city centre that shows no sign of slowing.

There are now 50,000 students studying in Liverpool, drawn to its top-performing universities, friendliness, music culture and nightlife. The campuses of the three main universities are located in the buzzing city centre. So it's small wonder that students prefer city centre-living to travelling in from outlying areas such as Allerton, which is where many halls of residence and individual landlord-owned properties used to be.

Students' desire to live in the heart of Liverpool has fuelled the building of purpose-built student accommodation (PBSA), but although development has brought social and economic benefits to the city, it is not without controversy. Some residents don't like the idea of students as neighbours, others fear that the boom may not be sustainable long-term or worry that the look of the city is changing.

Falconer Chester Hall (FCH) was faced with such hurdles when it designed a new upmarket student accommodation scheme on Hope Street – a sensitive location because it's one of Liverpool's most iconic and best-loved streets.

The 339-bedroom, mixed-use complex opened in September 2015. It was built by Nordic Construction UK, which bought the site from Maghull Developments, and includes three buildings overlooking a four-sided courtyard.

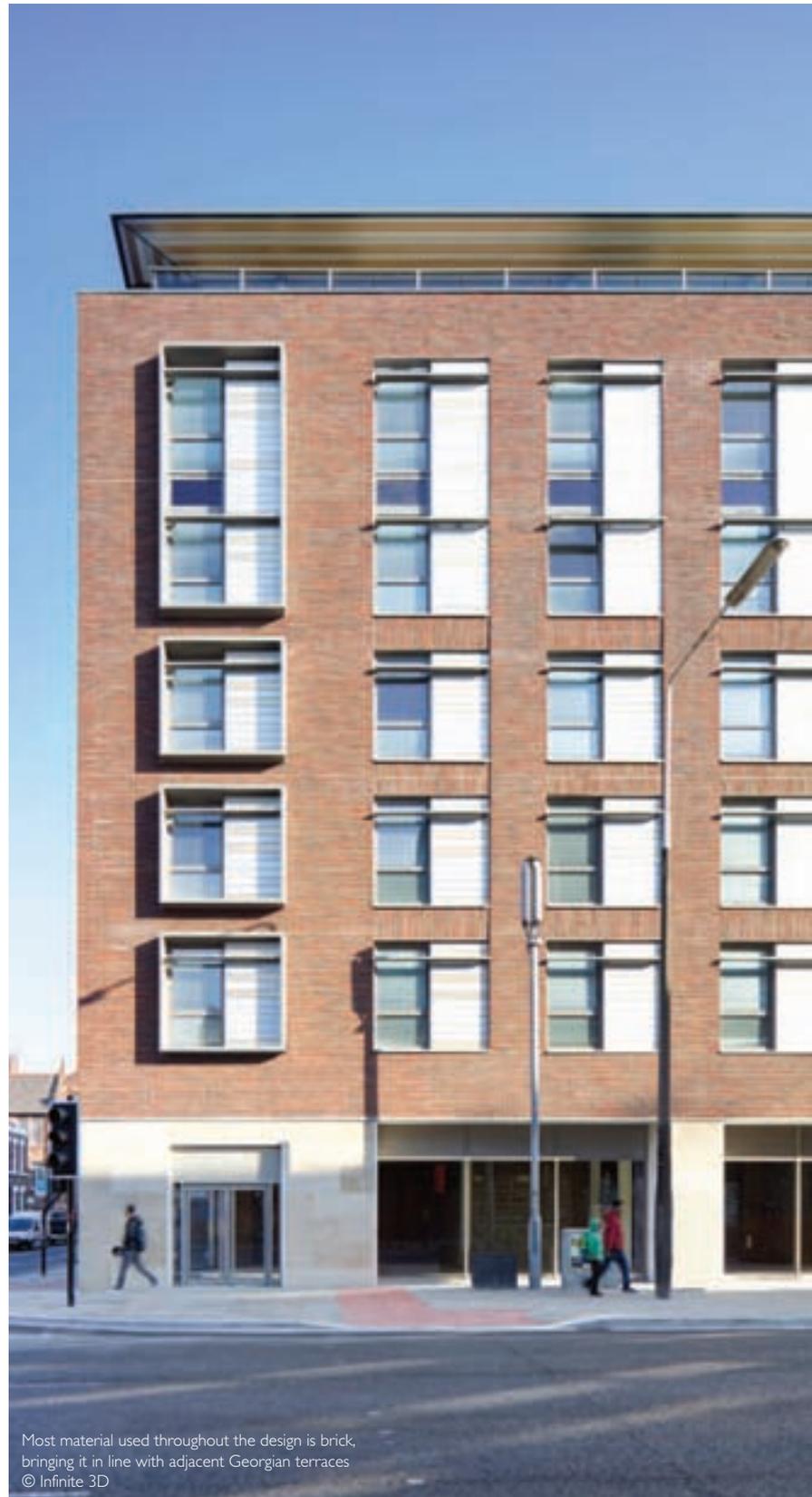
The scheme includes accessible studios and single bedroom flats, complete with fitted kitchens and en-suite bathrooms. Nordic Construction completed the project speedily using volumetric construction – innovative fully fitted timber-framed modules assembled in Latvia and craned onto the site.

Following more than a year in planning, and amendments to the original designs, Liverpool City Council approved the development. Construction on the 10,000m² former brownfield site began, with work on the foundations in January 2014.

Heritage area

“It was a challenging planning consent that took a lot of effort because the development is on a historic street, but it's also close to the university and adds to the variety of student accommodation in the city,” said Adam Hall, managing director, FCH.

Continued overleaf..



Most material used throughout the design is brick, bringing it in line with adjacent Georgian terraces
© Infinite 3D

The curved corner, inspired by the adjacent corner of the Philharmonic dining rooms, draws people from Hope Street and into the public square



Hope Street is one of Liverpool’s official ‘Great Streets’ and lies in its Cannon Georgian quarter, a conservation area. It is sandwiched between two famous cathedrals – the Metropolitan Cathedral at one end of the street and the Anglican Liverpool Cathedral at the other. The street also includes 13 Grade II listed buildings, including numerous early 19th century houses, and a Grade I building.

To satisfy local residents and placate their concerns over the scheme, Adam had several conversations with them, as well as with key organisations that operate in and around the area.

“I had meetings with locals who didn’t want students living in their area, although it’s already heavily populated with them,” said Adam. “I also met both heads of the cathedrals that are either end of Hope Street, and representatives from the Royal Liverpool Philharmonic Hall, which is adjacent to

the site, and the Everyman Theatre three doors down.”

Reacting to feedback from those meetings, Adam reduced part of the height of the building at the front to stop it from being too overpowering and chose a purple-red brick that’s faithful to the style of bricks used in the area to make the building more fit for its location.

He said: “Designing accommodation in this area was challenging because it has many different architectural styles; including the 1930s Philharmonic Hall, a Georgian terrace, two cathedrals, and a Victorian pub. It wasn’t a case of designing a building that replicated one style, height or brick, as there was so much variation already. But I had to be mindful of the area’s richness of architectural styles and pick up on some themes.

“The biggest challenge was achieving the height we eventually achieved while preserving the quality of the design. I had to make sure that what we designed was clearly set out and the builder had to stick faithfully to it.”

Complementary design

Adam’s respectful approach to local context can be seen in the design, which maintains similar proportions to the dense horizontal massing of many of the Georgian terraces’ nearby.

The development also complements the area by emulating the strong brickwork geometry on the corner junction with Myrtle Street and its similarities to the vertical facade grid of the adjacent Philharmonic Hall. The design continues the repeating rhythm and proportion of window openings in masonry in Hardman Street and Hope Street.

The height of the building at the front was reduced to stop it being too overpowering and the repeated window openings are in proportion to neighbouring buildings. Note the closeness of Liverpool Metropolitan Cathedral





The planned Skelhorne Street development is situated immediately to the right of the entrance to Lime Street station

As well as these complementary elements, the design also contained features that make the development stand out. These include a public courtyard with space for the reintroduction of the Hugh Stowell Brown statue. He was a local Victorian dignitary whose statue had been removed some years previously to protect it from vandalism.

In addition, the courtyard design includes a stage available for local groups, community organisations and the students to use. On the ground, there are also retail leisure spaces that FCH and Nordic Construction hope will be taken by restaurants whose back doors will spill out onto the courtyard.

Many of the PBSAs in Liverpool include courtyards and for good architectural reasons, says Adam.

“Unless you look into something light and attractive it stymies the central area of the scheme for using it in an efficient way,” he said. “By creating new space in the middle of the ‘doughnut’ you create surface area you can use to look into, and that enabled me to increase the density of this scheme. It’s a useful way to increase the surface area of a building’s footprint rather than everything looking outwards to the perimeter roads.”

One statement feature Adam included in the design is a curved wall at the front entrance section in metal cladding and containing a light installation. The articulated aluminium clad panel has ripples on its surface that at night will be illuminated, bringing people into the space.

“I envisaged a sort of sculptured end to the building rather than it being windows and brick,” said Adam. “It will shimmer as you move into the courtyard around this soft curve.”

Of course, for the students it’s the inside of the Hope Street development that will be of most concern. Although FCH wasn’t involved in the interior, which was completed by another architect, its design includes a generous entrance and facilities space for meeting, as well as luxuries such as a launderette and a gym that previous generations of graduates could only dream about.

Quality and location

The Hope Street scheme was built out just as the results of a review by Liverpool City Council into the number of buildings after PBSA and where they should be located, began to emerge.

“It’s now been decided where locations will be encouraged and that the emphasis will be on quality,” said Adam. “Luckily we have projects in these locations already and have just received planning for 1,000 units next to Lime Street railway station. It’s an excellent location for students because it’s close to the universities and the station where they arrive.”

Skelhorne Street is a mixed-use development for Butler Company and includes two buildings to be built on a former open-air surface car park. It will include student accommodation, an apart/hotel plus commercial and retail space for the public and residents on the ground floor.

“An open car park is the first thing people see when they arrive in the city and it’s not the kind of welcome Liverpool wants to give,” said Adam. “There’ll be a sharp point to the building that will be impressive and at 20 storeys it will be a clear symbol on the skyline.”

Continued overleaf...

‘Skelhorne Street will include student accommodation, an apart/hotel, plus commercial and retail space for the public and residents on the ground floor’





Like Hope Street, respect for local architectural character meant adopting a sympathetic facade strategy. Adam has included design elements that link to the railway heritage of the site, including strong vertical lines down the facade to the stone plinth that will flow into the pavement in geometric lines like rails. The ground floor's heavily modelled metal facade in raw exposed steel will reflect the steel and ironwork of the station and its colonnades.

Both Hope Street and Skelhorne Street raise the bar for student accommodation. The challenge for architects is to continue pushing the boundaries as developers try to outdo each other in leaving a positive legacy for the city.

Project details

Hope Street, Liverpool

Design architect:

Falconer Chester Hall (FCH)

Main contractor:

Nordic Construction UK

Client:

Liverpool Students 2013

Construction of prefabricated timber frame modules:

Nordic Homes

Structural engineer:

Curtins Consulting

M&E contractor:

Hurstwood Environmental Engineering

Building control:

Aedis Group

Fire consultant:

Omega Fire

Quantity surveyor:

Nordic Construction

Skelhorne Street, Liverpool

Architect:

Falconer Chester Hall (FCH)

Planning consultants:

Turley

Landscape architect:

Planit-IE

Renderings:

Infinite 3D Ltd

Quantity surveyor:

Pick Everard

Structure and mechanical engineering consultants:

WSP

Transport consultants:

Mott MacDonald

Retail and commercial units will run along Skelhorne Street, left, with student services and reception to the apart/hotel to the right along Bolton Street
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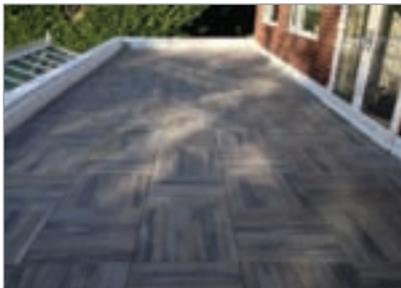
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The School of Veterinary Medicine's Academic Building is an architectural benchmark for further development on the new Manor Park campus.
© University of Surrey



University's new school for vets is UK's first since 1965

Jess Unwin learns how the special requirements of the University of Surrey's School of Veterinary Medicine led to three separate state-of-the-art buildings – each with different design challenges to be overcome

A new £45 million School of Veterinary Medicine at the University of Surrey has posed twin challenges for the design team behind its creation.

The requirements of the school – only the eighth of its kind in the country and the first in the South East outside London – has meant specific functions being separated in three very different state-of-the-art buildings.

And as the first academic buildings on the university's new Manor Park campus to the west of Guildford, the school also needs to set the right architectural benchmark for future development.

Officially opened in October by the Queen and the Duke of Edinburgh, the School of Veterinary Medicine is a part of the University of Surrey's plans to further enhance its leading profile in teaching and research.

Transformation

Since 2000, the university, which has been voted the *Times* newspaper's university of the year for 2016, has invested more than £400 million in the transformation of its buildings and facilities. Most recently, the university opened its £70 million

Continued overleaf..



5G Innovation Centre at its Stag Hill campus. Looking ahead, it has also obtained planning permission for a new Science, Technology, Engineering and Maths building at Stag Hill.

The expansion at Manor Park is key to the university's ambitions and in autumn 2012 PM Devereux's designs helped it win a competitive process to become the architects on the new School of Veterinary Medicine project.

It was clear from the outset that the school, which will have an overall training emphasis on larger animals like cows, horses and sheep, needed different types of learning environments, ranging from classrooms and lecture theatres to

laboratories, clinical spaces, dissection rooms and somewhere for practical animal handling. In addition, some of these environments require a physical separation of at least 30m due to safety regulations.

A spokesman for PM Devereux says: "Functions such as large animal practical handling are best suited to a farm-type environment and would not work well in the middle of the campus. To achieve the required facilities in a way that is suited to the campus masterplan and to deliver the vision for the new school the brief was organised into three distinct buildings."

The Clinical Skills Centre is an intriguing design mix of the new and the old. A single-storey and circular structure, its inspiration is a traditional farm stable block with a very modern twist.
© Nic Allen, PM Devereux



Central atrium

The approximately 6,600m² Academic Building is the largest of those three buildings. It comprises four floors plus plant and is dedicated to classroom and laboratory learning but also contains faculty offices. Clinical skills taught here will focus on smaller animals like cats and dogs and there is a mock-up veterinary surgery to that end.

A central atrium space, which features a node-glazed roofing system, links the building's different zones, providing circulation and social spaces plus natural ventilation for some

parts of the building. The atrium and main entrance has been arranged to open up onto a new pond and along the main pedestrian route.

PM Devereux says the building has been rotated to create “the best relationship” between the sweeping central green of the Manor Park campus, bus route and other external spaces. Sited more towards the centre of the new campus, the highest portion of the building has been placed on the north side, facing land that will be occupied by future university development, to “reduce its visual impact at the edge of the campus”.

Continued overleaf..

Project details

Clients Agent:

Northcroft
(part of Capita
Symonds)

Architect:

Devereux
Architects

Quantity

Surveyor:
Northcroft
(part of Capita
Symonds)

Services

Engineer
(M&E):

WYG

Engineering Ltd

Structural

Engineer:

Fluid Structures

Civil Engineer:

Peter Brett
Associates

CDM

Coordinator:

Huntley
Cartright

Planning

Consultant:

Terence
O'Rourke

The Pathology Centre contains state-of-the-art facilities for ante-mortem and post-mortem examination of all animal species.
© Nic Allen, PM Devereux



Professor Stephen Baker, Development Director for the University of Surrey, says: “The Academic Building will be the first of maybe four or five big new university buildings which will continue the same architectural themes and designs. So, it was important we got this design right because it’s not just a one-off but something of a template for others to come.”

State-of-the-art facilities

Three storeys high, the Pathology Centre contains state-of-the-art facilities for ante-mortem and post-mortem examination of all animal species. A complex hoist arrangement has been installed to transport animals within the building and large viewing galleries are provided for student interaction.

Its layout is primarily driven, says PM Devereux, by “highly technical requirements”, including research and anatomy study laboratories – some of which are classified as Containment Level 3 areas and allow work with diseased or contaminated animals. The containment labs feature sophisticated effluent treatment plant, and are designed to be under negative pressure, which prevents airborne particles generated in the lab from escaping. Professor Baker adds: “This makes our school unique – other schools don’t have this sort of facility.”

Paul Rogers, of planning consultant Terence O'Rourke, which has helped the University of Surrey draw up its

masterplan for the Manor Park campus, explains: “The nature of the activities in the Pathology Centre means it can’t sit right next to academic buildings.” As a result it’s setting is deliberately more peripheral on the campus.

Paul continues: “The building has to be separate and secure – you can’t just allow people to wander around in the way you might expect in other academic buildings.” It is fronted by a modest entry and social area, while to the south, and deliberately more discreetly placed, a service yard provides the necessary space for good animal welfare and vehicular access.

Old and new

On the western fringe of the campus and with a woodland backdrop, the Clinical Skills Centre is an intriguing design mix of the new and the old. A single-storey and circular structure its inspiration is clearly something like a traditional farm stable block but with a very modern twist.

The large farm animals housed in stalls here will be used for teaching best practice animal handling and clinical examination skills. In other words, as Paul says: “This is where students will learn how to handle animals, do injections and how to be around animals without scaring them. It’s on the edge of the campus and has a paddock next to it and

woodland. In that setting more of a traditional farm building look works. As for the circular nature: I believe the experts will tell you animals are calmer if they can see each other.”

Use of timber for some of the external treatments hints at a traditional farm design but the frame is steel and the building is clad in composite metal and polished blockwork. To complete the dominant contemporary feel, the building is topped off with a pre-patinated zinc standing seam roofing system.

This palette of modern materials is key to how the school's three physically separated buildings are still united in visual identity. The similarly steel-framed Academic Building and Pathology Centre are also clad with composite metal panels and polished blockwork. Both also have pre-patinated zinc roofing.

BREEAM rating

All the school buildings are designed to achieve BREEAM Very Good rating. Materials were selected accordingly and where possible they are A+ or A rated under the BRE Green Guide to Specification.

Each building employs a heat recovery system and natural ventilation where appropriate. The latter is controlled by a building management system where practicable but manual windows are provided to give additional control over internal environment.

All glazing is high performance to reduce heat loss in winter and solar gain in summer. A brise soleil feature provides external solar shading for the Academic Building.

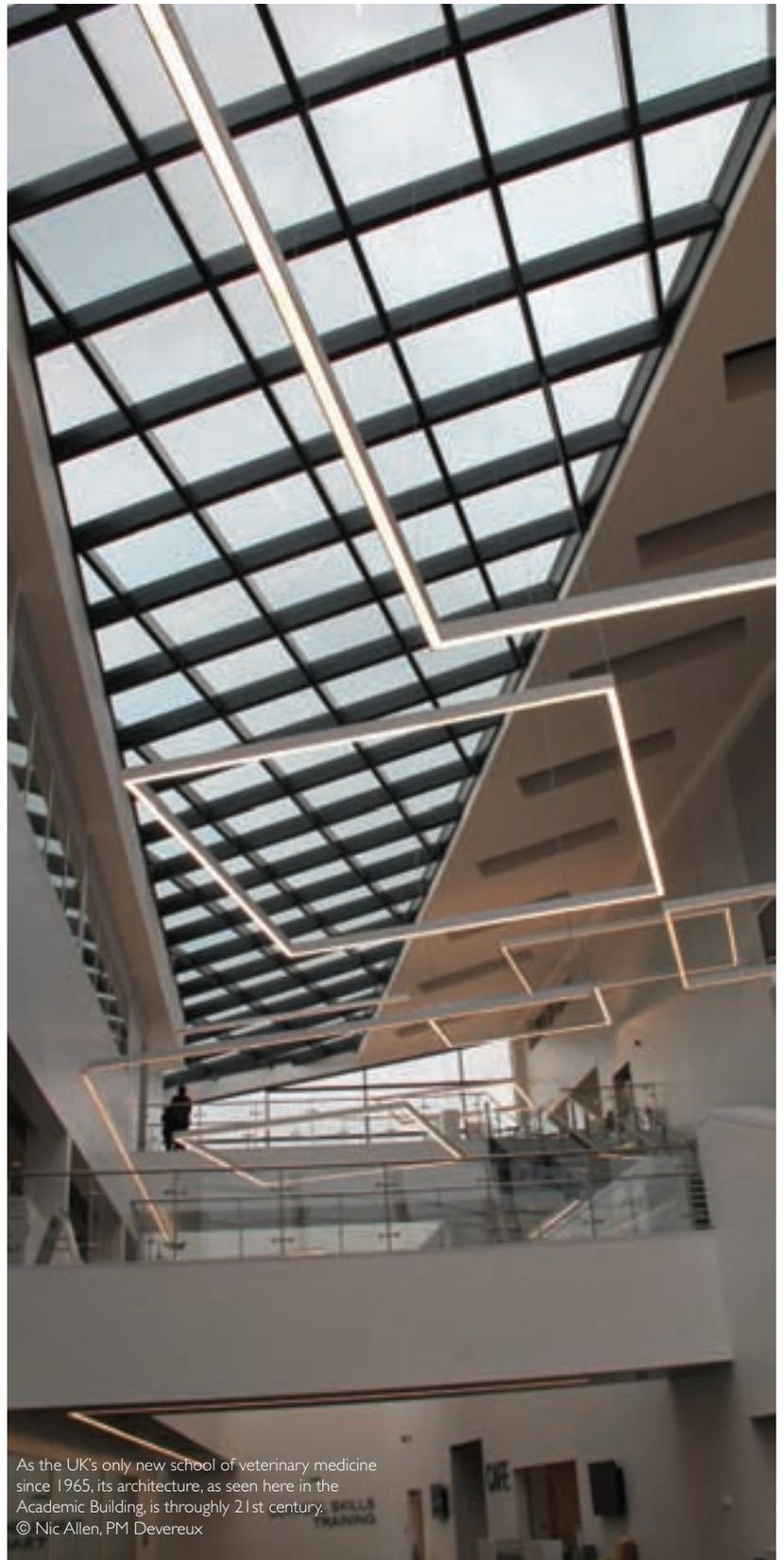
Pedestrian access and cyclists will very much take priority on the campus access roads with vehicular access limited to deliveries, estate management vehicles and visitors requiring accessible parking.

Delighted with results

Professor Baker says: “It’s been a very successful project, and both I and the university are delighted with these buildings.” He praised the work of everyone involved with their design, which has included not only the university’s own academics but also input from partner organisations including the Animal and Plant Health Agency, the Pirbright Institute, the Veterinary Medicines Directorate, Fitzpatrick Referrals, Liphook Equine Hospital and Westpoint Farm Vets.

Professor Lisa Roberts, Executive Dean of the Faculty of Health and Medical Sciences, says: “The School of Veterinary Medicine, only the second vet school to open in the UK since 1965, embraces the ‘One Health’ philosophy that human and animal health is intrinsically linked. The custom-built buildings are integral to the school’s innovative approach to veterinary education, which puts veterinary professionals, government agencies and industry at the heart of its teaching and research.”

As the UK’s newest school of veterinary medicine, there’s no doubt that this is not only a place of cutting-edge teaching methods but also the only school for vets with architecture that is so thoroughly 21st century.



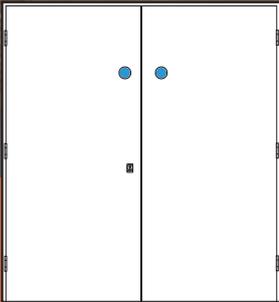
As the UK's only new school of veterinary medicine since 1965, its architecture, as seen here in the Academic Building, is thoroughly 21st century.
© Nic Allen, PM Devereux

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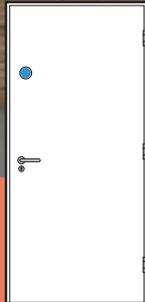
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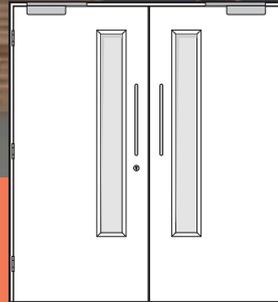
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Eye-catching academy is vital to regeneration scheme

Ray Philpott finds out how a well thought-out free school in inner-city Leeds manages to look so strikingly different despite working to the rigours of the Government's school building programme

© Render|3D Ltd 2010

When it opens for business next year, the Ryder Architecture-designed Ruth Gorse Academy will be the largest free school in the country.

But the £17.3 million academy actually sits on a highly constrained urban site in a traditionally industrial area of Leeds, posing interesting design challenges requiring smart solutions.

For starters, the state-funded, privately run school is being constructed on the storage site of a former chemical works in a once heavily industrial area south of the city's River Aire.

The building is directly bordered by Black Bull Street – a major arterial road – some recent residential and commercial developments and a number of low-grade industrial units. It is very near the former Tetley brewery site and adjacent to the newly developed Leeds Docks, formerly known as Clarence Docks.

Leeds City Council is regenerating this area, now named Leeds South Bank. Here it aims to attract commercial and retail development and create an environment that will attract families to live in a city centre that has become the domain of young adults and professionals. However, there's a shortage of secondary school provision in the area, so the new academy – which will accommodate 1,580 students when full, and run by The Gorse Academies Trust charity – forms a vital element of the regeneration programme.

Not only is the site itself challenging, but as a state-funded new school, it has to be built to a very tight 12-month timescale within the well-defined specifications and standards

of Phase 2 of the Government's Priority Schools Building Programme (PSBP) under the auspices of the Education Funding Agency.

These clearly specify everything from daylight requirements to air quality, while the tightly monitored budgets can limit the range of products and materials that can be used. However, Ryder Architecture has succeeded in creating a building that is neither uniform nor dull.

Efficient footprint

Despite the restricted size and slightly awkward shape of the site, the architects have designed a four-storey building with a highly efficient footprint. In essence, this consists of two traditional 'finger blocks' with classrooms and educational facilities projecting out from either end of a four-storey 'super block' known as 'The Hub'.

These three elements are connected to each other through a high-quality, glass and steel 'spine' comprising a large, circulation area under a large atrium and boasting showcase facilities such as the science laboratories and art studios.

Viewed from outside, the three-storey spine and two finger blocks form the boundaries of a courtyard-style play area, while elements of the spine building overhang the courtyard to form sheltered recreational areas. Maximising recreational spaces is vital given the naturally constrained nature of the site.

But it is the innovative formation and structure of the hub which is most central to the success of the buildings, as Grant Sellars, Ryder associate explains.

Continued overleaf..

The academy's attractive yet practical courtyard area, showing the different treatments given to the three core elements of the school

Seen from the Black Bull Street, the bold architecture of the hub and the brick-faced stem building echo the area's architectural heritage. The glass-fronted Learning Resource Centre in the hub is clearly visible from the street



“The planners and client were not keen on the idea of the traditional EFA standardised super-block, although it would have provided an efficient building form.

“With the hub we were able to maximise the site and create the efficient footprint needed by elevating the 2.5 storey-high sports, main halls and activity studios to the upper levels as these spaces require wide, clear roof spans. Fitted neatly below them are the dining facilities, Learning Resource Centre (LRC), administration, staff areas and services that don't require wide spans and can accommodate columns.”

He adds: “Halls often tend to be standalone elements, with sports halls usually in outlying parts of a school. In contrast our elevated sports hall is central to the school and has a strong external presence, being cantilevered over the glazed, street-facing front of the LRC. That seems appropriate for a school that's named after an inspirational teacher and sportswoman and celebrates her life.”

Distinctive appearance

Each element has a distinctive appearance, with its own pallet of colours and materials reflecting the external environment it is adjacent to.

The humanities finger block houses the english, history, geography, arts and music departments, among others and is finished in a grey composite cladding, white-coloured render and a brick plinth for solidity and reflects the residential side of the site which features new flats.

The three-storey 'stem' finger block runs parallel to Black Bull Street and is home to science, technical, and maths facilities. It features an entirely brick skin and, to give the roofline some movement, it incorporates a factory-style saw-tooth roof profile and window styles echoing the site's industrial heritage.

The saw-tooth roof element is made from lightweight

Ruth Gorse Academy: timescales

Planning permission and start on site:
Sept 2015

Phase 1 handover: Sept 2016

Final handover: Dec 2016

Project value: circa £17.3 million



© Render3D Ltd 2010

cladding on a lightweight metal frame. The block is also more sealed off from the external environment as it sits alongside the main road.

In contrast, the exterior of hub is comprised of glossy black composite panels using the Euroclad F5 system; these and the tall narrow windows deliver strong vertical lines.

“We avoided using lots of different panel shapes feeling that would look less elegant,” says Sellars. “There is certainly an industrial flavour to the hub exterior, especially when it’s viewed alongside the brick stem block. We wanted this part of the building to have a strong presence, and while the black finish might make it seem a little monolithic, at the same time it makes a bold and confident statement.”

On the ground floor of the hub, the Learning Resource Centre (LRC) has its glass frontage facing directly onto the road, set back slightly from the pavement, making a public statement that this an educational building. It also reinforces

the school’s links with the nearby Leeds College of Building and Leeds College, forming part of an education hub in the South Bank area.

Strict criteria

Ryder’s smart and innovative approach has undoubtedly avoided the uniformity and lack of imagination that can accompany many PSBP projects.

“The pallet of brick, render and composite cladding is in no small part driven by budget and, to some extent, you could argue there’s rather a lot going on; but we’ve created something that is a reaction to different elements,” explains Sellars. “Seen from a long view, it’s reflecting the language of buildings around the school.”

Notwithstanding that, PSBP criteria presented a particular challenge in terms of air quality in the stem block as it is located on a busy road. To meet the requirements, service areas

Continued overleaf..

Project details

The Ruth Gorse Academy

Architects:

Ryder Architecture

Client:

The Ruth Gorse Academy Trust and Education Funding Authority

Main contractor:

BAM Construction

Structural engineer:

BAM Design

Civil engineer:

BAM Design

MEP design:

BAM Design

MEP contractor:

BAM Services

Planning

consultant:

Turleys

Lighting design:

BAM Design and

Arup Daylight

Steelwork:

Leach

Glazing:

Quest

Roofing and

Cladding:

Lakesmere



were located along the roadside facade and some parts of the block draw their air supply from the courtyard area.

Strict daylight requirements saw a stringent approach to fenestration, involving high window heads and a large proportion of glazing to each classroom.

“However, as the academy is not part of a batch of PSBP schools there was a little more flexibility to work with the academy to define and develop its school-specific brief while achieving the elements of the EFA output specification,” explains Sellars.

Another aesthetic enhancement, attractive coloured opaque panels on the windows of the stem block, may eventually be used to represent the school’s brand colours.

The school’s perimeter also has some nice features, with

a part of it incorporating attractive brick piers from the original factory wall, complete with their original Yorkshire Chemical Works Group crests and parapets but with modern metal railing in between. Retaining this historic feature enables people to see in and out of the site, connecting the academy with the community.

Collaborative approach

Typically, under PSBP-related programmes, the main contractor has a significant input into the design of the school and, from the outset, Ryder has enjoyed a strong a working relationship with main contractor BAM.

“It’s been a fully collaborative partnership. BAM has provided a lot of valuable, practical input regarding the

The light-filled atrium area inside the 'spine' area of the school that links the three key elements of the building together (above) contains high quality facilities such as science classrooms (right)





'We're really pleased that we've been able to incorporate some interesting design elements for our clients while creating a lot of practical, useable space'

Grant Sellars, associate architect, Ryder Architecture

© Render|3D Ltd 2010

efficiency of the scheme and working closely together to tackle access and phasing issues of the programme to be sure it will be delivered on time," says Sellars.

Although it's early days yet, on paper, the school's sustainability and green credentials look good. Some 15 per cent of its electricity consumption will be provided by photovoltaic panels while heating and cooling is achieved through a highly energy-efficient heat recovery system used throughout the school, apart from a few ICT-intensive areas.

The building's BREEAM pre-assessment is currently targeting a Very Good rating with elements of Excellence, thanks to the generally high level of thermal insulation and air tightness.

Summary

Ryder's approach to designing the Ruth Gorse Academy shows that, with attention to detail and careful planning, it is possible to design a state-funded school that is so much more than just another run of the mill, 'built by numbers' modular building.

As Sellars puts it: "This project is probably the furthest we've been able to push a school budget. We're really pleased that we've been able to incorporate some interesting design elements for our clients while creating a lot of practical, useable space on a tricky site that is an awkward shape."

Ultimately though, it is the students and staff who'll benefit most from this thoughtful design when they walk through the school gates.

The main public entrance and lobby of the school (top) and the academy's centrally located, elevated sports hall (below)



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Putting education on a firm footing

Guy Stanton, director, Nora Flooring Systems UK, highlights some of the useful qualities of rubber floor coverings in the educational environment



Armenia

Dilijan College, the 13th member of the United World Colleges (UWC) group and the first international boarding school in Armenia, opened its doors in September 2014. Set within 10 hectares of forested and mountainous land, a backdrop of the Dilijan National Park, the holistic vision for the school was to create a facility that responded to and respected the natural landscape. UK architects practice Tim Flynn Architects made this vision a reality, with key criteria for materials being durability, quality, choice of colours and service. Tim says: "We chose rubber flooring for the UWC Dilijan College project because it's a durable and sustainable product." Several thousand square metres of both sheet and tile rubber flooring plus accessories, were specified for the college and boarding houses including classrooms, wet areas, circulation and stair cores including stunning inlays in the showpiece atrium area. All products were installed using accredited low-VOC installation systems to ensure the best possible finish and came with a 25-year extended warranty, giving the client peace of mind.

The physical environment has a strong influence on learning and with floor coverings forming a major component within the building they require careful consideration.

Those responsible for planning and constructing educational buildings are faced with widely differing challenges. However, all projects have one thing in common: the practically airtight construction methods that are used today to save energy. These minimise air exchange in buildings and make the use of low emission materials absolutely indispensable.

Ensuring healthy indoor air is vital. This not only relates to the floor covering itself, which must be harmless to health and ecologically safe, but also installation materials such as primers, fillers and adhesives, as well as the quality of the work, all play a major role in achieving a healthy learning environment.

Rubber floor coverings are the ideal solution for educational projects. They are exceptionally kind to the environment and provide warmth underfoot, they are comfortable enough for pupils to sit on and have excellent acoustic properties and can also reduce the severity of injury in the event of a fall, making it practical for all ages from nurseries through to adult education.

In terms of health, rubber floor coverings do not contain any PVC or plasticizers, are slip resistant and are toxicologically safe in the event of fire. The closed dense surface of rubber floor coverings does not require a coating, therefore there are no minuscule cracks or holes which can appear over time for dirt or bacteria to penetrate. This prevents the need for subsequent renewals that are not only time-consuming and expensive but also lead to considerable operational disruptions during the refurbishment process.

Easy maintenance

In terms of day-to-day maintenance, the floor coverings are dirt repellent, and naturally resist bacteria and mould. The dense, closed surface allows for easy and economic cleaning, without the use of aggressive cleaning agents. There is even a system using pads impregnated with microscopic diamonds that cleans and polishes the floors using nothing more than water.

Rubber is a versatile material and can be produced in a wide range of colours and bespoke design options, creating environments which are not only healthy but also have a motivating, visual appearance. Pictograms, signs and instructions

Continued overleaf..

Liverpool

Designed by architects Sheppard Robson, the Notre Dame Catholic College (pictured) was the first of eight schools in the first phase of an investment programme carried out by Liverpool City Council as part of their Liverpool Schools Concept. To meet the brief set by Liverpool City Council for achieving high flexibility and adaptability for the college's atrium functions, rubber flooring was specified as it is one of the most resilient and hard-wearing products on the market.



© Hufton + Crow

can also be inlaid to the flooring to give the design added value functionality.

New products are continually being developed. The latest to be launched this year is a self-adhesive rubber flooring system: the back of the flooring is lined with a rubber-based adhesive under a protective film that is simply peeled off prior to installation.

The range also includes special installation materials like filler and primer for preparing the subsurface – all components are perfectly matched to each other.

Not only is this new product extremely fast to lay, the system is also completely moisture-tolerable saving valuable time that would otherwise be spent waiting for the floors to dry.

Aesthetically welcoming

Rubber flooring can really make a strong contribution to the creation of a healthy and aesthetically welcoming building, one that makes people feel happier. It is perhaps unsurprising that students learning in these environments often perform better.

London

The challenge set by the Queen Elizabeth Grammar School for boys in Barnet, Greater London (pictured), was to find a hard-wearing but also quiet flooring solution that gives exceptional comfort underfoot and is easy to maintain. Bisset Adams, the architects for project, chose rubber tiles with a hammer surface for the new refectory that houses the school canteen and serving areas as well as offering communal space for extra school activities.





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Installing canopies and shelters in an educational environment

Installing products like canopies and shelters in schools can be both challenging and rewarding, but what are the main considerations when installing in an educational environment? SAS Shelters Managing Director Andy Swain shares his insights into manufacturing and installing products on school premises

When you start to discuss a new project with a school, college or nursery, the first things you have to establish are the age of the children the canopy or shelter is for, its intended use – for example, a play area, outdoor classroom or walkway – and the size of the area they wish to cover.

While carrying out the initial survey, study the school grounds as well as the buildings to determine which style and material will suit the existing look of the school. For example, is the school newly built or is the architecture much older?

Sometimes fitting a heavy steel structure to an older building isn't in keeping with its look and feel, so you might suggest a wooden structure as an alternative so it's in line with the school's current aesthetic. In most cases, planning permission will be required, so it is advised that you check with your local authority with regards to planning regulations on free-standing structures to ensure that the work can be carried out on the premises.

The challenge often faced by a canopy or shelter supplier is being able to offer the correct product that is fit for purpose and pleasing to the eye, within the school's budget. Another consideration when choosing which type of structure to use is what type of access does the school have for this type of structure? Is expensive lifting equipment or additional machinery required due to limited school access? All these things should be considered in the planning stage as they could add additional cost to the final quotation.

Key considerations

When selecting the right type of structure, many factors have to be taken into account. If the structure requires legs to support it, the number of legs need to be considered. If the number of legs are reduced then heavier steel work will be required to support the span of the roof and this will need to meet snow and wind loading regulations, which will be checked by a structural engineer.

When considering a canopy, the groundwork needs to also be considered. If this is going to be a play area, do you fit a soft play surface or Astroturf? If children are playing and running around near exposed posts from the structure then post protectors are highly recommended to reduce the number of accidents and to keep the children safe.



'Another consideration when choosing which type of structure to use is what type of access does the school have for this type of structure?'

The type of material used for the roof of the structure also has to be right; the ideal material to use is UV stable roof sheets, as they block out harmful UV rays and will keep children safe from the sun when playing outdoors. If the structure is intended to give shade to a classroom then tinted or opal roof sheets will cut out the sun's rays and will keep the classrooms much cooler during the summer.

If the structure is going to be situated in the middle of the playground, does the area suit a steel structure? Does it suit a vaulted or gable roof? How large is the structure? Does the structure need guttering? Drainage and guttering plays an important part in the decision making process, as any rainwater needs to be either directed towards drains, connected to the draining system or will require new soak-aways to be installed. If the rainwater is directed incorrectly, this could freeze during the winter months and cause a hazard.

Sail shades

Sail shades are becoming increasingly popular and are a great choice when choosing a structure for a playground. If you choose to go down this route then the school needs to decide if they require them to be waterproof, as this will impact on the material used. Sail shades can be offered in PVC and a mesh fabric, which still blocks out the UV rays, however is not completely waterproof like the PVC. The advantage of this is that the shade does not have to be set at a certain angle so that the rainwater can run off.

Continued overleaf...

Like all structures, sail shades require regular basic maintenance to keep their longevity as over time, the fabric will stretch slightly, due to the amount of rainfall we typically receive each year from our British climate. Tensioners need to be adjusted to make sure the fabric is kept to the correct tension, otherwise the rainwater will not be able to drain correctly and the fabric will become too stretched over time.

Awnings

If the school does not require a permanent structure, then awnings can be a great alternative. Commercial awnings have come a long way over the years in regards to full cassettes, which help to keep the fabric concealed from the elements when not in use. The fabric used on commercial awnings are virtually maintenance free, don't fade in the sun and are suitable for all

types of weather. Some modern designs can also be fitted with sensors so when the wind gets too strong for the projection, they automatically retract. This solution offers schools a hassle free and low maintenance alternative that can be fitted much quicker than a permanent structure.

Most schools would prefer the work to be carried out during the school holidays, so it is important to schedule the correct amount of time for the work to take place and if the timescales are tight, the school needs to be made aware so that alternative procedures can be put into place to ensure that the work is completed on time. If the work can be completed during term time, then the supplier can be a lot more flexible and has a greater window of opportunity to complete the work without having to rush to fit it in during the school holidays.



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Providing quality toilet facilities is a must

Schools and colleges need well thought-out and executed toilet designs to meet today's standards and demands, argues Kelvin Grimes, hygiene rooms project manager at Clos-o-Mat

Former Schools Minister David Miliband once said, "If you get the toilets right, you get the teaching right". That opinion is supported by authoritative organisations, and applies as equally to a huge inner-city academy as to a primary school in rural Scotland.

More children are starting school still in nappies and using functional rooms – including the toilet – is the second-biggest problem faced in daily life for families with a severely disabled child. Alongside that, one in 12 children suffers from bladder or bowel incontinence and the numbers of children with special needs in schools is rising.

Clearly, toilet needs are now part of any school's holistic approach to a child's development and well-designed, appropriate toilets are proven to positively affect an educational establishment's popularity.

Obviously, architects are aware of the legal requirements for toilet provision when designing an educational new-build or refurbishment under Department for Education Building Bulletins, Building Regulations Approved Document M, BS8300:2009.

One element not fully appreciated, however, is that under the Equality Act, which replaced the Disability Discrimination Act, providers are now obliged to make reasonable changes to the built environment where a disabled person would otherwise be at a substantial disadvantage. Previously, changes were only needed if it would have been "impossible or unreasonably difficult..." and those adjustments should be taken before a disabled person has a difficulty.

Some educational establishments have been taken to court and found liable in their failure to provide appropriate toilet facilities. In contrast, Wakefield College has reported an upsurge in its popularity among local disabled students, because of its provision of good hygiene rooms in its Castleford Campus.

A further consideration that has evolved with the changing role of a school is the need to design, not just for the children, but adults, too, as many schools open their facilities to community use out-of-hours. Plus, with the increasing diversity of courses, toilet facilities can double-up as an educational resource – as demonstrated at South Birmingham College, where the hygiene room is also used as a training room for students of social care.

Much of good toilet design in schools is common sense. They should be positioned as a direct extension of the circulation



space, enabling passive supervision and reducing likelihood of anti-social behaviour, but still offer physical and aural privacy. Each toilet cluster should include an accessible toilet, of the same quality and aesthetic standard as the standard male and female WCs.

Key design points include:

- Room for non-ambulant children to move around and for staff to help them if necessary, taking account of manual handling and transfer arrangements including the use of hoists.
- Fixtures and fittings should be robust and at an appropriate height.
- The layout, fixtures and fittings should reflect the age of the children and help them learn personal skills.
- Where a school has pupils with motor disabilities, particular attention needs to be paid to fittings... to encourage their use considering both dexterity and reach.
- Hygiene rooms need to provide a comfortable environment with room for assisted changing (12 to 20m²).
- Accessible changing rooms should have a peninsular toilet, wheelchair-accessible shower and/or a shower trolley, and height-adjustable changing bed.

So often practicality rules, but there is no major reason why the toilet and personal care facilities have to be grey, white and blue.

Continued overleaf...

Attractive sensory features have some justification beyond looking nice. Colour and texture can offer visual and tactile guidance for those with impaired vision, as well as enhancing the room's appeal.

A little thought over the detail similarly makes a huge difference. Department for Education and Science Guidance Standard Specifications, Layouts and Dimensions 3 – Toilets in Schools, maintains: "high quality fittings promote respect". This engenders pride and reduces the incidence of vandalism and ongoing repair and maintenance, thus helping deliver best value practice. and making the facility user-friendly. For example:

- Height-adjustable washbasins and toilets can accommodate the smallest to the tallest user.
- Concealed pipework is actually sensible where wheelchairs are being manoeuvred round.
- A hoist and height-adjustable changing bench enable care support staff to look after students with minimal risk of injuring themselves or the child during transfer.
- Longer hoses on showers optimise access.

In an ideal world, a height-adjustable automatic shower 'wash and dry' toilet meets the needs of small children through to adults. It eliminates the need to supply and use toilet tissue, ensures effective cleaning after any 'little accidents', improves hygiene by eliminating hand-to-body contact, saves paper and



reduces the risk of the toilet becoming blocked. A height-adjustable basin similarly accommodates the needs of most, and means only one set of pipes, one product, and one installation against at least three basins set at diverse height and associated costs and labour.

Many of us have childhood memories of unpleasant school toilets: yet care and expertise at the design stage can lead to more positive experiences for today's schoolchildren.

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Need to deliver excellent student accommodation fast?

Offsite construction is the answer

To maximise income, higher education institutions often need their accommodation to be built to tight timescales. Ian Ashley, regional director of modular building specialist Premier Modular, explains how that can be achieved without compromising quality

Calls to improve the student experience in the UK means there's a steadily growing requirement for significantly better quality accommodation.

One of the demands placed on contractors building student accommodation is for the project to be quickly completed, so it can be occupied throughout the whole academic year.

Early occupation provides a rapid return on investment and this can make a significant difference for an accommodation investment where academic year dates drive occupancy.

This all sounds so simple in principle but it can be far from the reality, thanks to the short timescales involved, the scarcity of skilled workers due to the upturn in construction activity, and rising costs.

Modular volumetric buildings now provide a cost-effective alternative to traditional build, and are enhanced with a number of significant benefits, including:

- Shorter construction periods – typically 50 per cent of a traditional programme.
- Less site disruption as up to 75 per cent of the construction is completed off-site.
- Fewer site deliveries, providing local environmental benefits.
- Reduced wastage, with many materials pre-cut to size as they're designed through a digital manufacturing process.
- Less shrinkage and therefore fewer maintenance issues.
- Cost certainty, as it is a manufactured product.
- Programme certainty with minimal risk of disruption due to weather.
- Improved health and safety as the majority of the building is manufactured in a controlled environment.
- More energy-efficient buildings as construction quality is controlled through factory processes.
- Improved build-quality, delivered through the factory process with repeatable operations and robust quality systems.

One fantastic example of a modular scheme is The Foundry, a private 206-bedroom student accommodation block in Newcastle, recently completed by leading contractor Sir Robert

The Foundry, Newcastle © Cadzow Pelosi



McAlpine, after being commissioned for the project in June 2014 by Trust Estates.

Consisting of five floors, the building was designed jointly by the client, FaulknerBrowns Architects and the building manufacturers to gain the maximum benefit of off-site fabrication. Each en-suite student room was completed and signed-off by all parties in the factory. Apart from the en-suite accommodation rooms, the building also offered high-quality communal spaces for kitchen, laundry and sitting room facilities. A number of larger studio rooms were also designed-in, complete with their own cooking facilities and, again, these rooms were fully factory-finished prior to site construction.

The building was constructed from March 2015 at a rate of up to twelve rooms a day and handover was achieved in the first

Continued overleaf..

week in September. This allowed the client to market the scheme to their potential residents in time for the new academic year, thereby realising an immediate return on investment.

Advantages

The majority of large residential, hotel and student accommodation schemes lend themselves admirably to the advantages of factory-produced modules as they benefit from efficient flowline manufacturing methods. To ensure this technology adds the maximum value available it is essential that the manufacturer is involved early in the thought process. There are sometimes restrictions in some areas that will affect the build-ability and therefore the manufacturer's system knowledge is essential.

This early involvement reduces the amount of time the team spends redesigning a scheme by ensuring the most cost-effective factory solution available is used. Bedrooms or indeed whole houses can be fully factory-finished with all internal fittings, sanitary ware, heating and even flooring if the correct approach is taken initially. This collaborative approach maximises the benefits of off-site construction and can reduce time on-site by up to 50 per cent.

Where completion of student accommodation is time-critical, it is clear that modular buildings can provide the solution and build quality required to maximise a client's return on their investment.



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Climate control for students

When constructing or refurbishing educational buildings, the heating, ventilating and air conditioning (HVAC) system is key to providing an optimal living and learning environment. As David Simoes, brand manager with Zehnder explains, a good system means students can work, rest and play in a comfortable indoor climate all year round

One technology that works extremely well in educational establishments is radiant heating and cooling. Delivering benefits to designers, contractors, managers, teachers, pupils and maintenance staff alike, it provides added value at all stages of its lifecycle.

Radiant technology utilises the same principal as the sun. Radiant panels heat the objects in the room as opposed to the air. So, the temperature within a radiant heated or cooled room can be up to 3°C lower or higher than that of an alternatively heated room, while giving the same sense of comfort. This enables quicker response times to temperature fluctuations, reduced infiltration losses and a more even temperature distribution for a better working environment.

The obvious advantage is energy efficiency and lower carbon emissions. A saving of up to 40 per cent can be made on alternative heating systems. Additionally, many modern schools utilise large open-plan teaching areas where staff can partition the space according to the activity taking place, radiant heating provides a uniform temperature throughout the space at all times for maximum comfort.

The ability of radiant panels to react so quickly to changes in the indoor climate means they're ideal for multi-use educational buildings where different rooms are likely to have different requirements throughout the day, evening and weekend. By responding automatically and promptly to changes in temperature they provide excellent controllability for maximum energy efficiency.

Functionality and maintenance

From a practical perspective radiant technology offers many additional advantages for all stakeholders:

Dual functionality – a key benefit of radiant technology. With the provision of heating and cooling from just one installation, significant savings can be made through reduced equipment and installation costs.

Multi-functionality – radiant panels can be integrated into a multi-functional classroom services ceiling raft. Complete with data cabling, lighting, fire alarms, smoke detectors and acoustics etc. the stylish multi-service raft, with plug-and-play installation, helps create a modern and uncluttered aesthetic.



'The ability of radiant panels to react so quickly to changes in the indoor climate means they're ideal for multi-use educational buildings'

Special solutions – radiant panels are versatile and can be fitted with special solutions to satisfy the requirements of every school project. Galvanised ball guards make them ideal for use in sports halls. A special wet room design is available for use in swimming pools, and a dust protector panel provides a hygienic option to limit dust build-up – ideal for allergy sufferers. Basic lighting, acoustic insulation, loudspeakers can be fitted as required.

Renewable energy – if you're looking at using renewable energy resources then radiant ticks that box too. Thanks to a low storage mass, radiant systems are ideally suited to operating at



Continued overleaf...



low-temperatures and can be used with solar, biomass or ground and air source heat pumps for a sustainable alternative.

Installation and maintenance – easy to install and maintain, radiant panels can be quickly connected by means of press/screw fittings to help reduce time spent on site. Hung independently, or fitted directly into an existing grid ceiling, they're suitable for both new-build or refurbishment projects. And being manufactured from corrosion-free materials they require little or no maintenance for long-term peace of mind.

The radiator

Alongside radiant technology, radiators also offer many advantages to architects and specifiers. With excellent choice in design and functionality, they go a long way to meeting the expectations of more discerning parents and students when it comes to student accommodation. Innovative aesthetics, materials and technologies, together with high efficiencies and greater controllability, make radiators a versatile heating solution.

Traditional column radiators can add a touch of class and timeless elegance to refurbished educational buildings, while more contemporary alternatives can form part of the interior decor and matched to the surroundings or used as a design feature.

The design flexibility of radiators means they can provide customised heating solutions together with architectural creativity. With bespoke sizing options, radiators can be shaped to fit the building structure. The contours of circular or undulating walls can be followed and radiators can be wall or floor-mounted for ease of placement.

They can be integrated within the building structure – column radiators incorporated within a balustrade or railing radiators used to heat difficult areas.

Additional boost functionality through the use of integral fans within trench heating, ensures areas with glass facades not only stay warm, but also have an uninterrupted view to the outside world.

Low surface temperature radiators ensure the safety of occupants and, with a wide choice of styles and colour, can be integral to the building design. New material technology provides additional options for architects and specifiers as polymer radiators combine performance, comfort and sustainability with style, durability and ease of installation.

With a wide choice of products on the market, it's important to know exactly what you're looking to achieve from the heating system from the outset. This will help guide product selection and ensure you provide a functional, energy-efficient and aesthetically pleasing solution to climate control that meets all stakeholders' requirements.

Daylight leads in Leeds college



The new campus for Leeds College of Building was designed by architects Fuse Studios, as the result of winning a major design competition. Using its skills to seamlessly integrate architecture and interiors, Fuse has fulfilled the College's brief to promote the use of modern materials and construction methods, so the new project becomes an educational demonstration in its own right, as well as supporting BREEAM excellence. Materials specified included the diffused daylighting Kalwall cladding and roofing system. Consistent with the winning design was a desire for internal transparency between all areas and a naturally-lit teaching environment which would not generate excessive solar heat gains. At the same time, it was recognised that too much glazing could distract the students, so the solution was to use translucent Kalwall. Derek Whitehead, Deputy Principal, Leeds College of Building, comments: "We're really pleased we went with the Kalwall solution for this project. The extra daylight really enhances the space and makes it very airy, light and bright. This has the benefits of not only reducing our energy consumption on one hand but, more importantly, creates a pleasant ambient light which enhances the health and well-being of our students and staff." Kalwall is distributed in England, Wales and Northern Ireland by **Structura UK**, a leading supplier, fabricator and installer of glass curtain walling, rainscreens, glass atria and windows.

Our Lady & St Josephs Catholic Primary School

Comar Architectural Aluminium Systems; with their approved fabricator Veranti Systems completed a new build 2 form entry Catholic Primary School in Poplar, East London. Formed out of a merger of two schools the bright and eye catching design uses brick to match the surrounding area and is wrapped with shards of colour in the form of Brise Soleil. The overhanging roof ensures extra shading; with the roof line being reminiscent of Poplar's ship building past and the skyline of London's Canary Wharf featuring as the backdrop. Achieving a BREEAM rating of excellent the school has been shortlisted for a 2015 'Construction Award'.

Comar 5P.i. Top/ Side Hung and Fixed Light thermally efficient polyamide insulated windows were specified. These aluminium windows offer outstanding weather performance and reduce heat loss through the trademark P.i thermal break ensuring low U-values so energy bills are minimised.

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In a busy education environment, Comar 7 sets are a natural choice. Not only are they available in swing, pivot, sliding, auto-sliding and sliding folding, they have been designed specifically for applications where high traffic solutions are required. For safety, the Comar 7 doors were fitted with anti-finger trap stiles, Axim soft touch panic exit devices and Axim concealed transom closers which were hung directly from the Comar 6 frame and complied with the Disability & Equality Act 2010.

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Making a Splash: Amwell Systems and Stebon Primary School

At the heart of Burdett Estates community lays Stebon Primary School, serving its local community and surrounding areas. Stebon Primary is a multi-faith, multi-cultural, multi-lingual school, with its pupils and staff hailing from over 20 different countries. Stebon is a two-form entry school currently expanding to a three-form entry school, and we were delighted to be a part of such a significant refurbishment for this thriving school.

With the school constantly growing, improving and moving from strength to strength, Amwell Systems understood how important it was for Stebon to have robust, reliable products to suit the needs of the school, its pupils and staff. With Amwell Systems having a great understanding of how important school toilet cubicles are to pupils, it was able to provide exactly what Stebon School wanted and needed. The company understands

school cubicles need to be inviting, child-friendly and safe. As well as this, it understands school cubicles need to be durable, strong, and great value for money.

With this in mind Amwell Systems' Splash and Acorn range were well-suited for Stebon Primary. Both were a perfect choice; Splash as it is a fun, vibrant washroom, yet is strong enough to withstand all sorts of rough and tumble and Acorn as it offers a versatile and practical washroom solution that looks inviting and works hard. With the gently rounded doors and sweeping divisions, the Acorn range was specifically chosen for Stebon's Reception class pupils. Not only does Amwell's cubicles have all this to offer, but they also come in a varied choice of spectacular colours and prints. Stebon Primary School chose to go with the Charcoal and Citrus for the Splash cubicles, as they continue with

Stebon's fresh new colour scheme, which flows throughout the school!

Having successfully and proficiently completed Stebon Primary with Amwell products Akaal-Ltd has now become an approved installer for Amwell Systems. Harjender Singh Batchu, the director of Akaal-Ltd, had the following to say about Amwell: "Our experience with Amwell has been great. They provide a very personal service and have quality products that provide a high standard of finish. Installation was very straight-forward, as fitting instructions were easy to follow. Going forward, we would definitely recommend the Amwell brand to our clients."

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Rodeca helps set a template for new school buildings

Transparent rainscreen cladding from Rodeca has been used on an “innovative, sustainable and economical” template for new school buildings.

Rodeca’s 60mm PC 2560-12 wall panels in Kristall finish were specified by architects Urban Projects Bureau for the front elevation of a £1.1million new sixth form centre at Graveney School in Tooting, south-west London.

The practice has worked with the Graveney Trust on many projects over the past four years and the new sixth form block is the result of a positive collaboration between the school staff, students and design team.

The 750m², two-storey building to the rear of the site, provides valuable extra teaching, study and events spaces, and a positive contribution to Graveney’s campus and host of fine architectural buildings.

Rules by the Academies Capital Maintenance Fund meant it had to be delivered on a tight

schedule and budget, with a target cost per m² way below current guidelines.

The school considered buying an off-the-peg prefab block but were unconvinced about the quality of accommodation it would provide as well as its location behind the Grade II listed Furzedown House which meant generic prefabs would be difficult to get through planning. As it was the planners requested samples of the materials proposed for its construction.

The new sixth form centre comprises eight 57m² classrooms, four staff offices and double-height independent study space with balconies and gallery.

Matthew Jeniec of Urban Projects Bureau said they met the brief by “rationalising the floor plans to exclude unnecessary space such as corridors, utilising prefabricated construction techniques (CLT) and leaving materials and services exposed.”

He added that the Rodeca polycarbonate cladding, which gives U-values of 0.75 W/m²K and light transmittance of up to 80 per cent and



was installed by specialist sub-contractor Roclad Systems, was specified for its “contemporary, clean aesthetic, transparency and economics.

“It provided the potential to display the building structure through the facade which was key to the flat-pack/tectonic aesthetic of the building. There was little budget for expensive materials or interior finishes so the tectonics and construction – its CLT frame, panels, claddings and openings – are what give the building its character.”

01268 531466 www.rodeca.co.uk

Altro flooring and wall cladding on cutting edge of excellence at new university science centre



Altro flooring and wall cladding are providing a total, high-level solution of hygiene, safety and contemporary style at a new state-of-the-art science and engineering centre at the University of Wolverhampton. Designed and equipped to offer cutting-edge teaching and research facilities to future scientists, the new £25 million Rosalind Franklin Building has been fitted with Altro Whiterock™ hygienic wall cladding, AltroScreed Quartz™ resin flooring, and Altro Designer™ TM 25 safety flooring. The bronze-clad building was designed by architect Berman Guedes Stretton, whose vision was to create a contemporary structure that would support modern learning and revitalise the surrounding area. Altro Whiterock hygienic wall cladding is a cost-effective, durable, grout-free, water-tight, smooth wall cladding system designed for building environments that are required to meet strict hygiene standards. The panels provide a stain resistant, wipe-clean surface with no gaps or cracks for bacteria to hide in. They are extremely impact resistant and ideal for tough areas, while meeting current EU health and hygiene directives. Gary Collins, Principal Director of Berman Guedes Stretton Architects, explains that “Altro Whiterock is the industry standard for this type of requirement, and we and the scientific community know and trust it.”

01462 480480 www.altro.co.uk

Hauraton drainage at Heslington East Campus, University of York

The flat terrain of the University of York’s Heslington East Campus meant that it was not possible to install deep drains, and so rainwater from roofs, road and pathways had to be directed into a series of culverts, surface drainage channels and rills, eventually discharging into a lake. The Sustainable Urban Drainage Scheme included the control of rainwater from roofs via downpipes into a series of buried, stepped shallow culverts made from two sizes of Hauraton FASERFIX® SUPER channels, fitted with solid ductile iron covers. Surface water drainage with ductile iron gratings was provided in the same channel, running where channels crossed paved footpaths or asphalted areas. Pairs of FASERFIX® SUPER 300 channels fitted with solid covers were also installed adjacent to each other in the rills to create tunnels under roadways and paths. RECYFIX® SLOTTED channels, with their unobtrusive galvanised slot inlets, were specified for the pedestrian routes and concourses. Colin Taff, Hauraton’s Project Engineer, commented that “over 1600 metres of Hauraton drainage channel have been installed by Howard Civil Engineering Limited with no breakages reported during the installation stages”. For more information visit the Hauraton and Hauraton Drainage Projects websites.

01582 501380 www.hauraton.co.uk



Sika Liquid Plastics helps academy secure roof refurbishment funding

When it comes to roofing, it is important that the surveyor chooses a company that they can rely on to provide a robust and accurate condition report, together with costed proposals. These contribute to a 'bid statement', designed to prove best value and offer the greatest opportunity for the academy to obtain funding.

Kenneth & Edwards worked with the team at Sika Liquid Plastics, who compiled a detailed report on the original felt roof, which had reached the end of its life and was in desperate need of upgrading.

Paddy O'Conner from Kenneth & Edwards said: "When it came to specifying a product for refurbishment, I was looking for a system that could cope with complicated detailing, as there was extensive work needed to make good around the roof lights. However, I was also conscious that if we used a traditional system with hot works, and the project overran the summer holiday period, there would be considerable disruption and risk."

Sika Liquid Plastics' liquid waterproofing membrane, Decothane, fit the bill. The liquid solution allows for ease of application around detailing and as the product is cold applied, installation could be undertaken during term time, if need be, without interrupting the education environment.

"The Sika Liquid Plastics system seemed to be the answer and was within budget," added Paddy. "And what finally swung it was the quality of the guarantee. All components of the system are covered by a substantial 20 year guarantee, which even goes so far as to adopt the original waterproofing down to and including the deck."

Stormforce Roofing and Maintenance, a Sika Liquid Plastics Quality Assured Contractor, completed the work in a matter of weeks, flawlessly overlaying the 1,500sq m roof with the new Decothane system, as well as installing new insulation and Decalite roof lights. These roof lights



Eden Park Academy, showcasing its recent roof refurbishment with Sika Liquid Plastics' liquid waterproofing membrane, Decothane

do not require raising of builders kerbs and consequential making good of the reveals, and are designed so that during installation the classrooms below do not need to be cleared.

The Sika Liquid Plastics system also allowed for a thermal upgrade, reducing both cost and work otherwise associated with stripping the original waterproofing to the deck.

01772 25978 www.liquidplastics.co.uk

P C Henderson improves primary school



P C Henderson's Lift and Slide System has been installed in the second phase of refurbishment for Lowther Primary School, London Borough of Richmond, to help transform the facilities and complement the existing building. Lift and Slide makes the doors operate with a simple turn of the handle. This unlocks the door, lifts the door up from

its weather-tight position and allows it to slide easily on the carriages with minimal friction. Once open, the door can be lowered at any position and locked by moving the handle down. This simple operation is achieved with the confidence that the system offers superior weather resistance and excellent security.

0191 377 0701 www.pchenderson.com

Quantum stair nosings



Durability and safety are of paramount importance when specifying stair nosings in educational environments. Quantum Profile Systems has moved to address these issues with their safety-focused lipped stair nosings and a range of double infill channels such as the HF2, designed with heavy traffic in mind. All of Quantum's stair

nosings are fabricated from highly durable materials which will stand the test of time. The company is also able to offer an extensive range of colours to help create a vibrant, bright and fun school environment, and this is complemented by a variety of skirtings in matching colours.

0161 627 4222 www.quantumflooring.co.uk



Door closer enhances safety in education

Leading hardware manufacturer, Samuel Heath, is reporting increased interest in its Powermatic controlled, concealed door closers from the education sector. While Powermatic's maintenance-free service, fire performance and accessibility credentials are undoubtedly factors in this heightened attention, evidence suggests that it is the door closer's health and safety benefits that are proving just as compelling, especially in areas where the reduction of risk in both fire and non-fire door situations is paramount. Being totally concealed when the door is closed, Powermatic presents very little opportunity for the would-be vandal or prankster to damage its mechanisms and render the door useless in case of fire. This total concealment, together with the fact that Powermatic can be installed towards the bottom of the door jamb, also mean that the closer offers a very useful anti-ligature solution. Professionals responsible for the management and development of educational sector buildings are recognising these benefits that make Powermatic an ideal choice for new-build, refurbishment and enhancement projects.

0121 766 4200 www.concealeddoorclosers.com

Pioneering rooftop science lab inspires female scientists to aim higher

A Level students at a Hertfordshire girls' school now have the opportunity to study in one of the most unusual science classrooms in the UK.

Watford Grammar School for Girls has installed a large SOLARDOME® PRO geodesic dome on the school roof as its new, fully equipped science laboratory.

The school had wanted to create an extension to its existing facilities; after exploring the options, they decided a geodesic dome would “bring science alive” and provide an inspirational space to nurture a new generation of female scientists.

The school chose UK company Solardome Industries to supply the dome as it was the only dome manufacturer that could design a habitable, temperature-controlled space with added ‘wow’ factor. Fitted with two doorways and an electric source air pump, the dome can be heated and cooled, making it usable all year round.

Mark Gregory, Director and Chartered Surveyor for the school, oversaw the design and build, and complimented the Solardome team. He described the school's dome as “bespoke, and nobody else in the UK provides anything quite like it.”

Its innovative design is set to benefit all of the students at the school – whether they study science or not. As Headmistress Dame Helen Hyde DBE explains:

“Although the research carried out inside the science dome will of course have a science focus, we see the existence of the dome as an addition to enrich the whole curriculum. It opens access to the higher levels of academic study and will motivate all our students to think beyond the stipulations of an advanced level syllabus” she added.

023 8066 7890

www.solardome.co.uk/solardome-pro



Which cycle solution is right for your school?



Cycle storage is essential for every school. With a myriad of options available, which one is right for your site? To help you decide, here is a breakdown of the main types of cycle storage and their individual benefits. The Sheffield Cycle stand is a common sight around the UK and offers a scalable and flexible cycle

parking solution. Providing the cycle stands are installed correctly (minimum 800mm apart) each stand will provide secure storage for two bicycles. Cycle racks are better suited for the smaller, or tighter, site. Cycle racks, such as the AUTOPA Type B, offer a higher density of cycle parking than single level cycle parking solutions. Cycle holders are ideal for smaller sites as they affix to the wall of an existing building without the need for additional space.

A modern approach to university lighting



Thorn Lighting & Tridonic have completed a lighting refurbishment in Durham University's Higginson Building. To overcome problems such as concealed metal tiles, the companies provided bespoke fixings and specially engineered Duoproof IP65 LED luminaires. Of the 400 LED luminaires supplied, half required

special engineering. First estimates are that the LED based fittings will provide energy savings of approximately 60-75 per cent and also deliver significant improvement in terms of lighting quality and levels. Another consideration was Tridonic's five year warranty on the entire refurbishment.

01256 374319 www.tridonic.com

Trespa sets the right tone for uni student block



A city centre student block for Liverpool University has been clad in more than 5000m² of innovative high performance laminate cladding from Trespa® UK, providing a clean-cut modern appearance while echoing the facades of nearby historic buildings. Drawing on a materials palette of the surrounding university buildings, Manchester-based architects Lewis and Hickey opted for Trespa's Meteor® cladding panels for the inner elevations of the blocks which face onto two central plazas, acting as communal areas from which the buildings are accessed. Architect Philip Daniels commented: “The facades of the three blocks facing outward onto the street were to be in a GRC, reflecting the stonework of the nearby Metropolitan Cathedral and the Reilly Building. The courtyard facades were also to be of the same tone, maximising the light reflectance to illuminate the courtyard bedrooms. Trespa® panels were the logical choice for the internal courtyard facades, offering a cost-effective option that maintained dimensional and aesthetic stability over time, and would weather well.” The design of the Trespa® facades, using approximately 2000 panels, was to use irregular panel sizes with staggered joints providing a softer, more organic effect, again referencing the stonework of the university buildings. A graduation of tones, using four colours, was also selected.

01952 290707 www.trespa.co.uk

Penwortham: creating a cutting edge science space

Penwortham Priory Academy is no ordinary school: in 2014 thirteen year old student Jamie Edwards became the youngest person in the world to create nuclear fusion in the school's science labs.

With labs dating from the 1950s, Penwortham wanted to enhance science learning by transforming their existing laboratories into cutting edge learning spaces.

Working closely with Cassidy + Ashton Architects and contractors F Parkinson, education interior specialists Innova Design Solutions created an open plan learning environment to facilitate collaborative teaching styles and fire students' enthusiasm for STEM subjects.

A central research and collaboration area with flexible tables supports group working and independent study alike, while mobile glass screens which double as writing boards allow the space to be reconfigured as needs change. An ICT



area with sawtooth desking provides space for online research.

Colourful, funky furniture and display units add a wow factor to this truly inspiring space.

Adjoining the research area, a wet lab designed using Innova's unique Hot Corners concept offers theory and practical study within the same space. In the dry lab movable pod units allow desks to be reconfigured, offering maximum teaching flexibility.

Durable Trespa Toplab work surfaces are fitted throughout to ensure the labs remain resistant to damage from chemical spills.

A large open plan prep room with central preparation desk and perimeter storage units provides the perfect space for technicians to prepare for lessons.

Even Penwortham's pets have a new home: perforated perspex cabinets were installed to house cages and tanks, giving the pets a fantastic new home in this ultra modern science space.

0161 477 5300 www.innova-solutions.co.uk

Canopy solutions with Fordingbridge



Fordingbridge offers a variety of innovative standard and bespoke canopy solutions to help you to make the most of any environment. With more than 50 years of experience as industry leaders in canopy design and manufacturing, Fordingbridge is able to share

experiences allowing the delivery of sustainable, elegant and cost-effective canopy solutions. Additionally, it is extremely flexible in design, thus ensuring that your project's exact requirements are met. With options of CE marked steel, timber and tensile structures along with a range of cladding choices, you can be sure that Fordingbridge have the external shelter solution to fit your project.

01243 55 44 55 www.fordingbridge.co.uk

Grove House student accommodation



Comar Architectural Aluminium Systems, with its approved fabricator, Barking Shopfronts, recently completed a change of use building refurbishment on Grove House, Ealing. The building, a 1980s unused former teaching facility forming part of the

University of West London, has now been transformed into 100 self contained studios for students. The building conversion was completed using Comar 5P.i Tilt & Turn and fixed light windows, Comar 6EFT curtain walling for the main entrances and stairways, Comar 7P.i Doors for the entrances and Comar 9P.i Framing for the side lights. Barking Shopfronts was able to ensure that the project was completed within the constraints of the budget and in line with deadlines.

0208 685 9685 www.comar-alu.co.uk

adf 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 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



Levato Mono Porcelain paver system



The Deck Tile Co's Levato Mono Porcelain paver system is designed for fast, cost effective installation over most surfaces including; single ply membranes, roofing felt and other delicate waterproofing systems. The 20mm thick porcelain pavers are also available in larger formats, are highly abrasion and stain resistant,

fire and frost proof and achieve R11 slip resistance – required for outdoor use. With all its features such as height adjustable and slope correcting supports, high load bearing and 45kgs per m², over 40 finishes available (plus co-ordinating internal tiles) Levato Mono is the ideal system for balconies, roof terraces and piazzas – residential and commercial use alike.

0845 27 00 696 www.thedecktileco.co.uk

Wet floors for accessible bathrooms



A new building in Stratford has recently been completed providing comfortable student accommodation. Angel Lane comprises of around 750 single student bedrooms, including 60 with accessible bathrooms with level access wet rooms. On The Level supplied 60 custom formers measuring 1,200mm x 1,200mm

for this project. All formers have a central waste and standard gully and were designed for level access wet rooms installed in accessible bathrooms with vinyl sheet flooring. For more information visit the company website.

020 3199 8496 www.onthelevel.co.uk

Making the most of your available space



Are you tired of making do with ineffective spaces? Do you dream of the days you can make the most of every square inch of your school? Well the answer could lie in the addition of fabric partitions. At **Building Additions** the company has helped many educational facilities including schools, colleges, and universities to overcome

problems with the lack of useable space. Providing flexibility thanks to their light-weight and smooth operation, fabric partitions are the ideal solution for any space saving needs. schools are able to divide areas for individual study spaces, smaller group activities, separate teaching areas, or even for cupboards and store areas. This cost effective means of dividing an area is designed for top track hanging in order not to cause any obstruction to floor space.

Ahmarra launch the Education Range



Specialist timber fire door manufacturer, **Ahmarra Door Solutions** has launched a new range of made-to-order doorsets for schools, colleges and universities. Managing Director, Tim Doran said: "Our aim is to make the process of specifying doorsets for schools as simple and practical as possible, using our

many years of experience in this sector". The range consists of 22 door types each with an associated ironmongery pack to perform a specific function and clients will be able to make significant cost savings by eliminating the need to re-define doorsets and ironmongery for every project. For more information visit the company website.

Blinds' first class design for university campus



Faber Blinds, a **Hunter Douglas** company, created a bespoke solution for architects designing a new building for the students and staff at the University of Bedfordshire. Cambridge-based architects **mosescameronwilliams** wanted a neat and tidy way to hide away the window blinds for The Gateway

– an impressive three-storey building at the university's Polhill campus in Bedford – when they weren't in use. Faber Blinds used its expertise to design and make a bespoke specialist bracket and box to fit each of the 200 fully motorised roller blinds in a tailor-made enclosure. EOS 500 roller blinds were fitted within curtain walling mullions above and ensured they were flush with the ceiling level.

01604 766251 www.hunterdouglas.co.uk

Senior specified for Schools BSF scheme



An extensive portfolio of products from leading fenestration designer and manufacturer **Senior Architectural Systems** has been selected for use on four new schools that have been created as part of the Leicester City Council's ambitious £350m Building Schools for the Future (BSF) scheme. Working alongside architects Aedas and main contractor Miller Construction, leading fabricator

Acorn Aluminium Limited has installed Senior's thermally-efficient SCW+ curtain wall, SPW600/E windows and SD commercial doors system at St.Paul's Catholic School, Babington Community College and City of Leicester College. the flexibility of Senior's systems has helped Acorn to successfully meet the individual requirements of the project.

Heating solutions in the Education sector



School & Colleges looking for a comfortable, invisible source of heat can score top marks on both counts with **Solray Radiant Panels**. Usually installed in the ceiling but also on walls and even floors, our panels provide a space saving energy efficient solution that is bad news for conventional convective systems. Solray is one of the UK's market leaders in the design, manufacture and installation of radiant panels, well over a century's

experience in the industry. The company's reputation is built on the quality of its manufacture and its skill in application. The unique Solray radiant panel system offers practical, reliable and cost-effective solutions for today's most demanding buildings.

University showcases Max Exterior



When it comes to sourcing materials for education sector builds, it's difficult to find products that offer the freedom of creative expression as well as dependable durability. Yet with its extreme weather resistance and sleek contemporary appeal, Max Exterior from **FunderMax** ticked all the right boxes for the

development of Southampton University's Mayflower Halls. Capturing the architect's vision beautifully, Max Exterior rainscreen panelling was affixed in varying, complementing shades of grey, across the facade of Mayflower Halls. Contrasting red window frames and cut out brick detail punctuated the design adding to its truly impressive overall effect.



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