

Going green TO BE SEEN

From innovative new-builds and refurbishments to the most successful 'green' initiatives, Jenny Oldaker looks at some of the ways universities are boosting their sustainability credentials



Sustainability has become an essential requirement for universities today, and its ethos is woven ever more deeply into the culture and curriculum of the modern campus. At a grassroots level, campaigns, blogs and sustainability champions are among the diverse techniques used to promote the green agenda among students and staff. Equally integral in ensuring that sustainability is at the heart of the modern campus are the technological innovations and architectural advances that are helping to 'green' both new

TOP: The planned £10m redevelopment of St. Hilda's College, Oxford, will be designed by Gort Scott Architects

and existing university buildings.

University new-builds and refurbishments are now invariably developed with one eye firmly on the structure's eco-credentials. This is certainly the case for the planned £10m redevelopment of St. Hilda's College, Oxford University, which will be designed by Gort Scott Architects, a firm with a strong background in sustainability.

Director of Gort Scott Fiona Scott

believes that, "The best 'green' buildings take a holistic approach – using appropriate technology and thoughtful low-energy design to create a lasting sense of place, that is welcoming, memorable and promotes a sense of belonging."

Gort Scott has kept this very much in mind in their concept for St. Hilda's College – incorporating elements of sustainable design while engaging with the college's natural site, including the introduction of rooftop gardens, wild-flower planting and a riverside pavilion.

"The best consultants will put in the ➔



extra thought and care to achieving designs that are completely in keeping with the particular nature of the project, and go beyond the minimum sustainability standards,” Scott explains. “This may include passive sustainable design, which refers to sustainable measures that are fully integrated into the design of a healthy building, without the need for machinery. We have used a lot of these measures in our proposal for St. Hilda’s College, Oxford University. For example, using ‘thermal mass’ (exposed areas of mass, typically concrete slabs), to regulate the temperature in the building. Or reducing overheating through the design of windows with deep reveals, creating shading, rather than relying on mechanical cooling that uses energy and needs constant maintenance.

“A small internal atrium garden also draws fresh air naturally through the building, reducing any mechanical ventilation. The scheme has sustainability at its core, whilst aiming to represent the College’s values and complement its exceptional riverside location.”

It’s fair to say that financial constraints can be a barrier to universities embracing green developments like this one, but it’s important to look ahead, as Scott points out: “As long-term owners and occupiers of their properties and estates, universities and colleges are in a fantastic and potentially privileged position to commission sustainable buildings. Greener buildings can cost more at the outset, but typically have significantly lower running costs and maintenance costs due to much higher efficiency and less machinery, which will prove cheaper over time.” St. Hilda’s will now work with Gort Scott to develop their concept, with construction of the new development due to begin in July 2017.

Beyond forward-thinking building projects, universities are also ‘greening’ themselves in myriad smaller-scale but nonetheless important ways. Take recycling, for example, which is at the very heart of engendering university staff and student engagement. UK institutions are increasing the effectiveness of their waste recycling by designing recycling systems around their own specific sites and requirements.

Bath Spa University recently worked with Leaffield Environmental to come up with a series of bins that would help it make strides towards its ‘zero waste to landfill’ goal. The university now benefits from five different recycling ranges, which are located in their communal areas, student halls of residence, recycling centres, corridors and outside areas. This attention

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to detail in identifying the ideal locations and receptacles has clearly paid dividends, contributing to Bath Spa being recognised as a First Class university in 2015's People and Planet University League Table.

"Our new approach to recycling is proving very successful," explains Dr Julian Greaves, Sustainability Manager at Bath Spa University. "And it has gained good acceptance from students, staff and the existing cleaning team alike.

"The results of our recent grading in the People and Planet sustainability league are most encouraging. One of the criteria by which we are judged is waste and water recycling, and our partnership with Leafield Environmental has had a significant impact on our achievements in this area."

Adopting new technology to reduce energy is another powerful way to boost an institution's sustainability quotas. For example, switching the displays in lecture theatres and study rooms from traditional projection to alternative methods such as Laser & LED hybrid light source technology has been found to result in significant power savings. This certainly proved to be the case when the University of Manchester worked with Casio to

RIGHT: Bath Spa recently worked with Leafield Environmental to come up with a series of bins that would help it make strides towards its 'zero waste to landfill' goal



revolutionise the display solutions across 24 of its study rooms, implementing Laser & LED projection for the rooms' displays.

These multipurpose learning spaces are used for everything from tutorials and collaboration work to presentations. Employing these new power-saving

(and mercury-free) Casio projectors has not only been hugely beneficial to those making use of these versatile spaces, it has also contributed to the University's social responsibility goals.

Such power-saving initiatives have come to represent an important element

CASE STUDY

BRIGHT BUILDING, UNIVERSITY OF BRADFORD

Farrell & Clark are experts in designing and refurbishing educational buildings and have completed more than 250 complex campus projects for UK universities.

In recent years, the practice has developed a strong reputation for delivering sustainable buildings. 2013 saw the completion of the £5.2m Bright Building, designed by the practice for the University of Bradford. The brief was to design a truly unique building to showcase sustainable development and construction at its best, and expand the university's relationship with the wider community. The building was also envisaged to serve as an educational tool through the expression of sustainable materials, systems, technologies and structure.

The educational facility has been constructed from mostly natural or recycled products, using extremely high levels of insulation, a natural ventilation strategy and a number of low and



zero carbon technologies. It is one of the most environmentally friendly buildings in the UK and has achieved the highest ever 'outstanding' BREEAM rating for a university building, placing it in the top 1% of UK buildings in terms of sustainability and reducing environmental impact.

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in the challenge to keep a university establishment on course to meet its sustainability goals. Lighting is one of the most important areas to tackle in this field, as this can account for a high proportion of any organisation's energy costs. And it's more than just creating a culture of switching off lights (although naturally this also helps). By implementing new technologies, a university's lighting output can be significantly reduced, as Oxford Brookes University discovered when it installed a new system, 'EyeNut', as part of its 10-year refurbishment plan.

EyeNut, from Harvard Technology is a customisable, web-based wireless control, monitoring and management system for indoor lighting. This new technology offers its users complete control of their lighting, with the result of cutting carbon emissions and energy use. So far Oxford Brookes has installed the system across three buildings, seeing initial energy savings of 30% through control strategies, such as daylight dimming and occupancy detection.

However, after Harvard completed an illuminance capping exercise, it was found that illuminance levels at Oxford Brookes University were higher than necessary, and could be reduced to recommended levels, resulting in further energy savings of 27%.

Oxford Brookes isn't the only institution that is innovating to save energy. The University of Glasgow has made notable progress in this field too. The University's

BY LOUISE SWIFT, PUBLIC SECTOR AND EDUCATION DIRECTOR, INTERFACE UK

Universities have high sustainability standards, which they have to balance with creating attractive interiors where students – and potential students – want to study and live in.

By combining cutting-edge design with innovative product specification, universities can create tangible results. They can improve energy efficiency, reduce their carbon footprint and minimise waste – while also maintaining a space people want to be in. To achieve this, universities need to look at suppliers who are really pushing the boundaries to reduce the environmental impact of their products, without compromising on look and feel.

For example, Interface's most recently launched product, Touch of Timber™, was derived from the culmination of 18 months collaboration between Interface and leading yarn supplier, Aquafil. The range is a first for the carpet tile industry as

it uses advanced contrast and colour twist technology to recreate the intricate and fine, subtle grain of real wood.

Touch of Timber doesn't just look beautiful, it also uses 100% recycled nylon and features Interface's Microtuft construction, which cuts the amount of yarn needed by half. Touch of Timber is also one of the first ranges to feature Interface's unique polyvinyl butyral (PVB) precoat to fix the yarn to the backing, replacing the existing SBR latex precoat used in the carpet industry. Using PVB recycled from the shatterproof laminate found in car windscreens, the new precoat has a carbon footprint that is 80% smaller than the traditional solution.

The modular flooring format also means the individual carpet tiles can be easily replaced when worn, as opposed to changing the entire floor. This greatly reduces waste when it comes to maintaining spaces with heavy footfall.

recent laboratory refurbishment project featuring work by electronic airflow control and monitor manufacturer and consultant, Temperature Electronics Ltd (TEL) and fume cupboard manufacturers, Laboratory

Specialist Services Ltd (LSS), won the refurbished laboratory category of the S-Lab 2015 Awards (recognising excellence

PROMOTION

NEW METRO DOME WASTE SOLUTION



Leaffield Environmental has introduced a new brightly coloured Metro Dome bin range, giving waste and facility managers a budget solution to collect waste on-street, in car park areas or facility entrances.

Standard offering includes a black base made from 100% recycled plastic*, a choice of red, green, blue, grey or black lids and

tidyman label. Steel or plastic liners are available as an optional extra.

The modern styling, compact 470mm footprint and double aperture provides easy 'walk by' access in narrow or large areas. Tamper-resistant plunge locking and lift-off lid provide easy, all round, access to empty waste.

The range is priced from £139.00.

Email: comms@leaffield-environmental.com
 Web: www.leaffieldrecycle.com
 Tel: 01225 816541

*Subject to availability





ABOVE: Glasgow University worked with Casio to revolutionise the display solutions across 24 of its study rooms, implementing Laser & LED projection for the rooms' displays

in the design, operation and management of labs, which has resulted in improved performance and enhanced sustainability and safety). The TEL/LSS element of the project alone is projected to save the laboratory 270MWh of energy and over £34,000 in associated energy costs per year.

In its entirety, the refurbishment involved the consolidation of the University's medicinal chemistry and chemical biology laboratories into a single 500m² open-plan laboratory in the Grade-A listed Joseph Black building. The new lab was created to facilitate collaboration between staff, while minimising energy and water use.

LSS installed a variable air volume (VAV) fume cupboard system, incorporating TEL's digital airflow controllers and auto sash

controllers. The controllers regulate airflow according to need, while the auto sash controllers automatically close the fume cupboards when not in use. The VAV system was selected as an energy-saving alternative to a conventional constant airflow volume (CAV) fume cupboard system, whereby air is continuously sucked out of the laboratory and replaced with clean air, even when the cupboards aren't in use.

"The new fume cupboard VAV control system is playing a major role in minimising our energy consumption and expenditure," said Graham Tobasnick of the University of Glasgow's School of Chemistry. "And we are delighted

that our sustainable refurbishment has been recognised by S-Lab."

'Greening' the higher education sector is still a work in progress and there is even more that universities can do in order to meet their sustainability goals. Furthermore, huge variation still exists between HEIs in the levels of commitment displayed towards matters of ecological improvement. However, where green matters are being prioritised at UK universities, great strides are being made. These institutions are demonstrating genuine engagement with the matter, while their innovation in architecture, technology and education are serving to make today's campuses an inspiring vision towards a sustainable future. **UB**