

- Research shows that green design features which add 0-2% to capital expenditure can save at least 10 times more on lifetime energy and other operating costs
- Tougher Building Regulations and other measures to drastically reduce CO2 emissions are inevitable
- Best practice 'green' buildings proclaim a university's ambition and future orientation

HIGHLY COMMENDED

University of Southampton - Optimising use of existing and new built space

A spectacular three-storey glass atrium has proved an inventive way of linking the old and the new at the University of Southampton. Staff working in administration and student services have been scattered across 28 buildings, but have now been brought together in a landmark Administration and Student Services Building on a former brownfield site. This links to the original 40-year-old administration building through the atrium, whose roof glazing gives solar shading to the old structure, while still providing adequate daylight. The glazing, part-funded through the Energy Savings Trust, also contains photovoltaic cells to generate some of the building's electricity needs.

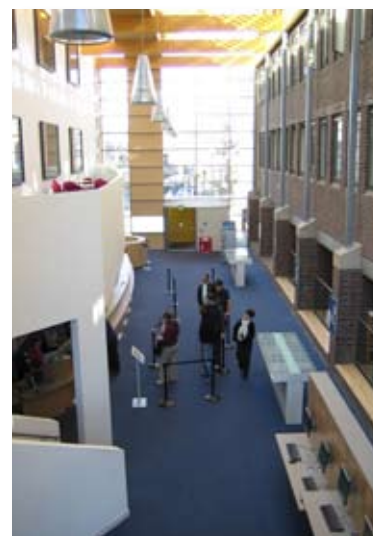
Other features include cooling intake air during warm months by passing it through underground ducts; a rainwater harvesting system to flush WCs; a high level of air tightness, and use of lime mortar. The latter has a number of advantages compared to Portland cement, including being fired at lower temperatures, absorbing high levels of carbon dioxide during curing, being less likely to crack, and in making it easier to recycle bricks after demolition.

The building features open plan offices with breakout areas and small meeting rooms, to achieve greater efficiency in the use of space. The University believes that at around £1,505 per square metre, this is good value for a useful combination of open plan and cellular space.

The building offers a long term monitoring project for the Sustainable Energy Research Group within the School of Civil Engineering, which has a particular interest in its impact on energy and comfort. And as part of the European Union-funded SARA project, the BMS and supplementary data will be available to any authorised researchers through the Internet.

John Brightwell, Project Co-ordinator, Estate and Facilities, at the University believes that "new buildings can be both green, and high performing in terms of cost, appearance and function. We've achieved this by setting a demanding brief, appointing a design team with expertise in, and a commitment to, sustainability, and not losing sight of our goals even when we had to value engineer £107,000 from the tendered price."

The atrium of the Administration and Student Services Building



Judges' Comments on Sustainable Construction (continued)

Southampton's ASSB also provides a good example of the intelligent use of low-cost, passive, and highly replicable, features to improve energy and environmental performance. These include its use of lime mortar, ground cooling of incoming air, high air tightness, and graywater recycling. Photovoltaic installations in the UK are admirable but, unfortunately, harder to justify on cost-effectiveness grounds. Southampton's array will nonetheless be valuable if it is fully used for curriculum, research and awareness raising purposes.

Of course, superbly designed buildings do not necessarily deliver their claimed energy and environmental benefits in use. A key - and often under-estimated aspect - of sustainable construction is a full post-occupancy evaluation, and regular recommissioning of systems throughout their life. Southampton and York now have an opportunity to continue their innovation in this way, both for their own financial benefit, and to provide evidence about the whole life costs, and other benefits, of sustainable buildings compared to more conventional ones.