

Building a Sustainable Legacy:

The Benefits of High Performance Buildings
to Further and Higher Education,
and How They Can Be Achieved

transport
technology
sustainable
environmental
energy efficiency
education



A Summary of Two Guides:

High Performance Buildings:

1. The Business Case for Universities and Colleges

High Performance Buildings:

2. The Process of Delivery for Universities and Colleges

Prepared jointly by, and obtainable from the web sites of:

HIGHER EDUCATION



ENVIRONMENTAL
PERFORMANCE
IMPROVEMENT



Thirdwave

The Business Case for Sustainability

The Benefits of High Performance Buildings

Buildings represent major investments in the future delivery of further and higher education; we dedicate money, time, creativity and many natural resources to their construction. They send a message to current and future generations about what we value today, and how much we care about tomorrow.

Financial Impacts

Buildings shape a financial legacy too. A 'rule of thumb' is that, during their first 20 years, every pound spent on their construction typically leads to £200 being spent on staff salaries and business operations, and £5 on operating costs. Buildings which improve user productivity, and which minimise energy and other operating costs, therefore make a huge difference to long-term financial performance.

Buildings also have social impacts, and are significant contributors to environmental problems such as climate change, pollution and the depletion of natural resources. If we want to bequeath a better world to our children, they need to be more sustainable.

What are High Performance Buildings?

'High performance' buildings are ones which deliver in all dimensions. Their features include:

- high adaptability through smart layouts and modular structures;
- natural lighting and ventilation to provide striking, comfortable and healthy environments for users;
- low energy and water consumption, and limited carbon footprints; and
- high use of renewable, non-toxic, and recycled materials.

Avoiding Capital Cost Increases

We need more high performance buildings but the record of further and higher education in achieving them to date is patchy. The two guides prepared by HEEPI, Sust and Thirdwave - whose content is summarised in the following pages - aim at achieving more, by demonstrating the solid business case for them, and that they can be achieved without major increases in capital cost if:

- sustainability requirements are built in from the start; and
- design and construction processes meet all key performance requirements, including sustainability.

Buildings That Keep on Giving

In 1995 the University of East Anglia's Elizabeth Fry Building achieved energy consumption half that of a conventional building, whilst meeting the cost yardstick of the time.

The building's energy consumption is still outstanding, and has already accumulated lifetime savings of over £350,000 compared to a typical building of the period. It has also achieved a very high occupant satisfaction score.



Guide 1 - High Performance Buildings: The Business Case for Universities and Colleges

The first Guide makes the financial case for high performance buildings, which is that, compared to conventional ones, they can:

- considerably lower costs for energy, water and maintenance (due to reduced scale equipment and/or less complex building services); for
- be delivered with modest or no increases in capital cost - for, whilst some features cost more, these can be offset by a reduced need for mechanical ventilation and cooling, reduced size (and therefore cost) of equipment, and the consequent creation of additional usable space.

In addition, there are strong cases with regard to:

- risk - with less danger of unaffordable rises in energy bills, inflexible buildings that are difficult to adapt to changing requirements, or employee ill health; and
- performance and reputation - through improved staff productivity and reduced absenteeism, and the effect of a good record on environmental performance and social responsibility influencing the choices of potential recruits and students.

*"We can give a rough answer to the question: How important are buildings to workplace productivity?
Answer: In the UK, the best buildings have a perceived productivity lift of up to plus 12.5 per cent, the worst a productivity fall of up to minus 17.5 percent - a difference between the best and the worst of 30 per cent"*
Adrian Leaman, Usable Buildings Trust

High Performance Building at Harvard

The Harvard University Green Campus Initiative employs 13 full-time staff, of whom 5 specialise in high performance buildings. Its' Director, Leith Sharp, estimates that the initiative delivers savings which are



over four times its running costs per annum, and believes that "multinational companies have learnt the hard way that their environmental and social performance - and the way in which this is embodied in activities and buildings - have a big influence on corporate and brand reputations. Universities - especially those who want to be global players - must learn the same lesson, for tomorrow's students, faculty and opinion-formers will pay great attention to this criteria when judging the institutions they will respect and support. Higher performance buildings are therefore vital - but can only be achieved through strategic commitment, and attention to detail in design and implementation."

Guide 2 - High Performance Buildings: The Process of Delivery for Universities and Colleges

The second Guide maps out what clients need to do to ensure that sustainability issues are fully considered, and acted upon, at all stages of the building process. The key messages are summarised below.

How to Achieve High Performance Buildings

