Appendix E

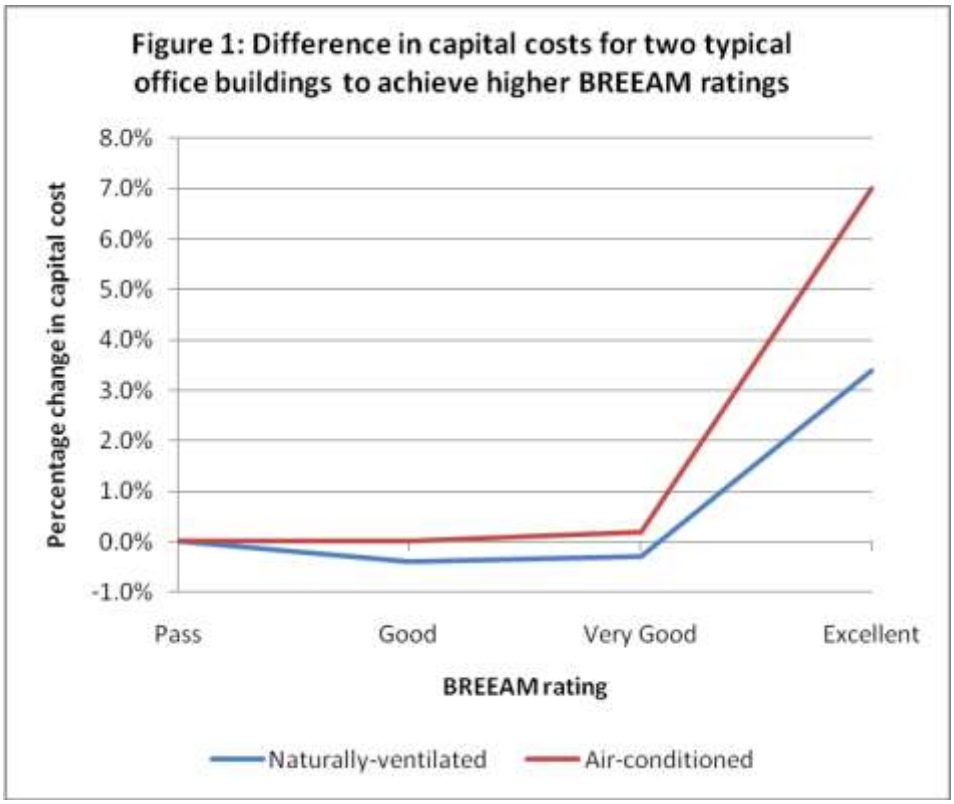
The financial implications of building to BREEAM standards

1. Capital spend

A major barrier to the construction of environmentally-friendly buildings is often the misconception that better environmental performance equals greater capital cost. Research carried out by the Building Research Establishment clearly demonstrates that it is possible to construct office buildings to BREEAM 'Very Good' and even 'Excellent' without an increase in capital investment.

1.1 Research into office accommodation

Figure 1 compares two typical office buildings in similar locations – one air-conditioned and one naturally ventilated. The percentage change in capital spend needed to achieve higher BREEAM ratings is plotted:



(Source: Building Research Establishment, 2005. *Costing sustainability: How much does it cost to achieve BREEAM and EcoHomes ratings?* www.brebookshop.com)

Naturally-ventilated office: Using BREEAM 'Pass' as a baseline (roughly equivalent to current Building Regulations), the results showed that the difference in capital spend needed for this building to achieve BREEAM 'Very Good' was -0.3%, and the difference in capital spend needed to achieve BREEAM 'Excellent' was +3.4%. Furthermore, the measures which raised the building's BREEAM rating also led to predicted in-use savings of 17% for energy and 71% for water. For a building such as Northgate House in Halifax, this would translate as a saving of around **£40,000 per year** on the building's running costs (£1.2m over the building's lifetime, assuming an average life of 30 years).

Air-conditioned office building: Using BREEAM 'Pass' as a baseline, the results showed that the difference in capital spend needed for this building to achieve BREEAM 'Very Good' was +0.2% and the difference in capital spend needed to achieve BREEAM 'Excellent' was +7%. Furthermore, the measures which raised the building's BREEAM rating also led to predicted in-use savings of 26% for energy and 55% for water. For a building such as the Park Road offices in Halifax, this would translate as a saving of around **£9,500 per year** on the building's running costs (£285,000 over the building's lifetime, assuming an average life of 30 years).

In addition, the 2005 report notes that: 'Many BREEAM credits are affected by basic building form and servicing solutions. Cost-effective BREEAM compliance can only be achieved if **careful and early consideration** is given to BREEAM-related design and specification details.'

1.2 Case Study: Campus M Business Park in Munich (BREEAM Excellent)

Campus M Business Park in Munich, built by AIG/Lincoln, has achieved a BREEAM Excellent rating at no extra capital cost. The development is part of the Am Moosfeld Business Park, a high profile office and technology park in the eastern district of Munich, approximately 4 km from the city centre. Campus M consists of four buildings, BT 1 to BT4, together with multi-storey parking making a total rentable area of 18,500 m².

David Lawrence, European Director for Construction and Development at AIG/Lincoln said: "We are particularly pleased with our BREEAM rating and Campus M proves that achieving Excellent does not mean additional cost. **A high priority was given to bringing all parties involved in the sustainability brief together early - the earlier everyone understands the process, the more cost and time effective green construction is**."

Paul Gibbon, Director of Sustainability at BRE Global said: "Campus M is an exciting development and delivers an important message to investors, developers and the industry as a whole that with good design, achieving a BREEAM Excellent rating does not cost extra."

The development scored particularly well in the Management (88.89%), Health & Wellbeing (84.62%) and Energy & Transport (83.33%) sections of BREEAM.

Key features of the development are:

- The building is entirely naturally ventilated with high frequency lighting and high levels of natural daylight, with workstations at most 7 metres from a window
- Low energy usage meeting the requirements of the German energy saving regulations EnEV2004
- Excellent public transport links and extensive cyclist facilities and showers
- Storage areas for recyclable waste in the basement
- Highly efficient gas condensing boilers providing the space heating
- Re-use of an existing site which involved the specialist disposal of contaminated material

(Source: http://www.bre.co.uk/page.jsp?id=1809)

1.3 Case study: Newport High School, Gwent

Newport High School was the first secondary school in Wales to achieve BREEAM Excellent and at no extra cost. Architect Brian Spires (HLM), who worked on the project, puts this down to the fact that BREEAM was built into the project from the very first stages.

(Source: June 2010 Building 4 Education article, supplied by Samantha Borley at BRE)

2. Revenue costs

2.1 Case study: Bletchley Leisure Centre, Milton Keynes

This new building achieved BREEAM Excellent in 2010. The project was assessed using BREEAM Bespoke 2006. Paul Sanders, Assistant Director for Leisure, Learning and Culture at Milton Keynes Council said:

"Achieving BREEAM Excellent was absolutely central to our requirements for the new leisure centre. This has provided a significant reduction in running costs and therefore Council subsidy, and is ultimately **one of the key measures that has helped the Council to save over £3 million in revenue funding during a 15 year period**. At a time where public sector funds and discretionary services are under significant pressure, the Council is delighted with the result and the state-of-the-art facilities that the community can now enjoy."

(Source: www.breeam.org)

2.2 Case study: Loreto Sixth Form College, Manchester

This new building achieved BREEAM Excellent in 2010. The project was assessed using BREEAM Schools 2006. The combined environmental measures incorporated into **the building will save an estimated £33,000 per year** compared with a standard build of the same size.

(Source: www.breeam.org. Cost savings calculated from kWh savings given in the report, using current energy prices)