

Delivering sustainable buildings

Savings and payback

Yetunde Abdul and Richard Quartermaine





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Yetunde Abdul (BRE)

Richard Quartermaine (Sweett Group)

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Front cover images

Left: Green wall at Waitrose (image courtesy of Waitrose)
Top right: Loudoun Square Health Centre (image courtesy of Austin-Smith:Lord LLP)
Bottom right: Canolfan Rheidol, Aberystwyth (image courtesy of Cyngor Sir Ceredigion County Council)

Back cover image

Detail of WWF's BREEAM Outstanding Living Planet Centre in Woking (image courtesy of Atelier Ten – P. Vincent)

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Executive summary

Research by Sweett Group and BRE has challenged the perception that sustainable buildings are necessarily more costly to build. By applying cost data from real construction projects to three case study buildings – an office, a secondary school and a community healthcare centre – detailed capital and operational cost information has been obtained.

The study investigated the capital costs of design and construction strategies that enhance building sustainability and help to achieve BREEAM ratings. They include low-cost or no-cost actions that can readily be used to enhance building sustainability ('quick wins'), and those initiatives that must be built into the project by the end of concept stage to minimise their costs. Detailed cost information for a wide selection of these actions is presented in this report.

The research team also examined the life cycle costs of operating buildings, focusing on energy and water consumption. They found that specifying sustainability measures during the building's design and procurement stage can result in cost savings over the operational life of the building for little or no additional upfront cost.

The effect on capital costs of achieving varying levels of sustainability was calculated, with the costs associated with gaining Pass, Good, Very Good and Excellent BREEAM ratings outlined in this report. It has been shown that achieving lower BREEAM ratings can incur little or no additional cost. Targeting the higher BREEAM ratings, which equate with more challenging sustainability levels, incurs some additional cost but this is typically less than 2%. The study of operational costs shows that this can be paid back within 2–5 years through utility cost savings.

This study complements and adds to a growing body of recently published evidence on the costs and value of sustainability. This evidence supports the findings that, where properly implemented, sustainability strategies add little to capital costs, that operational savings will pay back these costs and that there is a downward trend in sustainability costs.

Introduction

Do buildings with high sustainability standards necessarily cost more to develop than those that simply comply with building regulations? This publication reports on a study designed to answer that question using real cost information. It presents the actual costs of a range of sustainable building strategies, the additional costs – if any – of achieving different overall levels of sustainability and the payback gained through reduced utility costs.

Taking sustainability into account when designing and constructing buildings is increasingly common practice in the UK, but can still be inhibited by the lingering perception that this increases development costs. In fact, there is strong evidence that a sustainable approach need not add significantly to building costs. Also, where there are additional capital costs, it has been shown that these can be repaid relatively quickly through the reduced costs of operating the building. There is now a growing awareness among the construction industry and its clients of the balance to be struck between the capital costs of enhanced environmental performance and the longer-term benefits, payback and savings. There is also growing evidence of the benefits of sustainability in terms of delivering high-quality buildings that meet the needs of owners and occupiers and provide increased rental values.

Many clients now set sustainability requirements in their project briefs. Sustainability rating standards such as the BRE Environmental Assessment Method (BREEAM; www.breeam.com) are often used to help clients and their design/construction teams address the complexities of achieving sustainability goals. BREEAM was used to measure the sustainability performance of the case study buildings investigated in this study. Sweett Group* and BRE† applied costs from real projects to three case study buildings – an office, a secondary school and a community healthcare centre – and produced authoritative capital and life cycle cost information. This information can help building developers to optimise sustainability and its value.

This report updates and widens the scope of earlier research^[1] by BRE and others to identify the costs associated with sustainable solutions. It provides additional data on life cycle costs and savings to present a more complete picture of the potential economic costs and savings of sustainable buildings.

* Sweett Group is a global business with expertise in property and infrastructure professional services. www.sweettgroup.com.

† BRE is the UK's leading centre of built environment expertise and research. www.bre.co.uk.

Marks & Spencer's BREEAM Excellent Cheshire Oaks store
(image courtesy of Marks & Spencer)



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