BREEAM™

A practical method for assessing the sustainability of buildings for the new millennium

Matt Grace, Centre for Sustainable Construction, BRE, Garston WD25 9XX United Kingdom Website: www.bre.co.uk

What is BREEAM?

BREEAM (BRE Environmental Assessment Method) was the first commercially available environmental assessment tool for buildings and has been the benchmark for methods for assessing the environmental aspects of sustainability of buildings since the first version for offices was launched in 1990.

Why do we need BREEAM?

BREEAM provides the opportunity to benchmark the performance of all new and existing buildings using proven and effective, self financing methodologies.

In order to make progress towards sustainable development, a practical, easy to understand measure of sustainable construction is of paramount importance. The urgency of the need to address buildings should not be underestimated. In the UK, buildings are responsible for almost half of all carbon dioxide emissions as a result of their energy use, the construction industry consumes 6 tonnes of material per person per annum and creates 30–40% of annual waste, and a typical UK citizen spends approximately 90% of each day indoors, and is therefore potentially at risk from any hazardous materials within the fabric of the building.

How does BREEAM work?

BREEAM has been developed to provide a simple, cost-effective way of evaluating and improving the environmental performance of buildings. It brings real benefits for Developers, Designers, Landlords, Facilities Managers, and the environment as indicated by the continual and growing use of the method.

BREEAM covers the following areas of environmental impact:

Issue	Description
Management	Overall policy, commissioning and procedural issues
Energy Use	Operational energy and CO_2 issues
Health and Well Being	Indoor and external issues affecting health and well being
Pollution	Air and water pollution
Transport	Transport related CO_2 and location related factors
Land Use	Greenfield and brownfield sites
Ecology	Ecological value of the site
Materials	Environmental implication of building materials
Water	Consumption and water efficiency

For each of the categories set out above, the building is assessed against performance criteria set by BRE and awarded "credits" based on the level of performance against each criteria. The percentage of credits achieved under each category is then calculated and environmental weightings are applied to produce an overall score for the building. The overall score is then translated into a BREEAM rating of:

PASS
GOOD
VERY GOOD
or
EXCELLENT

The BREEAM rating achieved will be presented on the BREEAM Certificate, which can be used to verify and promote the environmental credentials of an organisation.

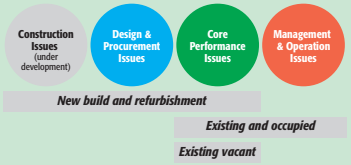
How can BREEAM be used?

To date, over 500 buildings have officially been BREEAMed. Many more are in the process of being BREEAMed, and BREEAM versions have already been developed for Canada, Hong Kong, New Zealand and a BREEAM derivative scheme in Norway.

Types of buildings that are covered at present are Offices (new and existing), Homes, Superstores and Industrial Units.

Market surveys have shown that the perceived client benefits of BREEAM include environmental, benchmarking, productivity, marketing and health and well being. It is essential for BREEAM to stay in tune with client wishes and market forces as well as technical development aspects.

BREEAM 98 for offices
Diagram showing the relationship between the current areas and building types and areas under development



Latest developments and the future of BREEAM

EcoHomes

In order to distinguish itself from other systems currently available, BREEAM must continue to be developed, reviewed and updated to ensure that it takes into account the latest research, technological developments and legislation. The version of BREEAM that applies to Offices has been revised three times, the latest version having been launched in 1998. EcoHomes (the version of BREEAM for houses) was launched on 6th April 2000 and BREEAM is currently being developed to cover more building types.

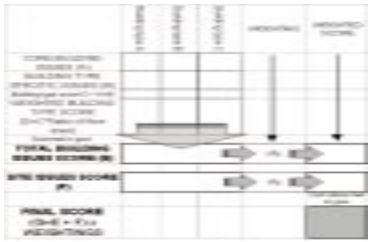


Figure 1 Multi building type assessment concept

BREEAM must also continue to expand to cover new building types and to explore new assessment techniques. Figure 1 shows a new concept, which can be used for the assessment of a building containing a number of different end uses or separate building types. At present, this is a prototype and has been successfully used to assess one major development. It is an example of one of the new developments that BREEAM is embracing for the future.

Recent revisions of the versions for both offices and homes have resulted in a significant growth in the range of issues covered. This reflects the broadening of the sustainability debate in general.

Maintaining the highest possible level of consistency and quality across all assessments is essential to maintaining the success of BREEAM as a benchmarking and reviewing system for the environmental sustainability of buildings. Assessments are carried out by a network of trained, licensed assessors.

Figure 2 shows an outline the system that has been established to maintain quality and consistency.

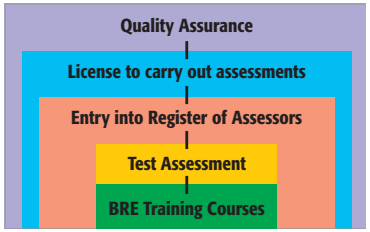


Figure 2 Structure for maintaining quality

Conclusions and recommendations

For more than a decade, BREEAM has now been at the forefront of benchmarking, reviewing and improving the environmental performance of the built environment. It has been and will continue to expand to embrace wider issues of sustainable construction as the debate becomes more informed from the results of ongoing research. The discussion and diagrams presented here illustrate and demonstrate the importance of maintaining close contact with the clients, through the use of market surveys, as the scheme must be self financing. The role of continuing development has been discussed. This is essential, as it will ensure that BREEAM takes into account relevant research and legislation and continues to expand to cover more building types. Lastly, quality was discussed and the mechanism installed for maintaining quality within BREEAM was described.

BREEAM and the Building Regulations
The figure shows the position of BREEAM relevant to Building Regulations and exemplar performance