Building Research Establishment Environmental Assessment Method (BREEAM)
Overview

BREEAM is one method of assessing, rating, and certifying the sustainability of buildings. It is typically undertaken to demonstrate compliance with environmental regulations but it can also be a planning requirement. There are different categories in which a domestic or non-domestic project (in-use, new build or refurbishment) is assessed. An assessment must be undertaken by a qualified BREEAM Assessor and in the experience of Willmott Dixon, achievement of the required rating (Fail, Pass, Good, Very Good, Excellent, Outstanding) is heavily dependent on the client commitment and involvement of all project team members from a very early stage right through until after handover of the project.

Introduction

Launched in 1990, Building Research Establishment Environmental Assessment Method (BREEAM) is a tool that aims to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimize their environmental impacts.

BREEAM is an assessment tool owned by the Building Research Establishment (BRE). It addresses environmental and some social issues of a project.

Standard BREEAM schemes exist for assessment of common domestic and non-domestic building types and less common building types can be assessed by developing bespoke criteria.

Standard BREEAM schemes:
- New Construction
- Communities
- In use
- EcoHomes
- Code for Sustainable Homes (soon to be replaced by the Home Quality Mark)
- Refurbishment

Where the building requiring assessment is outside of the UK it can be assessed using the BREEAM International scheme. BREEAM International can be used to assess a single development or BRE Global can assist in creating a BREEAM scheme for a country or region.

When completed, a BREEAM assessment provides a certified score that measures environmental sustainability of a construction project.

The aims of a BREEAM assessment are:
- To reduce the environmental impacts of developments.
- To enable developments to be recognised according to their environmental benefits.
- To provide a credible, environmental label for buildings to aid comparison and benchmarking.
- To stimulate demand for environmentally sustainable buildings.
- To distinguish buildings of reduced environmental impact in the marketplace.
- To ensure best environmental practice is incorporated in building design, operation, management and maintenance.
- To set criteria and standards surpassing those required by regulations.
- To raise the awareness of owners, occupants, designers and operators of the benefits of buildings with a reduced impact on the environment.
- To inform the design process.
- To allow organisations to demonstrate progress towards corporate environmental objectives.

Other sustainability benchmarks

SKA rating

The SKA rating system is also a voluntary assessment tool to measure the environmental impact of an office or retail fit out. Later this year, SKA rating for Higher Education will be launched.

Anyone can access the online SKA tool and carry out an informal self-assessment of a project but to have the project certified, you need a licensed SKA assessor to undertake the SKA assessment. For more information on the SKA rating please refer to the WD Technical Briefing Note 3 SKA rating.

LEED

LEED is a green building certification system developed by the US Green Building Council (USGBC). It is aimed at improving a building's environmental performance in areas such as energy savings, water
efficiency and CO₂ emissions reduction. Similar to BREEAM, LEED certification is available for 5 project types: Building Design and Construction, Interior Design and Construction, Buildings Operations and Maintenance, Neighbourhood Development and Homes. LEED is a point based system where building projects earn LEED points for satisfying specific green building criteria. The certification process offers four categories based on the number of points accrued, the highest rating is Platinum, followed by Gold, Silver and Certified. For more information on LEED please refer to the WD Technical Briefing Note 1 BREEAM, LEED, SKA.

What are the drivers to undertake an assessment?

- Client requirement;
- Enhanced market value – possible higher rental incomes and increased marketability, increased energy efficiency and lower life time maintenance costs;
- To demonstrate compliance with environmental requirements to occupiers, planners and development agencies;
- Environmental improvement – in support of a wider corporate strategy or as a standalone contribution;
- PR/Marketing – as a selling point to potential customers or tenants;
- Staff and end user benefits – To create a better place for people to live and work;
- Best Practice – Ensuring best up to date practice, providing a checklist for comparing buildings and guiding their improvement;
- Funding requirement;
- Planning conditions e.g. the Welsh Government National Planning Policy 4.11 requires new builds over 1000m² to achieve Very Good and Excellent for the credit ‘ENE01 Reduction of Carbon Emissions’. In addition, The London Plan (2011) forms the basis for planning policy in Greater London boroughs, it sets more demanding energy requirements for new development than most planning policies outside the capital and BREEAM can be used to address all of these issues.

For further information on who requires a BREEAM assessment to be undertaken, please refer to the WD Briefing Note 11 'Who requires BREEAM'

BREEAM Scoring

Standard BREEAM schemes assess projects using a system of ‘credits’ in eight categories:

- Management
- Energy
- Transport
- Health and well being
- Water
- Materials
- Land use and ecology
- Pollution

*Innovation credits

The credits are awarded according to the environmental impact of the development judged objectively against a rigid set of criteria. Each of the above categories is ‘weighted’ differently (see table below) and each credit within each category is ‘weighted’ differently, i.e. one credit awarded does not equal 1%.

Innovation credits

* To support innovation within the construction industry, BREEAM offers additional ‘credits’ for the recognition of sustainability related benefits or performance levels which are currently not recognised by standard BREEAM assessment issues and criteria.

There are two ways in which BREEAM awards ‘innovation credits’;

- the first is by meeting exemplary performance criteria defined within an existing BREEAM issue i.e. going beyond the standard BREEAM assessment criteria and therefore best practice (note, not all assessment issues have exemplary performance criteria) and;
- the second route is where an application is made to BRE Global by the registered project’s BREEAM Assessor to have a particular building technology or feature, design or construction method or process recognised as ‘innovative’. If the application is successful and subsequently compliance is verified, an ‘innovation credit’ can be awarded.

An additional 1% can be added to a building’s overall score for each ‘innovation credit’ achieved. The maximum number of ‘innovation credits’ that can be awarded for any one building is 10; therefore the maximum available additional score for ‘innovation’ is 10%. Innovation credits can be...
awarded regardless of the building’s final BREEAM rating, i.e. they can be awarded at any BREEAM rating level.

Table 1 BREEAM 2014 New Construction environmental weightings

<table>
<thead>
<tr>
<th>Environmental section</th>
<th>Fully fitted out</th>
<th>Shell only</th>
<th>Shell and core only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>12%</td>
<td>12.50%</td>
<td>11%</td>
</tr>
<tr>
<td>Health and Wellbeing</td>
<td>15%</td>
<td>10%</td>
<td>10.50%</td>
</tr>
<tr>
<td>Energy</td>
<td>15%</td>
<td>14.50%</td>
<td>15%</td>
</tr>
<tr>
<td>Transport</td>
<td>9%</td>
<td>11.50%</td>
<td>10%</td>
</tr>
<tr>
<td>Water</td>
<td>7%</td>
<td>4%</td>
<td>7.50%</td>
</tr>
<tr>
<td>Materials</td>
<td>13.5%</td>
<td>17.50%</td>
<td>14.50%</td>
</tr>
<tr>
<td>Waste</td>
<td>8%</td>
<td>11%</td>
<td>9.50%</td>
</tr>
<tr>
<td>Land Use and Ecology</td>
<td>10%</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Pollution</td>
<td>10%</td>
<td>6%</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Innovation (additional)</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

During the assessment process, credits are added together within each category and the environmental weighting is applied to the scores. A single overall score is then produced which results in the building being rated on a scale of Fail, Pass, Good, Very Good, Excellent and Outstanding (there are additional criteria for achieving a BREEAM Outstanding rating).

Minimum standards

To achieve a particular level of performance, the majority of BREEAM credits can be traded, i.e. non-compliance in one area can be off-set through compliance in another to achieve the target BREEAM rating. However, to ensure that performance against fundamental environmental issues is not over-looked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas e.g. energy, water, waste etc.

Fees

To register a BREEAM assessment, the BRE charge between £120 to £1850 + VAT (depending on the scheme and the size) and then payment is required for certification fees which range from £505 to £2120 (depending on the scheme and the size). The BREEAM assessor can charge between £5,000 to £15,000, depending on the complexity and size of the project to be assessed.

The time for completing the process (design stage and post-construction stage) depends on the type of building, type of assessment, project programme and how quickly the required documentation is provided by the project team to the BREEAM Assessor.

Code for Sustainable Homes Update

Following the Housing Standards Review in October 2014, the Code for Sustainable Homes has been withdrawn in England so Local Authorities should no longer require it as a planning condition for new approvals. Following this, the BRE is now developing the Home Quality Mark which aims to change the way consumers choose the homes they buy and rent and allow home builders to differentiate themselves in the marketplace. Within the draft Minor Alterations to the London Plan 2015, policy 5.3 ‘Sustainable design and construction’ removes requirements for the Code for Sustainable Homes but continues to require development to demonstrate that sustainable design standards are integral to the proposal, including its construction and operation.

In Wales, the Code for Sustainable Homes continues to be a funding requirement for social housing.
BREEAM Assessment Process

Stage 1
Decide which BREEAM scheme applies

Stage 2
Contact a licensed BREEAM Assessor or BREEAM In-Use Auditor

Stage 3
Carry out a pre-assessment

Stage 4
Register for an assessment

Stage 5
Get certified

Stage 6
Buildings Update listed on GreenBookLive

BREEAM Assessment Process

BREEAM and Willmott Dixon

Willmott Dixon has been involved with numerous BREEAM certified projects including:

- Houghton Primary Care Centre – UK’s first BREEAM ‘Outstanding’ Health Facility (certified in 2011) [http://www.willmottdixon.co.uk/projects/houghton-le-spring-urgent-primary-care-centre]
- Legal & General office in Stockley Park – ‘Excellent’ BREEAM Non-Domestic Refurbishment and Fit-Out (Design stage), first non-domestic refurbishment and fit-out project to achieve this rating [http://www.willmottdixon.co.uk/projects/fit-out-and-refurbishment-of-no-4-the-square-stockley-park]

We ensure we achieve the most potential credits by:

### Preconstruction
- Appoint BREEAM Assessor and Accredited Professional
- Obtain documentation confirming the project is registered with BRE and the scheme it is registered against
- Ensure BREEAM and any associated portals (e.g. Tracker+) are accounted for in the fees
- Set out the terms and costs associated with the Soft Landings Process as early as possible
- Attend or facilitate a BREEAM workshop as early as possible to enable targets and responsibilities to be set
- Include contract clauses that cover BREEAM compliant information or services when appointing any relevant subcontractor or consultant
- Compliant specifications and drawings provided to assessor prestart

### Construction
- Ensure handover documentation includes BREEAM assessment information, credit specific
- Include BREEAM target and basic information in induction and toolbox talks where applicable
- Ensure contracts include a BREEAM clause for all subcontractors and contractors where evidence is required from them
- Carry out regular quality checks for key trades and activities
- Take progress photos of key features being installed, e.g., insulation, wall build ups, petrol interceptors
- Any amendments to materials, floor plans, services must be checked against BREEAM requirements (and preferably the Assessor) every time

Post Construction
- Credit for ‘Aftercare’ covers handover meeting, Builders User Guide, weekly site presence (4 weeks minimum), onsite Facilities Management training and 12 month longer term aftercare, e.g. helpline or customer care liaison
- Building User Guide to be collated using templates and formally handed over to end users
- Customer Care workshop to include documented training and walk around information
- BREEAM Outstanding buildings will require a BREEAM In-Use assessment at 3 years
- Energy and water data to be recorded for first 12 months of occupation, with user satisfaction data

References and further information
2. [http://www.bre.co.uk/page.jsp?id=3442](http://www.bre.co.uk/page.jsp?id=3442)

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