A closer look at the major green building rating tools in use around the world:

BREEAM
BREEAM

BRE Environmental Assessment Method is the most widely used environmental assessment method for buildings with over 110,000 buildings certified and over half a million registered for certification.

Established by BRE (Building Research Establishment Ltd) in 1990, it has since been exported in various guises across the globe. Its equivalents in other regions include LEED North America and Green Star in Australia, and HQE in France.

For more information on BRE, go to: www.bre.co.uk
UK ASSESSMENTS

Non Domestic
- Offices
- Retail
- Industrial
- Education
- Healthcare
- Courts
- Prisons
- Bespoke: All Other Categories

Domestic
- Code For Sustainable Homes: New Houses
- Ecohomes: Refurbished Houses
- Ecohomes XB: Housing Associations & Stock Managers
- Multi-residential

ASSESSMENTS OUTSIDE OF THE UK

Gulf
Europe Retail
Europe Offices
Europe Industrial
Europe Toyota Retail Units
International Bespoke

Across:
Innovate property's green office in Leeds, UK achieved a BREEAM excellent rating. The development is naturally ventilated with high levels of natural daylighting throughout.
STANDARD BREEAM STEPS

1. Licensed BREEAM assessor

2. Registration (N/A if BREEAM International 2008)
   - design registration form
   - post construction registration form

3. Quality assurance (QA) and auditing
   Documents required:
   - assessment report template
   - signature (electronic ok)
   - supporting information

4. Certification
   Possible assessments re-submittal

Below: supporting documentation
The BREEAM gulf scheme can be used to assess the environmental impacts of any building located in the gulf region (United Arab Emirates, Oman, Qatar, Bahrain, Saudi Arabia and Kuwait) which complies with this scope document.

Above:
BREEAM gulf has region-specific credits for water and energy

Example: BREEAM Gulf

### SECTION WEIGHTING

<table>
<thead>
<tr>
<th>BREEAM Section</th>
<th>Credits Achieved</th>
<th>Credits Available</th>
<th>% of Credits Achieved</th>
<th>Section Weighting</th>
<th>Section score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>7</td>
<td>10</td>
<td>70%</td>
<td>0.08</td>
<td>5.60%</td>
</tr>
<tr>
<td>Health &amp; Wellbeing</td>
<td>11</td>
<td>14</td>
<td>79%</td>
<td>0.15</td>
<td>11.85%</td>
</tr>
<tr>
<td>Energy</td>
<td>10</td>
<td>21</td>
<td>48%</td>
<td>0.14</td>
<td>6.75%</td>
</tr>
<tr>
<td>Transport</td>
<td>5</td>
<td>10</td>
<td>50%</td>
<td>0.05</td>
<td>2.50%</td>
</tr>
<tr>
<td>Water</td>
<td>4</td>
<td>6</td>
<td>67%</td>
<td>0.30</td>
<td>20.1%</td>
</tr>
<tr>
<td>Materials</td>
<td>6</td>
<td>12</td>
<td>50%</td>
<td>0.09</td>
<td>4.5%</td>
</tr>
<tr>
<td>Waste</td>
<td>3</td>
<td>7</td>
<td>43%</td>
<td>0.05</td>
<td>2.15%</td>
</tr>
<tr>
<td>Land Use &amp; Ecology</td>
<td>4</td>
<td>10</td>
<td>40%</td>
<td>0.07</td>
<td>2.8%</td>
</tr>
<tr>
<td>Pollution</td>
<td>5</td>
<td>12</td>
<td>42%</td>
<td>0.07</td>
<td>2.94%</td>
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</tbody>
</table>

**Total Score**: 59.19%

**BREEAM Rating**
CREDITS

EXAMPLE: BREEAM GULF
## Using Local Standards

### Checklist A10 / Country Reference Sheets

Ensures that appropriate local codes are integrated in the process.

<table>
<thead>
<tr>
<th>Credit number</th>
<th>Reference in BREEAM manual</th>
<th>Issues to be covered by the local best practice standards/guideline</th>
<th>Do you have local equivalent best practice codes/guidance/tools that Year No</th>
<th>Local standard/tool reference</th>
<th>BRE/G Accepted/Rejected Proposed Standard</th>
<th>BRE/G Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tra 3</td>
<td>Local standard defining &quot;net lettable area / useable floor area&quot;</td>
<td>Gross internal floor area excluding internal structural and party walls (but not partitioning or other non-load-bearing walls within the tenancy area which are included in the area), ancillary areas to main function areas and circulation areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tra 4</td>
<td>National best practice road lighting guide</td>
<td>Minimum and average maintained illuminance levels for pedestrian pathways and cycle paths</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Met 1</td>
<td>Nationally recognised LCA tool</td>
<td>Evidence confirming the Environmental indicators that are being used in the analysis</td>
<td>Evidence confirming that the tool addresses the whole life cycle of the building, including service life and disposal.</td>
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<tr>
<td>LE2</td>
<td>Guidance on land decontamination</td>
<td>As per checklist A15</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pol 5</td>
<td>National water authority - flooding</td>
<td>Define flood risk</td>
<td>Develop flood maps</td>
<td>Figures for rainfall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**USE OF LOCAL STANDARDS**
1. BRE proposal for development of evaluation criteria
   Documents needed for this step are:
   - site plan and building plans
   - BREEAM international bespoke application form

2. BRE Draft Bespoke 2008 scoring spreadsheet
   Documents needed:
   - Proposal acceptance form
   - Building questionnaire completed
   - Up-to-date set of building plans
   - If a kick-off meeting is requested, the fee is £550 + travelling expenses and time.
3. BRE final criteria.
   Documents needed:
   - Comments response templates

Notes:
The fee for criteria development ranges from £3,000 to £5,500.
Remaining fees including certification range from £2,900 to £5,000 depending on building size.

Across: C&A store, Mainz, Germany. This retail unit underwent a major redevelopment by developer Redevco who were the first to achieve a BREEAM rating for a refurbishment project in mainland Europe.
BREEAM, LEED & GREEN STARS

CATEGORIES

BREEAM (Gulf)

Management 8 %
Health & Wellbeing 15 %
Energy 14 %
Transport 5 %
Water 30 %
Materials 9 %
Waste 5 %
Land Use & Ecology 7 %
Pollution 7 %

Offices

Green Star SA

Management 9%
IEQ 15%
Energy 25%
Transport 9%
Water 14%
Materials 13%
Land Use & Ecology 7%

Emissions 8%

LEED

Sustainable Sites 20 %
Water Efficiency 7 %
Energy & Atmosphere 25 %
Materials & Resources 19 %
Indoor Environmental Quality 22 %

| TABLE 1: GENERAL COMPARISON BETWEEN LEED, BREEAM AND GREEN STAR SCHEMES |
|-----------------------------|-----------------------------|-----------------------------|
| **LEED**                   | **BREEAM**                  | **Green Star**              |
| Assessment method          | Performance rating method (PRM) based on ASHRAE 90.1-2004 Appendix G | UK National Calculation Methodology (NCM) based on Approved Document Part L IA |
| Scope of assessment        | % of improvement based on annual energy cost | Energy performance certificate (EPC) rating: CO₂ based index |
| Simulation tool            | Software approved by the rating authority and subject to requirements specified in ASHRAE 90.1-2004 Appendix G | Approved software interfaces to SBEM method. Approved Dynamic Simulation Modelling software |
| Energy performance related credits/points (%) | 34.5% of total available points | 34.7% of total available credits | 34.1% of total available points |

Source: Building Sustainable Design, September 2009
BREEAM, LEED & GREEN STAR REQUIRED EXPERTS

**BREEAM**
- Licensed Assessor
- Licensed Acoustician
- Registered Ecologist
- Specialist Commissioning Manager

**Green Star**
- Registered Ecologist

**LEED**
- Commissioner
BREEAM, LEED & GREEN STAR

FEES

BREEAM (International Bespoke)

Criteria development: USD 4,600
£ 3,000 to £ 5,500 + VAT (depending on building type) to 8,400

Registration + Certification:
£ 2,900 (5,000 m2 or smaller) to USD 4,400
£ 5,000 (50,000 m2 or larger) + VAT to 7,600

Green Star

Registration:
2,500 m2 or smaller: ZAR 15,000 USD 2,000
70,000 m2 or larger: 78,000 + VAT to 10,600

Certification: ZAR 15,000 USD 2,000 (Design or As Built) to 78,000 + VAT to 10,600

LEED

Registration: USD 900 / 1,200 (depending on membership)

LEED Certification:
4,650 m2 or smaller USD 2,250
46,500 m2 or larger USD 30,000
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BREEAM

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