

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

BREEAM



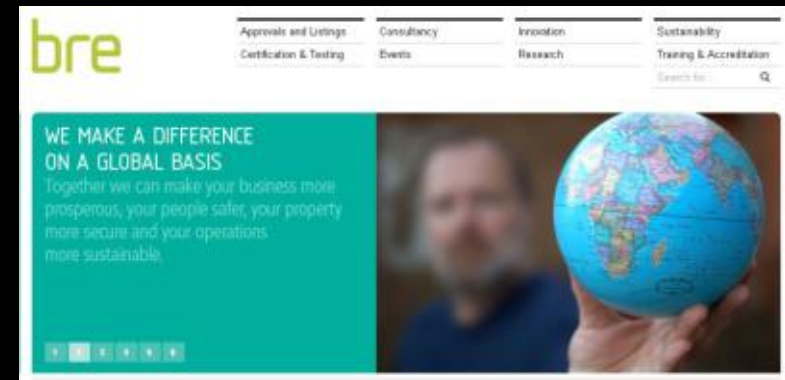
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BREEAM

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



WHAT IS BREEAM?

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

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.

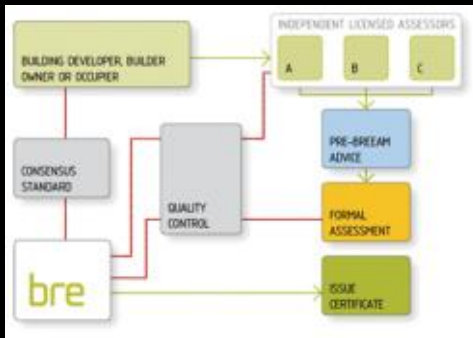
ASSESSMENTS OUTSIDE OF THE UK

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



THE DIFFERENT BREEAM ASSESSMENTS

STANDARD BREEAM STEPS



4. Certification

Possible assessments re-submittal

Below: supporting documentation

1. Licensed BREEAM assessor

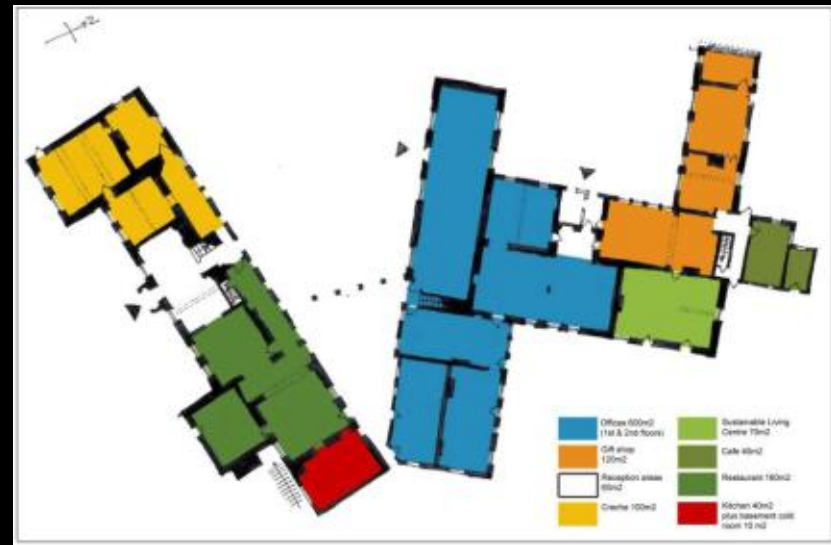
2. Registration (N/A if BREEAM International 2008)

- design registration form
- post construction registration form

3. Quality assurance (QA) and auditing

Documents required:

- assessment report template
- signature (electronic ok)
- supporting information



BREEAM CERTIFICATION PROCESS

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

SECTION WEIGHTING

BREEAM Gulf 2008 BREEAM Scoring and Rating

Table 5: Example BREEAM score and rating calculation

BREEAM Section	Credits Achieved	Credits Available	% of Credits Achieved	Section Weighting	Section score
Management	7	10	70%	0.08	5.60%
Health & Wellbeing	11	14	79%	0.15	11.85%
Energy	10	21	48%	0.14	6.75%
Transport	5	10	50%	0.05	2.50%
Water	4	6	67%	0.30	20.1%
Materials	6	12	50%	0.09	4.5%
Waste	3	7	43%	0.05	2.15%
Land Use & Ecology	4	10	40%	0.07	2.8%
Pollution	5	12	42%	0.07	2.94%
Total Score					59.19%
BREEAM Rating					• • •



EXAMPLE: BREEAM GULF

CREDITS

BREEAM Gulf 2008

BREEAM Scoring and Rating

BREEAM Gulf mandatory credits

To achieve a BREEAM rating, the minimum percentage score (table 1) must be achieved the mandatory credits (table 3) must be achieved.

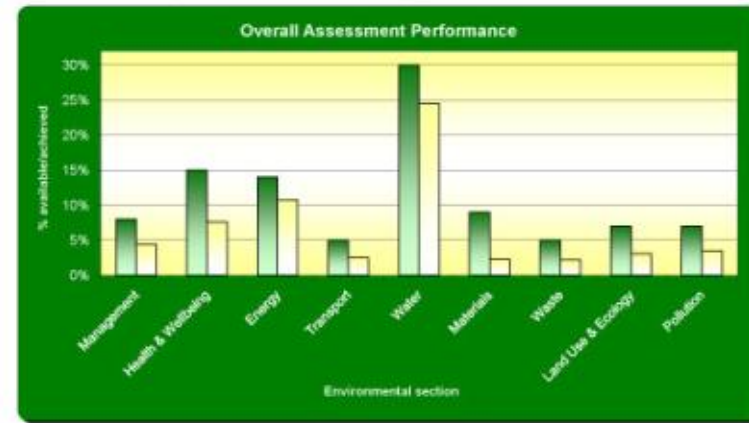
Table 3: Minimum BREEAM standards

Credit number	Credit title	Max credits available	Mandatory credits
Man 1	Commissioning	2	1
Man 4	Building User Guide	1	1
Hea 12	Microbial Contamination	1	1
Ene 1	Reduction of CO2 Emissions	15	1
Ene 2	Sub Metering of Substantial Energy Uses	1	1
Ene 5	Renewable & Low Emission Energy	3	1
Tra 5	Travel Plan	2	1
Wat 1	Water Consumption	1	1
Wat 6	Irrigation Systems	1	1
LE6	Long Term Impact on Biodiversity	1	1
Pol 9	Refrigerant ODP	1	1

BREEAM International:Gulf

Show rating		BREEAM Rating:	
Section	Env Weighting	Percentage section credits achieved	Overall Weighted Percentage
Management	9%	54.55%	4.56%
Health & Wellbeing	15%	50.66%	7.60%
Energy	14%	76.70%	10.74%
Transport	5%	50.00%	2.50%
Water	30%	81.82%	24.56%
Materials	9%	25.00%	2.25%
Waste	5%	44.44%	2.22%
Land Use & Ecology	7%	44.44%	3.11%
Pollution	7%	50.00%	3.50%
Total Score >>			60.83%

BREEAM Rating System	
No Stars	>30
★	≥30 - <45
★★	≥45 - <55
★★★	≥55 - <70
★★★★	≥70 - <85
★★★★★	≥85

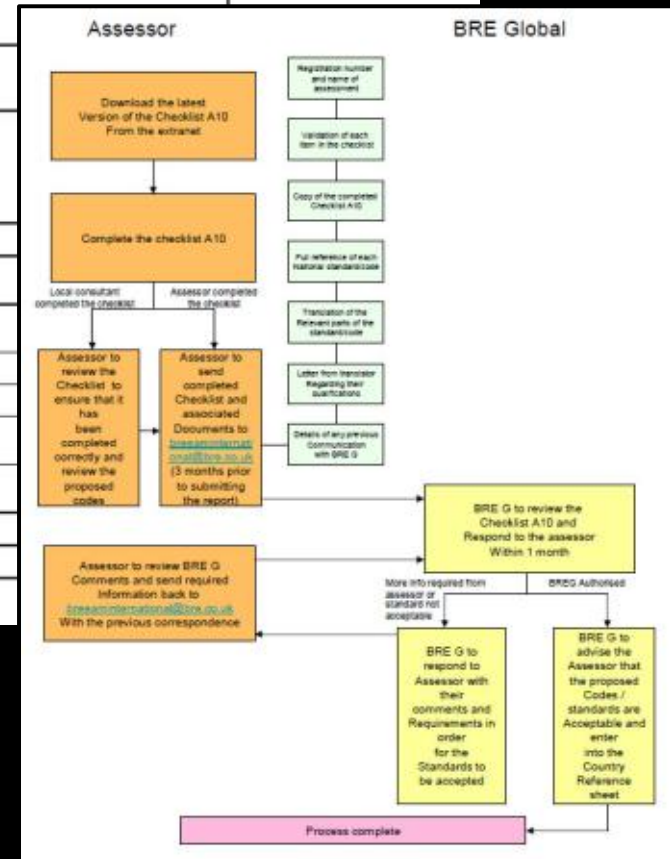


EXAMPLE: BREEAM GULF

USING LOCAL STANDARDS

Credit number	Reference in BREEAM manual	Issues to be covered by the local best practice standard/guide/tool	Do you have local equivalent best practice codes/guidance/tools that		BRE G Accepted/Rejected Proposed Standard	BRE G Comments
			Yes/No	Local standard/tool reference		
Tra 3	Local standard defining "net lettable area / useable floor area"	Gross internal floor area excluding all 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 for services, ancillary areas to main function areas and circulation areas.				
Tra 4	National best practice road lighting guide	Minimum and average maintained illuminance levels for pedestrian pathways and cycle paths Appearance and environmental aspects to be considered in the design (e.g colour rendering)				
Mat 1	Nationally recognised LCA tool	PLEASE NOTE: the requirements are indicative of the initial type of information that BRE Global will be looking at. If required BRE Global will request further information before a decision can be made. Due to the multitude of tools available it was not possible to define further requirements in this table.				
		Evidence confirming the Environmental indicators that are being used in the analysis.				
		Evidence attesting that the tool addresses the whole life cycle of the building, including service life and disposal.				
LE2	Guidance on land decontamination	As per checklist A16				
Pol 5	National water authority - flooding	Define flood risk Develop flood maps				
	National meteorological institute	Figures for rainfall				

Checklist A10 / Country Reference Sheets ensures that appropriate local codes are integrated in the process.



USE OF LOCAL STANDARDS

BREEAM BESPOKE INTERNATIONAL

1. BRE proposal for development of evaluation criteria

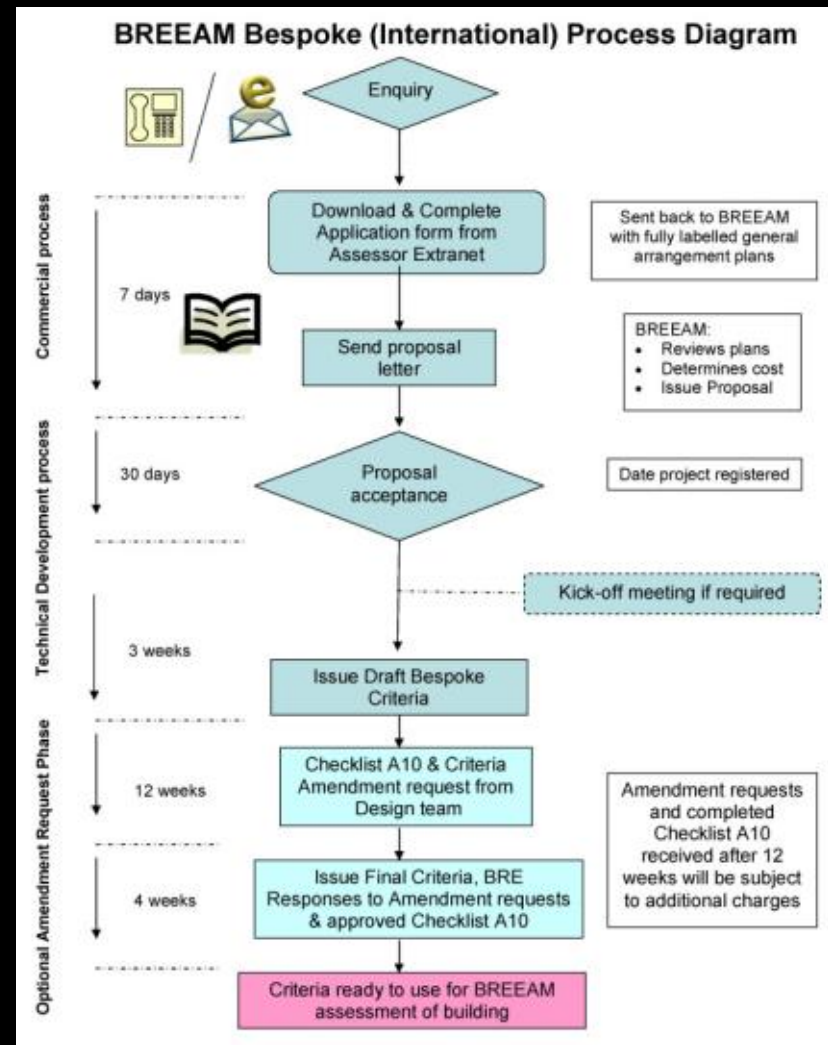
Documents needed for this step are:

- 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.



BREEAM BESPOKE INTERNATIONAL

BREEAM BESPOKE INTERNATIONAL

(Cont.)

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 BESPOKE INTERNATIONAL

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 L2A	National Australian Built Environment Rating System (NABERS) Energy methodology
Scope of assessment	% of improvement based on annual energy cost	Energy performance certificate (EPC) rating: CO ₂ based index	Predicted greenhouse gas emissions
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	Software must meet the requirements laid down in Green Star Office Design Tool
Energy performance related credits/ points (%)	14.5% of total available points	14.7% of total available credits	14.1% of total available points



CREDIT CATEGORIES OVERVIEW

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



REQUIREMENTS COMPARISON

BREEAM, LEED & GREEN STAR FEES

BREEAM (International Bespoke)

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

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

Green Star

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

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: USD 2,250
 4,650 m2 or smaller

46,500 m2 or larger USD 30,000

BREEAM Non-Domestic Project Registration and Certification Fees for BREEAM Europe, BREEAM Gulf and BREEAM International Bespoke Non Domestic schemes:

Fees*	Small buildings [$<5,000m^2$]	Medium buildings [$<50,000m^2$]	Large Buildings [$>50,000m^2$]
Registration	£700	£900	£1,350
Design Stage - Interim Certification	£1,500	£1,800	£2,300
Post Construction – Final Certification	£700	£900	£1,350
Total	£2,900	£3,600	£5,000

* These fees will be revised periodically and are excluding VAT

BREEAM International (Bespoke) Project Registration and Certification Fees for Residential Buildings:

Fees*	< 100 Dwellings [Small]	100 to 1000 Dwellings [Medium]	>1000 Dwellings [Large]	Notes
Registration	£700	£900	£1350	One-off rate per building type*
Design Stage - Interim Certification	£60.00 Per Dwelling	£45.00 Per Dwelling	£35.00 Per Dwelling	Subject to a minimum fee per development of £600
Post Construction – Final Certification	£35.00 Per Dwelling	£25.00 Per Dwelling	£12.50 Per Dwelling	Subject to a minimum fee per development of £350

*These fees will be revised periodically and are excluding VAT



FEES COMPARISON

THANK YOU



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BREEAM**



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