



# **BREEAM New Construction 2011**

## **CLEMG Nov 2011**

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# Environmental Perspectives LLP

**Our discipline is based on deep understanding of the built, natural and social environment. We work in partnership with our clients and advise upon the environmental aspects of their projects. We believe our approach is innovative and good value for money.**



# What are the services ?

- **EIA**
  - Project Managers – Technical input
- **Sustainability Advice / Direction**
  - Sustainability Coordinators – Sustainability Strategies
  - WRAP facilitators
  - BREEAM/Code Assessors & APs
- **Corporate Social Responsibility – Strategies & reporting**
- **Carbon Management & Energy**
  - LZC Energy Strategies
  - Energy auditing & modeling – Carbon Footprinting
- **Socio Economic**
  - HIA / Health Infrastructure – Vulnerable Localities Index – Regeneration Benefits / Multiplier
- **Biodiversity & Green Infrastructure**
  - Surveys, strategies & monitoring

# Who are the clients ?

- **Commercial developers**
  - British Land
  - National Grid
  - Tesco
  - Westfield
    - Manhattan Loft Corporation
- **Contractors**
  - Willmott Dixon – Mace
  - ISG
- **House builders**
  - Taylor Wimpey
  - St James Homes –  
Crest Nicholson – Barratts
- **Other**
  - Hotels
  - Architects
  - RSLs
  - Planning Consultancies

# What is BREEAM?

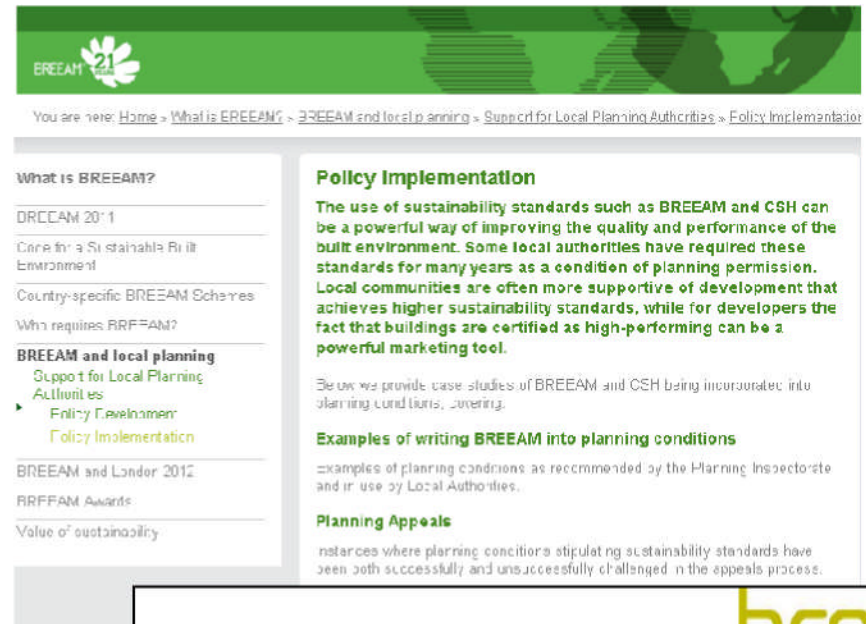
- **Independent, third party verified environmental assessment for buildings;**
- **Flexible and mandatory credits;**
- **Nine categories;**
- **One overall performance rating.**

The BREEAM logo is displayed in a bold, lowercase, yellow-green font.

BREEAM Rating	% score
OUTSTANDING	85
EXCELLENT	70
VERY GOOD	55
GOOD	45
PASS	30
UNCLASSIFIED	<30

# Drivers..

- Planning policy;
- Funding requirement;
- Corporate requirement.



The screenshot shows the BREEAM website navigation menu and content sections. The navigation menu includes: What is BREEAM?, BREEM 2011, Code for a Sustainable Built Environment, Country-specific BREEAM Schemes, Who requires BREEAM?, BREEAM and local planning, Support for Local Planning Authorities, Policy Implementation, BREEAM and London 2012, BREEAM Awards, and Value of sustainability. The 'Policy Implementation' section is highlighted in green and contains the following text:

**Policy Implementation**

The use of sustainability standards such as BREEAM and CSH can be a powerful way of improving the quality and performance of the built environment. Some local authorities have required these standards for many years as a condition of planning permission. Local communities are often more supportive of development that achieves higher sustainability standards, while for developers the fact that buildings are certified as high-performing can be a powerful marketing tool.

Below we provide case studies of BREEAM and CSH being incorporated into planning conditions, covering:

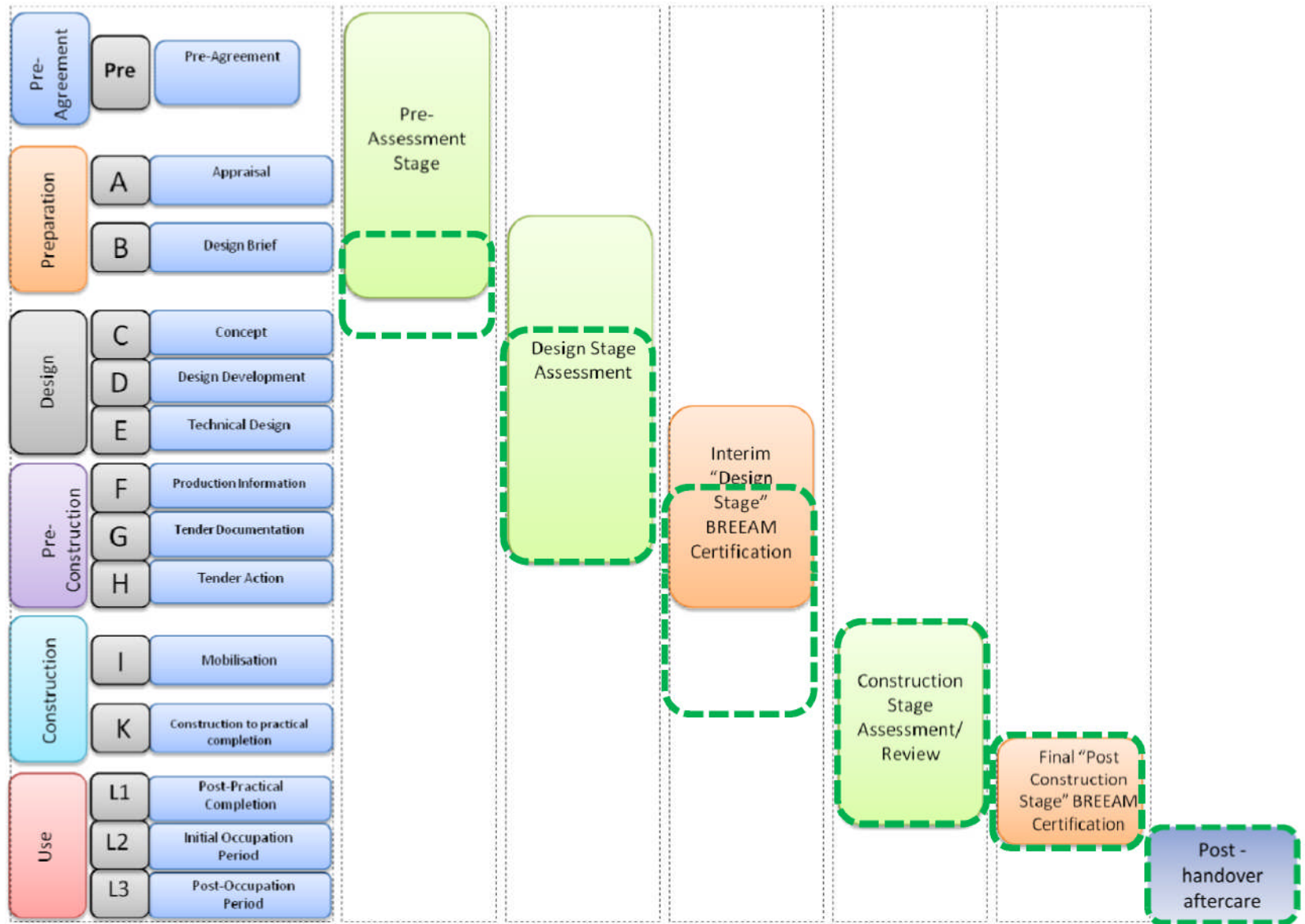
- Examples of writing BREEAM into planning conditions**  
Examples of planning conditions as recommended by the Planning Inspectorate and in use by Local Authorities.
- Planning Appeals**  
Instances where planning conditions stipulating sustainability standards have been both successfully and unsuccessfully challenged in the appeals process.



The image shows the cover of a guidance document from BRE. The title is "Guidance for Local Planning Authorities incorporating BREEAM and the Code for Sustainable Homes within planning policy". Below the title, it says "Which planning documents to use". The text explains that the document examines where sustainability standards should be specified within planning policy. It also mentions "Development Plan Documents and Supplementary Planning Documents" and includes a quote from the CLG, Supplement to PPS1, 2007: "Any policy relating to local requirements for decentralised energy supply to new development or for sustainable buildings should be set out in a Development Plan Document (DPD), not a supplementary planning document, so as to ensure examination by an independent Inspector." Finally, it states that where a condition to build to BREEAM/CSH is supported by a DPD or put forward as a viable option by the applicant, it appears likely to be upheld by the planning inspectorate. Conversely, similar requirements that do not refer to adopted policies have been successfully challenged. For more information regarding appeals, please visit the 'Policy Implementation' section on the BREEAM and Local Planning webpage.

# BREEAM NC 2011 Key Changes

- **Earlier introduction of BREEAM process & consultants;**
- **Energy performance assessment updated;**
- ***BREEAM In Use* introduced to maintain Excellent and Outstanding ratings.**



# Ene 01 – Reduction CO<sub>2</sub> Emissions

- Performance expressed as a ratio “Energy Performance Ratio” for New Construction (EPR<sub>NC</sub>)

- Ene 01 calculator uses following parameters from

**BRUKL:**

- the building’s operational energy demand;
- the energy delivered (consumption); and
- the total CO<sub>2</sub> emissions.

# Ene 01: Office Development

**BREEAM 2008 EPC 37 = 7 credits =  
Excellent**



**BREEAM 2011 EPRNC 0.568 = 6 credits =  
Very Good**

BREEAM credits	EPR <sub>NC</sub>
1	0.05
2	0.15
3	0.25
4	0.35
5	0.45
6	0.55
7	0.59
8	0.63
9	0.67
10	0.72

No. of BREEAM credits available	15	Available contribution to overall score	9.83%
No. of BREEAM innovation credits available	5	Minimum standards applicable	Yes

Ene01 Calculator and Key Performance Indicators

Shell & Core option?

N/A

Demand Consumption	Building floor area		82633	m <sup>2</sup>	
		Notional building energy demand		168.19	MJ/m <sup>2</sup> /annum
	Actual building energy demand			129.82	MJ/m <sup>2</sup> /annum
	Notional building energy consumption		64.98	kWh/m <sup>2</sup> /annum	
		Actual building energy consumption		56.41	kWh/m <sup>2</sup> /annum
	CO <sub>2</sub>	Target Emission Rate (TER)		26.40	kgCO <sub>2</sub> /m <sup>2</sup> /annum
		Building Emission Rate (BER)		21.20	kgCO <sub>2</sub> /m <sup>2</sup> /annum
		Building improvement over TER		20.00%	
		Demand Energy Performance Ratio (EPR)		0.213	
		Consumption Energy Performance Ratio (EPR)		0.176	
	CO <sub>2</sub> Energy Performance Ratio (EPR)		0.179		
	Overall Building Energy Performance Ratio (EPR <sub>wc</sub> )		0.568		

~0.22 for Excellent

Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
Is the building designed to be 'carbon negative' ?	
Building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported	

Total BREEAM credits achieved	6
Total contribution to overall building score	3.93%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Very Good level

# Post Occupancy Aftercare

- **Training schedule for building manager covering BUG contents;**
- **Commitment to provide 12 months aftercare support;**
- **FM manager undertakes quarterly intervals for the first 3 years after occupation.**



# Post Occupancy Evaluation

- **Independent third party review;**
- **One year after occupation;**
- **Review of design & construction;**
- **Feedback on environmental conditions;**
- **Disseminate information e.g. Corporate website.**

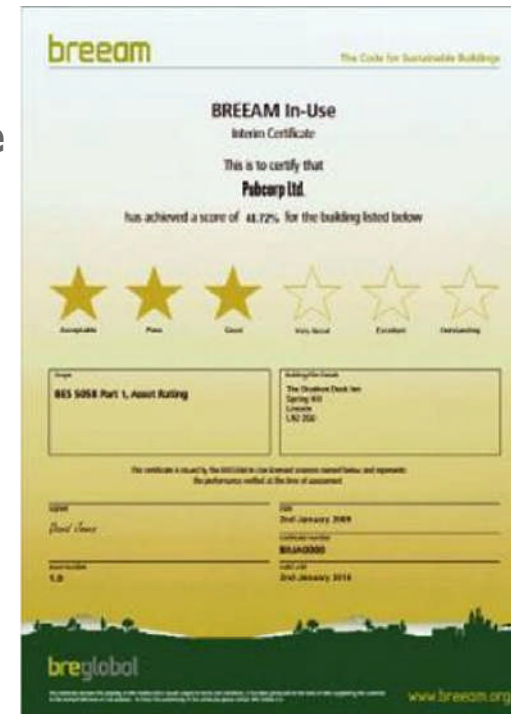
# BREEAM In Use

Excellent or Outstanding ratings must achieve full certification under BREEAM In Use within 3 years of operation.

If not rating will be down graded.

BREEAM In Use has Six Star rating.

In Use rating independent of BREEAM 2011 rating.



# BREEAM In Use



## **BRE Environmental and Sustainability Standard (BES 5058):**

**1. Providing assessment of: the building (Asset Rating);**

**2. The operation of the building (Building Management Rating);**

**1. How Clients are managing their activities within the building (Organisational Rating).**

# BREEAM In Use - Assessment (1)

- Using an online system, assets are pre-assessed by Clients and certified by Auditors.

- 197 questions contribute to overall Asset, Building Management and Organisational ratings

- 10 categories

- Consumption data is used to track performance over time.

Detail Chart

Environment issues	Max points achievable	Points scored	Score(%)	Weight(%)	Contribution(%)
Management	68	31.000	45.588	12	5.471
Materials	109	26.000	23.853	4.5	1.073
Transport	81	0.000	0.000	18.5	0.000
Waste	104	1.000	0.962	11.5	0.111
Water	83	6.000	7.229	3.5	0.253
Health	114	32.000	28.070	15	4.211
Pollution	93	24.000	25.806	10.5	2.710
Energy	127	36.000	28.346	19.5	5.528
Land Use	18	12.000	66.667	5	3.333
Total	797	162.000	01.000	100	22.690

# Building User Guide

- **Installed system (maintenance, operation, replacement & repair);**
- **Energy Monitoring System;**
- **Aftercare support (Man 01);**
- **Monitoring & feedback mechanisms/process (Man 01 and Man 04);**
- **Environmental Working groups;**
- **Environmental Management System.**