

Brothers in arms?

BREEAM has dominated environmental assessment of UK buildings for nearly 20 years. Now there's a competitor from the US: Leadership in Energy and Environmental Design (LEED). **James Parker** delves deep into the inner workings of both schemes to find their strengths and weaknesses

"Going global brings BREEAM head-to-head with its rival LEED. Design teams want to know which one is best"



Publically displaying your green credentials is becoming a must for organisations in our new sustainably-aware society. Multi-national companies are keen to show that every part of their business is green, including their buildings.

Environmental assessment of buildings is nothing new, with the first national scheme, BREEAM (the Building Research Establishment Environmental Assessment Method), appearing in 1990. BREEAM has since expanded massively, going from a 19-page BRE report with 27 credits available, to a massive 350-page technical guide (for the office version) with 105 credits.

The principles of BREEAM have also spread across the world. The US Green Building Council launched its Leadership in Energy and Environmental Design (LEED) in 1998. While similar methods have also sprung up, such as Greenstar in Australia and CASBEE in Japan, BREEAM and LEED are the main methods currently in use. And the question on everyone's lips is: which one is best?

Spot the difference

The main difference between the two methods is the process of certification. BREEAM has trained assessors who assess the evidence against the credit criteria and report it to the BRE, who validate the assessment and issue the certificate.

While LEED does not require training, there is a credit available if an accredited

professional (AP) is used. The role of the AP is to help gather the evidence and advise the client. The evidence is then submitted to the US-GBC which does the assessment and issues the certificate.

Both schemes share common components (Table 1). Early involvement of the assessor or AP at the design stage is beneficial to the project and the final rating. Both schemes drive the market to improve building design. The judging criteria also keep pace with legislative developments and current best practice.

LEED in the UK

In the UK, interest in LEED is growing. The Green Building Certification Institute's website records 66 LEED Accredited Professionals in the UK. This is the fifth highest national total behind the US, Canada, UAE and China.

The US-GBC also lists ten UK buildings as being registered for one of the LEED schemes. At the time of writing, the list shows that only one UK building – the Herman Miller HQ in Cheltenham – as having gained a LEED rating. This building also had a BREEAM assessment carried out under the offices 2006 scheme, under which it was awarded an excellent rating.

Another building known to have both a BREEAM and a LEED rating is the Van de Kamp Bakery, at Los Angeles City College. The bakery gained a certified LEED rating and a Good BREEAM 2005 rating.

Table 1: How LEED and BREEAM compare.

	BREEAM	LEED
Date introduced	1990	1998
Schemes available	<ul style="list-style-type: none"> • Offices • Retail • Industrial • Education • Ecohomes/Code for Sustainable Homes • Healthcare • Bespoke • Multi-residential • International • Courts • Prisons 	<ul style="list-style-type: none"> • New construction • Existing buildings: Operation and maintenance • Commercial • Interiors • Shell & core • Schools • Retail • Healthcare • Homes • Neighbourhood development
Categories	<ul style="list-style-type: none"> • Management • Health and well-being • Energy • Transport • Water • Materials • Waste • Land use and ecology • Pollution 	<ul style="list-style-type: none"> • Sustainable sites • Water efficiency • Energy and atmosphere • Materials and resources • Indoor environmental quality • Innovation in design
Ratings (lowest to highest)	<ul style="list-style-type: none"> • Pass • Good • Very good • Excellent • Outstanding (from 2008) 	<ul style="list-style-type: none"> • Certified • Silver • Gold • Platinum
Assessment	Trained Assessors	US-GBC
QA/Certification	BRE	US-GBC
Number of units certified (as of February 2008)	110 808 (109 450 domestic)	1823 (540 domestic)
Scheme	Weaknesses	Strengths
BREEAM	<ul style="list-style-type: none"> • Very exact requirements • Complex weighting system • Market profile • Cost of compliance 	<ul style="list-style-type: none"> • Allows comparison and benchmarking of different buildings • Independently audited • Adjusted to UK legislation and UK culture • Can assess any building with the Bespoke version
LEED	<ul style="list-style-type: none"> • Based on US systems • Intense documentation required • No independent audit of the assessment • Mixing building function and form is difficult to assess 	<ul style="list-style-type: none"> • Strong marketing gets the message through • Lots of information available • No need for an assessor and training
The main differences between LEED and BREEAM (courtesy Eszter Gulacsy)		
BREEAM	LEED	
Legislation/Best practice	Optional standards	
Quantitative thresholds	Percentage thresholds	
Based on carbon dioxide	Based on US Dollars	
Main application in the UK	Niche application in the UK	
Assessor involvement	Team involvement	

So it appears that BREEAM delivers a higher rating for the same building in both the US and the UK. That said, it would be more accurate to compare LEED with BREEAM 2008, as the latter now has a mandatory post-construction review, something LEED has had for a while. With previous BREEAM schemes most buildings were only assessed at a design stage.

Eszter Gulacsy, a sustainability consultant from MTT/Sustain believes LEED is simpler in its approach, while BREEAM is more academic and more rigorous. "While BREEAM is more relevant in the UK as it uses UK policies, LEED can sit alongside as part of a global corporate policy," she says.

Gulacsy also believes that the driver for LEED in the UK is often the client's global corporate policy or, on prestige speculative developments, the needs of global tenants. Germany-based Siemens uses it for all its new buildings worldwide, with several buildings in Europe already registered under the LEED scheme.

While some national green building councils are developing their own environmental assessment methods, some are adapting one of the existing schemes.

The BRE has not been shy about selling BREEAM across the globe. BREEAM International grew out of the BREEAM Bespoke scheme. BREEAM Europe and BREEAM Gulf are similar money-earners. But going global brings BREEAM head-to-head with its rival LEED. Ironically,



The Herman Miller HQ in Cheltenham has gained a Gold rating under the LEED New Construction scheme.

that water is the key issue, rather than energy as in the standard UK schemes. In addition to the CIBSE guidance being the measure for certain credits, ASHRAE and other standards are also now referenced in BREEAM Gulf.

BREEAM has long been able to adapt to local contexts. With BREEAM Bespoke, for example, the assessor can work with BRE to develop assessment criteria specially tailored to a building where it doesn't fit neatly into one of the existing schemes.

LEED, however, has not been created with this level of adaptability and it is not run that way. Instead it is fixed to the ASHRAE standards and the US way of thinking (for example, credits are awarded for having enough car parking spaces, rather than minimising them as in BREEAM).

There are also differences in the way LEED calculates credits. They are generally linked to the US Dollar (especially the energy credits), which means that if the exchange rate is unfavourable, then the building's rating could suffer.

A key change that may make LEED more exportable is the introduction of regional bonus credits. Six regional priority credits will be available based on what the US-GBC's regional councils and chapters deem important, environmentally, in that region.

A downside is that these credits are not available for non-US projects. However, there are national versions of LEED being developed by individual national green building councils. Canada was the first, followed by India. Countries such as Brazil and Italy are looking to have their own versions soon. The Dutch Green Building Council has also adopted BREEAM as its favoured environmental assessment method.

There is a lot of hype about the battle between BREEAM and LEED in the UK, but this seems to be unfounded. Both seem happy to co-exist and each has their niche areas or countries. They are even borrowing each other's ideas as they grow.

BREEAM will probably always come out on top in the UK, simply because it is imbedded in the system. Government departments require BREEAM ratings of all their buildings; most local authorities require BREEAM as part of planning approval for developments over a certain size.

Once projects are underway that aim to be zero carbon, the likes of BREEAM or LEED may have developed to become the global default methods of assessment.

Now, who'd bet against that?

BREEAM's director, Martin Townsend, was quoted in *Building Design* as seeking ways of collaborative working with the US LEED system.

"If an American bank wants to build over here, it understands about LEED and wants the building built to that standard," he said. "That's fine, but it might not translate that well into the UK climatic environment, our building legislation or the way that building operates. Providing a client with dual certification has to be a good way of sharing that information."

Others are more cautious. "Europe thinks that LEED is an easy win, but it isn't if the paperwork and evidence is not in place," says Eszter Gulacsy. "There is a danger of complacency," she warns.

The argument for two schemes

So is the dynamic tension between two competing systems desirable? Clearly, a one-size-fits-all assessment scheme would be difficult to achieve on a global basis. For example, water efficiency is a major issue in Dubai and Australia, but not in Scotland and nor in Wales. So different issues need to be ranked differently to match regional environment and regulations.

While LEED is dominated by the American ASHRAE standards, BREEAM takes its cue from European and UK legislation. The regional versions of both schemes flow from those antecedents.

BREEAM Gulf has been adapted for the local market. Gone are the Good, Very Good, and Excellent ratings, and in comes star ratings. The weightings are changed so

WHO HAS THE UK LEED?

LEED-accredited buildings in the UK as at December 2008

- 70 Chancery Lane, London
LEED CI 2.0
- Bovis Lend Lease CEMEA
office London: LEED CI 2.0
- Gensler London Office
LEED CI 2.0
- Green Park, UK 1
LEED EB O&M
- Green Park, UK 2
LEED EB O&M
- Green Park, UK 3
LEED EB O&M
- Herman Miller, Chippenham
LEED NC 2.1
- Orsman Road, London
LEED NC 2.2
- Reed Smith Broadgate Tower,
London LEED CI 2.0
- WPD Office, Tavistock
LEED NC 2.2

Key

CI: Commercial interiors
EB O&M: Existing building, operation
and maintenance
NC: New construction