

BREEAM: Carbon-related issues

BREEAM (Building Research Establishment Environmental Assessment Method) addresses wide-ranging environmental and sustainability issues and enables, including energy and carbon, and is now a common place requirement imposed on UK buildings by Planning Authorities, clients or as a pre-requisite for funding.

Carbon issues play a central role in the BREEAM score, and for BREEAM 2008, as well as the up-coming BREEAM 2011 criteria, this includes mandatory requirements which must be met in order to achieve higher ratings. Therefore it is important to understand the issues at the outset of a building's design.

In a BREEAM 2008 Assessment, Ene1 accounts for up to 15 credits so forms a significant portion of the assessment, with points for the CO₂ reductions credit awarded on EPC ratings rather than percentage reductions. Alongside this, minimum requirements have been put in place for this credit to ensure that buildings being awarded the 'Excellent' or 'Outstanding' rating are performing to a suitably high level on their energy use, needing to achieve an EPC Carbon Index of 40 and 25 respectively. These targets are not easy to achieve and are chosen to stretch design teams and force them to seriously consider the energy efficiency of the building and their design process.

Carbon also has a key role in Ene5 where credits are awarded for a feasibility study being carried out to determine carbon emission reductions from low and zero carbon technologies. This feasibility study is mandatory for BREEAM 'Excellent' or 'Outstanding' and there are further credits for a 10% or 15 % reduction in carbon emissions as a result. This encourages the team to look at renewable sources of energy early on (no later than RIBA Stage C) of the design process in a bid for renewable energy to become a real option in terms of energy generation rather than being seen as an add on for public image or as a last resort.

In the upcoming BREEAM 2011 version, Ene1 will be modified so credits can be achieved for a) energy demand, b) energy consumption and c) actual carbon emissions of the development. There will still be mandatory requirements for 'Excellent' and 'Outstanding' targets. Under Ene5 there will be a further credit for investigating and achieving a reduction in the life cycle carbon emissions of a renewable technology.

Carbon is a key driver for other credits as part of the BREEAM assessment, for example: daylighting and lighting performance and controls, natural ventilation, thermal comfort and free cooling credits, transport credits encouraging the use of public transport and cycles and green guide ratings of materials.

Ben Cartmell, 08 March 2011

Key issues

- Ene1 mandatory requirement of at least 6 credits (EPC of 40) for BREEAM Excellent
- Ene1 mandatory requirement of at least 10 credits (EPC of 25) for BREEAM Outstanding
- Ene5 minimum of 1 credit (a LZC feasibility study) for Excellent and Outstanding
- Early assessment of the above bullets by a low carbon consultant

Web links

- BREEAM website - <http://www.breeam.org>
- BREEAM 2011 overview:

http://www.breeam.org/filelibrary/BREEAM%202011/BREEAM_2011_Open_letter_and_summary_paper_PDF.pdf