

Open Letter

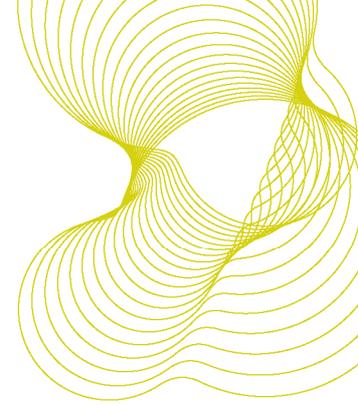
1 February 2011

Dear colleagues

BREEAM UK 2011 version

May I first thank everyone for the tremendous and very helpful feedback you've provided on our proposals for the BREEAM 2011 version update. Following your feedback, and with due regard to the changes and additions that need to be made to reflect regulation and standards, I am writing to let you know the changes and additions that will be in the BREEAM 2011 version. These are set out in the attached paper however, in summary they include:

- Setting new benchmarks and assessment methodology for energy efficiency and operational Carbon emissions in advance of the Government "road-map" to energy efficient, zero carbon and 'carbon negative' buildings.
- Updated benchmarks for construction waste and water consumption.
- Introduction of new standards on sustainable procurement and post-construction operational after-care, including monitoring of building performance.
- Updated approach to assessing and quantifying service life planning, stakeholder participation, life cycle impacts and recycled aggregates.
- New and updated reporting requirements of key performance indicators, including building life cycle CO₂ emissions, construction and operational water consumption, construction waste volumes and VOC emissions.
- Re-classification and consolidation of issues and criteria to make it even easier to deliver BREEAM certified buildings in an efficient, cost effective and value added manner. Ensuring BREEAM continues to provide an easy means of



specifying environmental performance targets and quantify key building impacts and opportunities at a local, national and global level.

The feedback we have received from individuals and organisations alike has proved essential in guiding the update of the UK scheme, but also our thinking on its longer term direction. It remains our aim to ensure BREEAM continues to deliver and serve the interests of a sustainable built environment and industry, guided by the principles of scientific robustness, verification and cost effective, value added outputs.

Responding to this agenda and your feedback doesn't stop with the update, we are also keenly aware of current Government proposals on localism and the opportunities and influence this will have on planning and building procurement, and therefore delivery of a sustainable built environment. Rest assured that we have taken and will continue to take every opportunity to demonstrate to Government the value of schemes such as BREEAM and the important role that independent assessment and verification of performance plays in driving innovation and delivering cost effective, low carbon buildings.

We will be talking about BREEAM and the 2011 version at Ecobuild and I hope to meet many of you there. Finally, may I personally thank you for your continued support in the use and development of BREEAM, with over two hundred thousand buildings now certified and a million registered for assessment globally it has been a great success for us all.

Yours sincerely

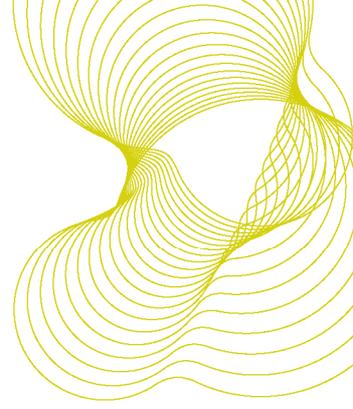
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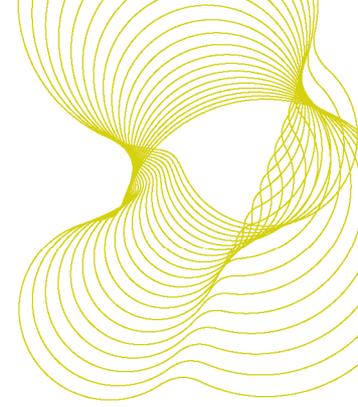
breglobal

**BREEAM 2011: A
summary paper of the
technical changes**

1st February 2011



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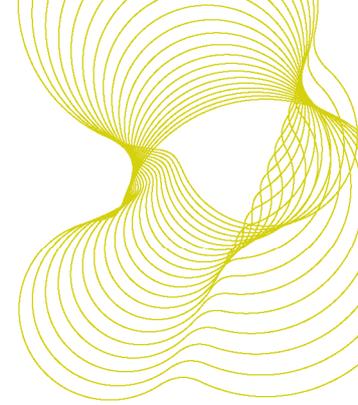
Executive Summary

BRE Global updates the BREEAM UK new construction scheme for non domestic buildings every few years to ensure that it remains up-to-date, representative of best environmental practice and a driver for innovation in building design and construction.

This paper summarises the changes that have been made to the 2008 version of the scheme, which will culminate in its replacement by the 2011 version. The paper therefore reflects how BREEAM is responding to the key issues raised by stakeholders and the challenges facing the industry in delivering a sustainable built environment.

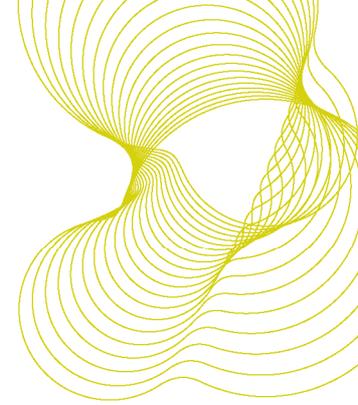
Key changes to the BREEAM UK new construction scheme for non domestic buildings include:

- Setting new benchmarks and assessment methodology for energy efficiency and operational Carbon emissions, including benchmarks that encourage the zero carbon hierarchy and reward 'carbon negative' buildings.
- Updated benchmarks for construction waste and water consumption.
- Introduction of new standards on sustainable procurement and post-construction operational after-care, including monitoring of building performance.
- Updated approach to assessing and quantifying service life planning, stakeholder participation, life cycle impacts and recycled aggregates.
- New and updated reporting requirements of key performance indicators, including building life cycle CO₂ emissions, construction and operational water consumption, construction waste volumes and VOC emissions.
- Re-classification and consolidation of issues and criteria to ensure the method continues to deliver in an efficient, cost effective and value added manner, whilst providing a platform for specifying environmental performance targets and quantifying the key building impacts and opportunities at a local, national and global level in line with international work on metrics and assessment frameworks.



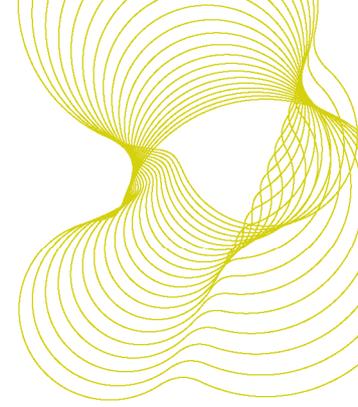
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Appendix A – BREEAM 2011 Assessment Issue List



1. Introduction

The current BREEAM 2008 UK version was launched in August 2008 and BRE Global began work on revising and updating this version in the spring of 2010. The technical development work is now complete and the new version is scheduled for publication in March 2011¹.

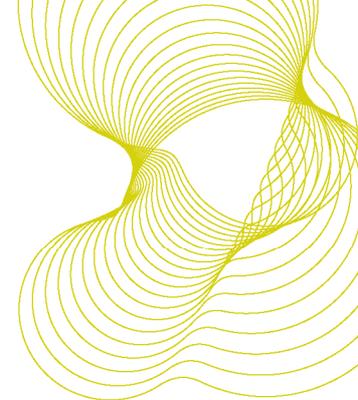
This paper provides a summary of the direction and principle changes in scope and methodology of BREEAM that will result in the 2011 version. The published version of the scheme document will contain the detailed criteria, benchmarks and guidance.

The paper is arranged in three parts.

- 1) The scope of BREEAM 2011.
- 2) A description of the technical changes to individual BREEAM assessment issues.
- 3) General issues pertaining to other relevant update items.

The second part constitutes the majority of the content of this paper and is arranged by BREEAM Environmental section. Each section includes the assessment issues that form part of the BREEAM 2011 version and the existing BREEAM 2008 assessment issues that have been removed from the method and therefore do not form part of the 2011 version.

¹ Please note, this date represents publication of the 2011 Scheme Document, the scheme will 'go live' i.e. supersede the current 2008 version in the late spring/early summer (the exact date will be confirmed in due course).



2. Scope of BREEAM 2011

BREEAM 2011 will be applicable to the same range of building types covered by the BREEAM 2008 version, this includes:

- Offices
- Industrial units
- Retail
- Schools
- Further Education
- Higher Education
- Healthcare
- Multi-residential
- Prisons
- Courts
- Other Building Types

The scope of BREEAM 2011 will initially exclude the recently released data centres scheme (re-launched in May 2010), which will remain as a 2010 version for the time being.

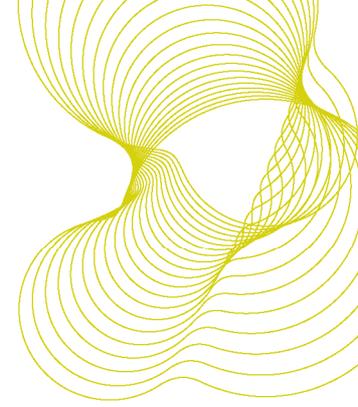
To ensure alignment with the BRE Global Code for a Sustainable Built Environment² the BREEAM 2011 version will become and be referred to as the BREEAM 'New Construction' scheme.

Furthermore, under the 2011 version, there will cease to be separate individual 'assessor guidance manuals' for each building/sector type (as currently the case under BREEAM 2008). BREEAM 2011 will consist of a single, consolidated scheme document containing all 'new construction' assessment issues and criteria relevant to the range of non domestic building types assessed using BREEAM in the UK. Although there will cease to be separate scheme documents, BREEAM continues to maintain assessment criteria specific to the range of building functions, sector stakeholders and end-users covered by its scope. This makes the scheme more flexible for use on mixed use buildings and aids clarity and consistency in the implementation of the method.

As the scope of BREEAM 2011 is shifting to new construction only, the 2011 version has not been designed specifically for the assessment of refurbishment and fit-out projects (currently the case under BREEAM 2008 via refurbishment/fit out specific benchmarks and criteria). At the time of writing, BRE Global have begun development of a standalone scheme to cover the refurbishment and fit-out life cycle

² The international Code for a Sustainable Built Environment is a set of strategic principles and requirements which define an integrated approach to the design, management, evaluation and certification of the environmental, social and economic impacts of the built environment. The BREEAM Core Standards interpret the Code as two separate but linked documents, one focusing on Technical and the other on Process requirements. These documents list the requirements that a Scheme Operator must comply with in order to be affiliated with the BREEAM Standards.

The Schemes are owned and developed by a Scheme Operator; for example BRE Global is the Scheme Operator for UK (BREEAM UK), the Dutch Green Building Council is the Scheme Operator for the Netherlands (BREEAM NL) etc. The Schemes can take any format as long as they comply with the requirements established in the BREEAM Standards. Please contact BRE Global if you require further information about the Code.



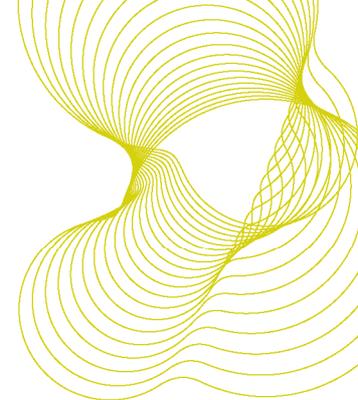
stages, following in a similar vein to the BREEAM domestic refurbishment scheme, which is currently being piloted and due for publication in Spring 2011.

Prior to the launch of a new refurbishment scheme for non domestic buildings, clients may continue to apply BREEAM and certify refurbishment and fit-out projects using the method. There will be two scheme options available for such projects once BREEAM 2011 goes live, as follows:

1. Refurbishment and fit out projects: continue to assess and certify using the BREEAM 2008 version.
2. Refurbishment projects only: assess and certify using the BREEAM 2011 version i.e. assess performance against the New Construction criteria.

In the case of the second option, this is likely to be practical for major refurbishment projects only; fit out projects should continue to use BREEAM 2008. Once BREEAM 2011 is launched, clients wishing to assess and certify a refurbishment project are advised to seek the input of a licensed BREEAM Assessor to determine the most practical and appropriate version of BREEAM to use.

Sections 3 to 11 of this document set out the scope of the BREEAM 2011 New Construction scheme. For each issue category (Management, Energy etc) it sets out the revised issues, their aim and the basis on which they are being amended or developed.



3. Management

The 2008 Management issues have been re-structured and consolidated in to the issue categories described below.

3.1 New issue: sustainable procurement

Aim: To ensure delivery of a functional and sustainable asset built in accordance with the design and performance expectations.

This new issue consolidates a number of existing 2008 issues and criteria, including:

- Man 1 commissioning
- Thermographic survey criteria from Ene06
- BREEAM AP credits
- Building User Guide
- Maintenance

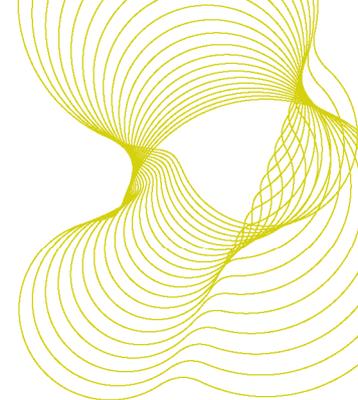
The issue contains new assessment criteria relating to the co-ordinated and facilitated handover of the building and appropriate aftercare activities to ensure smooth operation and occupation of the building in the initial phase. This includes aligning with the principles of established best practice, such as the Soft Landings Framework (Mark Way/UBT/BSRIA - BSRIA 2010), and recognition for the collation and reporting of occupant satisfaction, energy consumption and water consumption data at regular intervals during the initial period (1-3 years) of building occupation.

There will be a total of eight BREEAM credits available for this issue.

3.2 Responsible construction practices

This issue is a re-titled version of the 2008 'Considerate Constructors' assessment issue. The compliance criteria are unchanged, however the criteria has been standardised so that it is less specific to any one type of considerate constructors/contractors scheme. The issue now includes a list of 'compliant schemes' which includes the Considerate Constructors Scheme. Guidance is provided for other scheme operators who wish to add their scheme to the list of 'compliant schemes'.

Checklist A2 has been replaced with a new appendix outlining the requirements for potential compliant schemes and their operators.



There will continue to be two BREEAM credits available for this assessment issue.

3.3 Construction site impacts

This issue re-focuses the criteria and BREEAM credits in five key areas:

- Site energy consumption: monitoring, data gathering and reporting
- Site water consumption: monitoring, data gathering and reporting
- Transport of construction materials and waste: monitoring, data gathering and reporting
- Sustainable timber procurement
- Construction site management: Contractor EMS and pollution prevention procedures

In all cases, greater clarity and specificity is provided in terms of the impacts/end-uses to be monitored and reported. In particular, the transport of materials and waste criteria has been updated to clarify that:

- As a minimum, monitoring of transport must cover those materials that make-up the main elements of the building i.e. those covered in the Mat 1 Life Cycle Impacts assessment issue.
- Transport distance covered is that from the factory gate to site.
- Transportation of waste from site back to the supplier or relevant materials processing plant is covered.

In addition to the above changes, the assessment process will require reporting of construction site impact data, e.g. energy and water consumption, at the final post construction stage of assessment.

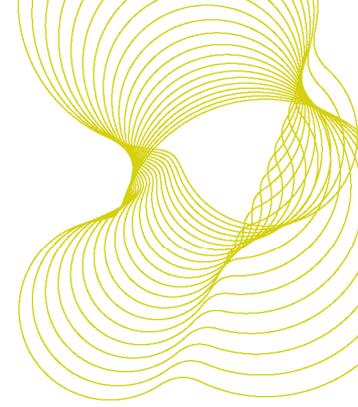
There will be five BREEAM credits available for this issue.

3.4 Service life planning and costing

Formerly the Life Cycle Costing assessment issue in the 2008 version, this issue is now applicable to all building types under BREEAM 2011.

BRE Global is aware that, under the 2008 version, few buildings achieve compliance with this issue. Therefore, in consultation with whole life costing experts, the assessment criteria have been revised to simplify the requirements and so encourage greater uptake. The main changes include:

- End-of-life stage removed from life cycle costing requirements.
- The option for the analysis to consider 'structure' has been removed.
- The requirement to update the LCC model during RIBA stages D and E has been moved to the third credit.
- Text added to recognise LCC tends to be done on an elemental level e.g. windows, walls etc.
- External spaces added as an elemental option for demonstrating compliance



- Reference added to a new ISO 15868 - Part 5 supplement that gives robust guidelines for LCC modelling

There will be a total of three BREEAM credits available for this issue.

3.5 New issue: stakeholder participation

Aim: In consultation with current and future building users and other stakeholders, design, plan and deliver accessible, functional and inclusive buildings.

This new issue consolidates a number of existing 2008 issues and criteria, including:

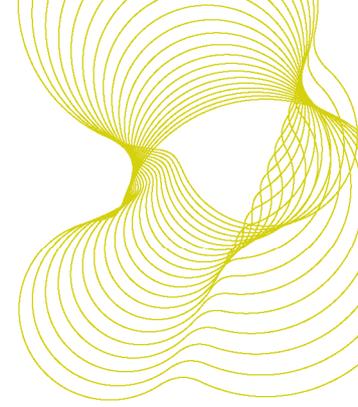
- Man 5 Site Investigation (Schools)
- Man 6 Consultation (Bespoke, Healthcare, Schools, Further Education, Prisons, Courts)
- Man 7 Shared Facilities (Healthcare, Schools, Further Education)
- Man 9 Publication of building information (Schools, Further Education, Bespoke)
- Man 10 Development as a learning resource (Schools, Further Education)
- Man 13 Good Corporate Citizen (Healthcare)
- LE7 Consultation with students and staff (Schools)
- Hea 15 Outdoor space (Healthcare, Multi-residential and Bespoke)
- Tra 7 Travel Information Space (Healthcare, Bespoke, Courts, Prisons, Retail)
- Hea 20 Home office (Multi-residential)
- Man 14 Inclusivity (Bespoke)

The issue will focus on a number of aspects:

- Part 1 will address consultation with future building users and other relevant stakeholders.
- Part 2 will address design decisions (inclusive design), resulting from this consultation with a view to ensuring an accessible and functional building for its intended users.
- Part 3 addresses provision of building user information.
- Part 4 address post occupancy evaluation (POE) and information dissemination.

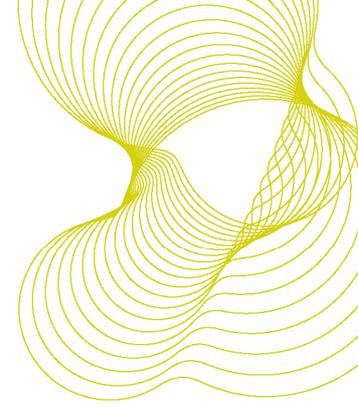
The assessment criteria has been amended to ensure consistency of approach across all building types, with the exception of some specific existing criteria for healthcare and education buildings, which have been retained.

There will be a total of four BREEAM credits available for this new issue.



3.6 Security

This issue has been removed from the Management section. The criteria will form part of a new Health and Wellbeing issue called Safety and Security (see next section).



4. Health & Wellbeing

The 2008 Health and Wellbeing issues have been re-structured and consolidated in to the issue categories described below.

4.1 Visual comfort

This issue consolidates the following existing 2008 issues and criteria:

- Daylight
- Glare and View Out
- Artificial/Internal Lighting levels
- High Frequency Lighting
- Lighting Zones and Control
- Arts in Health (Healthcare only).

Some minor changes have been made to specific daylight requirements for certain building functions in line with accepted practice. The emphasis for compliant glare control has been shifted to focus on designing out glare, as opposed to just providing occupant controlled blinds.

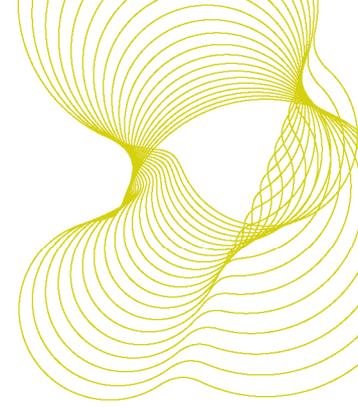
There will be a total of between three and five BREEAM credits available for this issue (dependent on building type and function areas).

4.2 Indoor air quality

This issue consolidates the following existing 2008 issues and criteria:

- VOCs
- Minimising ingress of external pollutants
- Potential for Natural ventilation
- Laboratory containment levels and fume cupboards

BREEAM UK versions have adopted the BREEAM Europe approach to the assessment of VOCs, to provide greater flexibility in demonstrating compliance with the current criteria. An additional credit has been made available for the testing of indoor Formaldehyde levels, as a measure of IAQ at the 'as built' stage of assessment. Furthermore, where measured, the Formaldehyde level will be reported at the final post construction stage of assessment.



There will be a total of between four and six BREEAM credits available for this issue (dependent on building type).

4.3 Thermal comfort

This issue consolidates two existing 2008 issues and criteria:

- Thermal modelling
- Thermal controls

The thermal zoning/control requirement has been altered to be less prescriptive. The new criteria will reward a thermal comfort strategy that has considered zoning, occupant control and interaction between systems and users. The new criteria will also require a “time out of range” (TOR) metric to be reported based on the results of the thermal modelling (and therefore the specified building servicing strategy).

There will be a total of two BREEAM credits available for this issue.

4.4 Water quality

This issue consolidates the following existing 2008 issues and criteria:

- Microbial Contamination
- Humidification systems
- Drinking water (now applicable to all building types)

No major changes have been made to the existing criteria. The requirement concerning the specification of ‘no humidification system or only steam humidification’ no longer forms a part of the minimum standards for microbial contamination, and therefore if a building specifies a non-steam type of humidification system, it will not prevent that building from achieving a BREEAM rating (this is currently the case under the BREEAM 2008 version). Also, note that compliance with drinking water criteria will not form a part of the minimum BREEAM requirements (minimum requirements apply only to the Microbial Contamination criteria of this issue).

There will be a total of one BREEAM credit available for this issue.

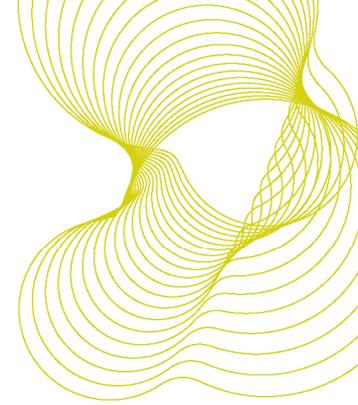
4.5 Acoustic performance

No major changes to the existing criteria for the majority of the building types. There are some minor changes/clarifications to the criteria with respect to schools.

4.6 New issue: safety and security

This issue consolidates the following existing 2008 issues and criteria:

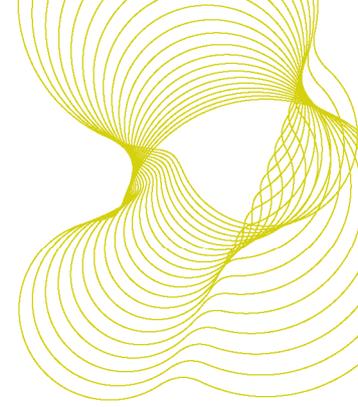
- Man 8 Security
- Tra 4 Pedestrian and cycle safety



- Tra 8 Deliveries and manoeuvring

A definition of 'suitably qualified security consultant' has been added. Architectural Liaison Officers and Crime Prevention Design Advisors meet this definition. Inclusion of the definition allows for the potential recognition of other categories of consultants/experts who are able to provide equivalent building related security advice.

There will be a total of two BREEAM credits available for this issue.



5. Energy

The 2008 Energy issues have been re-structured and consolidated in to the issue categories described below.

5.1 Reduction of CO₂ emissions

This issue has changed significantly in light of revisions to Building Regulations. The basis for awarding credits in BREEAM 2011 follows an energy/carbon hierarchy of:

1. Reduced energy demand (built form/fabric efficiency)
2. Reduced energy consumption (systems efficiency)
3. Reduced carbon (use of low and zero carbon energy)

There will continue to be fifteen credits available for this issue. The following pages describe the new approach.

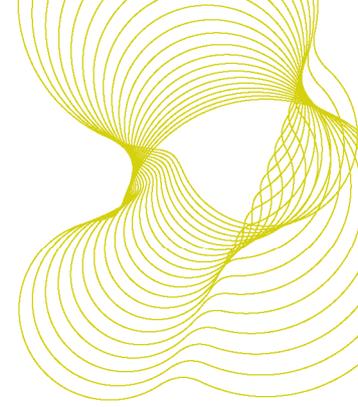
Building Regulation Part L2A 2010 and the relationship with BREEAM Ene01 Reduction of CO₂ emissions

The measure of energy/carbon performance of a building currently used in BREEAM 2008 to award credits is the CO₂ Index, which is also used to determine a building's Energy Performance Rating (EPC) (in England, Wales and Northern Ireland). A single CO₂ index benchmark scale is used to determine BREEAM performance for all building types and an Index of 40 and 25 corresponds to the minimum BREEAM requirement for BREEAM Excellent and Outstanding rated buildings respectively. This approach was primarily adopted in BREEAM 2008 to avoid the possibility of an air-conditioned building achieving higher credit scores than a passively heated and ventilated building regardless of the level of efficiency of the systems using the L2A 2006 methodology.

The 2010 version of the Building Regulations Approved Document Part L2A in England and Wales requires a 25% aggregate improvement in CO₂ emissions (i.e. percentage reduction on 2006 Building Regulations for non domestic buildings types). The CO₂ Index and EPC rating continues to be based on a direct comparison to a reference building.

As a result of this aggregate approach, the percentage improvement required under Part L2A varies between building types. For example a warehouse could require a 34% reduction whereas a retail development might require a 21% reduction in emissions. This approach reflects the fact that it is relatively straightforward for some building types to improve the energy performance by more than 25%, compared to other building types where a 25% improvement is more difficult.

The changes to Part L2A is likely to result in one compliant building type potentially achieving a better CO₂ index than another building type which is also just meeting compliance. Continued use of the CO₂ Index in BREEAM could result in the first building achieving a higher number of BREEAM credits (based on its



higher CO₂ Index) whilst only just complying with Building Regulations, when the second building has a lower number of credits (based on the lower CO₂ Index) but is performing well in advance of the Building Regulations requirements. It could theoretically be possible for a building that has a CO₂ Index low enough to achieve some BREEAM credits which does not correspond to Part L2A compliance. For this reason, the single benchmark scale approach using the CO₂ Index measure adopted by BREEAM in the 2008 version is considered impractical for the 2011 version of BREEAM.

BRE Global considered the options of including differing CO₂ Index based benchmark scales for each building type or reverting to a 'percentage improvement' benchmark scale, based on performance of the actual building versus the notional building (similar to the approach adopted in the 2006 version of BREEAM). However the later would recreate the loophole where air-conditioned buildings can perform better than passive solutions in some circumstances. BRE Global has therefore developed an alternative option for the 2011 BREEAM version.

Proposed approach to the assessment of energy performance in BREEAM 2011

The assessment of energy and CO₂ emissions in BREEAM will continue to be based on outputs from the National Calculation Methodology, SBEM (and other approved software) to align with the modelling requirements for building regulations/EPC approval.

These outputs include:

1. Notional and actual energy demand for the building
2. Notional and actual energy consumption for the building
3. Notional and actual CO₂ emissions for the building

Using the above information, building performance will be judged against three benchmark scales as follows:

1. Energy efficiency of the building: A performance measure based on the assessed building's actual energy demand relative to a minimum standard, i.e. building regulations compliance (Part L2a 2010 notional building).
2. Energy consumption of the building: A performance measure based on how efficiently the assessed building meets its energy demands i.e. its energy consumption relative to the notional building's energy consumption.
3. Carbon performance of building: A measure of the building's overall performance in terms of Carbon Dioxide emissions.

In determining the building's overall performance under this issue, relative weights are assigned to each of the above measures which reflect the number of BREEAM credits available for each benchmark. This creates a hierarchy that will ensure that standard practice against the energy efficiency or consumption scale cannot be completely off-set by best practice against the carbon performance scale. Thus higher performance, in terms of BREEAM's energy credits, will not be possible without due consideration of each stage in the energy/carbon hierarchy. This means that poor performance in terms of demand reduction and energy efficiency can only be counter-balanced to a certain degree through the specification of low or zero carbon on or off-site energy solutions.

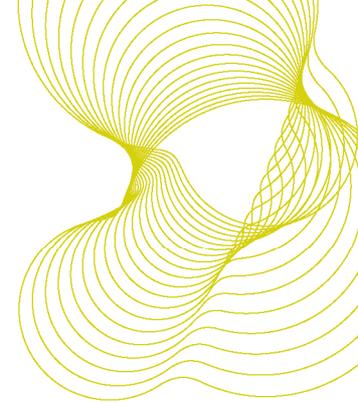


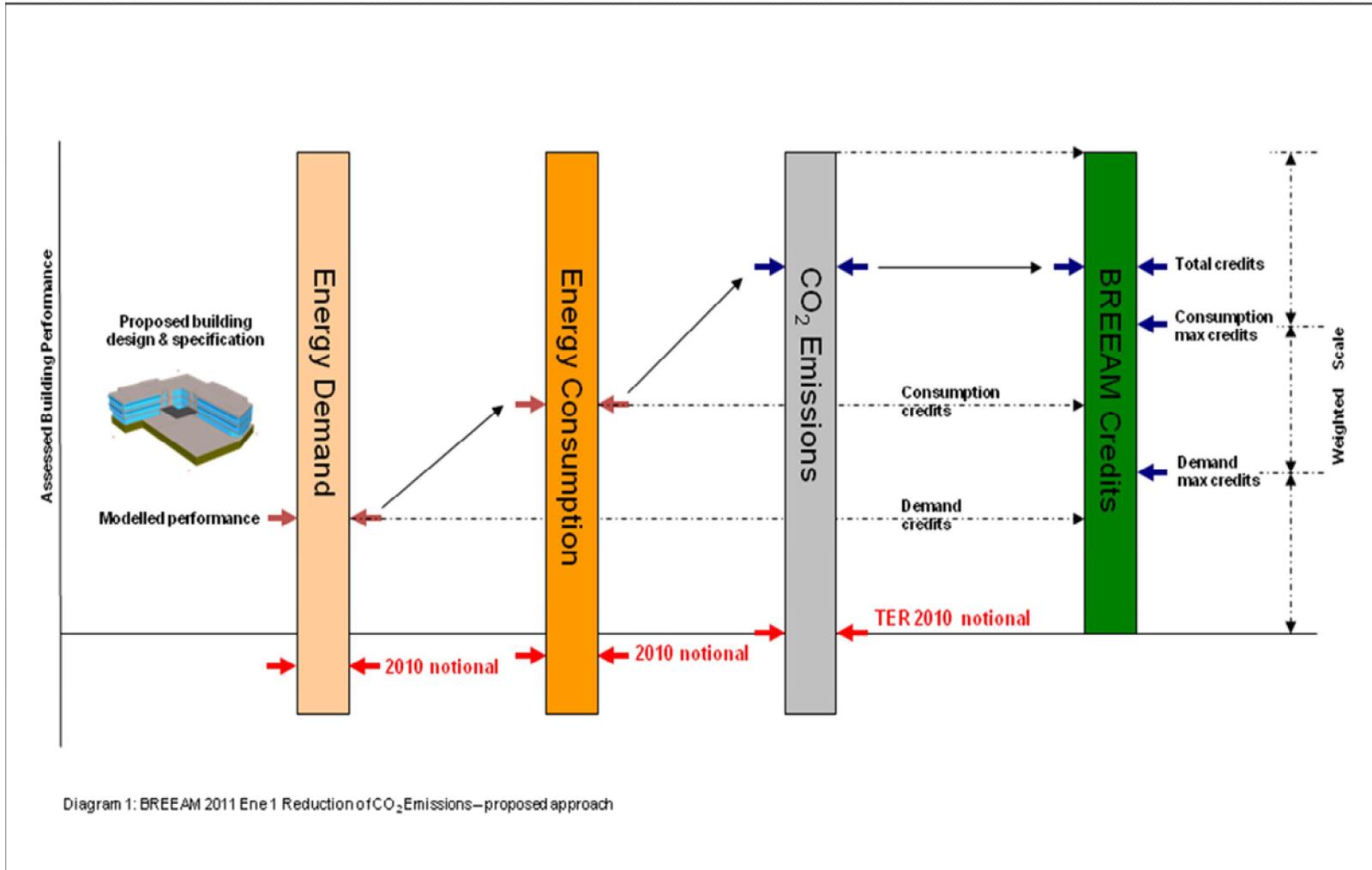
Diagram 1 (over the page) summarises the new approach.

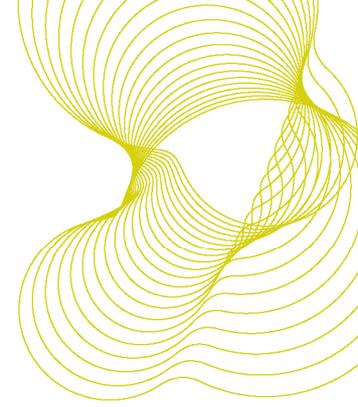
Minimum standards for reduction of CO₂ emissions

The BREEAM minimum standards for operational energy consumption and CO₂ emissions will continue to apply at the Excellent and Outstanding levels for this issue. The corresponding performance, in terms of the required reduction in CO₂ emissions and BREEAM credits to meet this minimum level, will be published along with the new Ene01 credit scale in the final scheme document.

Recognising exemplary performance

In BREEAM 2008 there are two exemplary level credits available for performance beyond the standard fifteen BREEAM credits for Ene01. These are awarded for achieving a 'net' zero carbon and 'true' zero carbon building respectively. Exemplary performance criteria have been maintained in BREEAM 2011 and the number of available innovation credits for this issue will increase. The exemplary level scale will continue to recognise zero carbon buildings as well as serve to encourage 'carbon negative' buildings i.e. buildings that are in affect generating a net surplus of zero carbon energy to meet an onsite process related energy demand or for export to meet an off-site demand.





5.2 Energy monitoring

This issue consolidates the following existing 2008 issues and criteria:

- Ene 2 Sub-metering of substantial energy use
- Ene 3 Sub metering of high energy load areas and tenancy

The assessment criteria remain broadly the same as the current 2008 criteria. There will be a total of two BREEAM credits available for this issue.

5.3 Low or zero carbon technologies

The additional credit for a feasibility study has been amended. In BREEAM 2008 the criteria for a feasibility study includes a requirement to carry out a life cycle carbon impact assessment of the relevant LZC technologies, and one credit is awarded for completing a feasibility study regardless of the percentage CO₂ reduction from LZC technology. In BREEAM 2011 there will be an additional credit for carrying out a life cycle carbon impact assessment. Furthermore, an additional credit has been made available where the building demonstrates a specific percentage reduction in its life cycle carbon emissions, as a result of the chosen LZC technology.

There will be a total of five credits available for this issue.

5.4 Building fabric performance and air infiltration

This issue currently applies to the BREEAM 2008 Retail, Prisons, Industrial and Bespoke schemes only.

The scope of this issue is now adequately addressed in Ene01 (Reduction of CO₂ emissions) and the National Calculation methodology (without being unnecessarily prescriptive in the approach required to reduce energy consumption resulting from fabric performance and air infiltration). Therefore, to maintain flexibility and avoid double counting, this standalone issue has been removed from BREEAM. The thermographic survey element of the existing criteria now forms a part of the new Sustainable Procurement issue in the management section.

5.5 Energy efficient cold storage

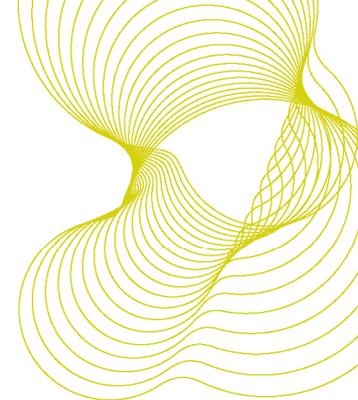
The criteria for this issue have been updated to reflect current best practice in the specification of refrigeration systems (in accordance with guidance in the Carbon Trust Refrigeration Road Map Action Plan).

There will be a total of three credits available for this issue.

5.6 Energy efficient transportation systems

This issue consolidates the following existing 2008 issues and criteria:

- Ene 8 Lifts
- Ene 9 Escalators and travelling walkways



The criteria remain broadly unchanged. If, in future, transportation systems fall within the scope of 'regulated emissions' and therefore the National Calculation Method, it is likely that this standalone issue will be removed from BREEAM (to avoid double counting) or significantly amended. The Energy Efficient Transportation Systems issue is now applicable to the assessment of Multi-residential accommodation.

There will be a total of two BREEAM credits available for this issue.

5.7 Free cooling

The requirements of this issue will form a part of the Low or Zero Carbon Technology issue (for schools and FE buildings), as such, under BREEAM 2011 it will no longer be a standalone assessment issue.

5.8 Energy efficient laboratory

This issue consolidates the following existing 2008 issues and criteria:

- Ene 11 Energy efficient fume cupboards
- Ene 19 Energy efficient laboratory

The existing criteria remain unchanged and there will continue to be five credits available for this issue.

5.9 Labelled lighting controls

This issue is a BREEAM 2008 Prisons scheme issue only. This issue has been removed from the 2011 version of the prisons scheme.

5.10 BMS

This issue is a BREEAM 2008 Prisons scheme issue only. Recognition of the issue is covered by the new BREEAM issue 'Energy Monitoring'. Therefore it has been removed as a standalone issue from the 2011 version of the prisons scheme.

5.11 CHP community energy

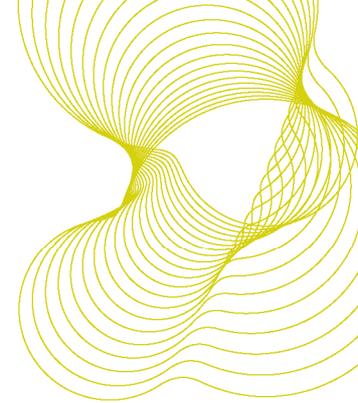
This issue is a BREEAM 2008 Healthcare scheme issue only. The requirements of this issue form a part of the Low or Zero Carbon Technology assessment issue in the 2011 version. Therefore, it has been removed as a standalone issue in BREEAM 2011.

5.12 Residential areas – energy consumption

This issue currently applies to the BREEAM 2008 Other Buildings scheme only.

The recognition of energy consumption from residential areas in non domestic buildings is adequately dealt with in the new Part L2A 2010 and the National calculation Method and therefore it is covered by Ene 01 'Reduction of CO2 emissions'. As such, this issue has been removed from the Multi-residential scheme.

5.13 New issue: energy efficient equipment



Aim: to ensure the energy efficient specification of 'unregulated' equipment.

This new issue consolidates a number of existing 2008 issues and criteria into one issue and criteria set, including:

- Ene 12: Swimming pools
- Ene 15: Provision of Energy efficient equipment
- Ene 20: Energy efficient I.T solutions

In addition, criteria have been added to address:

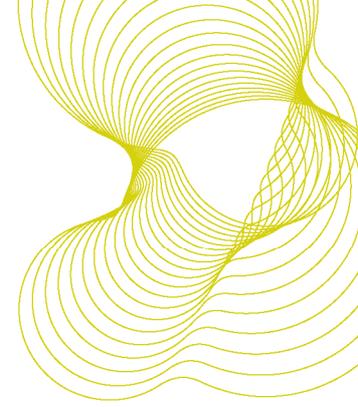
- Small power / plug in equipment
- Commercial kitchens/equipment, based on the compliance/use of CIBSE TM50: *Energy Efficiency in Commercial Kitchens*

Compliance is assessed on the basis of meeting the criteria for the equipment types that will be responsible for the majority of unregulated energy consumption in a building. Therefore, compliance will not necessarily be required for every individual piece or type of equipment present.

There will be a total of two credits available for this new issue.

5.14 Drying space

This issue is applicable to multi-residential accommodation buildings only. The requirements of this issue will remain the same as the existing 2008 version requirements and one BREEAM credit remains available.



6. Transport

The 2008 Transport issues have been re-structured as described below.

6.1 Public transport accessibility

The criteria and benchmarks remain unchanged and there will continue to be a total of between two and five BREEAM credits available for this issue (dependent on building type).

6.2 Cyclist facilities

A number of compliance notes have been removed, consolidated or re-worded to reduce the complexity of this issue.

The 50% reduction rule in city centres has been replaced by a compliance note allowing a 50% reduction where a specific number of the available credits under Tra01 Public Transport Accessibility have been achieved (the 50% reduction rule for rural locations remain).

A total between one and five credits is available for this issue (dependent on building type).

6.3 Pedestrian and cyclist safety

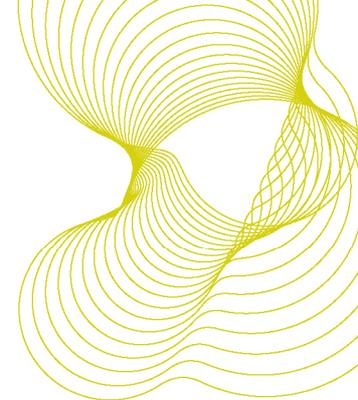
The criteria in this assessment issue form a part of the new Health and Wellbeing issue 'Safety and Security'. It will therefore cease to be a part of the Transport section as a standalone issue.

6.4 Travel information space

The criteria in this assessment issue will form a part of the new Management section issue 'Inclusive Design'. It will therefore cease to be a part of the Transport section as a standalone issue.

6.5 Deliveries and manoeuvring

The criteria in this assessment issue will form a part of the new Health and Wellbeing issue 'Safety and Security'. It will therefore cease to be a part of the Transport section as a standalone issue.



7. Water

The 2008 Water issues have been re-structured and consolidated in to the issue categories described below.

7.1 Water consumption

BRE Global are developing a methodology for calculating 'whole building' water consumption for the majority of non domestic BREEAM building types (currently a method exists only for office, industrial and schools versions). Alongside this new/updated methodology there are new benchmarks (or in the case of some UK schemes updated water consumption benchmarks), compliance against which will determine the number of BREEAM credits.

The methodology allows for the provision of water recycling (designed to appropriate British Standards), but for higher benchmark/credit levels, there is a minimum performance specification for fittings to avoid a situation where higher consumption is off-set by high rain/grey water recycling.

Exemplary performance levels have also been set for this issue and BREEAM's current Wat01 minimum standards have been maintained.

There will be a total of five credits available for this issue (plus one additional credit for exemplary performance).

7.2 Water monitoring

The current 2008 exemplary performance level criteria have become part of the standard criteria for achieving the available BREEAM credit for this issue. As such there will be no exemplary level criteria for Wat02.

There will be a total of one credit available for this issue.

7.3 New Issue: Water leak detection and prevention

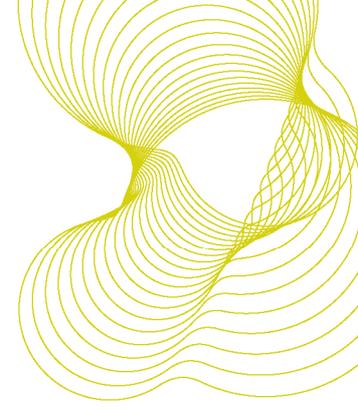
This issue consolidates the following existing 2008 issues and criteria:

- Wat 3 Major Leak Detection
- Wat 4 Sanitary Supply Shut off

The assessment criteria remain broadly unchanged and there will be a total of two credits available.

7.4 Water recycling

This issue is applicable to the BREEAM 2008 Retail, Education, Healthcare, Prisons, Courts, Bespoke schemes only.



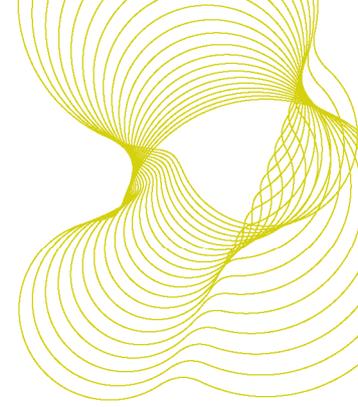
Suitable recognition of grey and rainwater recycling systems has been accommodated within the whole building water consumption methodology (as outlined under 'Water Consumption' above). As such, the available credits and criteria for the existing Water Recycling issue will be merged with Wat01 (Water Consumption). Water recycling will therefore cease to be a standalone BREEAM issue in the water section.

7.5 New Issue: Water efficient (process) equipment

This issue consolidates the following existing 2008 issues and criteria:

- Wat 6 Irrigation systems
- Wat 7 Water recirculation – vehicle wash

The assessment criteria remain broadly unchanged. (This follows a similar approach adopted for 'un-regulated' equipment in the energy section – detailed above). There will be one credit available for this issue.



8. Materials

The 2008 Materials issues have been re-structured as described below.

8.1 Life cycle impacts

This is a re-titled issue, previously 'materials Specification – major building elements' in BREEAM 2008.

The criteria and calculation procedures account for the differing levels of verification of LCA data currently available, and therefore robustness of any specified products declaration of environmental performance.

For offices and retail, floor finishes will be added to the elements list for assessment.

Where available (via the Green Guide online) for the elements assessed, the embodied CO₂ of those elements shall be reported via the BREEAM assessment and certification process.

There are between two and six credits available for this issue (dependent on building type).

8.2 Re-use of façade and structure

The scope of BREEAM 2011 New Construction is new buildings only (as described above). As a result of this and the proposed BREEAM scheme for non domestic refurbishment, these issues have been removed from the 'new construction' scheme. The benefits of reusing any existing structure or façade in a new development will still be recognised within the Mat01 and Wst02 assessment issues.

8.3 Responsible sourcing

The tier levels are in the process of being reviewed; specifically to recognise the difference in performance levels required for Very Good and Excellent ratings in the BES6001 Responsible Sourcing scheme. Any change i.e. new tier levels/points will also affect the classification of other schemes, specifically the timber certification schemes.

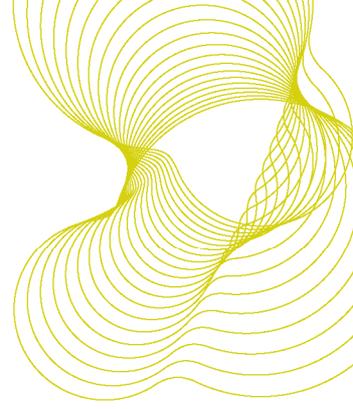
Hard landscaping will be included in the list of applicable elements. Hard landscaping materials will require assessment only where a building has a large area relative to the main building elements.

'Fittings' have been added to the list of applicable elements. The definition of fittings includes stairs, windows, floor finishes, and doors.

There will continue to be three credits available for this issue.

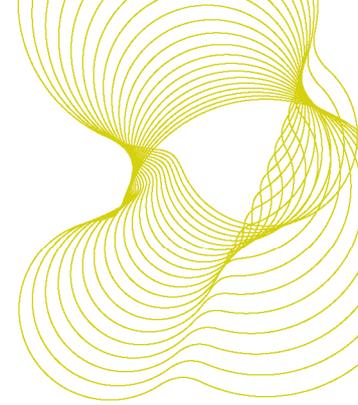
8.4 Insulation

This issue and its criteria remain unchanged and there will continue to be two credits available.



8.5 Designing for robustness

This issue and its criteria remain unchanged and there will continue to be one credit available.



9. Waste

The 2008 Waste issues have been re-structured and consolidated in to the issue categories described below.

9.1 Construction waste management

The construction waste benchmarks have been updated in accordance with latest industry performance (SMARTWaste data), to reflect levels of best practice.

A minimum standard of one credit has been set at the BREEAM Outstanding rating level for this assessment issue and an exemplary level of performance has been defined (with the potential reward of an innovation credit)

There will be four BREEAM credits for this issue, plus one additional credit for exemplary performance.

9.2 Recycled aggregates

The overall 25% requirement remains the same, however percentage requirements for specific applications/elements have been defined. These percentages act as a minimum requirement for recycled content for particular applications, i.e. if a particular application is to contribute towards achieving the overall requirement of 25% recycled aggregate for the project it will need to meet the minimum recycled content requirement.

An exemplary performance level of 35% recycled aggregate has been defined for this issue (as above this will include specific minimum requirements for certain building application/elements).

There will be one BREEAM credit available for this issue.

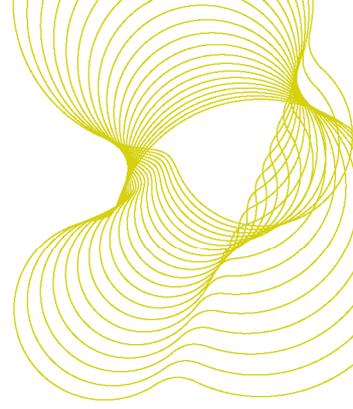
9.3 Operational waste

This issue consolidates the following existing 2008 issues and criteria:

- Wst 3 Storage of recyclable waste
- Wst 4 Compactor/baler
- Wst 5 Composting

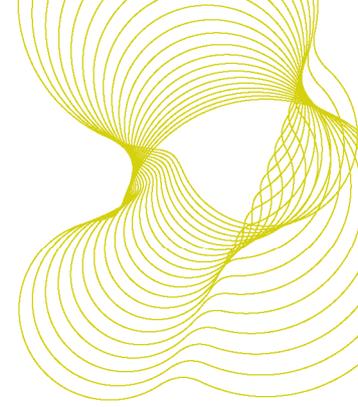
There is a greater amount of flexibility designed in to the assessment of this issue in terms of specifying facilities appropriate to the operational waste streams of the assessed building (i.e. less prescriptive criteria on space and number of facilities).

There will be one BREEAM credit available for this issue.



9.4 Speculative floor & ceiling finishes

The scope of this issue (office buildings only) has been expanded to include ceiling finishes as well as floor finishes. There will continue to be one BREEAM credit available for this issue.



10. Land Use & Ecology

The 2008 Land Use and Ecology issues have been re-structured and consolidated in to the issue categories described below.

10.1 Site selection

This issue consolidates the following existing 2008 issues and criteria:

- LE1 Re-use of land
- LE2 Contaminated land

The criteria remain unchanged and there will be a total of two credits available for this issue.

10.2 Assessment issues LE 3 – 6

BRE Global has collaborated with the independent BREEAM/CEEQUAL Ecology Task Group, established following publication of the UK Green Building Council's report on 'Biodiversity and the Built Environment' published in March 2009. This report recommended establishing a new method for assessing biodiversity in sustainability assessment tools to replace those currently used within BREEAM and CEEQUAL.

Work is still underway on a revised method and following further consultation it has not been possible to include this within BREEAM 2011. BRE Global is minded to adopt the proposed method and guidance as a means of assessing compliance with ecology issues in BREEAM, once development of the method is complete and consulted on.

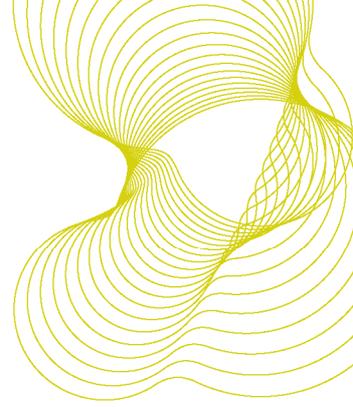
BRE Global has been liaising with members of the Ecology Task Group and IEEM and have agreed improvements to the existing criteria, as an interim position, These relate to the use and role of a suitably qualified ecologist and the checklist for defining land of low ecological value. Furthermore BRE Global has updated the default plant species data to reflect the data from the latest (2007) Countryside Survey.

The existing Land Use and Ecology assessment issue and criteria will therefore remain largely unchanged with exception of the above.

There will continue to be a total of eight BREEAM credits available for these assessment issues.

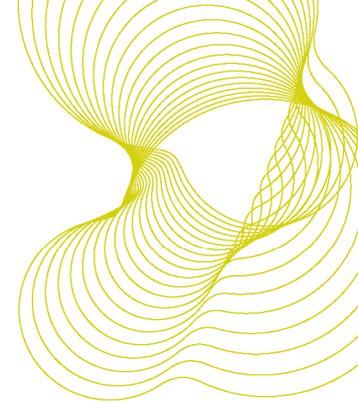
10.3 Consultation with students and staff

This issue applied to the BREEAM 2008 Education scheme only. The criteria for this issue form a part of the new 'Stakeholder Participation issue (Management section). Therefore, it ceases to be a standalone Land Use and Ecology assessment issue.



10.4 Local wildlife partnerships

This issue applied to the BREEAM 2008 Education scheme only. The criteria for this issue form a part of the existing 'Long term impact on Biodiversity' issue, as an additional item. Therefore, it ceases to be a standalone Land Use and Ecology assessment issue.



11. Pollution

The 2008 Pollution issues have been re-structured and consolidated in to the issue categories described below.

11.1 Refrigerants

This issue consolidates the following existing 2008 issues and criteria:

- Pol 1 Refrigerant GWP (Building Services)
- Pol 2 Preventing refrigerant leaks
- Pol 3 Refrigerant GWP (Cold Storage)

BREEAM will provide an alternative to Global Warming Potential as the measure/indicator of the impact of refrigerants. This alternative will quantify the direct, life cycle emissions from refrigerant specification, considering system design life and lifetime leakage rates of the specified refrigerants.

BRE Global has also changed the GWP threshold criterion from 5 to 10 to reflect recent re-classifications of the GWP of some refrigerants and new developments. This has been done with the intention of ensuring that refrigerants with a low GWP are the preferred option.

There will be three BREEAM credits available for this issue.

11.2 NO_x emissions

The requirement for assessing NO_x emissions resulting from hot water heating (as stipulate for the healthcare and education building types) is now applicable to multi-residential buildings.

There will continue to be three credits available for this issue.

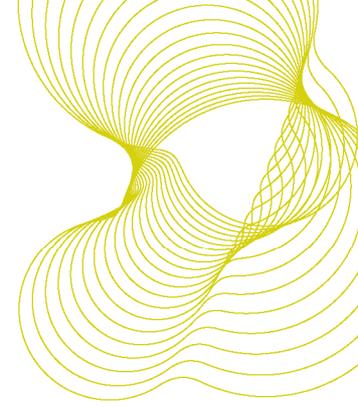
11.3 Surface water run-off

This issue consolidates the following existing 2008 issues and criteria:

- Pol 5 Flood Risk
- Pol 6 Minimising Watercourse pollution

The assessment criteria have been aligned with the 2010 version of the Code for Sustainable Homes (CSH), published earlier this year by CLG. Specifically changes include:

- Inclusion of requirements for volume run-off, water quality and flooding in the event of drainage system failure.



- Ensuring the flood risk and peak surface water run-off requirements relate to current best practice and policy and are equivalent to those adopted within the Code for Sustainable Homes (CSH).
- Adding an additional credit for the volume run-off and drainage system failure requirements.
- Adding a requirement for water quality regarding discharge up to 5mm to the watercourse pollution requirements in line with that included in the CSH.

There will be a total of five credits available for this issue.

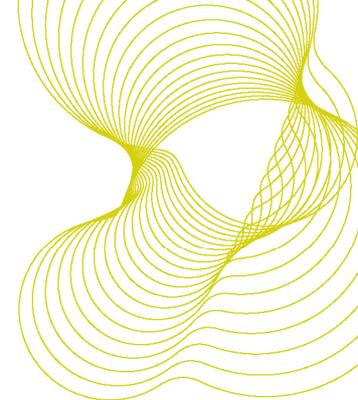
11.4 Reduction of night time light pollution

This issue and its criteria remain unchanged and there will continue to be one credit available.

11.5 Noise attenuation

The reference and use of BS4142 has been replaced with BS 7445:1991 Description and measurement of environmental noise.

There will continue to be one credit available for this issue.



12. General

12.1 BREEAM Accredited Professional

The credits available for the use of a BREEAM AP have been moved from the Innovation section to the new 'Sustainable Procurement' issue in the Management section. The number of credits for using a BREEAM AP has risen from two to three so as to ensure a similar relative value, in terms of overall percentage score achieved for appointing an AP (the section weightings of the Innovation and Management section differ, therefore it has been necessary to increase the credits available for using a BREEAM AP to maintain the relative value of doing so).

In response to feedback, the BREEAM AP criteria have been strengthened to ensure that the intended benefits are realised. Specifically, criteria focus on the AP's appointment at each of the key work stages and include the setting of BREEAM related targets, determined on the advice of the AP. These must be defined within the contracts between the client, the design team and principal contractor (as appropriate to the relevant stage) for credits to be awarded.

12.2 BREEAM Scoring, weightings and ratings

The environmental section weightings were updated in 2008 (as part of the development of the BREEAM 2008 version). As such they do not require updating for the 2011 version and remain unchanged. The BREEAM rating types also remain unchanged.

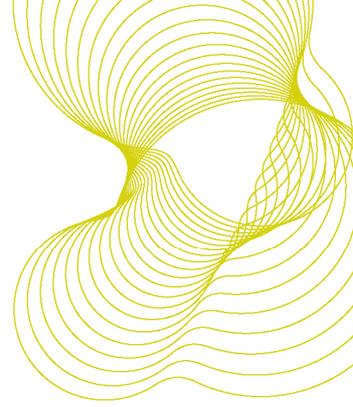
In BREEAM 2008, BRE Global set a condition that any building achieving an Outstanding BREEAM rating was required to undertake a BREEAM In-Use assessment within three years from the building's first operation in order to maintain the building's certified 'BREEAM Outstanding' status. In 2011, this condition has been extended to those buildings achieving a BREEAM Excellent rating.

BREEAM assessed and certified buildings will be listed on the Green Book Live listing website along with their certified 'life-cycle' stage BREEAM rating www.greenbooklive.com.

12.3 Assessment issues/areas not being developed for BREEAM 2011

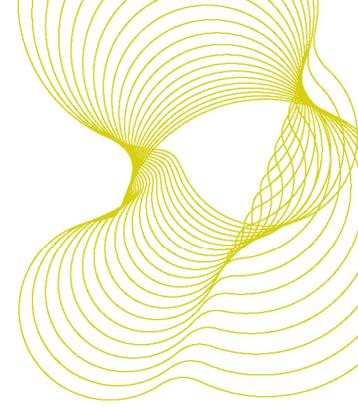
As part of the 2011 version update BRE Global consulted on and investigated the feasibility of developing new, specific assessment issues in a range of different areas. The following were explored, but not developed fully into standalone assessment issues:

- Climate change adaptation
- Flexible design and future proofing
- Sustainable aspects of fire safety/prevention (passive and active)
- Design for Materials Optimisation



Several of the above areas are recognised indirectly via existing assessment issues and BRE Global will explore further the above areas in terms of future inclusion and/or greater recognition in BREEAM. However, at the current time further research, development and testing is required to a) evaluate/quantify and demonstrate the sustainability benefits and therefore, b) define appropriate and robust criteria against which building performance can be defined and assessed.

Note: The above issues/areas are not exclusive i.e. BREG will continue to explore other relevant/appropriate issues for inclusion in future BREEAM versions and welcome any industry feedback/input.

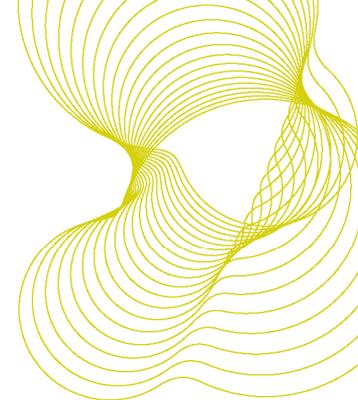


Appendix A – BREEAM 2011 Assessment Issue List

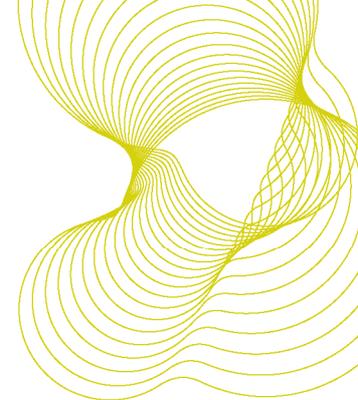
Please note: this list is subject to change prior to publication of the final BREEAM 2011 Scheme Document. Furthermore, not all issues and available credits necessarily apply to all building types covered by the method's scope.

BREEAM section and assessment issue		Available credits ³
Management		
Man01	Sustainable procurement	8
Man02	Responsible construction practices	2
Man03	Construction site impacts	5
Man04	Stakeholder participation	4
Man05	Service life planning and costing	3
Environmental section weighting		12%
Health and Wellbeing		
Hea01	Visual comfort	3-5
Hea02	Indoor air quality	6
Hea03	Thermal comfort	2
Hea04	Water quality	1
Hea05	Acoustic performance	2-4
Hea06	Safety and security	2
Environmental section weighting		15%
Energy		
Ene01	Reduction of CO ₂ emissions	15
Ene02	Energy monitoring	1-2

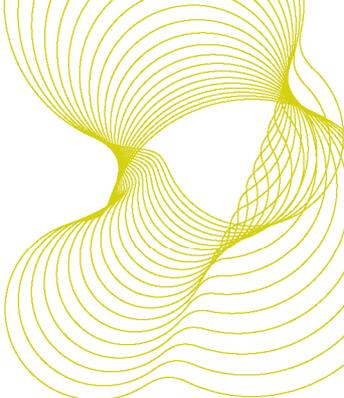
³ Where there is a range of credits this means that either the number of credits available varies by building type or, in the case of a zero, the issue does not apply to particular building type or does not apply to a building type which does not perform a function relevant to the impact covered by the assessment issue e.g. building does not have any laboratory space.



BREEAM section and assessment issue		Available credits³
Ene03	Low or zero carbon technologies	5
Ene04	Energy efficient external lighting	1
Ene05	Energy efficient cold storage systems	0-3
Ene06	Energy efficient transportation systems	0-2
Ene07	Energy efficient laboratory systems	0-5
Ene08	Energy efficient equipment (process)	0-2
Ene09	Drying space (building type specific)	0-1
Environmental section weighting		19%
Transport		
Tra01	Public transport accessibility	2-6
Tra02	Proximity to amenities	0-1
Tra03	Cyclist facilities	1-2
Tra04	Maximum car parking capacity	0-2
Tra05	Travel Plan	1
Environmental section weighting		8%
Water		
Wat01	Water consumption	5
Wat02	Water monitoring	1
Wat03	Water leak detection and prevention	2
Wat04	Water efficient equipment (process)	1
Environmental section weighting		6%
Materials		
Mat01	Life Cycle Impacts	2-6
Mat02	Hard landscaping and boundary protection	1
Mat03	Responsible sourcing of materials	3
Mat04	Insulation	2



BREEAM section and assessment issue		Available credits³
Mat05	Designing for robustness	1
Environmental section weighting		12.5%
Waste		
Wst01	Construction waste management	4
Wst02	Recycled aggregates	1
Wst03	Operational waste	1
Wst04	Speculative floor and ceiling finishes	0-1
Environmental section weighting		7.5%
Land Use and Ecology		
LE01	Site Selection	2
LE02	Ecological value of site and protection of ecological features	1
LE03	Mitigating ecological impact	2
LE04	Enhancing site ecology	2-3
LE05	Long term impact on biodiversity	2
Environmental section weighting		10%
Pollution		
Pol01	Refrigerants	3
Pol02	NO _x emissions from heating source	2-3
Pol03	Surface water run-off	5
Pol04	Reduction of night time light pollution	1
Pol05	Noise attenuation	1
Environmental section weighting		10%
Innovation		
Inn 01	Innovation	10 (max)



BREEAM section and assessment issue	Available credits³
Environmental section weighting	10% ⁴

⁴ This represents a maximum additional percentage which can be added to the final BREEAM score for complying with and achieving BREEAM innovation credits.