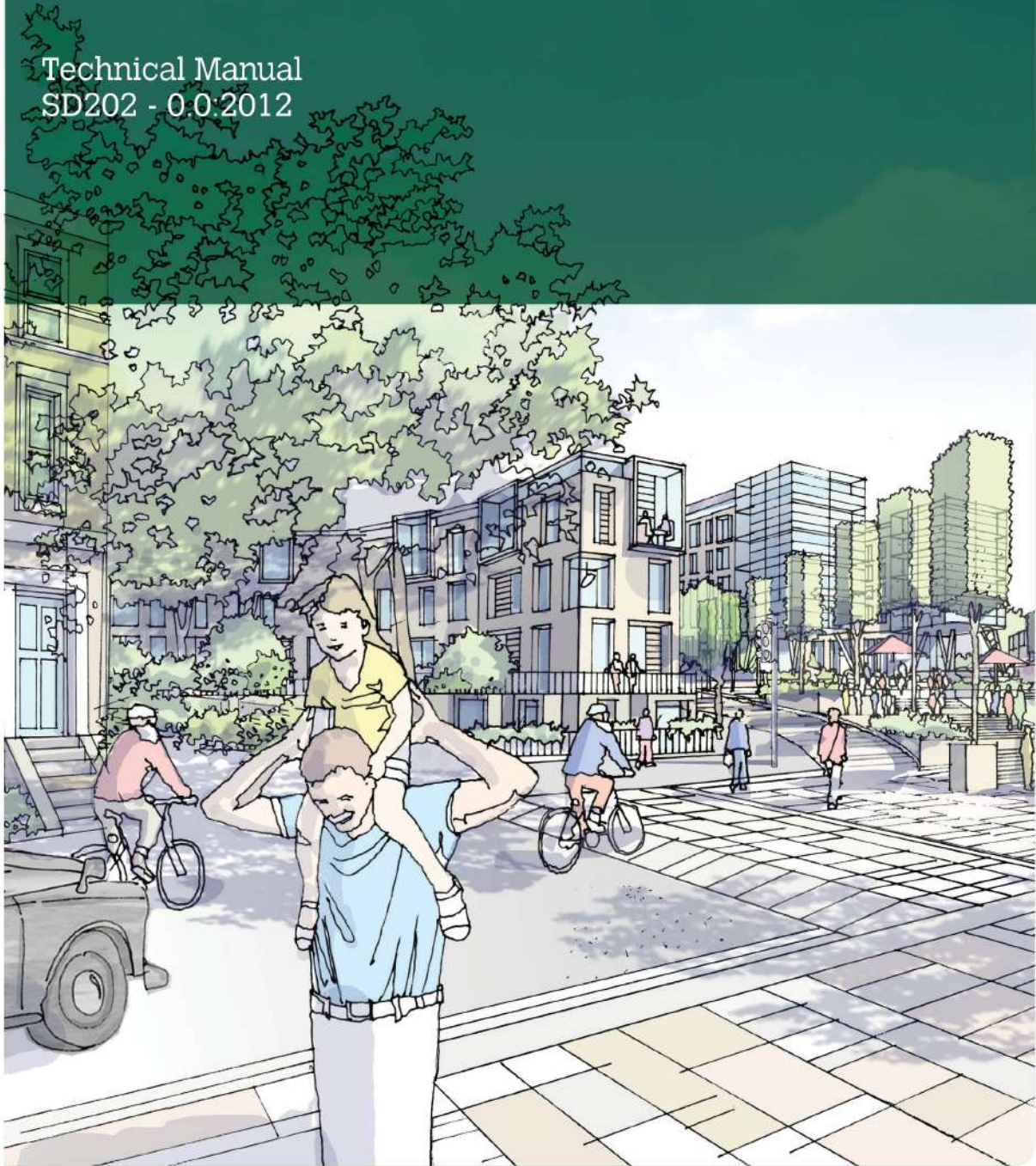


BREEAM Communities

Technical Manual
SD202 - 0.0:2012



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About BRE Global Limited

BRE Global Limited (part of the BRE Group) is an independent third party approvals body offering certification of fire, security and sustainability products and services to an international market.

BRE Global Limited's mission is to Protect People, Property and the Planet.

We aim to achieve this by:

1. Researching and writing standards
2. Testing and certification in the areas of fire, electronics, security and sustainability
3. Developing world leading sustainability assessment methods
4. Undertaking research and consultancy for clients and regulators
5. Promulgating standards and knowledge throughout the industry through publications and events
6. Developing and delivering training

BRE Global Limited's product testing and approvals are carried out by recognised experts in our world renowned testing laboratories.

BRE Global Limited is custodian of a number of world leading brands including:

1. BREEAM the world's leading sustainability assessment method for buildings
2. LPCB for approval of fire and security products and services

BRE Global Limited is a trading subsidiary of the BRE Trust, the registered research and education charity which owns the BRE Group.

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Governance

As a certification body accredited by the UK Accreditation Service (UKAS) BRE Global Limited maintains an open and accountable governance structure. The operation of BREEAM (and indeed all its assurance activities) is overseen by an independent Governing Body and a Standing Panel for Peer & Market Review.

The Governing Body represents stakeholder interests to ensure, amongst other things, that BRE Global Limited is acting independently and impartially, that it is operating its processes correctly, and that it treats its customers fairly.

The Standing Panel provides BRE Global with access to a range of experts who can review BRE Global Limited's standards and schemes to ensure their robustness from a scientific, technical and market perspective. The Panel also ensures that the development of the standards and schemes is open to external and independent scrutiny.

Quality Standards

To ensure our independence, competence and impartiality, BRE Global Limited is accredited by the United Kingdom Accreditation Service (UKAS) to:

1. BSEN ISO 17024 (Conformity assessment - General requirements for bodies operating certification of persons) for BREEAM assessors. This is to ensure that BREEAM assessors are technically competent, accurate and professional when offering BREEAM assessment services to their clients.
2. BSEN 45011 (General requirements for bodies operating product certification systems) for the complete BREEAM assessment process.

Furthermore BRE Global Limited is formally certified to ISO 9001 for all its BREEAM related activities.

Introduction

What is BREEAM?

First launched in 1990, BREEAM was the world's first environmental assessment method for new building designs. It uses a balanced scorecard approach with trade-able credits to enable the market to decide how to achieve optimum environmental performance for the project. Over the years BREEAM has been regularly updated and applied to an ever growing range of building types and designs, BREEAM is now applied in its various forms in over 50 countries.

In 2011 BREEAM committed to widening the group of stakeholders involved in its future development, both strategically and at the local level. In doing so it aims to be a vehicle for design support, as well as assessment, across all building life cycle stages and infrastructure, including the master planning of large scale developments. In BREEAM Communities the environmental assessment method is expanded to more holistically approach sustainability with consideration of the social and economic impacts of development. BREEAM is a continually evolving methodology. This places BREEAM in the forefront of sustainable development, with local schemes, processes, science and governance cooperating internationally under an overarching framework defined by core standards and core science.

Aims of BREEAM

BREEAM aims to ensure that its standards provide social and economic benefits whilst mitigating the impacts of the built environment. In doing so, BREEAM enables developments to be recognised according to their sustainability benefits and stimulates demand for sustainable developments.

Objectives of BREEAM

BREEAM has been developed to meet the following underlying principles:

1. Ensure quality through an accessible, holistic and balanced measure of sustainability impacts.
2. Use quantified measures for determining sustainability.
3. Adopt a flexible approach, avoiding prescriptive specification and design solutions.
4. Use best available science and practice as the basis for quantifying and calibrating a cost-effective performance standard for defining sustainability.
5. Seek economic, social and environmental gains jointly and simultaneously.
6. Provide a common framework of assessment that is tailored to meet the 'local' context including regulation, climate and sector.
7. Integrate construction professionals in the development and operational processes to ensure wide understanding and accessibility.
8. Adopt third party certification to ensure independence, credibility and consistency of the label.
9. Adopt existing industry tools, practices and other standards wherever possible to support developments in policy and technology, build on existing skills and understanding and minimise costs.
10. Use stakeholder consultation to inform ongoing development in accordance with the underlying principles and the pace of change in performance standards (accounting for policy, regulation and market capability).

What is BREEAM Communities?

Building on the high level aims and objectives of the various standards in the BREEAM family, BREEAM Communities is an independent, third party assessment and certification standard based on the established BREEAM methodology. It is a framework for considering the issues and opportunities that affect sustainability at the earliest stage of the design process for a development. The scheme addresses key environmental, social and economic sustainability objectives that have an impact on large-scale development projects.

BRE recognises that the selection of an appropriate site for development is a critical factor in determining how sustainable a new community will be. In the UK, the process of selecting sites for development is largely determined by developers, landowners and the planning system. Many decisions taken during the design and planning stage of a large development will have a fundamental impact on its sustainability. This scheme covers the assessment and certification of the designs and plans for a development at the neighbourhood scale or larger. A post-construction certification is not included in this assessment due to the long timescales for large developments. BREEAM may develop further stages of performance evaluations for communities at the in-use and regeneration stages.

There are three steps involved in the assessment of sustainability at the masterplanning level:

1. Following site selection there is a process whereby the developer must show the suitability and need for specific types of developments on the site as part of a planning application. Strategic plans for the wider area, usually contained within the local authority's planning documents, should indicate the housing, employment or services that are required. The new development will need to respond to these local requirements in order to receive planning permission. In this scheme the process described above is assessed under 'Step 1 - Establishing the principle of development'. During this step BREEAM assesses the degree to which the design team understand the opportunities to improve sustainability that necessitate a site-wide response, such as community-scale energy generation, transport and amenity requirements. All issues must be covered to ensure a holistic strategy for the site.
2. The next step in the masterplanning process determines the layout of the development. This will include detailed plans for how people will move around and through the site and where buildings and amenities will be located. This is called 'Step 2: Determining the layout of the development' in BREEAM Communities.
3. 'Step 3: Designing the details' involves more detailed design of the development including: the design and specification of landscaping, sustainable drainage solutions, transport facilities and the detailed design of the built environment. The latter includes the use of whole building assessment methods such as the building related BREEAM schemes.

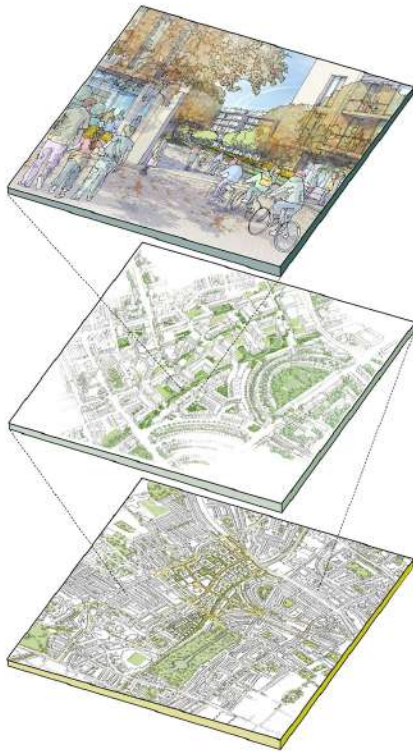


Figure 1 :Steps in the BREEAM communities process

Masterplanning is an iterative process characterised by developing plans, consulting stakeholders and revising plans. The steps and the organisation of this manual aim to assist project managers in linking masterplanning with the assessment process and ensure that issues are addressed at the appropriate time in the masterplanning process. However, it may be the case that activities are carried out in a different order to that presented in this technical manual. Design teams for smaller sites in particular may find that Steps 1 to 3 in the manual overlap considerably with less distinction between the actions taken at each stage.

The categories in BREEAM Communities

The issues within this manual are grouped into five impact categories which are considered through appropriate criteria in Steps 1 to 3 described above. It is difficult to categorise sustainability issues definitively, as they often affect all three dimensions of sustainability (social, environmental and economic). By assigning categories, BREEAM seeks to provide some clarity about the intention of each issue. For the purposes of scoring and rating, there are three additional categories that have been combined into one category in the manual. Social and economic wellbeing encompasses the three categories of social wellbeing, local economy and environmental conditions. A sixth category promotes the adoption and dissemination of innovative solutions. The categories are listed below with a brief description of the aims of their issues:

Governance (GO)

Addresses community involvement in decisions affecting the design, construction, operation and long-term stewardship of the development

Social and economic wellbeing (SE)

Addresses societal and economic factors affecting health and wellbeing such as inclusive design, cohesion, adequate housing and access to employment

Resources and energy (RE)

Addresses the sustainable use of natural resources and the reduction of carbon emissions

Land use and ecology (LE)

Addresses sustainable land use and ecological enhancement

Transport and movement (TM)

Addresses the design and provision of transport and movement infrastructure to encourage the use of sustainable modes of transport

Innovation (Inn)

Recognises and promotes the adoption of innovative solutions within the overall rating where these are likely to result in environmental social or economic benefit in a way which is not recognised elsewhere in the scheme.

Table 1 sets out the issues assessed under each category and the steps that they are considered in.

Table 1: BREEAM Communities 2012 steps, categories and assessment issues

Step 1	Step 2	Step 3
Governance		
GO01 – Consultation plan	GO02 – Consultation and engagement GO03 – Design review	GO04 – Community management of facilities
Social and economic wellbeing		
SE01 – Economic impact SE02 – Local demographic survey SE03 – Flood Risk Assessment SE04 – Noise pollution	SE05 – Housing provision SE06 – Delivery of services, facilities and amenities SE07 – Public realm SE08 – Microclimate SE09 – Utilities SE10 – Adapting to climate change SE11 – Green infrastructure SE12 – Local parking SE13 – Flood risk management	SE14 – Local vernacular SE15 – Inclusive Design SE16 – Light pollution SE17 – Labour and skills
Resources and energy		
RE01 – Energy strategy RE02 – Existing buildings and infrastructure RE03 – Water strategy		RE04 – Sustainable buildings RE05 – Low impact materials RE06 – Resource efficiency RE07 – Transport carbon emissions
Land use and ecology		
LE01 – Ecology strategy LE02 – Land use	LE03 – Water pollution LE04 – Enhancement of ecological value LE05 – Landscape	LE06 – Rainwater harvesting
Transport and movement		
TM01 – Transport assessment	TM02 – Safe and appealing streets TM03 – Cycling network TM04 – Access to public transport	TM05 – Cycling facilities TM06 – Public transport facilities

The importance of consultation and engagement

Consultation and engagement are widely recognised as an essential process in the development of a sustainable community. In BREEAM Communities there are many assessment issues that require some form of consultation with community representatives and other stakeholders. A consultation plan is required in the first step in the manual. By its nature, consultation is a variable activity. The scope and level of consultation employed is different depending on the development project. For this reason the scheme focuses on a robust consultation plan that is created by the design team to allow for different project priorities. The consultation plan sets out the timescales and method of consultation as well as who will be consulted and what they will be consulted about. This plan is implemented throughout steps 2 and 3. Table 2 sets out the issues in BREEAM Communities that relate to or require consultation.

Table 2: Assessment issues with a link to consultation

Step	Issue
Step 1	GO 01 - Consultation plan SE 02 - Demographic needs and priorities SE 03 - Flood risk assessment RE 02 - Existing buildings and infrastructure LE 01 - Ecology strategy
Step 2	GO 02 - Consultation and engagement GO 03 - Design review SE 06 - Delivery of services, facilities and amenities SE 07 - Public realm SE 11 - Green infrastructure SE 12 - Local parking LE 05 - Landscape TM 03 - Cycling network
Step 3	GO 04 - Community management of facilities SE 14 - Local vernacular TM 06 - Public transport facilities

How does BREEAM Communities fit with statutory and legislative requirements?

The issues in 'Step 1: Establishing the principle of development' cover assessments and strategies that are generally required for outline planning permission for larger developments in the UK. This does not mean that completion of Step 1 will ensure that all of the requirements for outline planning permission have been completed.

In order to simplify the assessment process as far as possible, BREEAM Communities makes use of the studies and strategies that are prepared to meet UK and EU legislative requirements by accepting them as a part of the evidence required to achieve credits. For example, the work done for an Environmental Impact Assessment would be appropriate evidence for many of the land use and ecology assessment issues. A full list of the documents typically required for planning applications that are also applicable to this scheme is available in Appendix A - The BREEAM evidential requirements. To

achieve a rating, the scheme requires the developer to go above and beyond the minimum requirements set out in national and international regulations and policies.

The issues in Step 1 do not replace legislative requirements such as the need to undertake Environmental Impact Assessments¹. Similarly, where BREEAM Communities is used to inform a large programme or plan, the scheme does not replace the requirements for Sustainability Appraisal or Strategic Environmental Assessment². Refer to for a visual of how these requirements relate to BREEAM Communities.

How does BREEAM Communities fit with building level assessments?

The assessment issues in BREEAM Communities address sustainability at the site-wide scale of large developments. Topics like energy and surface water run off can have a significant impact when they are planned on a larger scale than an individual building. For example, site-wide energy technologies such as district heating systems are viable where they service multiple buildings with different heat requirements across a 24 hour period. BREEAM Communities was created to ensure that these opportunities are considered at the early stages of the design process. Individual building design issues are not assessed at this stage. However, the assessment issues in BREEAM Communities link to BREEAM New Construction and the Code for Sustainable Homes.

Table 3 shows where evidence from BREEAM Communities issues can be used to support compliance with performance requirements at the building scale. It is often the case that the requirements in the building level assessments are more detailed and require additional information. Where certification will be sought under BREEAM New Construction or the Code for Sustainable Homes following a BREEAM Communities certificate, BREEAM recommend consulting the relevant technical manual as early as possible. This will allow the design team to consider how decisions made in the masterplanning stage may affect certification under building level assessments.

Table 3: Relationship between BREEAM Communities and building level assessments

BREEAM Communities assessment issues	BREEAM New Construction 2011 assessment issues	Code for Sustainable Homes 2010 assessment issues
GO01 – Consultation plan	Man 04 Stakeholder participation	N/A
GO02 – Consultation and engagement	Man 04 Stakeholder participation	N/A
SE03 – Flood Risk Assessment	Pol 03 Surface water run off	Sur 2 Flood risk

¹See European Directive 85/337/EEC on "The assessment of the effects of certain public and private projects on the environment" as amended by Directives 97/11/EC and 2003/35/EC.

²See European Directive 2001/42/EC (the Strategic Environmental Assessment or SEA Directive) "on the assessment of the effects of certain plans and programmes on the environment".

BREEAM Communities assessment issues	BREEAM New Construction 2011 assessment issues	Code for Sustainable Homes 2010 assessment issues
SE 04 – Noise pollution	Pol 05 Noise attenuation	N/A
SE 11 – Green infrastructure	Links to land use and ecology credits	Links to ecology credits
SE 12 – Local parking	Tra 04 Maximum car parking capacity Hea 06 Safety and security	N/A
SE 13 – Flood risk management	Pol 03 Surface water run off	Sur 1 Management of surface water run off from developments
SE 15 – Inclusive design	Man 04 Stakeholder participation	Links to Hea 4 Lifetime Homes Links to access requirements in: Was 1 Storage of Non-recyclable Waste and Recyclable Household Waste Was 3 Composting Hea 3 Private Space
SE 17 – Labour and skills	Man 02 Responsible construction practices	N/A
RE 01 – Energy strategy	Ene 01 Reduction of CO2 emissions Ene 04 Low and zero carbon technologies	Ene 1 Dwelling emission rate Ene 2 Fabric energy efficiency Ene 7 Low and zero carbon technologies
RE 02 – Existing buildings and infrastructure	Mat 01 Life cycle impacts	Mat 1 Environmental impact of materials Mat 2 Responsible Sourcing of Materials - Basic Building Elements Mat 3 Responsible Sourcing of Materials – Finishing Elements Was 2 Construction Site Waste Management
RE 04 – Low impact materials	Mat 02 Hard landscaping and boundary protection	N/A
RE 05 – Resource efficiency	Wst 01 Construction waste management Wst 02 Recycled aggregates	Was 2 Construction site waste management

BREEAM Communities assessment issues	BREEAM New Construction 2011 assessment issues	Code for Sustainable Homes 2010 assessment issues
RE06 – Transport carbon emissions	Tra 05 Travel plan	N/A
LE01 – Ecology strategy	LE02 Ecological value of site and protection of ecological features LE03 Mitigating ecological impact	Eco 1 Ecological value of site Eco 3 Protection of ecological features Eco 4 Change in ecological Value of Site
LE02 – Land use	LE01 Site selection	N/A
LE03 – Water pollution	Pol03 Surface water run off	Sur 1 Management of surface water run off from developments Man 3 Construction Site Impacts
LE04 – Enhancement of ecological value	LE04 Enhancing site ecology	Eco 2 Ecological enhancement
LE06 – Rainwater harvesting	Wat 01 Water consumption Pol03 Surface water run off	Wat 2 External water use Sur 1 Management of surface water run off from developments
TM01 – Transport assessment	Tra 05 Travel plan	N/A
TM02 – Safe and appealing streets	Tra 05 Travel plan	N/A
TM03 – Cycling network	Tra 05 Travel plan	N/A
TM04 – Access to public transport	Tra 01 Public transport accessibility Tra 05 Travel plan	N/A
TM05 – Cycling facilities	Tra 05 Travel plan	Ene 8 Cycle storage
TM06 – Public transport facilities	Tra 05 Travel plan	N/A

BREEAM Communities and viability

BREEAM Communities addresses the long-term economic success of a development through the assessment of a number of issues, including:

- 'SE 01 - Economic viability';
- 'SE 02 - Demographic needs and priorities'; and
- 'SE 17 - Labour and skills'.

Consideration of the economic impact of other factors (such as ecology, resources, transport and social wellbeing) is done through full assessments of site constraints and opportunities in relation to resources and services that extend beyond the development. These assessments are developed into strategies that guide decision making in the masterplanning process. The BREEAM Communities 2012 approach takes account of the economic effects of increasing demand on resources, services and land into the future as well as the direct and indirect costs associated with the impacts of climate change.

BREEAM Communities does not set guidelines for the development economics of a site. This is the responsibility of the local authority and the developer, as every development has unique circumstances that determine site level viability. BREEAM Communities is designed to be flexible whilst ensuring it drives real and measurable improvement in a non-prescriptive way. Flexibility is also achieved by limiting mandatory standards (as much as possible) to issues that are normally required for planning applications at this scale.

When to engage with the BREEAM Communities scheme

To get the most benefit from using BREEAM Communities it is important to appoint a BREEAM Communities Assessor early in the project. This will have a variety of benefits, including:

- ensuring integration of the methodology in the procurement process
- increasing the opportunity for cost savings by optimising the development's sustainability performance
- supporting the project managers to ensure that the BREEAM Communities requirements and timescales are fully integrated into the programme from the outset
- achieving the target rating without undue impacts on the flexibility of design decisions, budgets and potential solutions.

Figure 2 shows the relationship between BREEAM Communities, the design process (through the Urban Design Compendium and RIBA Outline Plan of Works) and statutory requirements. It is important to note that BREEAM Communities 2012 'Step 1' is not intended to align perfectly to outline planning. This is because each large development is different and local authorities require different evidence across the outline and detailed planning stages.

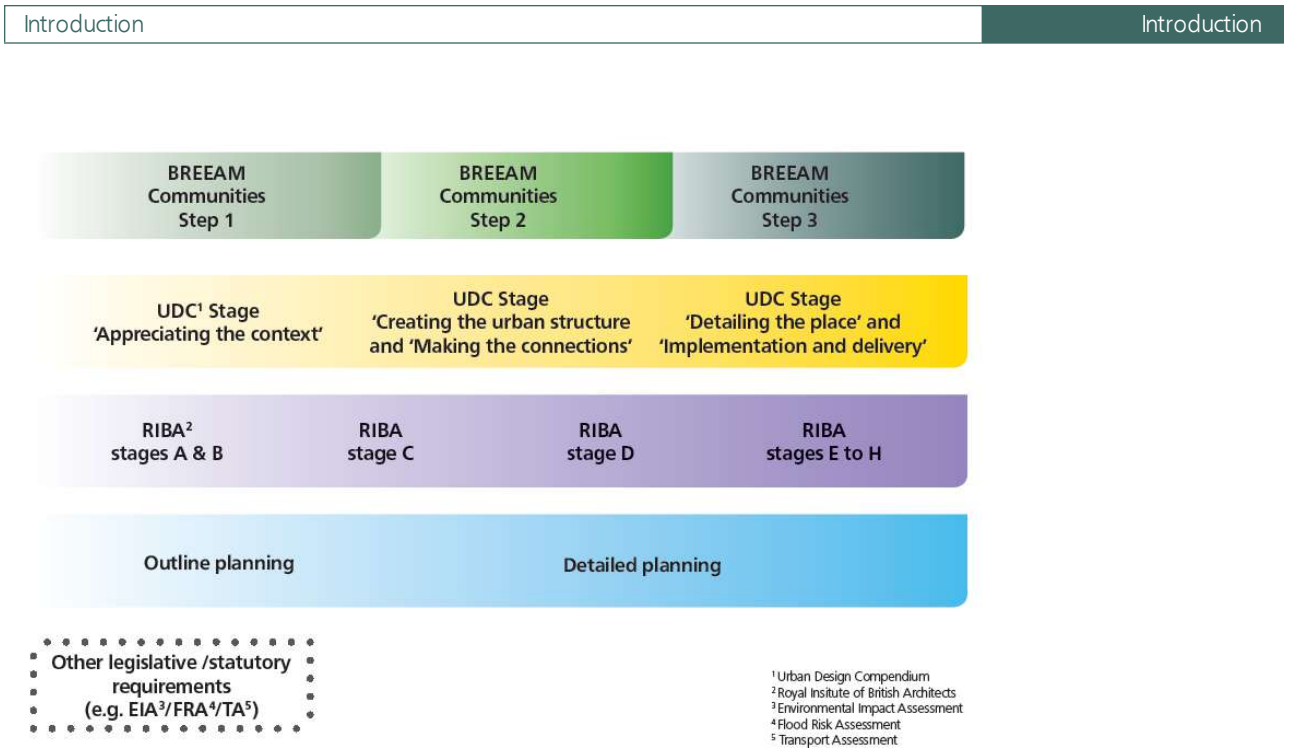


Figure 2: BREEAM Communities and the masterplanning process

How to use the BREEAM Communities scheme document

This BREEAM Communities Scheme Document is a technical document which has been created:

1. to enable qualified and licensed BREEAM Assessors to complete BREEAM assessments
2. as a reference for clients and members of the project team whose development proposal is being BREEAM assessed.

The scheme document is split in to eight parts:

1. Introduction
2. Scope of BREEAM Communities
3. Scoring and Rating proposals
4. Step 1: Establishing the principle of development
5. Step 2: Determining the layout of the development
6. Step 3: Designing the details
7. Innovation
8. Appendices

The Scope of BREEAM Communities section describes the types of development projects and stages of assessment that BREEAM Communities can be applied to. This can be used by clients and BREEAM Assessors to check whether this is the correct BREEAM scheme to use for their project.

The Scoring and rating proposals section outlines the BREEAM Communities rating level benchmarks and mandatory standards. It also describes the individual BREEAM assessment issues and BREEAM credits, including 'innovation credits' and how performance against these is calculated and expressed as a BREEAM Communities rating.

Steps 1 – 3 include a detailed description of each of the forty assessment criteria. Each issue defines the aims of the issue, a level of performance (the assessment criteria) against which the assessed development proposal demonstrates compliance, and the appropriate evidence required to achieve the corresponding number of available BREEAM credits.

The majority of BREEAM issues are optional, meaning that a client/design team can pick and choose which to target in order to build their BREEAM performance score and achieve the desired BREEAM rating. However, some BREEAM issues have mandatory standards meaning that to achieve a particular BREEAM rating certain minimum performance criteria must be achieved (refer to Scoring and rating proposals).

Each BREEAM issue is structured as follows:

Issue Information

This contains the step, category, assessment issue reference, title, whether the issue forms part of BREEAM's mandatory standards, and the total credits available.

Aim

This broadly outlines the aim of the issue.

Assessment Criteria

This section outlines the performance level benchmarks and criteria. Where the designs and plans for the development comply with the assessment criteria, as determined by the BREEAM Assessor, the relevant number of BREEAM credits can be awarded.

Compliance Notes

These notes provide additional guidance that supports the application and interpretation of the main assessment criteria, including how to assess compliance in particular situations. They are identified by a number that corresponds to the relevant assessment criterion.

Schedule of Evidence

This outlines typical examples of the type of information that must be provided by the design team/client and given to the BREEAM assessor. This enables the assessor to verify the development's performance against the assessment criteria and award the relevant number of BREEAM credits. In Step 1 – Establishing the principle of development there are two sets of evidence requirements. One set corresponds to the evidence that BRE expect all developments to have available at the early stages of masterplanning. The other set of evidence is required for the final assessment and allows credits to be achieved for the issues in Step 1.

Additional Information

This section contains information that supports the application of the assessment criteria, including relevant definitions and any other relevant information.

The Appendices provide supporting information such as references or guidance referred to in BREEAM Communities 2012. As the Technical Manual acts as a controlled document within the formal certification scheme, a Schedule of Changes appendix is also included (for use when the scheme document is amended and re-issued), Appendix B - Schedule of Changes to the Scheme Document.

Verifying a development's certified BREEAM rating

The BREEAM assessment process is one of evaluating a development's performance against the scheme and its criteria using an independent third party auditor (the BREEAM Assessor). The BREEAM certificate, issued by the National Scheme Operator (NSO - BRE Global in the UK), provides formal verification that the Assessor has completed an assessment of a development in accordance with the requirements of the scheme and its quality standards and procedures. A BREEAM certificate therefore provides assurance to any interested party that a development's BREEAM rating, at the time of certification, accurately reflects its performance against the BREEAM standard.

All BREEAM assessed and certified developments are listed on Green Book Live www.greenbooklive.com (along with a directory of licensed BREEAM Assessors). Green Book Live is a

free to use, publicly available online database designed to help specifiers and end users identify products and services that can help to reduce their impact on the environment.

Anyone wishing to verify the BREEAM rating of a development can do so by either checking a development's BREEAM certificate, which will contain the BREEAM certification mark, (see below) or by searching Green Book Live for a specific listing.



Figure 3: The BREEAM Certification mark

Production of a case study for BREEAM Outstanding rated developments

BREEAM ratings range from Pass to Outstanding. This is explained in the 'Scoring and rating proposals' section. The BREEAM Communities Excellent and Outstanding ratings represent best and exemplary practice in the design and planning of new communities. Developments that achieve these ratings can therefore serve as practical demonstrations of what can be achieved.

One of the most important aspects of the BREEAM Outstanding rating is that projects certified to this level act as exemplars for the industry. In order to do this a good-quality case study must be produced that other design teams and clients can refer to.

Prior to 'Final (Steps 2 and 3) Certification' the design team and client for the BREEAM Outstanding rated project will be asked to agree to provide either a case study of the assessed development or the relevant project information to allow BRE Global to produce a case study. This information will be requested at the final stage of certification and should be provided with the BREEAM Assessors 'Final (Steps 2 and 3) Certification' report.

BRE Global may publish the case study on the BREEAM website, Green Book live website and other BRE/BREEAM-related publications (as appropriate). The development will be certified to a BREEAM Excellent rating level where case study information is not provided (without good reason). Where a development is security sensitive BRE Global will, in discussion and agreement with the client, exercise flexibility in terms of the production of a case study, its content and dissemination.

Definitions

Design team

The inter-disciplinary team of professionals informing the design and planning of the development.

Detailed documentary evidence

'Detailed documentary evidence' may be any written documentation confirming compliance. Across the assessment, evidence include a mix of letters, briefs, strategies, site plans and specification text as appropriate. The assessor must satisfy themselves that the evidence is robust

and traceable. A letter of intent from the developer is not acceptable where the requirement is for 'detailed documentary evidence'.¹

Developer

This is an organisation or individuals with the responsibility for delivering the development being assessed.²

Rural

Any settlement or land that does not meet the definition of urban below. This definition applies to the expected post-development population.

Site boundary

This will normally be the land enclosed in the 'red line' planning application boundary.

Urban

A settlement with a population of 10,000 or more located within a tract of predominately built-up land. This definition applies to the expected post-development population.

Written confirmation from the developer

This must be in the form of a letter on company headed paper and must be signed by a senior individual who is deemed responsible for the development by the board of directors or equivalent senior management group of that developer. The letter must refer to specific criteria within the issues and explain how the criteria or design stage commitment have been satisfied. The letter must be explicit in terms of the assessment and the site under development.³

¹This definition is slightly amended from the Code for Sustainable Homes Technical Guide, Department for Communities and Local Government, November 2010

²This definition is slightly amended from the Code for Sustainable Homes Technical Guide, Department for Communities and Local Government, November 2010

³This definition is slightly amended from the Code for Sustainable Homes Technical Guide, Department for Communities and Local Government, November 2010

Scope of BREEAM Communities

The principles and assessment criteria in this scheme are likely to have the most beneficial results when applied to a moderate or large mixed-use development. An assessment can also be carried out for single-use developments (e.g. housing estates, retail or business parks, etc.); however, in these cases greater attention should be given to the impact of the development and the role of facilities and amenities beyond the site boundary.

Type and scale of development that can be assessed using the BREEAM Communities scheme

Given the variation in the description of 'moderate or large developments', BRE Global have prepared a list of questions to help developers, communities and local authorities determine the type and scale of developments that are suitable for a BREEAM Communities assessment at the design and planning stage.

To determine whether a BREEAM Communities assessment is appropriate for a development, consider the following questions. Answering 'yes' to the majority of these questions indicates that using this scheme could improve the sustainability of the development:

- Will the development place significant extra burdens on public transport systems or highways requiring extra capacity or new transport infrastructure (cycle/pedestrian routes, roads, parking, etc.)?
- Does the development include or make use of adjacent areas of public realm that occupants and visitors will use?
- Will the development lead to the enhancement, diversification or addition of local employment, social mix or ecological value?
- Will the development include dwellings that trigger additional capacity or require new provision of medical centres, schools, retail centres, places of religious worship, or other similar facilities and services?
- Is the development of a scale that could create opportunities for community level utility provision including energy, water and waste services or where there would be potential for linking to other new or existing developments in the area to make such options viable?
- Is the development likely to have a significant impact on existing communities?

Developments not covered under BREEAM Communities

Single building or small developments that do not have a significant impact on the issues above may not be appropriate for assessment under BREEAM Communities. Use of the BREEAM New Construction 2011 scheme without BREEAM Communities may be more appropriate to deal with these developments.

Large development life cycle stages and phases that are covered by BREEAM Communities

This BREEAM Communities scheme can be used to assess and rate the environmental, social and economic impacts arising from large developments in the design and planning stages. Further stages of the BREEAM Communities scheme may be developed to address the life cycle stages of

communities in use and undergoing regeneration. This scheme document leads to the following two certification stages:

1. Interim (Step 1) BREEAM Communities certificate
2. Final (Steps 2 and 3) BREEAM Communities certificate and rating

On completion of the issues in 'Step 1: Establishing the principle of development' BREEAM requires that the evidence verifying performance against the assessment criteria is submitted for quality assurance. If all of the mandatory criteria have been achieved BRE Global will issue a certificate for Step 1. An assessment rating is not given at this point. The certificate is only an indication of whether the assessment report has met the Step 1 requirements.

The Interim (Step 1) certificate cannot be used in place of the final certificate as there is not enough detail at this stage to measure the development's performance against key sustainability objectives.

The consideration of environmental, social and economic sustainability issues at an early stage in the development process will assist in achieving high-level sustainability objectives, may reduce the overall costs for a proposed development project, and will reduce the costs of assessment against BREEAM building standards.

The Final (Steps 2 and 3) certificate measures the detailed commitments that most large-scale developments will be required to make for detailed planning permission. It covers the issues in Steps 2: Determining the layout of the development and Step 3: Designing the detail. There is no certification of Step 2 alone.

The Final (Steps 2 and 3) certificate is the only stage of assessment and certification that provides an overall sustainability rating against the commitments of a specific development project as well as scores for each of the assessment categories.

The issues in Step 1 are broadly related to the outline planning stage of a large development. However, there may be specific requirements for outline planning that carry into Step 2 (refer to Figure 2: BREEAM Communities and the masterplanning process). If a development has already received outline planning consent and would like to begin the BREEAM Communities assessment, all of the mandatory criteria in Step 1 will need to be achieved. It should be noted that BREEAM Communities should be started at the earliest possible stages in the design and planning process. Beginning an assessment after outline planning may have an adverse effect on the overall project costs and the potential rating under BREEAM Communities. Any constraints resulting from decisions made in the work leading to outline planning cannot be used as justification for not achieving mandatory criteria in the manual.

Some large masterplans are divided into plots that are phased across a long timescale. To ensure a manageable assessment process and the achievement of final certification to meet statutory or project requirements, assessors may choose to apply this scheme to each masterplan phase. In this case there are two options:

1. each phase could undergo assessment separately; or
2. the whole site could be assessed under 'Step 1' and separate phases could be assessed at the appropriate time using 'Steps 2 and 3'.

Please contact the BREEAM Helpdesk at breem@bre.co.uk to register a scheme that follows the latter option.

BREEAM Communities Bespoke

The BREEAM Communities scheme can be used to assess the sustainability impacts (social, environmental and economic) of a site-wide development in accordance with this document in England, Scotland, Wales and Northern Ireland. Assessments in most other countries will need to

undergo a bespoke assessment process to ensure that criteria are appropriate for the context within which the development is being carried out.

In some countries BRE Global has licensed national scheme operators to operate national BREEAM affiliated schemes in place of the BREEAM Bespoke service. Details of these schemes can be found on the BREEAM website at www.breeam.org.

Further information on the BREEAM Communities Bespoke scheme is available via the above website and through the BREEAM Helpdesk: breeam@bre.co.uk.

Scoring and rating proposals

There are a number of elements that determine the overall performance of a development assessed using BREEAM Communities. These are as follows:

1. the BREEAM rating level benchmarks
2. the mandatory BREEAM standards
3. the BREEAM assessment issues and credits
4. awarding credits for innovation
5. the category and assessment issue weightings.

How these elements combine to produce a BREEAM rating is summarised on the following pages. This is followed by a description and example describing the methodology for calculating a rating.

BREEAM rating benchmarks (final certificates only)

The BREEAM rating benchmarks for the BREEAM Communities 2012 scheme are as follows:

Table 4: BREEAM Communities rating benchmarks

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

The BREEAM rating benchmark levels enable a client or other stakeholder to compare an individual developments performance with other BREEAM rated developments.

An unclassified BREEAM rating represents performance that is non-compliant with BREEAM. This may be through a failure to meet either the BREEAM mandatory standards of performance for key sustainability issues or the overall threshold score required for formal BREEAM certification. No certificate will be issued for unclassified assessments and they are not listed on Green Book Live.

Mandatory standards

To maintain a flexible system BREEAM adopts a 'balanced score-card' approach to the assessment and rating of a development's performance. This means that non-compliance in one area can to some extent be off-set through compliance in another to achieve the target BREEAM rating, subject to achieving the required overall percentage score.

However, to ensure that performance against fundamental sustainability issues is not overlooked in pursuit of a particular rating, BREEAM sets mandatory standards of performance across the five categories in BREEAM Communities (see Table 5: Mandatory BREEAM Communities standards). All of the issues in 'Step 1: Establishing the principle of development' are mandatory. This means that the development must achieve the mandatory minimum criteria for all of these issues. Please note that these are not to be seen as a minimum set of requirements for defining a sustainable development nor do they represent best practice for a BREEAM rating level at final certification. Table 5 sets out the mandatory criteria at Steps 1 and 2. There are no mandatory criteria in Step 3.

BRE Global recognise that every development site has a unique set of opportunities and constraints. The decision to make the Steps 2 and 3 issues optional (with the exception of GO02 – Consultation and engagement) reflects this reality and builds flexibility into the scheme.

A development proposal cannot achieve a BREEAM Communities certificate and rating without addressing all of the mandatory criteria. Where these criteria are not met the development proposal will not achieve a Pass.

Table 5: Mandatory BREEAM Communities standards

Step	Identifier	Assessment issue	Criteria
Step 1	GO01	Consultation plan	1–3
	SE01	Economic impact	1
	SE02	Demographic needs and priorities	1–2
	SE03	Flood risk assessment	1–3
	SE04	Noise pollution	1
	RE01	Energy strategy	1
	RE02	Existing buildings and infrastructure	1–2
	RE03	Water strategy	1–2
	LE01	Ecology strategy	1–6
	LE02	Land use	1–2
	TM01	Transport assessment	1–3
	Step 2	GO02	Consultation and engagement
Step 3	None		

BREEAM assessment issues and credits

BREEAM Communities consists of forty individual assessment issues spanning five technical categories, plus a sixth category called 'Innovation' (described below). Each issue addresses a specific large-scale development related sustainability impact and is grouped within one of the five main technical categories: governance; land use and ecology; resources and energy; social and economic wellbeing; and transport and movement. Each of the assessment issues has a number of credits assigned to it which are awarded where the development design and plan meet the performance levels defined for that issue.

It is worth noting that, in addition to the category scores and overall BREEAM rating, verified performance against individual assessment issues also provides users with a credible set of key sustainability performance indicators for a range of development impacts. In this respect, it is possible to use the BREEAM Communities method to define performance levels in support of specific organisational policy objectives for individual sustainability issues. Care should be taken when setting planning and design targets using individual issues and credit levels in this way as it can limit design flexibility and have an impact on project costs.

Awarding credits for innovation

It is one of the aims of BREEAM to support innovation within the planning, development and construction industries. 'Innovation credits' provide additional recognition of a development that innovates in the field of sustainable performance, above and beyond the level that is currently recognised and rewarded within the standard BREEAM issues. 'Innovation credits' therefore enable clients and design teams to boost their development's BREEAM performance and help support the market for new and innovative technologies and practices.

An additional 1% can be added to the final category score to which the innovation is most relevant. The maximum number of 'Innovation credits' that can be awarded for any one development proposal assessed is 7. Therefore, the maximum available score achieved for innovation is 7%. 'Innovation credits' can be awarded regardless of the final BREEAM rating.

To achieve an innovation credit the BREEAM Assessor in connection with the project registered for BREEAM Communities assessment is required to send an application to BRE Global regarding a particular development feature, technology, system or process recognised as 'innovative'. If the application is successful and subsequently development compliance is identified, an 'innovation credit' can be awarded.

Category and assessment issue weightings

The aim of the categories is an important aspect of the BREEAM Communities weighting system. Category weightings were developed by determining the impact of each category against each of the three aspects of sustainability: social, economic and environmental. The three aspects of sustainability are equally valued in the manual. Once the category weightings were derived, the individual assessment issues were weighted by prioritising the importance of each assessment issue in terms of its impact on the overall aim of the category.

The 'Social and economic wellbeing' category was broken down into three sub-categories for weighting purposes. This is to ensure the weightings are based on clearly defined aims. These are local economy, social wellbeing and environmental conditions. Table 6 shows the category aims and weightings.

Table 6: BREEAM Communities 2012 category aims and weightings

Category	Aim	Weighting
Governance	To ensure community involvement and leadership in running the development.	9.3%
Social and economic wellbeing	Local economy: To create a healthy economy (employment opportunities and thriving business). Social wellbeing: To ensure a socially cohesive community. Environmental conditions: To minimise the impacts of environmental conditions on the health and wellbeing of occupants.	14.8% 17.1% 10.8%
Resource and energy	To reduce carbon emissions and ensure wise use of natural resources.	21.6%

Category	Aim	Weighting
Land use and ecology	To improve ecological biodiversity.	12.6%
Transport and movement	To create an efficient and safe system for movement.	13.8%

Each of the forty assessment issues has an individual weighting and a variable number of credits. This means that the value of credits varies in each issue depending on the weighting of the assessment issue. The following tables outlines the individual weightings for each assessment issue and the value of each credit in that assessment issue.

Table 7: Governance assessment issue weightings

Governance assessment issue	Weighting	Credits available	Value of each credit
GO01 - Consultation plan	2.3%	1	2.3%
GO02 - Consultation and engagement	3.5%	2	1.7%
GO03 - Design review	2.3%	2	1.2%
GO04 - Community management of facilities	1.2%	3	0.4%

Table 8: Social and economic wellbeing assessment issue weightings

Category	Social and economic wellbeing issues	Weighting	Credits available	Value of each credit
Local economy	SE01 - Economic impact	8.9%	2	4.4%
Local economy	SE 17 - Labour and skills	5.9%	3	2%
Social well-being	SE02 - Demographic needs and priorities	2.7%	1	2.7%
Social well-being	SE05 - Housing provision	2.7%	2	1.4%
Social well-being	SE06 - Delivery of services, facilities and amenities	2.7%	7	0.4%
Social well-being	SE07 - Public realm	2.7%	2	1.4%

Category	Social and economic wellbeing issues	Weighting	Credits available	Value of each credit
Social well-being	SE09 - Utilities	0.9%	3	0.3%
Social well-being	SE11 - Green infrastructure	1.8%	4	0.5%
Social well-being	SE12 - Local parking	0.9%	1	0.9%
Social well-being	SE14 - Local vernacular	0.9%	2	0.5%
Social well-being	SE15 - Inclusive design	1.8%	3	0.6%
Environmental conditions	SE03 - Flood risk assessment	1.8%	2	0.9%
Environmental conditions	SE04 - Noise pollution	1.8%	3	0.6%
Environmental conditions	SE08 - Microclimate	1.8%	3	0.6%
Environmental conditions	SE10 - Adapting to climate change	2.7%	3	0.9%
Environmental conditions	SE13 - Flood risk management	1.8%	3	0.6%
Environmental conditions	SE16 - Light pollution	0.9%	3	0.3%

Table 9: Resources and energy assessment issue weightings

Resources and energy assessment issue	Weighting	Credits available	Value of each credit
RE01 - Energy strategy	4.1%	11	0.4%
RE02 - Existing buildings and infrastructure	2.7%	2	1.4%

Resources and energy assessment issue	Weighting	Credits available	Value of each credit
RE03 - Water strategy	2.7%	1	2.7%
RE04 - Sustainable buildings	4.1%	6	0.7%
RE05 - Low impact materials	2.7%	6	0.5%
RE06 - Resource efficiency	2.7%	4	0.7%
RE07 - Transport carbon emissions	2.7%	1	2.7%

Table 10: Land use and ecology assessment issue weightings

Land use and ecology assessment issue	Weighting	Credits available	Value of each credit
LE01 - Ecology strategy	3.2%	1	3.2%
LE02 - Land use	2.1%	3	0.7%
LE03 - Water pollution	1.1%	3	0.4%
LE04 - Enhancement of ecological value	3.2%	3	1.1%
LE05 - Landscape	2.1%	5	0.4%
LE06 - Rainwater harvesting	1.1%	3	0.4%

Table 11: Transport and movement assessment issue weightings

Transport and movement assessment issues	Weighting	Credits available	Value of each credit
TM01 - Transport assessment	3.2%	2	1.6%
TM02 - Safe and appealing streets	3.2%	4	0.8%
TM03 - Cycling network	2.1%	1	2.1%
TM04 - Access to public transport	2.1%	4	0.5%
TM05 - Cycling facilities	1.1%	2	0.5%

Transport and movement assessment issues	Weighting	Credits available	Value of each credit
TM06 - Public transport facilities	2.1%	2	1.1%

Calculating an assessment score

A BREEAM Assessor must determine the BREEAM rating using the appropriate assessment tool. The process of determining a BREEAM rating is outlined below and an example calculation is included in Appendix D. The table in Appendix D illustrates how the scoring system works in practice.

1. For each assessment issue the number of credits awarded must be determined by the assessor in accordance with the criteria (as detailed in the technical sections of this document).
2. The credits achieved in each assessment issue are then multiplied by the corresponding individual credit weighting. This gives the assessment issue weighted score.
3. In order to determine the category score, the individual assessment issue weighted scores for all issues in any category are added together.
4. An additional 1% can be added to the final score of the relevant category for each 'innovation credit' achieved (up to a maximum of 7%).

See calculation in Appendix D - Example calculation of a BREEAM Communities score and rating

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Step 1: Establishing the principle of development

The first step in BREEAM Communities assesses the issues and opportunities on the site and requires consideration of how the development will impact on the wider community. **All of the issues in this section are mandatory** because they are the fundamental principles that will underpin decisions for how the development will be designed.

At this stage, a site is already selected for development. Detailed surveys regarding flood risk, ecology, energy, transport and the local economy will be conducted. The surveys will result in strategies or commitments made by the developer that will be implemented in detail in Steps 2 and 3. For this reason, the evidence requirements in Step 1 are divided into two sections. Some evidence of preliminary plans and commitments is required at this stage; however, the implementation of these commitments is assessed at the Final (Steps 2 and 3) assessment.

The issues in 'Step 1' are relevant to the requirements of an outline planning application. Therefore, there is unlikely to be an additional burden of information required in order to achieve the mandatory assessment criteria set out in this step of BREEAM Communities. Refer to the Introduction section to see how this relates to statutory requirements through environmental impact assessments and strategic environmental assessments.

GO 01 – Consultation plan

Step	Category	Mandatory standards	No. of credits available
1	Governance	Yes (criteria 1 to 3)	1

Aim

To ensure the needs, ideas and knowledge of the community are used to improve the quality and acceptability of the development throughout the design and construction process.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. Members of the local community and appropriate stakeholders have been identified for consultation.
2. A consultation plan is in place and the local authority has been consulted about the plan. Consultation should take place early enough in the process for the community and stakeholders to influence key decisions. This may be during the pre-application stage of the planning system. The plan includes timescales and methods of consultation, clearly identifying:
 - at which points the community and other stakeholders could usefully contribute
 - how they will be kept informed about progress on the project
 - how and when feedback will be provided about how consultation input will be taken into account
 - a named person who is responsible for delivering the consultation activities and championing the outcomes in the project team together with their contact details
 - the approach that will be taken to target and provide for minority and 'hard to reach' groups (e.g. elderly, youth, disabled and those with limited time to participate).
3. The minimum consultation content is covered (see compliance notes).

One Credit

4. Criteria 1 to 3 are achieved.
5. A facilitated community consultation method will be used to engage the community on specific aspects of the design.

Compliance Notes

Ref	Terms	Description
CN1	Members of the local community and appropriate	This includes but is not limited to the following: <ul style="list-style-type: none"> — actual/intended occupants (if known) — if the site is near one or more existing communities, representative consultation groups from the existing com-

Ref	Terms	Description						
	stakeholders. See criterion 1	<p>munities</p> <ul style="list-style-type: none"> — if the site is a new development and there are no existing community representatives, representatives are sought from surrounding communities or from a similar type/size of project — potential users of any on-site or shared facilities (e.g. operators of clubs and community groups) — representatives from the local authority — local or national historic/heritage, ecology, cultural, residents, business groups, etc. (over and above any requirements relating to statutory consultees) — specialist service and maintenance contractors/representatives where the known building functions have particular technical requirements in complex environments (e.g. buildings containing laboratories). 						
CN2	Minimum consultation content. See criterion 3	<p>The consultation plan should detail the level of consultation for different stakeholders, when consultation will take place and the methods that will be used. The consultation should consider the following as a minimum:</p> <ul style="list-style-type: none"> — impacts of the development upon the surrounding community in construction and following completion (including the protection of areas of historic/heritage value) — design quality — management, maintenance or operational issues — opportunities for shared use of facilities and infrastructure with the existing or adjacent community. <p>There are a range of other assessment issues in BREEAM Communities, across Steps 1, 2 and 3 that require community and stakeholder consultation. Not all of these issues are mandatory; however, if 'credits' are sought for these issues, consultation must be undertaken and considered when preparing the consultation plan. Please refer to these issues and their compliance notes for a full explanation of the consultation requirements. The issues are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #2c4e4e; color: white;"> <th>Step</th> <th>Issue</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">Step 1</td> <td>SE02 – Demographic needs and priorities SE03 – Flood Risk Assessment RE02 – Existing buildings and infrastructure LE01 – Ecology strategy</td> </tr> <tr> <td style="vertical-align: top;">Step 2</td> <td>GO02 – Consultation and engagement GO03 – Design review SE06 – Delivery of services, facilities and amenities SE07 – Public realm SE11 – Green infrastructure SE12 – Local parking</td> </tr> </tbody> </table>	Step	Issue	Step 1	SE02 – Demographic needs and priorities SE03 – Flood Risk Assessment RE02 – Existing buildings and infrastructure LE01 – Ecology strategy	Step 2	GO02 – Consultation and engagement GO03 – Design review SE06 – Delivery of services, facilities and amenities SE07 – Public realm SE11 – Green infrastructure SE12 – Local parking
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Step	Issue							
	LE05 – Landscape TM03 – Cycling network							
Step 3	GO04 – Community management of facilities SE 14 – Local vernacular TM06 – Public transport facilities							
CN3	Facilitated community consultation method. See criterion 5	<p>There are many methodologies available to engage communities about the formulation and design of development proposals. Where 'credits' are sought for this criteria, the following principles must be adhered to:</p> <ul style="list-style-type: none"> — the consultation exercise has a clearly communicated purpose — participants understand how their views will be used in plans for the development — expectations are set as to which options are open for discussion and revision — reasonable advance notice is given to potential participants of the consultation exercise — efforts are made to include hard-to-reach groups — jargon is avoided during the consultation exercise — the consultation is facilitated by a person or organisation that is independent from the developer. A local authority can be a facilitator. 						

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1 – 3	A copy of the consultation plan.	Evidence that the consultation has been carried out through the satisfaction of criteria 1 – 3 in GO02 – Consultation and engagement
5	Documentation outlining the facilitated community consultation method that will be used.	Documentation showing the output of the facilitated community consultation exercise.

Additional Information

Where credits are to be sought under BREEAM New Construction MAN 04 Stakeholder participation, please refer to the minimum consultation content for specific building types.

SE 01 – Economic impact

Step	Category	Mandatory standards	No. of credits available
1	Social and economic wellbeing	Yes (criterion 1)	2

Aim

To increase economic wellbeing in the wider area by ensuring that the development attracts inward investment, creates jobs and complements and enhances existing economic activity in the local area.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. An economic study is completed and clearly identifies the needs and opportunities within the local area and surrounding economy. This study should be focused on understanding how the proposed development can enhance the economic wellbeing of future occupants. It should also ensure that the development complements and enhances existing economic activity in the local area. For solely domestic developments this study should identify potential employment and training opportunities for future residents.

One credit

2. Criterion 1 is achieved.
3. There will be no net reduction in employment as a result of the development.
4. The infrastructure and/or facilities within the proposed development will contribute to and/or complement existing business in the area.
5. The economic study includes a skills gap analysis for the local area.

Two credits

6. Criteria 1 to 5 have been achieved.
7. The development will have a positive net gain on employment in the region and local area, through the creation of new employment and/or supporting/enhancing earnings and/or improving productivity.
8. The developer will partner with a training provider to provide training opportunities for local residents and businesses.
9. Opportunities to attract inward investment to the area are included in the development proposal as identified in the economic study or local/sub-regional economic strategies. This refers to infrastructure or development uses that have been identified as lacking in the area, such as transport infrastructure.

Compliance Notes

Ref	Terms	Description
CN1	Economic Study. See criterion 1	<p>The economic study must focus on the priorities of the local authority. The study should include:</p> <ul style="list-style-type: none"> — business in existing area — employment and unemployment rates — economic activity rates — location of business types (existing and proposed) — provision of facilities (services and social and economic infrastructure) — a map of the area surrounding the development highlighting the types of existing business units — the outcome of the demographic profiles and future trends work done for 'SE02 - Demographic needs and priorities'. <p>Employment and training opportunities should be informed by the demographic profile of the area with consideration to education levels of the population. The developer may be able to obtain relevant information for the economic study from the local planning authority.</p>
CN2	Infrastructure and/or facilities. See criterion 4	<p>This could include:</p> <ul style="list-style-type: none"> — transport infrastructure — communications or power infrastructure — community facilities — technical or industrial facilities
CN3	Employment opportunities provided by the development. See criteria 3 & 7	<p>Employment opportunities can include the following:</p> <ul style="list-style-type: none"> — temporary and permanent jobs — part-time and full-time jobs — apprenticeships. <p>Employment can include any of the jobs provided during the construction of the site. Refer to 'SE 17 - Labour and skills'.</p>
CN4	Training provider. See criterion 8	<p>A training provider could include (but is not limited to):</p> <ul style="list-style-type: none"> — technical colleges — universities — higher educational institutions — apprenticeship schemes (or equivalent).

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1 - 7	Copy of an economic study (or equivalent, such as a socio-economic impact assessment)	None
8	A written commitment from the developer.	None
9	A copy of the economic study or strategy and relevant development plans.	Detailed documentary evidence.

Additional Information

Relevant definitions

Temporary jobs

Part or full-time jobs lasting up to 1 year during project timescale.

Permanent jobs

Part or full-time jobs that are expected to be in existence beyond project timescales.

SE 02 – Demographic needs and priorities

Step	Category	Mandatory standards	No. of credits available
1	Social and economic wellbeing	Yes (criteria 1 to 2)	1

Aim

To ensure that the development plans for the provision of housing, services, facilities and amenities on the basis of local demographic trends and priorities.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. The scope of the proposed development, including housing mix, community facilities and employment opportunities, has been informed by a review of the current demographic profiles and future trends of the local area. The study has been conducted based on the following:
 - economic impact study (See SE 01 – Economic impact)
 - policies and evidence in the local and neighbourhood development plans
 - relevant local authority strategies
 - detailed consultations with the members of the local community including local residents, businesses, schools, community groups and other members of the community and parish councils.
2. The community is consulted on the local needs and requirements (see compliance notes) that are desired as part of the proposed development. Their views are used to prioritise the local needs and requirements in order of desirability (low, medium and high).

One credit

3. Criteria 1 and 2 are achieved.
4. Where the provision of some of these functions is outside the scope of the current development:
 - a. long-term financial and social implications of not providing the infrastructure as part of the current development have been discussed with the local authority and other bodies as appropriate
 - b. a suitable delivery mechanism has been established to ensure delivery of required functions on an appropriate timescale and to ensure that demands are fulfilled whilst avoiding the creation of facilities that will be unsustainable in the short-term.

Compliance Notes

Ref	Terms	Description
CN1	Demographic profiles. See criterion 1	<p>The demographic profile should be available from the local authority and census data. It will include information about:</p> <ul style="list-style-type: none"> — age, gender, religion — household size, values, tenure and change — population projections — headship rates — deprivation (as per the Indices of Deprivation 2007 this includes: income; employment; health and disability; education, skills and training; barriers to housing and services; crime; and the living environment) — the ageing population — children and young people — employment (sectors, incomes, businesses, unemployment) — crime — health.
CN2	Local needs and requirements. See criterion 2	<p>Consultation on local needs and requirements should include an assessment of the services, facilities, amenities, and housing provision required for the community. Consideration should be given to how the demographics of the community will change over the life of the development. The following should be considered:</p> <ul style="list-style-type: none"> — community buildings/local meeting place — dwellings, including affordable homes and mix of tenure — education and library services, — green space* — leisure facilities (free and priced) and other sports facilities (e.g. tennis courts, football pitches, swimming pools, etc.) — health and social care services such as pharmacy, medical centre and GP surgery — shop and / or farmer's market selling food and fresh groceries — allotment space or places growing fresh fruit and vegetables — children's playground and facilities (nursery/crèche) — communication services such as public internet access, post box and postal facility — bank and/or cash machine — public house — places of religious worship (incl. parish halls), etc. <p>*Green spaces (public park, village green or similar) are dealt with in 'SE 11 – Green Infrastructure'; however consultation could occur with the other needs and requirements listed above.</p>

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A copy of the local needs investigation report (or equivalent).	None
2	A copy of the consultation plan (see GO 01 – Consultation plan) outlining who will be engaged and the methods to be used. Minutes from the consultation meeting (s). The prioritised list of local requirements.	None
4	Record of the meeting with the local authority or other bodies.	Formal agreement or confirmation from the local authority or other body on the details of the delivery mechanism agreed.

Additional information

This issue follows through to 'SE06 – Delivery of services, facilities and amenities', where credits are available for providing the desired facilities within reasonable walking distances from the dwellings/site. Consultation for this issue may also inform 'SE07 – Public realm'.

SE 03 – Flood risk assessment

Step	Category	Mandatory standards	No. of credits available
1	Social and economic wellbeing	Yes (criteria 1 to 3)	2

Aim

To ensure that sites and developments take due account of flood risk and, where it is present, take appropriate measures to reduce the risk of flooding to the development and the surrounding areas.

Assessment criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. A site specific flood risk assessment is carried out in accordance with current best practice and planning policy, and includes as a minimum:
 - risk and consequences of flooding from all sources, on the site and from the site to the surrounding area, and how the risks will be managed
 - changes in flood risk due to climate change
 - consultation with appropriate statutory bodies
 - knowledge of possible flood risk held within the local community (including the local authority's strategic flood risk assessment).
2. The flood zone/zones for the development are determined in accordance with current best practice and planning policy.
3. A commitment is made to incorporate the recommendations of all appropriate statutory bodies into the masterplan.

One credit (medium or high flood risk zone)

4. Criteria 1 to 3 are achieved.
5. Where there is a medium or high risk of flooding from any part of the development (in accordance with current best practice and planning policy), the development has been designed to minimise flood risk onsite and offsite using current best practice and planning policy as follows:
 - development is avoided in areas of the development site that are susceptible to flooding
 - where the above is not practical essential infrastructure is situated in areas of the site that are at the lowest risk from flooding
 - in areas where risk from flooding cannot be avoided measures are taken to defend or protect the development from flooding without increasing the flood risk in upstream and downstream areas
 - any residual risks are safely and appropriately managed and resilient measures are incorporated into building designs to the satisfaction of the relevant statutory body
 - the planned ground level of the buildings and access to the buildings and the site are designed (or zoned) so they are at least 600mm above the design flood level of the flood zone in which the assessed development is located.
 - an emergency plan is established in the event of flooding.

Two credits (low flood risk zone)

6. Criteria 1 to 3 are achieved.
7. Where the flood risk assessment demonstrates that there is a low risk of flooding for the whole development (in accordance with current best practice and planning policy).

Compliance Notes

Ref	Terms	Description
CN1	Flood risk assessment (FRA). See criterion 1	A study to assess the risk of a site flooding and the impact that any changes or development on the site will have on flood risk on the site and elsewhere. A flood risk assessment must be prepared according to best practice and planning policy. For developments of less than 1 ha (10,000 m ²), the level of detail required in an acceptable FRA will depend on the size and density of the build. This will range from a brief report for small, low-density developments, to a more detailed assessment for a high-density development of 2000–10,000 m ² . For example, for very small developments (2000 m ² and less), an acceptable FRA could be a brief report carried out by the contractor’s engineer confirming the risk of flooding from all sources of flooding (see CN2 for further details), including information obtained from the Environment Agency, water company/sewerage undertaker, other relevant statutory authorities, site investigation and local knowledge.
CN2	Sources of flooding. See criterion 1	Sources of flooding include: Streams and Rivers: Flooding that can take place from flows that are not contained within the channel due to high levels of rainfall in the catchment. Coastal or Estuarine: Flooding that can occur from the sea due to a particularly high tide or surge, or combination of both. Groundwater: Where the water table rises to such a height where flooding occurs. Most common in low-lying areas underlain by permeable ground (aquifers), usually due to extended periods of wet weather. Sewers and highway drains: Combined, foul or surface water sewers and highway drains that are temporarily over-loaded due to excessive rainfall or due to blockage. Surface water: The net rainfall falling on a surface (on or off the site) which acts as runoff which has not infiltrated into the ground or entered into a drainage system. Infrastructure failure: canals, reservoirs, industrial processes, burst water mains, blocked or undersized sewers or failed pumping stations.
CN3	Appropriate statutory body. See criterion 1	This refers to either the Environment Agency in England & Wales, the Environment Agency, Department of the Environment, and the Rivers Agency in Northern Ireland, the Scottish Environment Protection Agency in Scotland or the local authorities and internal drainage boards.

Ref	Terms	Description
CN4	Alternative standards and recommendations from an appropriate statutory body	<p>None of the credits can be awarded where the assessed development has proceeded against the recommendation of the statutory body on the basis that the flooding implications are too great (this includes a recommendation given by the statutory body even where such a recommendation cannot or is not statutorily enforced).</p> <p>Where the local authority (or other statutory body) has set more rigorous criteria than those above these must be met in order to achieve the credits.</p> <p>Development proceeding in such an area that wish to seek BREEAM Communities Certification should contact the BREEAM Centre: breeam@bre.co.uk</p>
CN5	Third-party defences	<p>There are many defences, owned by third parties, which due to their location act as a flood defence by default e.g. motorway, railway embankments, walls etc. It can be assumed that such embankments will remain in place for the lifetime of the development, unless the assessor or project team have reason to believe otherwise. For walls, assurance must be sought that the wall is likely to remain for the design life of the building.</p>
CN6	Downgrade flood risk due to flood defences	<p>A site's flood risk may be downgraded to a lower flood risk category as a result of flood defence installations. This may occur in the following circumstances:</p> <ul style="list-style-type: none"> — where permanent new flood defences are planned (mentioned in formal planning documents with budgets allocated) to minimise the risk of flooding to the site and its locality — where the development is located on a site benefiting from existing maintained flood defences. <p>In these circumstances, flood risk will be downgraded from medium to low flood risk, as defined in best practice and planning policy guidelines, and three 'credits' can be awarded. All of the following evidence will be needed to demonstrate compliance:</p> <ul style="list-style-type: none"> — confirmation from the flood defence agency (e.g. Environment Agency) that the flood risk level for the site will be reduced to a low flood risk — confirmation from the flood defence agency that there are plans to maintain the defences for the lifetime of the development (for private flood defences, evidence must be provided that there is a contractual agreement to cover the maintenance of the defences for the lifetime of the development.) — the flood risk assessment clearly demonstrates that the residual risks have been identified and will be managed appropriately.

Ref	Terms	Description
CN7	Assessments in the functional flood plain	Developments located in a classified 'functional flood plain' zone do not achieve any 'credits' unless the proposed development has located only water compatible buildings within this zone. Where this is the case please contact the BREEAM helpdesk (breeam@bre.co.uk) to discuss the project and whether certification will be possible under BREEAM Communities.
CN8	Allowance for climate change	An allowance for climate change should be made in accordance with current best practice and planning policy. This should be applied to both the pre and post development flood risk. Climate change allowances will be dependent on the site's context and location. Please refer to the 'Additional Information' section of this issue for further details on how to account for climate change.

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1 - 5	A copy of the site specific flood risk assessment covering all the required details and managing the flood risk.	Detailed documentary evidence.
7	A copy of the site specific flood risk assessment covering all the required details.	Detailed documentary evidence.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Pol 03 Surface water run off. The assessor is not required to perform any calculations as these should be provided by the professional completing the flood risk assessment.

Allowance for climate change

Professionals completing the Flood Risk Assessment should refer to the National Planning Policy Framework (NPPF) technical guidance document (March 2012). The key points have been copied below for ease of use.

"Global sea level will continue to rise, depending on greenhouse gas emissions and the sensitivity of the climate system. The relative sea level rise in England also depends on the local vertical movement of the land, which is generally falling in the south-east and rising in the north and west. In preparing a Strategic Flood Risk Assessment or a site-specific flood risk assessment, the allowances for the rates of relative sea level rise shown in table 4 should be used as a starting point for considering flooding from the sea, along with the sensitivity ranges for wave height and wind speed in table 5."

Table - 4: Recommended contingency allowances for net sea level rises

	Net sea level rise (mm per year) relative to 1990			
	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
East of England, east midlands, London, south-east England (south of Flamborough Head)	4.0	8.5	12.0	15.0
South-west England	3.5	8.0	11.5	14.5
North-west England, north-east England (north of Flamborough Head)	2.5	7.0	10.0	13.0

Notes for table 4

- a. "For deriving sea levels up to 2025, the 4mm per year, 3mm per year and 2.5mm per year rates (covering the three geographical groups respectively), should be applied back to the 1990 base sea level year. From 2026 to 2055, the increase in sea level in this period is derived by adding the number of years on from 2025 (to 2055), multiplied by the respective rate shown in the table. Subsequent time periods 2056 to 2085 and 2086 to 2115 are treated similarly.
- b. Refer to Department for Environment, Food and Rural Affairs FCDPAG3 Economic Appraisal Supplementary Note to Operating Authorities – Climate Change Impacts, October 2006, for details of the derivation of this table. In particular, Annex A1 of this Note shows examples of how to calculate sea level rise.
- c. Vertical movement of the land is incorporated in the table and does not need to be calculated separately.

The rise in sea level will change the frequency of occurrence of high water levels relative to today's sea levels, assuming no change in storminess. There may also be secondary impacts such as changes in wave heights due to increased water depths, as well as possible changes in the frequency, duration and severity of storm events. A 10 per cent sensitivity allowance should be added to offshore wind speeds and wave heights by the 2080s.

In making an assessment of the impacts of climate change on flooding from the land, rivers and sea as part of a flood risk assessment, the sensitivity ranges in table 5 may provide an appropriate precautionary response to the uncertainty about climate change impacts on rainfall intensities, river flow, wave height and wind speed."

Table - 5: Recommended national precautionary sensitivity ranges for peak rainfall intensities, peak river flows, offshore wind speeds and wave heights

Parameter	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
Peak rainfall intensity	+5%	+10%	+20%	+30%
Peak river flow	+10%	+20%		

Parameter	1990 to 2025	2025 to 2055	2055 to 2085	2085 to 2115
Offshore wind speed		+5%		+10%
Extreme wave height		+5%		+10%

Notes to table 5:

- a. "Refer to Department for Environment, Food and Rural Affairs FCDPAG3 Economic Appraisal Supplementary Note to Operating Authorities – Climate Change Impacts, October 2006, for details of the derivation of this table.
- b. For deriving peak rainfall, for example, between 2025 and 2055 multiply the rainfall measurement (in mm per hour) by 10 per cent and between 2055 and 2085 multiply the rainfall measurement by 20 per cent. So, if there is a 10mm per hour event, for the 2025 to 2055 period this would equate to 11 mm per hour; and for the 2055 to 2085 period, this would equate to 12mm per hour. Other parameters in table 5 are treated similarly.

Sensitivity testing of the flood map produced by the Environment Agency, using the 20 per cent from 2025 to 2115 allowance for peak flows, suggests that changes in the extent of inundation are negligible in well-defined floodplains, but can be dramatic in very flat areas. However, changes in the depth of flooding under the same allowance will reduce the return period of a given flood. This means that a site currently located within a lower risk zone (e.g. Zone 2 in table 1) could in future be re-classified as lying within a higher risk zone (e.g. Zone 3a in table 1). This in turn could have implications for the type of development that is appropriate according to its vulnerability to flooding (see table 2). It will therefore be important that developers, their advisors and local authorities refer to the current flood map and the Strategic Flood Risk Assessment when preparing and considering proposals.

Flooding in estuaries may result from the combined effects of high river flows and high sea surges. When taking account of impacts of climate change in flood risk assessments covering tidal estuaries, it will be necessary for the allowances for sea level rise in table 4 and the allowances for peak flow, wave height and wind speed in table 5 to be combined."

Flood protection

To meet the requirements of criterion 5 (the requirement to implement measures to protect or defend the site from flooding) the design need not be restricted to flood defences. A site can be protected from flood water using various methods including solutions such as use of topography, attenuation and storage of flood waters. This can ensure that flood water is kept away from the development. These types of solutions may be appropriate in some instances. However, assurances must be made that the solutions do not create issues further downstream and will not inconvenience the local area. It is the responsibility of the relevant professional to determine the most appropriate solution for the development.

Flood risk

It should be noted that the Environment Agency (EA) flood map confirms the flood zone of a development, including the risk of flooding from rivers and seas. In order to have a compliant Flood Risk Assessment, it must look at the risk of flooding from all sources (as listed in CN2). Therefore, whilst the EA map can contribute towards the Flood Risk Assessment, it cannot be the only evidence used to determine the relevant flood zone.

The EA map also provides details on existing flood defences installed and areas that benefit from them. Note that some existing flood defences may not be included on the EA maps.

SE 04 – Noise pollution

Step	Category	Mandatory standards	No. of credits available
1	Social and economic wellbeing	Yes (criterion 1)	3

Aim

To ensure that the development is designed to mitigate the impacts of noise. This includes mitigation from existing sources of noise, reducing potential noise conflicts between future site occupants, and protecting nearby noise-sensitive areas from noise sources associated with the new development.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. A noise impact assessment has been carried out by a suitably qualified acoustician to determine the sources and nature of existing noise on and around the site. The suitably qualified acoustician has prepared a report setting out recommendations for addressing all identified site issues and, if necessary, attenuation of on-site noise to prevent disturbance to neighbouring noise sensitive areas.

One credit

2. Criterion 1 is achieved.
3. All noise attenuation measures recommended in the noise impact assessment report are incorporated into the site layout of the masterplan.
4. Building locations and orientations within the masterplan have been informed by the noise impact assessment results to ensure that the effects of external noise on building occupants are minimised and that potential conflicts between site occupants are reduced.

Two credits

5. Criteria 1 to 4 are achieved.
6. The developer commits to achieve indoor ambient noise levels in buildings/spaces within the development, and where appropriate external noise levels, that satisfy the "reasonable" targets set out in BS8233:1999.
7. The developer commits to achieve a rating noise level difference no greater than +5dB during the day (0700hrs to 2300hrs) and +3dB at night (2300hrs to 0700hrs) compared to the background noise level (as measured in the locality of the nearest or most exposed noise-sensitive area) from: all factories, industrial premises, fixed installations or sources of an industrial nature in commercial premises within the proposed development.

Three credits

8. Criteria 1 to 7 are achieved.
9. A commitment is made to achieve noise levels from environmental noise sources 5dB below the "reasonable" targets set out in BS8233:1999.
10. A commitment is made to achieve a rating noise level (as measured in the locality of the nearest or most exposed noise-sensitive area) that is no greater than the background noise level during

both the day (0700hrs to 2300hrs) and at night (2300hrs to 0700hrs) from: all factories, industrial premises, fixed installations or sources of an industrial nature in commercial premises within the proposed development.

Compliance Notes

Ref	Terms	Description
CN1	Rating noise level See criteria 7 & 10	As defined in BS4142:1997 - the specific noise level plus any adjustment for the characteristic features of the noise ($L_{Ar,T}$).
CN2	Background noise level See criteria 7 & 10	As defined in BS4142:1997 - the A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 % of a given time interval, T, measured using time weighting, F, and quoted to the nearest whole number of decibels ($L_{A90,T}$).

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	Copy of the noise impact assessment report.	None
3	Copy of the masterplan showing the areas affected by noise (on and off site) and the attenuation measures used to mitigate these.	Detailed documentary evidence of the areas affected by noise (on and off site) and the attenuation measures used to mitigate these.
4	Site layout plans showing the expected sources and levels of sound and the anticipated acoustic routes through the development.	Detailed documentary evidence of the expected sources and levels of sound and the anticipated acoustic routes through the development.
6-10	Written confirmation from the developer.	None

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Pol 05 Noise attenuation.

Relevant definitions

Suitably qualified acoustician

An individual who holds a recognised acoustic qualification and membership of an appropriate professional body. The primary professional body for acoustics in the UK is the Institute of Acoustics.

Noise sensitive area

Landscapes or buildings where the occupiers are likely to be sensitive to noise created by the new development, including:

1. Residential areas
2. Hospitals, health centres, care homes, doctor's surgeries etc.
3. Schools, colleges and other teaching establishments.
4. Libraries
5. Places of worship
6. Wildlife areas, historic landscapes, parks and gardens.
7. Located in an Area of Outstanding Natural Beauty (AONB) or near a Site of Special Scientific Interest (SSSI).
8. Any other development that can be considered noise sensitive.

RE 01 – Energy strategy

Step	Category	Mandatory standards	No. of credits available
1	Resources and energy	Yes (criterion 1)	11

Aim

To recognise and encourage developments designed to minimise operational energy demand, consumption and carbon dioxide emissions.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. An energy strategy has been written for the proposed development by an energy specialist.

One to ten credits

2. Criterion 1 is achieved.
3. The developer commits to implementing recommendations in the energy strategy that will result in at least a reduction in carbon dioxide emissions (beyond those associated with baseline energy demand). Credits are available for the following percentage reductions:

Credits	Reduction in CO ₂ emissions
1	10%
2	20%
3	30%
4	40%
5	50%
6	60%
7	70%
8	80%
9	90%

Credits	Reduction in CO ₂ emissions
10	100%

Eleven credits

4. Criterion 1 is achieved and the development is 'carbon neutral' (receiving 10 credits above).
5. The developer commits to implementing recommendations in the energy strategy that will result in a 'carbon negative' development (see Additional Information section).

Compliance Notes

Ref	Terms	Description
CN1	Energy strategy. See criterion 1	<p>The energy strategy should include the following as a minimum:</p> <ol style="list-style-type: none"> 1. a prediction of the baseline energy demand and associated emissions for a Building Regulations Part L compliant development calculated using approved Building Regulations compliant energy modelling software and other modelling to cover site-wide consumption. This should include: <ul style="list-style-type: none"> — a breakdown of the site wide heating, cooling and electricity demand — emissions for both regulated and unregulated energy use — emissions associated with street lighting and other electrically powered street furniture 2. recommendations for reducing energy use and associated emissions beyond baseline levels through implementation of energy efficient measures including: <ul style="list-style-type: none"> — site layout — use of topography — shading — solar orientation — use of daylighting — wind management — use of natural ventilation. 3. opportunities to further reduce emissions through the use of decentralised energy including: <ul style="list-style-type: none"> — connection to existing or future heat distribution networks — installation of site wide communal heating and cooling networks — utilisation of combined heat and power (CHP) systems, including any opportunities to extend beyond the site boundary 4. opportunities to further reduce emissions through the installation of local (on-site or near-site) low or zero carbon (LZC) energy sources including details of the following: <ul style="list-style-type: none"> — energy generated from LZC energy source — payback — land use — local planning criteria

Ref	Terms	Description
		<ul style="list-style-type: none"> — noise — feasibility of exporting heat/electricity from the system — life cycle cost/lifecycle impact of the potential specification in terms of carbon emissions — all technologies appropriate to the site and energy demand of the development — how any proposed LZC sources will be integrated with and complement any proposed decentralised energy networks — reasons for excluding other technologies <p>5. Summary of the carbon dioxide savings resulting from energy efficient design measures, the use of decentralised energy and the installation of LZC energy sources.</p>
CN2	Energy specialist. See criterion 1	<p>An individual who:</p> <ul style="list-style-type: none"> — has acquired substantial expertise or a recognized qualification for undertaking assessments, designs and installations of low or zero carbon solutions; — is not professionally connected to any low or zero carbon technology or manufacturer.
CN3	Approved site-wide energy modelling software. See criterion 1	<p>The energy strategy must include a prediction of the baseline energy demand and associated emissions for a Building Regulations Part L compliant development calculated using approved Building Regulations compliant site-wide energy modelling software. A similar baseline energy demand and associated emissions should be calculated for a typical site-wide approach to non-regulated energy uses.</p> <p>A range of dynamic simulation tools are available to simulate and report upon the site-wide energy requirements and associated carbon emissions of new developments at an early stage in the design process. These help to forecast the energy demand of a development once built as well as the output of the various energy solutions proposed. Please contact the BRE when selecting an approved energy model for the project.</p> <p>Calculations for regulated building energy consumption may also be performed using draft figures from SAP and SBEM ratings (these can be obtained by modelling a number of representative building types based on a developer's standard specification or by using existing ratings already calculated for existing developments with similar building types).</p>
CN4	Baseline Energy Demand. See criterion 1	<p>The energy strategy must include a prediction of the baseline energy demand. This should include both regulated emissions and emissions not covered by Building Regulations (unregulated emissions).</p> <p>The baseline regulated emissions should be based on the Target Emission Rate (TER) calculated through the Approved Building Regulations SAP methodology for dwellings, and calculated</p>

Ref	Terms	Description
		<p>through the Approved Building Regulations methodology based on the National Calculation Methodology (NCM) for non-domestic buildings.</p> <p>Unregulated emissions should be established using BREDEM (BRE Domestic Energy Model) or similar methodology for Dwellings and using CIBSE guidelines (CIBSE Guide F) or other established industry benchmarks for non-domestic buildings.</p> <p>Calculations will be required for non-building related energy usage such as street lighting.</p>
CN5	Renewable and low carbon installations. See criterion 1	Where included as part of the development, the installation of low or zero carbon technologies can be used to offset emissions arising from regulated and unregulated energy consumption. The LZC technology can be installed on-site, near-site via a private wire arrangement or off site via the provision of accredited external renewables (see CN6).
CN6	Accredited external renewables. See criterion 1	<p>For the purpose of this BREEAM issue accredited external renewables are renewable energy schemes located off-site, but within the UK, which:</p> <ul style="list-style-type: none"> — Are accredited renewables (as defined by the Energy Act 2004). These will be Renewable Energy Guarantee of Origin (REGO) certified — Create new installed generation capacity, designed to meet the loads of the development (i.e. not just units of carbon) — Provide additional capacity to that already required under the Renewables Obligation <p>At the time of writing, BRE Global are not aware of a mechanism for accrediting off-site renewables and therefore of any renewable energy schemes that meet the above definition; though some ESCOs may achieve these criteria.</p> <p>The BREEAM definition of 'Accredited External Renewables' differs from and should not be confused with the term 'Allowable Solutions'. The term Allowable Solutions forms part of the proposed Zero Carbon definition for buildings. Furthermore what constitutes an 'Allowable Solution' is not yet defined (at the time of writing). Once an official definition of Zero Carbon and Allowable Solutions is confirmed by Government for non domestic buildings, BRE will advise accordingly on the contribution of Allowable Solutions toward achieving the BREEAM 'credits'.</p>
CN7	Recognised 'local' LZC technologies. See criterion 1	<p>Technologies eligible to contribute to achieving the criteria of this issue must produce energy from renewable sources and meet all other ancillary requirements as defined by Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing directives 2001/77/EC and 2003/30/EC (www.eur-lex.europa.eu/).</p> <p>The following requirements will be met:</p>

Ref	Terms	Description
		<ul style="list-style-type: none"> — Where not provided by accredited external renewables there must be a direct supply of energy produced to the development under assessment. — Where covered by the Microgeneration Scheme (MCS), technologies under 50kWe or 45kWth must be MCS (or equivalent) certified products installed by MCS (or equivalent) certified installers. — Combined Heat and Power (CHP) schemes above 50kWe must be certified under the CHPQA standard.
CN8	Waste heat from a building related operational process. See criterion 1	Waste heat from a process that takes place within the assessed site, for the purpose of this BREEAM issue, can be considered as 'Low Carbon'.
CN9	Waste Incineration. See criterion 1	<p>Waste heat from an incineration plant can only be considered as low carbon for the purpose of this BREEAM issue under the following circumstances:</p> <ul style="list-style-type: none"> — All other LZC technologies have been considered and discounted in the feasibility study and EITHER — The local authority in which the incineration plant is located is demonstrably meeting its annual waste reuse/recycling targets OR — A near or onsite facility is connected to the development, via a private wire arrangement, which is demonstrably removing materials that are re-usable and recyclable to prevent their incineration.
CN10	Biofuels. See criterion 1	Given the current uncertainty over their impact on biodiversity, global food production and greenhouse gas savings, plus the ease of interchangeability between fossil fuels, BREEAM does not recognise or reward building systems fuelled by first generation biofuels manufactured from feedstock's e.g. biofuels manufactured from sugars, seeds, grain, animal fats etc. BREEAM will recognise systems using second generation biofuels (biofuels from lignocellulosic biomass feedstock using advanced technical processes) or biofuels manufactured from biodegradable waste materials e.g. biogas, or locally and sustainably sourced solid biofuels e.g. woodchip, wood pellets where these are not interchangeable with fossil fuels or first generation biofuels.

Schedule of evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A tender specification or contract for the independent energy specialist. A copy of the completed energy strategy.	None
3 – 11	Calculations within the energy strategy demonstrating the necessary reduction in carbon emissions.	Design specifications highlighting the features implemented in line with the energy strategy recommendations in order to achieve the necessary reduction in carbon emissions.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Ene 01 Reduction of CO₂ emissions and Ene 04 Low and zero carbon technologies.

Relevant definitions

Carbon negative

A site that generates, surplus to its own demand, an excess of renewable or carbon neutral energy and exports that surplus to the National Grid to meet other, off-site energy demands, i.e. the site is an net exporter of zero carbon energy. Surplus in this respect means that the site generates more energy via renewable/carbon neutral sources than it needs to meet its own regulated and unregulated energy needs. Any surplus must be exported through the National Grid as additional capacity to that required by the Renewables Obligation i.e. Renewable Obligation Certificates are not claimed/sold for the renewable energy generation (see definition of Renewables Obligation Certificate).

This definition of carbon negative focuses only on energy and carbon dioxide emissions resulting from the operational stage of the development life cycle (as this is the stated aim of this assessment issue). It does not take into account the embodied carbon, in terms of carbon fixing or emissions resulting from the manufacture or disposal of building materials and components (these impacts/benefits are dealt with in BREEAM New Construction issue Mat 01 Life Cycle Impacts).

Carbon neutral

Carbon neutral means that 'through a transparent process of calculating emissions, reducing those emissions and offsetting residual emissions, net carbon emissions equal zero' (Source: Department of Energy and Climate Change, Oct 2009). See also, zero net CO₂ emissions definition below.

Regulated emissions

Emissions from building energy consumption resulting from the specification of a 'controlled', 'fixed building service'.

Renewables Obligation Certificate (ROC)

A green certificate issued to an accredited generator for eligible renewable electricity generated within the United Kingdom and supplied to customers within the United Kingdom by a licensed electricity supplier. One ROC is issued for each megawatt hour (MWh) of eligible renewable output generated (Source www.ofgem.gov.uk).

Unregulated emissions

Emissions from building energy consumption resulting from a system or process that is not 'controlled' i.e. energy consumption from systems in the building on which the Building Regulations do not impose a requirement. This also covers most energy use outside the buildings.

Zero net carbon dioxide emissions

The annual building/site CO₂ emissions (kgCO₂/m²/year) arising as a result of energy consumption from fixed building services i.e. space heating and cooling, water heating, ventilation and lighting, also referred to as a controlled service or fitting as a result of requirements imposed on such systems by the Building Regulations.

In aiming to achieve a zero carbon status, the building energy modelling can take account of contributions of energy generation from on-site, near-site and accredited external renewable and low carbon installations. Energy generated and supplied from off-site renewable and low carbon installations that are not accredited cannot be used to meet this definition.

RE 02 – Existing buildings and infrastructure

Step	Category	Mandatory standards	No. of credits available
1	Resources and energy	Yes (criteria 1 and 2)	2

Aim

To take account of the embodied carbon in existing buildings and infrastructure and to promote their re-use where possible.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

- An assessment of any existing buildings and infrastructure (including their materials) is carried out to determine what can be refurbished, re-used or recycled. The assessment considers the following:
 - heritage and local identity
 - the location and condition of buildings and infrastructure
 - the embodied carbon in existing materials
 - potential uses of buildings and infrastructure
 - possible use of materials (on or off-site)
 - community and local authority knowledge and opinion (see 'GO 01 – Consultation plan').
- A decision is made and justified with evidence regarding the use and/or demolition of all existing buildings and infrastructure on site.

One credit

- Criteria 1 and 2 are achieved.
- The developer commits to recycling building and/or infrastructure materials and (where possible) using the materials on the development site.

Two credits

- Criteria 1 to 4 are achieved.
- The developer commits to refurbishing any existing building or buildings that have been identified as being of significant value to the local community or for sustainability reasons.

Compliance Notes

None.

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A copy of the assessment with consultation feedback highlighted.	None
2	Documentation of the decisions made for existing buildings.	None
4 & 6	A letter of commitment from the developer.	Detailed documentary evidence regarding the location and use of refurbished buildings or recycled materials.

Additional Information

This issue relates to criterion 1 in 'RE 06 – Resource efficiency' where a pre-demolition audit of any existing building, structure or hard surfaces is completed to determine if refurbishment/re-use of materials is possible. Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Mat 01 Life cycle impacts.

RE 03 - Water strategy

Step	Category	Mandatory standards	No. of credits available
1	Resources and energy	Yes (criteria 1 to 2)	1

Aim

To ensure that the development is designed to minimise water demand through efficiency and appropriate supply-side options taking full account of current and predicted future availability of water in the area.

Assessment criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. The developer engages with water suppliers, the local authority and the appropriate regulatory body (i.e. the Environment Agency, Internal Drainage Boards, etc.) to develop overall water consumption targets for the development taking account of:
 - the current availability of water and demands in the area
 - the future predicted availability taking climate change into account
 - the predicted water demand for the area resulting from growth and climate change.
2. A strategy is prepared to manage water demand on the development site to meet the above consumption targets. The strategy includes:
 - actions to minimise the predicted use on the development; and maintain this in future
 - ownership and maintenance of any shared facilities
 - design options to reduce the water demand in landscaping, any other predicted water use and on-site collection/storage opportunities
 - targets for water use in residential and non-domestic buildings in the development site.

One credit

3. Criteria 1 and 2 are achieved.
4. A commitment is in place to enforce the adoption of the water consumption targets set within the Water Strategy in building designs on the site.
5. A commitment is in place to design and specify landscape, planting and hard surface areas in accordance with the Water Strategy.
6. Responsibilities for management and maintenance of water supply/collection facilities are established and commitments are in place.

Compliance notes

Ref	Terms	Description
CN1	Allowance for climate change See Criterion 1	The water strategy needs to take climate change into account. Allowance must be made for impacts on precipitation levels, increased evaporative losses and changing use patterns arising from climate change in accordance with current planning guidance

Schedule of evidence required

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	Letter, email or meeting minute notes.	None.
2	A copy of the water strategy.	None.
4 - 6	A letter of commitment.	

Additional information

None.

LE 01 – Ecology strategy

Step	Category	Mandatory standards	No. of credits available
1	Land use and ecology	Yes (criteria 1 to 6)	1

Aim

To ensure that the development maintains or enhances biodiversity and protects existing natural habitats.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. An ecological impact assessment (EclA) has been undertaken by a suitably qualified ecologist to identify:
 - valued ecological resources (including those off-site that may be affected by the development)
 - potential impacts from the development.
2. The ecological impact assessment takes account of any local knowledge of ecological issues through a process of consultation (see 'GO - 02 Consultation and engagement').
3. An ecology strategy covering the construction and operation phases has been drawn up by a suitably qualified ecologist to avoid damage to any ecological features on or near site. The strategy is based on the findings of the EclA.
4. Where it is unavoidable that damage to an ecological feature will occur, a mitigation plan and/or compensation plan has been agreed by the appropriate statutory body to ensure there is no net loss of any of the ecologically valuable features.
5. The suitably qualified ecologist confirms that the masterplan conforms with the ecology strategy and there will be no net loss of ecological value on the site, or where this is unavoidable, appropriate mitigation and/or compensation has been allowed for in accordance with the agreed ecology strategy.
6. The developer confirms that all significant ecological features will be preserved and protected during development works.

One credit

7. Criteria 1 to 6 are achieved.
8. The ecology strategy outlines a plan (agreed by the appropriate statutory body) to ensure there is a net gain in biodiversity.
9. The suitably qualified ecologist confirms that the masterplan conforms to the ecology strategy and there will be a net gain in biodiversity on the site.

Compliance Notes

Ref	Terms	Description
CN1	Ecological impact assessment (EclA). See criterion 1	This is usually required for planning applications for large scale developments and forms part of the environmental impact assessment. Guidance on producing an EclA is available on the Institute of Ecology and Environmental Management (IEEM) website at: http://www.ieem.net/ecia/
CN2	Suitably qualified ecologist. See criterion 1	<ul style="list-style-type: none"> — Holds a degree or equivalent qualification (e.g. N/SVQ level 5) in ecology or a related subject. — Is a practising ecologist with a minimum of three years relevant experience (within the last five years). Such experience must clearly demonstrate a practical understanding of factors affecting ecology in relation to construction and the built environment; including acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures. Examples of relevant experience are: ecological impact assessments; Phase 1 and 2 habitat surveys; and habitat restoration. — Is covered by a professional code of conduct and subject to peer review. Peer review is defined as the process employed by a professional body to demonstrate that potential or full members maintain a standard of knowledge or experience required to ensure compliance with a code of conduct and professional ethics. <p>Full members of the following organisations, who meet the above requirements are deemed to be suitably qualified ecologists:</p> <ul style="list-style-type: none"> — Association of the Wildlife Trust Consultancies (AWTC) — Chartered Institution of Water and Environmental Management (CIWEM) — Institute of Ecology and Environmental Management (IEEM) — Institute of Environmental management and Assessment (IEMA) — Landscape Institute (LI).
CN3	Ecology strategy. See criterion 3	<p>This strategy should include consideration of the issues set out in the IEEM EclA Guidelines including but not limited to identifying actions to address/achieve:</p> <ul style="list-style-type: none"> — protection, enhancement and creation of local ecological habitats and the processes that sustain them (including water supply and quality; nutrient cycling; shelter; ecosystem hierarchies etc.); — opportunities for maximising the presence of flora and fauna species on and/or near to the site; — protection, enhancement and creation of wildlife movement/migration routes;

Ref	Terms	Description
		<ul style="list-style-type: none"> — potential damage/disturbance arising from the proposed development and its ongoing use; — the optimal balance between ecological, social and economic benefits of the proposed development and predicted damage/disturbance; — protection and enhancement of existing ecological features.
CN4	Valued ecological resources. See criterion 4	Guidance on determining value of ecological resources is available from the Institute of Ecology and Environmental Management (IEM) here http://www.ieem.net/ecia/determining-value.html .

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A copy of the ecological impact assessment.	None
2	A copy of the consultation plan.	A copy of minutes from local consultation workshops showing discussion of ecological issues.
3 & 8	A copy of the ecology strategy.	None
4	A copy of the mitigation/compensation plan.	None
5 & 9		A letter from the suitably qualified ecologist.
6	None	A letter of commitment from the developer.

Additional Information

The implementation of criteria 8 and 9 is also covered in issue 'LE04 – Enhancement of ecological value is informed by the ecology strategy and the ecologist. Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under LE02 Ecological value of site and protection of ecological features and LE03 Mitigating ecological impact.

Relevant definitions

No net loss

“The point at which habitat or biodiversity losses equal their gains, both quantitatively and qualitatively.” (Institute of Ecology and Environmental Management)

Net gain

“The point at which the quality and quantity of habitats or species improves compared to their original condition. i.e. improvements over and above those required for mitigation/compensation.” (Institute of Ecology and Environmental Management)

LE 02 – Land use

Step	Category	Mandatory standards	No. of credits available
1	Land use and ecology	Yes (criteria 1 and 2)	3

Aim

To encourage the use of previously developed and/or contaminated land and avoid land which has not been previously disturbed.

Assessment Criteria

The following is required to demonstrate compliance:

Land Contamination

Mandatory (no credits)

1. A preliminary investigation (desk study and site reconnaissance) has been carried out to identify any potential land contamination issues with the site.
2. Where the preliminary investigation has identified potential land contamination issues, a contaminated land specialist has performed a site investigation and risk assessment to determine the presence and levels of any contamination affecting the site and make recommendations on any remediation required.

One credit

3. Criteria 1 and 2 are achieved.
4. Where remediation is required, the findings of the site investigation and risk assessment have informed the masterplan site layout and design.

Two credits

5. Criteria 1 to 4 are achieved.
6. A remediation strategy for the site has been prepared by a contaminated land specialist taking into consideration the sustainability principles in the UK Sustainable Remediation Forum's (SuRF-UK) 'Framework for Assessing the Sustainability of Soil and Groundwater Remediation'.
OR
7. The developer has contracted a contaminated land specialist to prepare a remediation strategy for the site taking into consideration the sustainability principles outlined in the SuRF-UK 'Framework for Assessing the Sustainability of Soil and Groundwater Remediation'.

Previously Developed Land

One credit

8. At least 75% of the area of the proposed development site is on previously developed land.

Compliance Notes

Ref	Terms	Description
CN1	Preliminary investigation. See criterion 1	BS 10175:2011 'Investigation of potentially contaminated sites - Code of practice' gives guidance on the scope of a preliminary investigation. Where the preliminary investigation shows that the site is unlikely to be affected by significant contamination and that no further investigation is required, the site will meet the mandatory requirements for this issue, but is not eligible for the award of any of the land contamination 'credits'. Where a formal preliminary assessment has not been performed, but other documentary evidence exists to show that the site is not or is unlikely to be affected by significant contamination, this may be acceptable to prove compliance with the criterion. In this instance, please contact BRE Global for advice.
CN2	Site investigation. See criterion 2	Site investigations must be performed in accordance with BS 10175:2011 'Investigation of potentially contaminated sites - Code of practice'.
CN3	Asbestos. See criterion 2	Where the only remediation required is the removal of asbestos within an existing building fabric, the site cannot be classified as contaminated. However, where asbestos is found to be present in the ground, this will be classed as contamination for the purposes of assessing this issue.
CN4	Prior decontamination. See criterion 2	The land contamination 'credits' are not achievable for instances where historical remediation of the site has occurred outside the scope of the current development proposals. Contaminated land that has been decontaminated solely for health and safety reasons (rather than for the specific purpose of re-development) does not comply.
CN5	Masterplan site layout and design. See criterion 4	Where contamination is affecting certain areas of a site, this can be recognised in the masterplan site layout and design. Examples of this approach include: <ul style="list-style-type: none"> — matching land-use with ground conditions, e.g. locate most vulnerable receptors and land-uses away from most contaminated areas — considering the feasibility of locating basement parking within ground conditions that require intervention, e.g. avoid excavating clean soil to create basements while at the same time remediating other soils in-situ — considering the location of sustainable drainage systems (SUDS), e.g. locating SUDS percolation areas in areas of clean soil to prevent leaching of contaminated materials — considering the use of vapour membranes in buildings rather than excavating and disposing of large volumes of

Ref	Terms	Description
		soil.
CN6	Remediation strategy. See criterion 6	This must include a detailed remedial options appraisal including assessment of the sustainability of the remediation options.
CN7	Verification/ validation of remedial works	The verification/validation that remedial works have been successfully completed on a site in accordance with the remediation strategy is outside the scope of this issue. It is the responsibility of the developer to ensure that the remediation strategy is implemented to the satisfaction of the appropriate regulator(s). Guidance on verification requirements can be found in the Environment Agency report 'Verification of remediation of land contamination (Report: SC030114/R1)'.
CN8	Previously developed land credit	Where a site does not meet the criterion for the previously developed land credit, the land contamination 'credits' can still be achieved.

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A copy of the preliminary investigation report or other relevant evidence that demonstrates the site is unaffected by significant contamination.	None
2	A copy of the contaminated land site investigation and risk assessment report.	None
4	A copy of the masterplan iterations showing areas of the site affected by significant contamination and the proposed land uses for these areas.	None
6	A copy of the remediation strategy.	None
7	A copy of the contract or written confirmation from the developer that they will comply with the criterion.	A copy of the final remediation strategy
8	Details of previous land use, e.g. maps, reports and site photographs. The overall site wide plan including the footprint areas (m ²) of all buildings, hard landscaping, access roads and parking areas.	None

Additional information

General best practice guidance on dealing with land contamination issues is available from the Environment Agency in their 'General Principles for Land Contamination (GPLC)' series of documents (www.environment-agency.gov.uk). Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under LE01 Site selection.

Relevant definitions

Contamination

Contamination is defined as any solid, liquid or gaseous material in, or on the ground (including groundwater) to be covered by the development, which is classed as a hazard and therefore presents an unacceptable risk to human health and the environment. The definition also includes land significantly infested by non-native invasive plant species (see definition below).

Contaminated land specialist

A contaminated land specialist is an individual that holds a degree or equivalent qualification in chemistry or an individual that holds a degree or equivalent qualification in chemistry, environmental science/management, earth sciences, civil engineering or a related subject, and has a minimum of three years relevant experience (within the last five years) in site investigation, risk assessment and appraisal. Such experience must clearly demonstrate a practical knowledge of site investigation methodologies and understanding of remediation techniques and national legislation on the subject; as well as, acting in an advisory capacity to provide recommendations for remediation.

Non-native invasive plant species

Non-native invasive plant species are non-indigenous species that adversely affect the habitats they invade economically, environmentally or ecologically. For the purposes of the BREEAM Communities scheme this currently includes Japanese Knotweed and Giant Hogweed only¹.

Previously developed land

Previously developed land is defined by the National Planning Policy Framework² as land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or has been occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures; land in built-up areas such as private residential gardens, parks, recreation grounds and allotments; and land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time. For the purposes of BREEAM, previously developed land must have been in use within the last 50 years.

Remediation

¹Further information on control and disposal together with legislative requirements relating to such species can be obtained from Defra (<http://www.defra.gov.uk>).

²National Planning Policy Framework, Department for Communities and Local Government, March 2012

Activity undertaken to prevent, minimise, remedy or mitigate the risk caused by contaminated land to human health or the environment¹.

Remediation strategy:

A plan that involves one or more remediation options to reduce or control the risks from the contamination associated with the site.

Significant contamination

For the purposes of this issue, significant contamination is contamination compliant with the above definition of 'contamination' such that without remediation, development of the site is not possible.

SuRF-UK

Further details on SuRF-UK including their 'Framework for Assessing the Sustainability of Soil and Groundwater Remediation' are available from the CL:AIRE (Contaminated Land: Applications In Real Environments) website (www.clare.co.uk/surf-uk).

¹Further guidance is available from the Environment Agency (<http://www.environment-agency.gov.uk/research/planning/40381.aspx>).

TM 01 – Transport assessment

Step	Category	Mandatory standards	No. of credits available
1	Transport and movement	Yes (criteria 1 to 3)	2

Aim

To ensure transport and movement strategies reduce the impact of the development upon the existing transport infrastructure and improve environmental and social sustainability through transport.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. A transport assessment or transport statement is developed following scoping discussions with the local authority and the highway authority (and other bodies where relevant).
2. Travel plan coordinators are appointed to develop travel plans to encourage the most sustainable modes of transport and movement.
3. A travel plan(s) is developed for the site outlining the design methods used to encourage and implement sustainable transport and movement.

One credit

4. Criteria 1 to 3 are achieved.
5. The transport assessment/statement and travel plans positively influence the environmental sustainability of the development and wellbeing of future residents. This is achieved through recommendations or plans to:
 - a. reduce the need for travel (especially by car)
 - b. reduce the length of trips
 - c. promote multi-purpose or linked trips
 - d. promote a more sustainable pattern of development
 - e. reduce the physical separation of key land uses
 - f. reduce distances from buildings to public transport nodes
 - g. improve sustainable transport choices through actions such as increased or improved walking/cycling and public transport infrastructure and facilities
 - h. ensure safe and easy access to jobs, shopping, leisure facilities and services by walking, cycling and public transport.

Two credits

6. Criteria 1 to 5 are achieved.
7. The transport assessment/statement confirms that there is spare capacity to meet the demands of the proposed development.
OR
8. Where development is phased, public transport services will be subsidised to ensure residents occupying the early phases of development can use these services from the outset. The developer has committed to providing subsidised services where appropriate.

Compliance Notes

Ref	Terms	Description
CN1	Transport statement. See criterion 1	<p>A transport statement is suitable when the proposed development is expected to generate relatively low numbers of trips or traffic flows, with minor transport impacts. As a minimum a transport statement should include¹:</p> <ul style="list-style-type: none"> — existing site information including existing uses and issues and plans for the site — baseline transport data including existing site travel characteristics, public transport provision, description and functional classification of the highway network in the vicinity of the site, analysis of the injury accident records in the vicinity of the site — plans for the proposed site layout, scale of development and proposed land uses, main features of the development, person-trip generation of the proposed development, distribution of trips across modes and a description (based on recent site observations) of the travel characteristics of the proposed development.
CN2	Transport assessment. See criterion 1	<p>A transport assessment will be required where a proposed development is likely to have significant transport and related environmental impacts. The study area for a transport assessment related to a proposed development should be determined in discussion between the developer and appropriate authorities. In addition to the points listed above for a transport statement, a full transport assessment should contain the following:</p> <ul style="list-style-type: none"> — Baseline transport data, including: parking facilities available in the vicinity of the site, current traffic flows at links/junctions, identification of critical links/junctions and capacity testing, summary of planned transport improvements, identification of current peak periods on the adjacent road network, levels for air quality and noise for the highway network at the site entrance and any other locations where statutory limits might be breached by additional development traffic, and baseline carbon emissions data for the site, broken down by mode. — Public transport assessment, including: the total person trip generation for all travel modes, the likely modal split for the public transport network (buses, rail and tram), the public transport services relevant to the proposed development,

¹Department for Transport publication 'Guidance on Transport Assessment' available at <http://www.dft.gov.uk/publications/guidance-on-transport-assessment/>

Ref	Terms	Description
		<p>the existing capacity of the bus/rail/tram service, the current level of patronage or usage on the public transport network, the estimated spare capacity on the public transport network, and measures to address any shortfall in capacity.</p> <ul style="list-style-type: none"> — Walking/Cycling assessment, including: the capacity of the existing cycleway and rights of way network and required enhancements. — Road network, traffic data and safety, including: the available vehicular capacity on the road network, the impacts from the development and any mitigation measures that may be required, the viable parking facilities in the vicinity of the site, the impact that development could have upon them, recent counts for peak period turning movements at the critical junctions (other counts such as queue length, journey time, freight counts etc. may also be required) and any significant highway safety issues and recent accident history of the area. — Proposed development plans, including: site area and development phasing, proposed access arrangements, method of linking to existing infrastructure, servicing arrangements, hours of operation. <p>The travel assessment should ensure that the impacts of the proposed development are considered in the context of two scenarios 'With' and 'Without' the development. As a minimum the impacts assessed should include:</p> <ul style="list-style-type: none"> — accessibility — safety — economy — environment — integration.
CN3	Travel plan coordinator. See criterion 2	<p>The role of the travel plan coordinator will depend on the scale of the development. The following responsibilities are normally included:</p> <ul style="list-style-type: none"> — development and implementation of travel plans appropriate to the site — promote the travel plan and raise awareness of sustainable transport options — review the success of the travel plan. <p>The travel plan coordinator can be a member of the design team.</p>
CN4	Travel Plans . See criterion 3	<p>Travel plans are an important tool in the delivery of sustainable outcomes. A travel plan comprises site-specific initiatives aimed at improving the availability and choice of travel modes to and from a development. Together with a transport assessment, travel plans are the mechanism for assessing and managing access to sites, improving accessibility and promoting practices or policies that reduce the need for travel.</p>

Schedule of Evidence

Ref	Step 1 Assessment	Steps 2 & 3 (Final) Assessment
1	A copy of the transport assessment/statement.	None
2	A letter of appointment or contract.	None
3	None	A copy of the travel plan.
5	None	A copy of the travel plan.
7	A copy of the transport assessment/statement.	None
8	None	A letter of commitment from the developer.

Additional Information

The design and layout of streets is covered in issue TM02 – Safe and appealing streets. Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under TM05 Travel plan.

Relevant definitions

Existing transport corridor
Any route served by a regular transport service.

Public transport corridor
Any route served by bus, train, tram or other form of public transport.

Transport capacity
The maximum number of people that can be transported via a public transport service. ALL potential users of the development must be able to access the transport facility within the defined boundaries.

Step 2: Determining the layout of the development

Following the assessment of the site-specific needs and opportunities a design team will be ready to consider the proposed layout of a development. This involves using the detailed surveys regarding flood risk, ecology, energy, transport, demographics and the local economy to find the most sustainable design solutions for the site.

The local community may become more engaged in influencing design as various options are produced by the design team. Project stakeholders, statutory consultees, the planning authority and the local community will be involved in appraising and refining options.

In this step in BREEAM Communities the design team will be designing and testing options for:

- biodiversity and habitat protection and enhancement
- pedestrian, cyclist and vehicular movement
- public transport
- street and building layout, use and orientation
- housing type, provision and location
- utilities and other infrastructure provision
- public realm and green infrastructure.

The only mandatory standard in Step 2 is in the community ownership issue 'GO 02 – Consultation and engagement'. The BREEAM Communities Assessor will work with the design team to determine which criteria can be achieved under BREEAM Communities.

GO 02 – Consultation and engagement

Step	Category	Mandatory standards	No. of credits available
2	Governance	Yes (criteria 1 to 3)	2

Aim

To ensure the needs, ideas and knowledge of the community are used to improve the quality and acceptability of the development throughout the design process.

Assessment Criteria

The following is required to demonstrate compliance:

Mandatory (no credits)

1. The consultation plan is used to determine when consultation takes place and who is consulted on the development proposal.
2. Good practice consultation methods are used to engage members of the community and appropriate stakeholders in the process of designing development proposals.
3. Following consultation sessions, feedback is given to the consultation group regarding suggestions made.

One credit

4. Criteria 1 to 3 are achieved.
5. Influence and/or alteration to the design plan can be demonstrated as a result of the consultation process. A full justification should be provided in the situation where outcomes of the consultation have not influenced the design.

Two credits

6. Criteria 1 to 5 are achieved.
7. A design workshop was used as part of the community and stakeholder involvement / consultation process.

Compliance Notes

Ref	Terms	Description
CN1	Good practice consultation methods. See criterion 2	<p>Good practice consultation should include that the local community and stakeholders have been:</p> <ul style="list-style-type: none"> — informed about the proposal (e.g. public notices and adverts) — consulted for opinion on the development brief — involved in developing a range of options in a timely manner — asked to select their preferred option from a range of

GO02 – Consultation and engagement		BREEAM Communities Technical manual
Ref	Terms	Description
		<ul style="list-style-type: none"> — schemes — involved in the preparation of their preferred proposal (e.g. through workshops or participative processes). — involved in the production of guidelines for the development of this proposal.
CN2	Feedback. See criterion 3	<p>Feedback to groups that are consulted should include the following:</p> <ul style="list-style-type: none"> — summary of proposals made during consultation — how each of the proposals was considered — the outcome, e.g. implementation of suggestions or description of why options have not been deemed feasible.

Schedule of Evidence

Ref	Description
1 – 5	Copies of documentation outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
5	Detailed documentary evidence of the alterations that have been made.
7	Evidence that a design workshop was completed. This could be an agenda, list of attendees or minutes of the workshop.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Man 04 Stakeholder participation.

Design workshops (sometimes called charrettes) are used to bring together a wide range of people to explore design ideas about a development or an area.¹

¹More information is available in 'By Design, Urban design in the planning system: towards better practice' on the Department for Communities and Local Government website (<http://www.communities.gov.uk/publications/planningandbuilding>)

GO 03 – Design review

Step	Category	Mandatory standards	No. of credits available
2	Governance	No	2

Aim

To ensure that the masterplan's design supports a vibrant, healthy, functional and inclusive development.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. A community engagement process led by an independent facilitator is used to inform the development of the design and access statement. The engagement exercises show how the development addresses key issues in urban design including:
 - a. the character and identify of the place
 - b. how security is considered and addressed through design
 - c. the design of the public realm
 - d. how the design addresses movement and legibility
 - e. the layout of the development
 - f. the diversity and compatibility of uses in the development
 - g. how the place is designed to be flexible and adaptable over time
 - h. the design of the landscape
 - i. the density, scale and appearance of the development.
2. The opinions gathered through the engagement process have been taken into account in the production of the design and access statement.
3. Feedback is given to those who participated in design consultation exercises. An explanation is given as to why responses were accepted or not.

One credit

4. Criteria 1 and 2 are achieved.
5. An independent and inter-disciplinary panel has been used to undertake a design review of the development proposal.

Two credits

6. Criteria 1 to 4 are achieved.
7. Improvements have been made to the design of the development as a result of the design review.

Compliance Notes

Ref	Terms	Description
CN1	Community engagement process. See criterion 1	Consultation and engagement activities should be linked to 'GO 01 – Consultation plan' and 'GO 02 - Consultation and engagement'.
CN2	Independent facilitator . See criterion 1	An independent facilitator is not associated with the developer. It is helpful if they are experienced practitioners in the area of design and development.
CN3	Independent and inter-disciplinary panel. See criterion 4	Experts on the design review panel are independent of the developer and the local authority. They represent an inter-disciplinary background covering varying aspects of design and development.
CN4	Design review. See criterion 4 & 5	Design review is a process where an independent and inter-disciplinary panel of built environment experts will review design proposals and assess the overall design quality ¹ .

Schedule of Evidence

Ref	Description
1 & 2	A copy of the minutes from local community consultation workshops, including: <ul style="list-style-type: none"> — a list of the attendees — the agenda — an outline of the recommendations and concerns of the attendees. — an outline of responses or actions to issues raised at previous meetings.
5	Detailed documentary evidence of the advice or comments from the design review panel.
7	Detailed documentary evidence of the advice or comments from the design review panel. A copy of the design and access statement.

¹Further guidance can be found in Design review: Principles and practice published in 2009 by the Commission for Architecture and the Built Environment.

Additional information

There are many publicly available resources on urban design. The following resources are particularly relevant in the UK context:

Urban Design Compendium, originally published in 2000 by English Partnerships (now the Homes and Communities Agency).

By Design, Urban design in the planning system: towards better practice, published in 2000 by the Commission for Architecture and the Built Environment.

Manual for Streets, published for the Department for Transport in 2007

Secured by Design - Principles, published in 2004 by the Association of Chief Police Officers.

SE 05 – Housing provision

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	2

Aim

To minimise social inequalities and foster a socially inclusive community by ensuring appropriate housing provision within the development.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. The housing type and tenure is based on the needs in the local area (See 'SE02 – Demographic needs and priorities') and the local authority's strategic housing market assessment.
2. The developer and local authority agree on specific targets for the number of affordable rented, social rented and intermediate affordable housing.
3. The developer commits to achieving (or requiring a subsequent developer to achieve) minimum space standards in all housing in the development.

One credit

4. Criteria 1 to 3 are achieved.
5. The proposed affordable housing units are distributed across the development and integrated with the other dwellings on the site in terms of design.

Two credits

6. Criteria 1 to 5 are achieved.
7. Suitable financial models and conditions or a letter of commitment have been established to:
 - ensure that local residents and any residents that were displaced by the development are given priority consideration for affordable housing on the new site
 - ensure the affordable units will be available to meet the future demographic trends in the area.

Compliance Notes

Ref	Terms	Description
CN1	Affordable housing . See criterion 2	The range of different types of affordable homes required for the development site must reflect the local requirements (as determined by the local authority and work done for 'SE02 –

Ref	Terms	Description																
		Demographic needs and priorities’) to ensure that people are housed appropriately.																
CN2	Minimum space standards for housing. See criterion 3	<p>Minimum space standards for housing in the UK are generally lower than the European average. The Mayor of London published Housing Space Standards in 2006 that draw on the Parker Morris Report (1961), the Building Research Establishment's Housing Design Handbook (1993) and the National Housing Federation's Guide to Standards & Quality (1998). The proposed baseline, additional standards and Minimum Internal Dwelling Area (MIDA) standards in the 2006 publication should be met as a minimum. These are as follows:</p> <p>Proposed baseline standards The minimum floor area for the aggregate of the cooking, eating and living areas (CEL areas) is to be:</p> <table border="1"> <thead> <tr> <th colspan="2">CEL areas (m²)</th> </tr> </thead> <tbody> <tr> <td>1p</td> <td>22</td> </tr> <tr> <td>2p</td> <td>22</td> </tr> <tr> <td>3p</td> <td>24</td> </tr> <tr> <td>4p</td> <td>27</td> </tr> <tr> <td>5p</td> <td>30</td> </tr> <tr> <td>6p</td> <td>33</td> </tr> <tr> <td>7p</td> <td>36</td> </tr> </tbody> </table> <p>NB: Cooking, eating and living (Kitchen, Dining and Living) areas exclude any utility area or space taken up on plan by staircases or hallways / corridors connecting these areas</p> <ul style="list-style-type: none"> — The minimum floor area for bedrooms to be based on: <ul style="list-style-type: none"> — Aggregate bedroom areas to be no less than 7m per double / twin bedroom provided AND — Each bedroom to have a minimum internal floor area of 6.5m for a 2 person bedroom. — NB1 : in larger dwellings each bedroom does not have to be at least 7m noted above. — NB2 : ensuite bathrooms or shower rooms do NOT count towards this minimum. — NB3 : the floor space taken up by build in wardrobes in bedrooms counts toward the bedroom floor area. 	CEL areas (m ²)		1p	22	2p	22	3p	24	4p	27	5p	30	6p	33	7p	36
CEL areas (m ²)																		
1p	22																	
2p	22																	
3p	24																	
4p	27																	
5p	30																	
6p	33																	
7p	36																	

Ref	Terms	Description
		<ul style="list-style-type: none"> — Storage cupboards: 1 m per additional person. <p>Proposed additional standards</p> <ul style="list-style-type: none"> — Minimum room dimensions (at the narrowest / shortest point) <ul style="list-style-type: none"> — living area: 3.2m — double or twin bedroom width: 2.6m — bedroom length: 3m — habitable rooms to be no longer than twice their width, or no wider than twice their depth (i.e. the 2:1 ratio is not exceeded) — "Dirty" storage (internal to the dwelling or block, or external) — Internal play space: nothing for the first two occupants and then 2m for each additional person. — External recreational space (balcony): 3m per additional person. — Mobility: compliance with Lifetime Homes standards*.. <ul style="list-style-type: none"> — for flats without private gardens: 1 m — for houses bungalows and flats with private gardens for up to four people: 2.5m — for houses, bungalows and flat with private gardens for five or more people: 3.0m <p>*The intention of this standard is fulfilled in BREEAM Communities 2012 through 'SE 14 - Inclusive Design' and therefore is not required for performance against this criterion.</p> <p>Minimum Internal Dwelling Area (MIDA) standards Please also see Table 12 below.</p>

Table 12: Minimum Internal Dwelling Area standards

MIDA (m ²)	
1p	37
2p	44
3p	57
4p	67
5p	81
6p	92
7p	105

Schedule of evidence

Ref	Description
1	A copy of the local needs investigation report (or equivalent).
2	Documentation of the number, mix of types and tenures of affordable homes included on the development site.
3	A written commitment from the developer.
5	Elevations and other relevant documentation demonstrating the measures taken to integrate the design of affordable housing with other dwellings.
7	Documentation of the purchase model chosen, how it will be implemented and for which properties it will apply.

Additional Information

For more information on the space standards referred to above please access the Housing Space Standards report by HATC Limited for the Greater London Authority, 2006.

Relevant definitions:

Strategic Housing Market Assessment

Assessments carried out by local authorities to estimate housing demand in terms of affordable and market housing.

SE 06 – Delivery of services, facilities and amenities

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	7

Aim

To ensure essential facilities are provided and that they are located within a reasonable and safe walking distance.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. The list of local needs and requirements from 'SE 02 – Demographic needs and priorities' is used to confirm which services, facilities and amenities will be provided on the site and to what timescales. The decisions and commitments are recorded and built in to the masterplan.
2. The above commitments are confirmed through a planning condition, planning obligation, or similar binding mechanism.

Two credits

3. Criteria 1 and 2 are achieved.
4. The local needs which are identified as the medium priorities have been incorporated in the proposed development and a timescale for provision is agreed with the local authority.
5. These are located within walking distance of all dwellings via a safe and convenient pedestrian route.

Three credits

6. Criteria 1 and 2 are achieved.
7. The local needs which are identified as the high priorities have been incorporated in the proposed development and a timescale for provision is agreed with the local authority.
8. These are located within walking distance of all dwellings via a safe and convenient pedestrian route.

Six credit

9. Criteria 1 to 8 are achieved.
10. The local needs which are identified as the low priorities have been incorporated in the proposed development and a timescale for provision is agreed with the local authority.
11. These are located within walking distance of all dwellings via a safe and convenient pedestrian route.

One additional credit

12. At least one credit must be achieved for criteria 1 to 8 above.
13. Funding will be secured and suitable mechanisms and structured organisations will take over the operation of the provided services / facilities once construction is completed.
14. The management organisation agrees to undertake a monitoring and reporting process to regularly review the performance of services in meeting the requirements of the local community.

Compliance Notes

Ref	Terms	Description
CN1	Local needs and requirements. See criterion 1	See compliance notes for 'SE02 – Demographic needs and priorities'. Green spaces (public park, village green or similar) are dealt with in 'SE11 – Green infrastructure. Credits cannot be awarded under this issue for providing these amenities.
CN2	Walking distance See criteria 5, 8 & 11	A maximum acceptable walking distance is provided in 'TM04 – Access to public transport. It is defined as the following distances: <ul style="list-style-type: none"> — ≤650m in an urban development — ≤1300m in a rural development. This is the furthest that people should be expected to walk to reach local facilities.
CN3	Measuring distance See criteria 5, 8 & 11	Distance should not be measured 'as the crow flies' and must be measured via a safe and convenient pedestrian route from the main building entrances of the residential / non-domestic building and facility.
CN4	Safe and convenient pedestrian route for urban developments See criteria 5, 8 & 11	A safe and convenient pedestrian route must have the following characteristics: <ul style="list-style-type: none"> — Lighting design of pedestrian pathways must be in compliance with CIBSE Lighting Guide 6, 1992 (LG6) and BS5489 Part 1. — Safe crossing points are provided at appropriate locations and intervals. At the point of crossing, the road must also be well-lit and there should be a clear line of sight for at least 300m in each direction. — For larger developments with a high number of public users / visitors, pedestrian pathways must be signposted to public transport nodes. — On roads with a speed limit of 30mph (or higher) there is a clearly defined footpath. — The footpath is designed with consideration of all users including the disabled, elderly and children. — The carriageway of low-traffic roads with a speed limit of 20mph or below. — A footpath width of >900mm.

Ref	Terms	Description
CN5	Safe and convenient pedestrian routes for rural developments See criteria 5, 8 & 11	In the case of rural developments only the following must be adhered to: <ul style="list-style-type: none"> — A grass verge can be accepted in place of a footpath, but must be reasonably level, at least 900mm in unobstructed width and continuous. — Roads with housing (in existence or planned) without a speed limit of 20mph must have traffic calming measures in place and the road must be well lit. — Roads with a speed limit of 50mph (or higher) must be well-lit, without sharp bends or significant junctions, and with a clear line of sight for at least 300m in either direction from the crossing point.
CN6	Pedestrian routes that extend beyond the site boundary See criteria 5, 8 & 11	Where the pedestrian route extends beyond the site boundary an assessment of existing routes must be completed. The most accessible, convenient and safest route on balance must be used to connect into the development.
CN7	Children's playground	A children's playground must be clearly defined as such, designated as publicly available and maintained by the local authority or another body.
CN8	Leisure facilities	Leisure facilities must be open for public use, members only would not comply, although an affordable (informed by the demographic profile in 'SE 02 - Demographic needs and priorities') entry fee is acceptable.
CN9	Phasing of amenities	In the case of a large development where amenities are to be provided as a part of the overall development, but built at a later stage than the phase being assessed, a commitment to provide amenities should be made through a binding agreement with the local authority.

Schedule of Evidence

Ref	Description
1	Documentation of the decisions made and timescales agreed. Site layout plans indicating the proposed location of agreed services.
2	A copy of the planning condition, planning obligation, or similar binding mechanism.
4 –	Site layout plans with the location of facilities and dwellings noted. Plans should be to

SE06 – Delivery of services, facilities and amenities

Ref	Description
11	scale with a clear identification of the scale, types of amenities, pedestrian routes, dwellings and public transport nodes where relevant.
13	Documentation explaining the organisations and management structures.
14	Documentation of the monitoring and reporting processes. A formal letter of agreement.

Additional Information

This issue links to 'GO02 – Consultation and engagement', credits are available where community organisations are supported to manage appropriate facilities. The public realm can also be used to address adaptation to climate change and ecological habitat. Please refer to 'SE 10 - Adapting to climate change', 'SE 11 - Green infrastructure' and 'LE05 - Landscape'.

SE 07 – Public realm

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	2

Aim

To encourage social interaction by creating comfortable and vibrant spaces in the public realm.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. Consultation has taken place with the local authority and potential users of the development to understand the activities, uses and local identities that the public realm can promote. The consultation also considers how existing residents currently use this space.
2. The public realm is designed to allow multiple uses for different development users, including children, the elderly and disabled people with regard taken to safety, comfort, disturbance and security.
3. The design of the public realm takes account of the role it plays in terms of connectivity into and throughout the development.

One credit

4. Criteria 1 and 2 are achieved.
 5. An assessment is undertaken to determine the appropriateness of using some streets in the development as shared street space or home zones.
 6. Where the assessment has identified appropriate streets for shared spaces, design plans indicate where these spaces will be developed in the site. Appropriate levels of signage and surface treatments/landscaping will be used to clearly define these areas.
- OR
7. Where shared street spaces are not appropriate, the design plans indicate how space for social interaction has been considered in the design of streets and open areas throughout the development and its surroundings.

Two credits

8. Criteria 1 to 5 and either 6 or 7 are achieved.
9. Evidence from microclimate studies are used to influence the design of social spaces. Benches and other seating areas are located in places with consideration of the sun, shade, wind and rain.
10. The local identity of the area is strengthened through the design of social spaces. This is accomplished by incorporating information from community consultation.
11. A mix of uses on the ground floor (and range of access points to these) throughout the development encourages a sense of vibrancy through:
 - frequent use
 - activity overspill (e.g. café) to the street
 - transparent glazing to allow views both out and in.

Compliance Notes

Ref	Terms	Description
CN1	Consultation. See criterion 1	Consultation for this issue should be informed by 'GO01 – Consultation plan' and 'GO02 – Consultation and engagement'.
CN2	Multiple uses for different residents. See criterion 2	The required uses should be informed by the studies undertaken for 'SE02 – Demographic needs and priorities'.
CN3	Shared spaces. See criterion 5	Consultation to gauge support for shared spaces should be informed through the achievement of the minimum criteria for 'GO01 – Consultation plan' and 'GO02 – Consultation and engagement'.
CN4	Microclimate. See criterion 9	The relevant microclimate issues to be addressed should be informed by the studies undertaken for 'SE08 – Microclimate'.
CN5	Local identity. See criterion 10	Consultation to assess aspects of the local identity that are important to the local community should be informed through the achievement of the minimum criteria for 'GO01 – Consultation plan' and 'GO02 – Consultation and engagement'.

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
2	Design specifications and an explanation of the design of the public realm for multiple uses for different users.
5	A copy of the assessment or consultation feedback regarding this issue.
6	Signage and surface treatment strategy.
7	Design specifications for streets.
9	A copy of simulation outputs for the development characterising the microclimate of spaces in the public realm and marked up site drawings where appropriate (see the schedule of evidence for 'SE08 Microclimate').

Ref	Description
10	Site drawings and copies of documentation demonstrating consultation feedback, including (where relevant) agenda and minutes from meetings.
11	Documentation of the proposed uses for the ground floor in properties throughout the development.

Additional Information

This issue also relates to 'SE 10 - Adapting to climate change', 'SE 11 - Green infrastructure' and 'LE 05 – Landscape'. Guidance on shared street space and home zones can be found at www.homezones.org

Relevant definitions

Public realm (or public space)

Public realm (or space) has been defined by the Office of the Deputy Prime Minister (now Department for Communities and Local Government)¹ as: "...all those parts of the built and natural environment where the public has free access. It encompasses: all the streets, squares and other rights of way, whether predominantly in residential, commercial or community/civic uses; the open spaces and parks; and the 'public/private' spaces where public access is unrestricted (at least during daylight hours). It includes the interfaces with key internal and external and private spaces to which the public normally has free access".

¹ Office of the Deputy Prime Minister publication 'Living Places: Caring for Quality'

SE 08 – Microclimate

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	3

Aim

To ensure the development provides a comfortable outdoor environment through the control of general climatic conditions

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. A microclimatic simulation/study shows the effect of urban morphology on the external micro-climate of the development and surrounding area.
2. The development is designed to minimise adverse conditions, including negative microclimatic factors.

Two credits

3. Criteria 1 and 2 are achieved.
4. The development is designed to increase positive conditions throughout the year.

Three credits

5. Criteria 1 to 4 are achieved.
6. An appropriate and diverse range of favourable microclimatic conditions have been provided throughout the development to cater for a wide range of personal preferences.
7. The design of public space optimises microclimatic conditions at all times of the year.
8. The location and design of pedestrian/cycling routes takes full account of microclimatic conditions.

Compliance Notes

Ref	Terms	Description
CN1	Microclimatic factors. See criterion 1	The following factors should be considered: <ul style="list-style-type: none"> — temperature/thermal comfort — solar exposure (sky view and shadowing) — air movement and wind speed — dust and pollution — acoustic environment.

Ref	Terms	Description
		These factors can be influenced through design of the development in order to provide a comfortable thermal, visual and acoustic environment. There are no universally applicable measures that can be employed to ensure a comfortable microclimate. The specific needs and climatic characteristics of the site need to be considered in an integrated way.
CN2	Seasonal tailoring/adaptation. See criterion 4	The main summertime requirements of a space are likely to be provision of shade, cooling, air movement and prevention of glare. In winter conditions the focus will be on protection from wind and rain. An example of seasonal microclimate adaptation would be the use of deciduous trees in a public square to provide summer shade. These would then lose their leaves in winter allowing natural light to the square, improving visual comfort.
CN3	Demonstrating Compliance	It is the responsibility of the design / project team to demonstrate to the assessor that microclimatic effects have been considered seriously within the design and that this has positively influenced the outcomes to a significant degree.

Schedule of Evidence

Ref	Description
All	A copy of simulation outputs for the development (and marked up site drawings where appropriate) characterising the microclimate of exterior spaces and highlighting the influence of the adopted measures on microclimatic factors.

Additional information

This credit relates to assessment criteria in 'SE07 – Public realm. Evidence for this issue can be used as part of the evidence for criterion 8 in SE07 regarding the consideration of microclimate when designing the public realm.

Controlling the impact of the urban heat island effect (mitigation or utilisation, depending on the individual situation) at the micro scale is concerned with the thermal comfort of the people in those spaces and is a different issue from the consideration of the overall impact of the urban heat island effect from the development as a whole. However, some of the methods employed to manage the urban heat island effect may also be appropriate for achieving thermal comfort at the micro scale. Wind movement and solar exposure will also be key factors for affecting thermal comfort.

The extent of solar shadowing will have an impact on thermal comfort whilst natural light conditions play an important role in visual comfort. Daylight penetration and illumination of spaces will need to be balanced with the prevention of glare.

The flow of air through a development is an important factor in thermal comfort and air quality. Additionally, wind movement around buildings can aid natural ventilation but also contribute to heat loss. Building form and relationships should be designed to minimise funnelling, vortexes and other adverse wind conditions.

The acoustic environment of a space influences physical comfort and while there are large differences in acoustic preferences due to age, gender, cultural background, etc, in general, people express a preference for natural sounds over artificial sounds. Vehicle and construction noise is generally viewed as unfavourable.

This issue aims to encourage the use of careful design to enhance microclimatic conditions for the benefit of the health and economy of the community. Design of the microclimate to maximise use of solar heat gain/natural light/ventilation in order to reduce energy use is covered in RE01 – Energy strategy. Tools used to analyse the current site conditions and effects of different design strategies may be the same for both issues and with careful planning the measures employed may be relevant and beneficial for both microclimate and energy efficiency.

SE 09 – Utilities

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	3

Aim

To provide easy access to site service and communications infrastructure, with minimal disruption and need for reconstruction, and to allow for future growth in services.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. Provision of a single point of access for each service running through the site.
2. The following service providers have committed to the coordinated installation of related infrastructure:
 - gas
 - electricity
 - water / sewage
 - telecommunications / internet
 - heat and cooling (where relevant).

Two credits

3. Criteria 1 and 2 are achieved.
4. Access to the service(s) is provided away from any circulation routes on site.
5. Individual service providers have committed to provide access to the network(s) for maintenance which will not severely interrupt customer supply or cause unnecessary disruption, expense or nuisance to either the public domain or to the occupiers or their neighbours.

Three credits

6. Ducting is provided in addition to the necessary capacity to allow for future expansion of services.

Compliance Notes

Ref	Terms	Description
CN1	Scope of services. See criterion 1	For the purposes of this Issue, services include heating, cooling, power, water, sewerage and communications. Any additional subterranean services that the assessor feels should be located away from public areas should be included in this assessment. This includes any service that will

Ref	Terms	Description
		require maintenance repair.
CN2	Single point of access. See criterion 1	This is to ensure that maintenance can be provided in one place for each service for the site. As such, major junctions / service points should be located in a manner that reduces disruption to people’s movement within the development site. Single points of access should be provided at the building / plot level. BRE Global does not require a single point of access for services entering the site but these should be located in a manner to reduce disruption to people’s movement and for ease of access.
CN3	Circulation routes. See criterion 4	This refers to any point on the development where the public have right of access, on foot or through other means. Services should be located in such a way that any required maintenance would cause the least possible disruption to people’s movement throughout the development.

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence of the location of services, routes through the site and access points.
2	Letter of commitment on the installation of related infrastructure from all of the service providers.
4	Detailed documentary evidence of services’ planned route(s) in relation to public space, roadways, cycle routes and footpaths
5 & 7	Documentation from individual service providers.

Additional Information

Services may require maintenance anywhere along the ‘line’ in which they run. Therefore, key junctions or points at which regular maintenance would occur should be located away from areas in the public realm such as roads, footpaths and parks.

Relevant definitions

Footpaths

Any access or route designed for public access. It does not refer to any private access routes or access routes for a designated service e.g. a substation located away from public areas.

SE 10 – Adapting to climate change

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	3

Aim

To ensure the development is resilient to the known and predicted impacts of climate change.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. Evidence has been used from the local authority and statutory bodies to understand the known and predicted impacts of climate change for the site.
2. The masterplan takes account of evidence of the impacts of climate change on the site and demonstrates in the design plans how the risks will be managed.

Two credits

3. Criteria 1 and 2 are achieved.
4. The masterplan takes account of evidence of the impacts of climate change on the site and demonstrates in the design plans how the risks will be reduced.

Three credits

5. Criteria 1 to 4 are achieved.
6. The masterplan takes account of the evidence of impacts of climate change on the site and demonstrates in the design plans how the risks will be reduced through the use of 'win-win' measures (see compliance notes).

Compliance Notes

Ref	Terms	Description
CN1	Impacts of climate change. See criterion 1	Impacts of climate change considered should include: <ul style="list-style-type: none"> — increased temperatures (including the heat island effect) — flood risk — increased weather volatility — impacts on water resources — changes in ground conditions.
CN2	'Win-win'	These measures deliver benefits in addition to climate change

SE 10 – Adapting to climate change

Ref	Terms	Description
	measures. See criterion 6	<p>adaptability. This could include:</p> <ul style="list-style-type: none"> — Reducing more than one impact of climate change. For example, helping to reduce the heat island effect whilst also reducing flood risk — Reducing the contribution of the development to climate change. For example, reducing the need for electric cooling and therefore reducing carbon emissions. — Providing additional sustainability, economic or wellbeing benefits. For example, using drainage techniques that may also increase biodiversity or improve water quality.

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence.
2 & 4	Site plans and design specifications.
6	Site plans and design specifications with specific reference to 'win-win' measures.

Additional Information

This issue relates to the criteria in 'SE07 - Public realm', 'SE 11 - Green infrastructure' and 'LE05 - Landscape'. Further information on the impacts of climate change in the UK can be found from the UK Climate Impacts Programme: <http://ukclimateprojections.defra.gov.uk/>

Relevant definitions

Heat island effect

The heat island effect occurs when a development is significantly warmer than surrounding rural areas. Sustained high temperatures can have impacts on health, local micro-climate/weather conditions and energy use (for cooling). Methods for adapting to or reducing the heat island effect include, but are not limited to:

- increased vegetation
- green roofs and vegetated walls
- design to enable air-flow throughout the development
- open water and fountains
- shaded public spaces and footpaths
- external finishes that are designed to avoid heat absorption
- site layout / orientation to maximise microclimatic cooling
- interconnection of green spaces / corridors.

Flood risk

Rising sea levels and increases in average winter precipitation, as well as a general increase in the frequency, duration and intensity of rainfall may result in flood risks. Methods for adapting to increased flood risk include, but are not limited to:

- flood resilient buildings and materials
- managing flood pathways
- water storage within green space
- hard flood defences and barriers
- attenuation of runoff with green open space and green roofs
- use of sustainable drainage systems.

Impacts on water resources

Low summer rainfall could lead to water shortages and a decrease in water quality due to low flows in watercourses having less of a dilution effect on pollutants. Methods for adapting to impacts on water resources include, but are not limited to:

- increased use of reclaimed and recycled water
- reduction in water demand, for example through low water-use planting
- rainwater harvesting and use of sustainable drainage systems to collect and store water.

Changes in ground conditions

Climate changes have the potential to increase the occurrence of subsidence, heave, erosion, landslip and other adverse ground conditions. Methods for adapting to changes in ground conditions include, but are not limited to:

- vegetation management
- design of structures/foundations to be able to withstand predicted variations in ground conditions
- surface erosion controls
- reinforcement or re-grading of slopes.

SE 11 – Green infrastructure

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	4

Aim

To ensure access to high quality space in the natural environment and/or urban green infrastructure for all.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. Consultation has taken place with the local authority, existing residents and potential users of the development to understand the desired uses, design, quantity and location of accessible and natural greenspace.
2. A green infrastructure plan is developed as a part of the masterplan. A summary of the consultation responses and any constraints restricting the provision of accessible and natural greenspace are explained in this document.

Two credits

3. Criteria 1 and 2 are achieved.
4. The masterplan is designed to allow all residents to be within walking distance of greenspace via a safe and convenient pedestrian route.
5. There is a management strategy in place or the developer can confirm it will be in place to provide long-term maintenance of the greenspace. This can be through any of the options below:
 - the developer sets up a residents' association with funding arrangements,
 - the developer or owners hand over the title to new areas of open space to the local authority, usually with a commuted sum with which the local authority can fund future maintenance,
 - the local authority or developer makes an arrangement with a suitable third party for long-term maintenance.

Three credits

6. Criteria 1 to 5 are achieved.
7. The green infrastructure plan sets out the provision of the desired uses and design set out in consultation. Any deviation from consultation responses is reasonably justified.
8. In urban areas, the Accessible Natural Green Space Standard is achieved.

Four credits

9. Criteria 1 to 8 are achieved.
10. The green infrastructure plan sets out the provision of the desired quantity and location set out in consultation. Any deviation from consultation responses is reasonably justified.

Compliance Notes

Ref	Terms	Description
CN1	Consultation. See criterion 1	Consultation for this issue should be informed by 'GO01 – Consultation plan' and 'GO02 – Consultation and engagement'.
CN2	Green infrastructure plan. See criterion 2	Refer to LE04 – Enhancement of ecological value'.
CN3	Walking distance. See criterion 4	A maximum walking distance is provided in 'TM04 – Access to public transport'. It is defined as the following distances: ≤650m in an urban development OR ≤1300m in a rural development.
CN4	Safe and convenient pedestrian route. See criterion 4	See compliance notes for 'SE06 – Delivery of services, facilities and amenities' (including compliance note 6, for pedestrian routes beyond the site boundary).
CN5	Accessible Natural Green Space Standard (ANGSt). See criterion 8	The Accessible Natural Green Space Standards are maintained and operated by Natural England ¹ . They require: <ul style="list-style-type: none"> — an accessible natural green space of at least 2 hectares in size, no more than 300 metres (5 minutes' walk) from home — at least one accessible 20 hectare site within two kilometres of home — one accessible 100 hectare site within five kilometres of home — one accessible 500 hectare site within ten kilometres of home — one hectare of statutory Local Nature Reserves per thousand population.
CN6	Reasonably justified. See criterion 10	Reasonable justification might include excessive constraints to green infrastructure provision such as the size of the site.
CN7	Access to	On constrained sites the green space provided by the developer

¹Please refer to the Natural England website for the most up to date standard: www.naturalengland.org.uk/ourwork/enjoying/places/greenspace/greenspacestandards.aspx

Ref	Terms	Description
	green space beyond the site boundary	can be beyond the site boundary if this space is freely accessible to the public and access is maintained via a safe and convenient pedestrian route. Where the public green space falls beyond the boundary of the site, clearly marked plans must be provided that demonstrate where the space is in relation to the development site. The distance and routes residents would travel should also be clearly marked.

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
2, 6 & 9	A copy of the green infrastructure plan. This can be a section of another document such as the design and access statement.
4	Detailed documentary evidence of dwelling locations and proposed green infrastructure.
5	A statement of commitment from the developer or a draft contract to put in place a long-term maintenance strategy no later than practical completion.
8	An investigation report (or equivalent) showing that the developer has addressed and committed to meeting the requirements under the ANGSt (Accessible Natural Green Space Standards).

Additional Information

This issue relates to the criteria in 'SE07 - Public realm' and 'SE 10 - Adapting to climate change'.

The 2012 review, 'Microeconomic Evidence for the Benefits of Investment in the Environment'¹ published by Natural England provides evidence for the economic and social benefits of green infrastructure. These benefits include: economic growth, health and productivity, attractiveness, housing/property values, climate change mitigation and adaptation, air quality improvement, noise reduction, tourist and recreation attraction, community cohesion, and economic and social dynamism.

Relevant definitions

The following definitions are from Natural England²:

¹Natural England 2012: <http://publications.naturalengland.org.uk/publication/32031>

²'Nature Nearby: Accessible Natural Greenspace Guidance', Natural England, 2010 p.8

Accessible greenspace

"places that are available for the general public to use free of charge and without time restrictions (although some sites may be closed to the public overnight and there may be fees for parking a vehicle). The places are available to all, meaning that every reasonable effort is made to comply with the requirements under the Disability Discrimination Act (DDA 1995). An accessible place will also be known to the target users, including potential users who live within the site catchment area."

Natural greenspace

"Places where human control and activities are not intensive so that a feeling of naturalness is allowed to predominate. Natural and semi-natural greenspace exists as a distinct typology but also as discrete areas within the majority of other greenspace typologies. To simplify what we mean by natural when mapping natural greenspace we suggest the adoption of a proxy measure of land use categorisation under 4 levels [see Annex 2 in 'Nature Nearby: Accessible Natural Greenspace Guidance' (Natural England 2010 p.48)]."

Greenspace Quality

"A recognised standard of excellence that meets the expectations of both the staff and users of a site and the wider community and neighbourhood. Such sites are visually stimulating and attractive, safe and welcoming to all sections of society, managed and maintained to the highest standards of sustainability, and provide an enjoyable and inspirational visitor experience. The Green Flag Award is the nationally accepted standard of greenspace quality supported by Natural England. Play England is also developing a play quality standard for play spaces."

SE 12 – Local parking

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	1

Aim

To ensure parking is appropriate for the expected users and well integrated into the development.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. Consultation has taken place between the local authority, highway authority, developer, community representatives and other stakeholders. The consultation considers parking in relation to the following:
 - size and type of the development
 - expected levels of car ownership/visitor numbers to the development
 - expected levels of other vehicle use on site (e.g. cycles, delivery vehicles, motorcycles, mobility scooters, etc.)
 - acceptable distances between parking and residences/facilities
 - the extent to which private car journeys can be replaced by more sustainable modes (walking, cycling, public transport) or by other arrangements (such as home delivery of shopping)
 - the need to use land efficiently
 - the provision of public transport.
2. The results of the consultation have been analysed and an appropriate level of parking for the development that promotes sustainable transport choices has been agreed with the local authority.

One credit

3. Criteria 1 and 2 are achieved.
4. Parking is integrated into the development without allowing it to dominate the space or interfere with cyclist, pedestrian and motor vehicle movement.
5. Where appropriate, residential parking is located behind, under, above or to the side of the building as opposed to within the front curtilage.
6. Residential parking is overlooked by houses and is located an appropriate distance from the vehicle owner's dwelling, as established during consultation.

Compliance Notes

Ref	Terms	Description
CN1	Integrating parking into the development . See criterion 4	<p>Examples of integration of parking into the development include but are not limited to:</p> <ul style="list-style-type: none"> — small scale, dispersed parking throughout developments — use of trees and hedges to prevent full exposure of the vehicles to the view from the street — entrances to underground car parking should not dominate the streetscape. — entrance ramps should be integrated within the pedestrian area using appropriate detailing and materials.
CN2	Secure parking garage. See criterion 6	If residential parking is to be provided in a secure parking garage a credit can be awarded. The garage must have controlled access to be classified as secure.

Schedule of Evidence

Ref	Description
1	Copies of documentation outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
2	Summary of the analysis and confirmation of the parking provision within the development
4	Site plans and design specifications detailing how the parking will be integrated into the development
5 - 6	Site plans and design specifications detailing the location of residential parking in relation to the dwellings

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 04 Maximum car parking capacity.

Relevant definitions

Shared car parking

Parking spaces can be shared by more than one use. For example, schools and leisure facilities might share parking because the peak levels of use do not coincide.

SE 13 – Flood risk management

Step	Category	Mandatory standards	No. of credits available
2	Social and economic wellbeing	No	3

Aim

To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk of localised flooding on and off site, watercourse pollution and other environmental damage.

Assessment criteria

The following is required to demonstrate compliance:

One credit

1. The recommendations of the appropriate statutory bodies within the site specific flood risk assessment are incorporated into the masterplan, as per SE03 – Flood risk assessment.
2. An appropriately qualified professional is appointed to carry out the calculations and provide design criteria for all elements regarding the surface water run-off drainage system in a report.
3. The peak rate of surface water run-off over the development lifetime, allowing for climate change, is no greater for the developed site than it was for the pre-development site. This should comply at the 1 year and 100 year return period events.

Two credits

4. Criteria 1 to 3 are achieved.
5. Any additional volume of rainwater discharge predicted to be caused by the new development for a 1 in 100 year event of 6 hour duration (including an allowance for climate change) should be reduced as far as possible using infiltration and/or other SuDs techniques. Where this is not possible technical justification will need to be provided and alternative flow rates will need to be satisfied (see compliance notes and schedule of evidence).

Three credits

6. Criteria 1 to 5 are achieved.
7. Where flooding of property would not occur in the event of local drainage system failure (caused either by extreme rainfall, a lack of maintenance or accidental damage/blockage).

Compliance Notes

Ref	Terms	Description
CN1	Appropriately	See compliance notes for 'LE03 – Water pollution'.

Ref	Terms	Description
	qualified professional. See criterion 2	
CN2	Report. See criterion 2	<p>The appropriately qualified professional's report should contain all information necessary to demonstrate compliance with the peak rate of run-off requirements. The report should include:</p> <ul style="list-style-type: none"> — areas of permeable and impermeable surfaces on the site pre- and post- development — details of the permeability characteristics of the site pre- and post-development (e.g. infiltration tests etc where appropriate) — peak rates of run-off (l/s) calculations for the 1 year and 100 year events, pre- and post-development, including an allowance for climate change over the development lifetime — detailed documentary evidence showing the design methods used to reduce the peak rate of run-off to pre-development rates. — the pre-development volume of run-off (m³) for the 100 year 6 hour event — the additional volume of run-off (m³) for the 100 year 6 hour event caused by the development without mitigation measures — the additional volume of run-off (m³) with the proposed mitigation — information to demonstrate that the hierarchical approach to reducing the additional volume of run-off was followed — information on the calculation methods used — summary results.
CN3	Pre-development. See criterion 3	The site's condition immediately before project commencement, e.g. brownfield or greenfield.
CN4	Calculating the volume of run off. See criterion 3	Refer to Chapter 4, Section 4.5.5 of The SuDS Manual (CIRIA C697, 2007) for guidance on calculating the additional volume of run-off caused by the development.
CN5	Calculating the peak rate of run off for greenfield sites. See criterion 3	<p>Greenfield sites of less than 50 ha: The calculation of greenfield run-off rates must be in accordance with IH Report 124, Flood estimation for small catchments (Marshall and Bayliss, 1994). The pro-rata method on the size of catchment detailed in Table 4.2 in The SuDS Manual, CIRIA C697 (2007) must be followed.</p> <p>Greenfield sites of 50 ha to 200 ha: The calculation of greenfield run-off rates must be in accordance with IH Report 124, Flood estimation for small catchments (Marshall and Bayliss, 1994). FEH can be used for these sites as an alternative, where there is a preference to do so, but only if the catchment is considered to be suitable for its application.</p>

SE 13 – Flood risk management

Ref	Terms	Description
		Greenfield sites of more than 200 ha: The calculation of greenfield run-off rates must be in accordance with the Flood Estimation Handbook (Centre for Ecology & Hydrology, 1999) and any subsequent updates. Where the Flood Estimation Handbook is not considered appropriate for the development IH Report 124 can be used.
CN6	Calculating the peak rate of run off for brownfield sites. See criterion 3	If the existing drainage is known and is fully operational then it should be modelled using best practice simulation modelling, to determine the 1 year and 100 year peak flow rates at discharge points (without allowing surcharge of the system above cover levels to drive greater flow rates through the discharge points). If the system is not known, then the brownfield run-off should be calculated using the greenfield run-off models described above but with a Soil Type 5.
CN7	Allowance for climate change. See criterion 5	See compliance notes for 'SE 03 - Flood risk assessment'.
CN8	SuDS techniques. See criterion 5	<p>One or more components built to manage surface water run-off to prevent flooding and pollution, including:</p> <ul style="list-style-type: none"> — wet ponds — infiltration basins — detention basins — swales — reed beds — pervious (porous or permeable) paving — soakaways — rainwater harvesting — filter strips — filter drains and trenches with or without perforated pipes — green roofs — underground attenuation storage. <p>For more information refer to The SuDS manual (CIRIA C697, 2007)</p>
CN9	Designing for system failure. See criterion 7	CIRIA publication C635 (2006) Designing for exceedence in urban drainage – good practice should be referred to for guidance.
CN 10	Contaminated sites	Drainage designs for sites must take into account legislation relating to contaminated sites, such as the Water Resources Act 1991, the Environmental Protection Act 1990, the Groundwater Directive (2006/118/EC) and, more recently, the Groundwater (England and Wales) Regulations 2009. Where the site risk assessment confirms that infiltration SuDS techniques are not appropriate, SuDS techniques that do not allow infiltration, such as swales lined with an impermeable membrane, can be used. It may

Ref	Terms	Description
		be the case that only some areas of the site are contaminated and therefore infiltration SuDS techniques can be used elsewhere on the site. There may also be a requirement to remediate the contaminated soils, creating opportunities for the use of infiltration SuDS post-remediation.
CN 11	Derelict site	If the site has been derelict for over five years, the appropriately qualified professional must assess the previous drainage network and make reasonable assumptions to establish probable flow rates and volumes, using best practice simulation modelling, to determine the 1 year and 100 year peak flow rates at discharge points (without allowing surcharge of the system above cover levels to drive greater flow rates through the discharge points). To complete the calculations, a site visit prior to development will be required unless accurate data already exist from a previous survey. The resultant professional report can then be used to determine the pre-development volumes and rates of run-off. Without this professional input, the site must be deemed greenfield pre-development, assuming Soil Type 5 for the calculation of the pre-development site run-off.
CN 12	Discharge to the sea or tidal estuaries	If all run off is discharged directly from the site to either the sea, estuaries covered by a shoreline management plan or designated wildlife / SSSI areas (as part of habitat management), then the credit may be awarded without the need to specify additional attenuation measures.
CN 13	Discharge of additional volume to watercourses	Where it is not possible to ensure that the post development volume of run-off, allowing for climate change over the development lifetime, is no greater than it would have been before the development (full justification must be provided), the following should be achieved: Reduce the post development peak rate of run-off to the limiting discharge. The limiting discharge is the pre-development flow rate equivalent to the mean annual flood flow rate (Q_{bar}) or 2 l/s/ha. For all events up to the 100 year return period event, the peak rate of run-off for the developed site must not exceed the limiting discharge. Where the limiting discharge flow rate would require a flow rate of less than 5 l/s at a discharge point, a flow rate of up to 5 l/s may be used where required to reduce the risk of blockage.
CN 14	Limiting discharge rate	The limiting discharge for each discharge point should be calculated as the flow rates from the pre-developed site, as detailed in the calculation procedures above. The calculation should include the total flow rate from the total area of site feeding into the discharge point. The discharge point is defined as the point of discharge into the watercourse/sewers. Where this calculation results in a peak flow rate of less than 5 l/s, the limiting discharge

Ref	Terms	Description
		rate may be increased up to a level of no more than 5 l/s at the point of discharge from the site to reduce the risk of blockage.
CN 15	Minimum flow rate/maximum storage requirement set by a Statutory Body	<p>Where the statutory authority have exercised their statutory powers and have set specific minimum flow rate/maximum storage requirements that are less onerous than criterion 3, the statutory requirements will take precedent over this criterion. All other criteria within this issue will still be applicable. Evidence should be provided to confirm that this is the case and should be formal documentation from the statutory authority. This should include evidence such as planning approvals/conditions and/or correspondence from a statutory body setting out their specific requirements, i.e. sewerage undertaker, Environment Agency etc. The Flood Risk Assessment may contain some of the evidence required to demonstrate compliance.</p> <p>Note: Where the statutory authority has approved a design on the basis of a minimum discharge rate identified through a FRA, compliance with this minimum standard, will be deemed to meet the mandatory peak rate of run-off requirement, where supported by the documentary evidence. However, in all other cases, the approval of a specific design feature or the setting of a non-compliant discharge rate will not be sufficient to demonstrate compliance.</p>
CN 16	No change in impermeable area	<p>Where the impermeable area draining to the watercourse (natural or municipal) has decreased or remains unchanged post-development, the peak and volume rate of run-off requirements for the surface water run-off 'credits' will be met by default. Flow rate calculations will not need to be provided. Instead, drawings clearly showing the impermeable areas of the site draining to the watercourse should be provided for the pre- and post-development scenarios. Figures must also be given (ideally on the drawings) to show a comparison between the areas of drained impermeable surfaces pre- and post-development. In this instance a Flood Risk Assessment must be carried out and any opportunities identified to reduce surface water run-off are implemented.</p>

Where required, please refer to the compliance notes for 'SE 03 – Flood risk assessment.'

Schedule of Evidence

Ref	Description
1	Copy of the Flood Risk Assessment including the design specifications, calculations and drawings highlighting the measures recommended by the appropriate statutory bodies.

Ref	Description
2	Letter or email from the design team / client confirming appointment of an appropriately qualified professional. A copy of the appropriately qualified professional's report.
3	A copy of the appropriately qualified professional's report
5	The appropriately qualified professional's report containing all information necessary to demonstrate compliance with the volume of run-off requirements.
7	Drawings showing the pre-development drainage for the site (natural or constructed) Drawings showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels Confirmation from the appropriately qualified professional that local drainage system failure would not cause an increase in the risk of flooding within dwellings either on or off site.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Pol 03 Surface water run off. The assessor is not required to perform any calculations as these should be provided by the design team / client.

Relevant definitions

Discharge point

The point of discharge into watercourses and sewers (see definition of 'Watercourses and sewers')

Greenfield land

Land that has not been previously developed.

Greenfield runoff rate

The rate of run-off that would occur from the site in its undeveloped state

Peak Rate

Referred to as Q_p [m^3/sec], this is the highest rate of flow from a defined catchment area assuming that rainfall is uniformly distributed over the drainage area, considering the entire drainage area as a single unit and estimation of flow at the most downstream point only.

Qbar

An estimation of the mean annual flood flow rate from a catchment (see Report IH124 Flood estimations for small catchments).

Sustainable Drainage Systems (SuDS)

As defined in the SuDS manual, sustainable drainage systems are an approach to surface water management that combines a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques. These systems infiltrate, store, convey and partially treat surface water runoff, which minimises environmental impact and maximises environmental opportunities. SuDS should aim to maximise the use of on-the-surface techniques for operational and maintenance reasons.

Tidal estuary

A semi-enclosed coastal body of water which has a free connection with the open sea and within which seawater is measurably diluted with fresh water derived from land drainage. Tidal rivers (i.e. where no measurable seawater content is present during normal tidal movements) cannot be included as part of the estuary.

Volume of run-off

The volume of run-off that is generated by rainfall occurring on the site. This is typically measured in cubic metres. Additional predicted volume of run-off is the difference between the volumes of run-off pre- and post-development, usually calculated for a specific rainfall event.

Watercourses and sewers

A term that includes rivers, streams, ditches, drains, cuts, culverts, dykes, sluices, sewers and passages through which water flows.

LE 03 – Water pollution

Step	Category	Mandatory standards	No. of credits available
2	Land use and ecology	No	3

Aim

To ensure that measures are put in place to protect the local watercourse from pollution and other environmental damage.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. A comprehensive and up-to-date drainage plan of the site will be made available to the authority responsible for maintaining the drainage infrastructure and future development users. This aims to prevent the proposed drainage being affected by future works or a lack of maintenance.
2. Measures are put in place to avoid any potential water pollution during construction in accordance with the following Environment Agency pollution prevention guidelines (PPGs): PPG 1, PPG 5 and PPG 6.

Two credits

3. Criteria 1 and 2 are achieved.
4. Where an appropriately qualified professional designs a system to ensure that the run-off from all hard surfaces shall receive an appropriate level of treatment in accordance with the SuDS Manual to minimise the risk of pollution. Note: The SuDS Manual best practice recommendations should be followed where there is a risk to groundwater from infiltration (for example, contaminated land or developments with high risk of pollution incidents).
5. Where the building has chemical/liquid gas storage areas, shut-off valves are fitted to the site drainage system to prevent the escape of chemicals to natural watercourses (in the event of a spillage, leak or bunding failure).
6. Specification of oil/petrol separators (or equivalent systems) in surface water drainage systems, where there is a high risk of contamination or spillage of substances such as petrol and oil (see compliance notes for a list of areas).

Three credits

7. Criteria 1 to 6 are achieved.
8. The appropriately qualified professional confirms that there will be no discharge from the developed site for rainfall depths up to 5mm.

Compliance Notes

Ref	Terms	Description
CN1	Drainage plan. See criterion 1	A comprehensive and up-to-date drainage plan of the site, which accurately identifies all drains, must be produced and handed over to the new occupier(s). If there is no in-house expertise to do this an appropriately qualified professional may need to be employed.
CN2	Appropriately Qualified Professional. See criterion 4	A professional or team of professionals with the skills and experience to champion the use of SuDS within the overall design of the development at an early stage. The professional or team of professionals must be capable of understanding the site's particular surface water management needs and opportunities. In addition, they must have knowledge and experience in using SuDS-based solutions to influence the holistic design of a development's drainage system and provide the robust hydraulic design calculations referred to in key guidance documents such as The SuDS manual (CIRIA C697, 2007) and Preliminary rainfall runoff management for developments (EA/DEFRA, 2007). Suitable professionals may be found in a variety of disciplines, such as engineering, landscape design or hydrology or a combination. Geotechnical advisers or specialists may be required for SuDS techniques that allow infiltration.
CN3	Areas where oil separators are required. See criterion 6	'Pollution Prevention Guide 3 Use and design of oil separators in surface water drainage systems' ¹ defines the type of areas on a development where separators are required. In some instances, where the risk of contamination is infrequent and potential spills will be small, oil interceptors may not be required if appropriately designed Sustainable Urban Drainage systems are specified. Refer to PPG3 for additional guidance.
CN4	5mm discharge for minimising watercourse pollution. See criterion 8	A range of SuDS techniques can be used to prevent discharge from the site for rainfall depths of up to 5 mm; however, end-of-pipe solutions, such as ponds and basins, will only be deemed to comply where the principal run-off control to prevent discharge from the first 5 mm of a rainfall event is achieved using source control and site control methods. Green roofs and permeable surfaces can be deemed to comply with this criterion for the rain that falls onto their surface. However, evidence is still required to demonstrate that the 5 mm rainfall

¹'Pollution Prevention Guide 3 Use and design of oil separators in surface water drainage systems' (2006) produced on behalf of the Environment and Heritage Service (Northern Ireland), Scottish Environment Protection Agency and Environment Agency (England and Wales).

Ref	Terms	Description
		from all other hard surfaces on site is being dealt with, to allow this credit to be awarded.
CN5	Level of Treatment	<p>When used in the context of one, two or three levels of treatment for surface water, treatment level should be regarded as the number of SuDS components in series through which run-off passes from the originating surface on which rainfall fell to the site discharge point.</p> <p>Where a SuDS component has more than one treatment process, it might be considered to provide more than one level of treatment. In these circumstances please contact the BREEAM Centre: breeam@bre.co.uk</p>

Schedule of Evidence

Ref	Description
1	A copy of the drainage plan, confirmation that it has been handed over to the authority responsible for maintaining the drainage infrastructure, and a plan for how it will be made available to occupiers.
2	Written confirmation from the developer that the site procedures to minimise water course pollution will follow the PPGs.
4 - 6	<p>Marked-up site plan highlighting low and high risk areas of the site.</p> <p>A copy of the relevant section/clauses of the building specification or design drawings confirming the type of pollution control systems, oil and petrol separators, shut-off valves and SuDS specified, where appropriate.</p>
7	The appropriately qualified professional's report detailing the design specifications, calculations and drawings to support the 5mm rainfall discharge criteria.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Pol 03 Surface water run off.

LE 04 – Enhancement of ecological value

Step	Category	Mandatory standards	No. of credits available
2	Land use and ecology	No	3

Aim

To ensure that the ecological value of the development is maximised through enhancement.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. The masterplan enhances ecological value through the creation of appropriate new habitats or through the increase in scale of existing habitats on the site in accordance with the recommendations of the suitably qualified ecologist and appropriate statutory or wildlife bodies.

Two credits

2. Criteria 1 is achieved.
3. The masterplan enhances ecological value through the protection, enhancement and/or creation of wildlife corridors on the site linking established and/or new wildlife habitats on or adjacent to the site. These proposals should be developed in accordance with the recommendations of the suitably qualified ecologist and appropriate statutory or wildlife bodies.

Three credits

4. Criteria 1 to 3 are achieved.
5. The ecological plans are integrated within a green infrastructure plan (or similar strategy) to maximise the following (when appropriate):
 - amenity and social provision
 - occupier/user health and wellbeing
 - conservation (heritage and archaeology)
 - adaptation to climate change
 - aesthetic value of green spaces on and near to the site.

Compliance Notes

Ref	Terms	Description
CN1	Suitably qualified ecologist. See criterion 1	Refer to 'LE01 – Ecology strategy'.

Ref	Terms	Description
CN2	Green infrastructure plan. See criterion 5	<p>A document (or section of another document, such as the design and access statement) outlining:</p> <ul style="list-style-type: none"> — the location, type and size of green infrastructure — links to the enhancement of ecological value — links to the landscape design of greenspace. <p>Also see 'LE06 – Rainwater harvesting'.</p>

Schedule of Evidence

Ref	Description
1 & 3	A letter of verification from the suitably qualified ecologist.
5	A copy of the green infrastructure plan or similar strategy.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under LE04 Enhancing site ecology.

Development is usually seen as being detrimental to the ecological value of the site. This is often the case but enhancement can also be implemented. Where damage is necessary and unavoidable its effects can be offset to some extent through enhancement in other areas of the site. The steps to be taken will depend on the nature of the site and the surrounding areas, and independent specialised advice should be sought in this respect.

Where the development site is linking to green areas beyond the site boundary this should be as clear as possible. Where links are broken by infrastructure (such as roads) the views of the ecologist must be sought as to whether this will be a barrier to migration routes.

LE 05 – Landscape

Step	Category	Mandatory standards	No. of credits available
2	Land use and ecology	No	5

Aim

To ensure that the character of the landscape is respected and, where possible, enhanced through the location of features and design appropriate to the local environment.

Assessment Criteria

The following is required to demonstrate compliance:

Ecological landscape

Minimum (no credits)

1. The suitably qualified ecologist confirms that the detailed landscaping and planting design and site specific protection measures conform with the ecology strategy prepared under 'LE01 – Ecology strategy'.

One credit

2. Criterion 1 is achieved.
3. At least 60% of tree and scrub and herbaceous planting consists of appropriate native species (or other ecologically appropriate species where recommended by the suitably qualified ecologist to take account of the nature of the site conditions).
4. A commitment is made to appoint an ecology clerk of works to ensure the ecological strategy is implemented throughout the construction phase.

Two credits

5. Criteria 1 to 4 are achieved.
6. Water efficiency is considered in the selection of tree, scrub and herbaceous planting specifications and any associated irrigation systems. This is informed by the water strategy in 'RE03 - Water strategy'.

Three credits

7. Criteria 1 to 6 are achieved.
8. At least 80% of tree and scrub and herbaceous planting consists of appropriate locally native species (or other ecologically appropriate species where recommended by the suitably qualified ecologist to take account of the nature of the site).

Four credits

9. Criteria 1 to 8 are achieved.
10. There is a commitment to prepare and implement a landscape management and maintenance plan to ensure the long-term achievement of the ecology objectives and their maintenance during occupation. The plan should allow for planned maintenance and protection. It should also establish appropriate and enforceable responsibilities for management and maintenance that

have been agreed and set out in accordance with the ecology strategy under LE01 – Ecology strategy.

Sustainable landscape design

One credit

11. The proposed landscape design has been developed with reference to the community needs outlined in consultation for 'SE 07 – Public realm'.
12. Existing landscape features and landmarks considered important will be preserved in the new development.
13. The proposed landscape design has been assessed by an independent design review panel to ensure the design achieves environmental, social and aesthetic outcomes (see 'GO 03 – Design review').

Compliance Notes

Ref	Terms	Description
CN1	Suitably qualified ecologist. See criterion 1	See the compliance notes for 'LE01 – Ecology strategy'. Please note that the detailed landscaping and planting design can be carried out by a landscape architect or other professional.
CN2	Ecology clerk of works. See criterion 3	Independent qualified ecologist commissioned to monitor the construction of development and give advice on the implementation of mitigation and/or compensation measures.

Schedule of Evidence

Ref	Description
1, 3 & 8	A verification letter from the suitably qualified ecologist.
4	A letter of confirmation or contract.
6	Detailed documentary evidence.
10	A letter of commitment from the developer and a verification letter from the suitably qualified ecologist.
11	Copies of documentation outlining consultation feedback, including (where relevant) agenda and minutes from meetings.

LE05 – Landscape

Ref	Description
12	Written confirmation or copy of the landscape design statement.
13	A copy of the recommendations from the design review panel. A copy of the design and access statement.

Additional Information

None.

TM 02 – Safe and appealing streets

Step	Category	Mandatory standards	No. of credits available
2	Transport and movement	No	4

Aim

To create safe and appealing spaces that encourage human interaction and a positive sense of place.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. The transport assessment or statement and travel plans are used to inform the objectives for the design of streets.
2. A context appraisal is carried out to determine the appropriate layout of streets in relation to the existing or planned buildings and/or open space.
3. A movement framework is developed to determine the layout and design of streets that will promote sustainable modes of movement and transport through travel plans.

One credit

4. Criteria 1 to 3 are achieved.
5. Street layouts and the design of pedestrian and cycle routes are safe and secure by incorporating the following:
 - in residential areas, all streets and open spaces will be overlooked by multiple dwellings
 - all access points and routes through the site will be well lit, direct and overlooked
 - pedestrian crossings are designed to ensure safety for all users
 - a clear distinction is made between public, semi-public and private external spaces.
6. Design measures are incorporated into the masterplan to ensure safety with regard to large vehicles and pedestrian and cyclist movement. As a minimum, vehicle delivery areas are not accessed through parking areas and do not cross or share pedestrian and cyclist routes.

Two credits

7. Criteria 1 to 6 are achieved.
8. The landscape design strategy enhances pedestrian routes through design and the provision of attractive landscaping.
9. Pedestrian routes allow easy navigation around the development using key features and existing neighbourhoods to aid navigation. As a minimum, the following is achieved:
 - new routes into the development are a continuation of existing routes from the surrounding area
 - routes connect residential areas to, and between, community focal points in the development and surrounding area.

Three credits

10. Criteria 1 to 9 are achieved.
11. Within the development's traffic management plan, targets have been set regarding road traffic accident reduction and these targets have been agreed and informed by the local authority, high-way authority and/or police authority.
12. Potential vehicle noise disturbance and potential visual and vibration disturbance from heavy vehicles to site users has been mitigated through road layout, building orientation and buffer zones.

Four credits

13. Criteria 1 to 12 are achieved.
14. A maintenance contract will be in place for external areas that are not covered by the local authority for at least the first five years from the time the development is occupied.

Compliance Notes

Ref	Terms	Description
CN1	Context appraisal. See criterion 2	<p>The Department for Transport's Manual for Streets explains the function of a context appraisal as:</p> <p>"The context appraisal will identify how an area has developed in terms of form, scale, the pattern and character of streets and how a site or existing street relates to existing buildings and/or open space." This will involve analysing the following:</p> <ul style="list-style-type: none"> — local character and distinctiveness — how existing streets sit within the area — the relationship between streets, buildings and the public realm — the use of links to important destinations — the need to remedy existing poor-quality connections — the importance of existing or planned buildings and public spaces — key destinations such as transport nodes, educational facilities, offices, and retail areas — movement via pedestrians, cyclists, public transport users, specialist vehicles (including large and heavy goods vehicles) and other motor traffic. <p>Guidance on the context appraisal and movement framework are available in the Manual for Streets.</p>
CN2	Movement framework. See criterion 3	<p>The Manual for Streets¹ explains the function and development of a movement framework. The framework should include consideration of:</p> <ul style="list-style-type: none"> — a hierarchy of sustainable transport (pedestrians, cyclists, public transport users, specialist vehicles and other motor

¹Manual for Streets, Department for Transport, Thomas Telford Publishing, London, 2007. p.26-29

Ref	Terms	Description
		<ul style="list-style-type: none"> — traffic) — the form of the surrounding environment (buildings, landscape and activities) — connection and permeability of street networks.
CN3	Design measures for street safety and large vehicles. See criterion 7	<p>The following design measures could be used to address the impact of large vehicles:</p> <ul style="list-style-type: none"> — parking and turning areas allow for simple manoeuvring of large vehicle type, thus avoiding the risk of minor collisions — there are separate parking areas for waiting goods vehicles, away from the manoeuvring areas and staff / visitor car parking — there are dedicated space(s) for the storage of refuse skips / pallets away from delivery vehicle manoeuvring areas and car parking.

Schedule of Evidence

Ref	Description
1, 3 – 6 & 9, 12	A copy of the movement framework (or equivalent plan).
2	A copy of the context appraisal.
8	A copy of the landscape design strategy.
9	Site drawings.
11	Detailed documentary evidence of targets and agreements.
14	Written commitment or draft maintenance contract. Confirmation from the local authority (and highway authority in two tier areas) of those areas of external space that they will take as part of their municipal activities. This could include the maintenance of the roads, cycle and footpaths.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 05 Travel plan.

Relevant definitions

Semi-public

Those areas often adjacent to buildings or private areas that whilst not enclosed or demarcated as private are not expected to be accessed by users of the public areas. This could include buffer zones between public rights of way and private boundary finishes.

Private

Areas often within buildings or surrounded by boundary finishes such as fencing and hedges that create a sense of exclusion from the public realm. These areas are for the use of the building (or area) occupants only.

Community focal points

Facilities/amenities within the development and surrounding area. This may include: retail, healthcare, educational, sports, recreation, dedicated open spaces, community meeting areas and transport facilities.

TM 03 – Cycling network

Step	Category	Mandatory standards	No. of credits available
2	Transport and movement	No	1

Aim

To promote cycling as a leisure activity and as an alternative to vehicle use by providing a safe and efficient cycle network.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. The movement framework or similar (developed for 'TM02 – Safe and appealing streets') covers items A – E below.

One credit

2. Criterion 1 is achieved.
3. The movement framework or similar (developed for 'TM02 – Safe and appealing streets') covers items F – G below.

Item	Description
A	Cycle routes in the development connect to, or are a continuation of existing routes from the surrounding area.
B	Cycle routes connect residential areas to, and between, community focal points in the development and surrounding area.
C	Cycle routes are direct and safe (well lit, safe road crossings etc.).
D	Cycle routes are segregated from vehicles and pedestrians as appropriate: <ul style="list-style-type: none"> — on low speed streets (below 20mph) cyclists can be integrated with vehicles — on busy streets or where there are higher traffic speeds there should be clearly defined cycle lanes — separate cycle tracks should be introduced where space allows, in particular where the traffic speeds exceed 30mph — pedestrians and cyclists can share the same space, but steps must be taken to segregate the two, for example, a raised kerb or clear markings. Where pedestrians and cyclists share the same space but segregation is not possible, a minimum width of 3 metres should be provided.

TM03 – Cycling network

Item	Description
E	Adequate signage detailing directions and route information is provided to aid cyclist navigation around the development and into the surrounding area.
F	Special provision is provided at junctions (including roundabouts) for cyclists. Junctions are designed to ensure that cyclists can see, and be seen by other road users. Cyclists are given priority at interchanges with other infrastructure networks, for example, through the phasing of lights, priority crossing points and advanced stop lines.
G	Cycle routes are attractive and designed to be enjoyable in order to encourage cycling and discourage the use of vehicles.

Compliance Notes

Ref	Terms	Description
CN1	Cycle lane dimensions	Cycle lanes should be 2 metres wide on roads where traffic is travelling in excess of 40 mph. Cycle lanes should be 1.5 metres wide on roads where traffic is travelling at less than 40 mph.

Schedule of Evidence

Ref	Description
All	Detailed documentary evidence.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 05 Travel plan. Further information on Cycle Infrastructure Design can be found in the Department for Transport Local Transport Note 2/08.

TM 04 – Access to public transport

Step	Category	Mandatory standards	No. of credits available
2	Transport and movement	No	4

Aim

To ensure the availability of frequent and convenient public transport links to fixed public transport nodes (train, bus, tram or tube) and local centres.

Assessment Criteria

The following is required to demonstrate compliance:

One to four credits

1. The distance from each building entrance to a compliant transport node must be via a safe and convenient pedestrian route and between the following distances:

Credits	Distances (urban)	Distances (rural)
1	≤650m	≤1300m
2	≤550m	≤1100m
3	≤450m	≤900m
4	≤350m	≤700m

Compliance Notes

Ref	Terms	Description
CN1	Compliant transport node	In order to be compliant the transport node must provide a regular/frequent service. The node must have a service at least every 10 / 15 (peak / off peak) minutes in urban areas and every 30 minutes / 1 hour (peak / off peak) in rural areas. The services should run to a local centre or a key services centre.
CN2	Proximity to buildings	The public transport nodes' proximity and frequency should be assessed for each building separately. The resulting 'credits' should

TM04 – Access to public transport

Ref	Terms	Description
		be averaged to obtain the 'credits' awarded to the whole development. Where building types are unknown, notional entrance points must be marked on the masterplan and measurement taken from this point.
CN3	Measuring distance	Distance should not be measured 'as the crow flies' and must be measured via a safe pedestrian route (see CN6 below) from the main building entrance to the nearest compliant transport node.
CN4	Multiple services at a transport node	Where a transport node is served by more than one service going to a local urban centre, the frequency between services can be used as the frequency for assessment. For example, where there are three services, each with a 30 minute frequency but each follows on 10 minutes after the other, and then the frequency used for assessment purposes would be 10 minutes.
CN5	Multiple transport nodes	Where there is more than one transport node but it serves different proximities of the buildings / units / plots, e.g. one node at 400m and another at 600m then each node should be assessed separately and the 'credits' awarded for the best performing node.
CN6	Safe and convenient pedestrian route	See compliance notes for 'SE06 – Delivery of services, facilities and amenities'.
CN7	Phased developments	In the case of a large development where new transport facilities will be provided at a later stage than the phase being assessed, a commitment to provide the transport facilities should be demonstrated either within the General Contract Specification or in a binding undertaking such as a Section 106 Agreement.

Schedule of Evidence

Ref	Description
All	<p>Detailed documentary evidence highlighting the agreed:</p> <ul style="list-style-type: none"> — public transport nodes — distances from building entrances to the transport nodes — safe pedestrian routes <p>Details of the agreed public transport provision, as a minimum:</p> <ul style="list-style-type: none"> — public transport routes and stops — frequency of services at peak and off peak times — details of local urban centres.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 01 Public transport accessibility and Tra 05 Travel plan.

Relevant definitions

Local centre

A local centre is defined as any community focal point. This includes local shops, community facilities, a major transport node, (i.e. a railway, bus station) or another type of significant non-leisure related meeting place.

Peak hours

between 08:00 - 19:00

Off peak hours

between 19:00 - 08:00

Step 3: Designing the details

The final step in BREEAM Communities focuses on the detailed design of the development. Evidence from previous engagement activities and site-wide strategies will be used to inform more detailed plans and designs.

Depending on the size of the development, there may not be a clear distinction between Steps 2 and 3 of BREEAM Communities. The local community and other stakeholders continue to be involved in influencing design options as the masterplan progresses into greater levels of detail and the construction phase.

In this step in BREEAM Communities the design team will be designing and testing options for:

- landscaping
- construction materials
- management and long-term stewardship of facilities and services
- building design
- inclusive design
- resource efficiency during and after construction
- using local employment during construction.

None of the issues in Step 3 are mandatory. The BREEAM Communities Assessor will work with the design team to determine which issues can be achieved under BREEAM Communities.

GO 04 – Community management of facilities

Step	Category	Mandatory standards	No. of credits available
3	Community ownership	No	3

Aim

To support communities in active involvement in developing, managing and/or owning selected facilities.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. All community facilities will be developed and managed during the construction phases with procedures in place to allow handover to the responsible party at project completion.
2. Training and user manuals will be provided to the responsible party on the operation and maintenance of the community facilities, particularly in relation to sustainable design and technologies with which users may be unfamiliar.

Two credits

3. Criteria 1 and 2 are achieved.
4. The developer agrees to provide significant support to a community group or trust to manage the implementation of one or more community facility.

Three credits

5. Criteria 1 to 4 are achieved.
6. The developer agrees to support the development of a Community Development Trust (CDT) or management company for the new community. The local authority agrees to work in partnership with the CDT. Management structures are agreed.

Compliance Notes

Ref	Terms	Description
CN1	Community facility. See criterion 1	Any service, facility or amenity that the community expresses a desire in managing. This could include community buildings, allotments, meeting places, areas of public access, or any other facility agreed by the community.

Ref	Terms	Description
CN2	Responsible party. See criterion 1	The party(ies) identified in 'SE 06 - Delivery of services, facilities and amenities' as a suitable and structured organisation(s) that will take over the management and operation of services / facilities once construction is completed.
CN3	Significant support. See criterion 4	Support could be through financial, technical and/or operational. The developer should work in partnership with the community on this issue.
CN4	Community Development Trust. See criterion 6	Community development trusts are community-owned and led organisations that use self-help trading for social purpose, and ownership of buildings and land to bring about long-term social, economic and environmental benefits in their community. They operate in both urban and rural areas, often in neighbourhoods which have experienced the worst economic decline. They are independent, but work with the public sector, private businesses, and other community groups.

Schedule of Evidence

Ref	Description
1	Documentation of the identified facility, responsible party, design and construction plan and engagement plan.
2	A letter of commitment from the developer or copies of the training arrangements and user manual.
4	Confirmation of the support sources identified, signed by the developer. Evidence in the form of an implementation plan outlining the support sources and the stage that they will be implemented.
6	Evidence in the form of an implementation plan outlining the support sources and the stage at which they will be implemented. Confirmation from the local authority and community development trust in regards of their acceptance of associated roles and responsibilities and the management structures.

Additional Information

None.

SE 14 – Local vernacular

Step	Category	Mandatory standards	No. of credits available
3	Social and economic wellbeing	No	2

Aim

To ensure that the development relates to local character whilst reinforcing its own identity.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. A review of the area surrounding the proposed development is undertaken to establish the key aspects of the local character.
2. Consultation has taken place between the local authority, developer, community representatives and other stakeholders. As a minimum the consultation considers the following:
 - building materials
 - building colour
 - architectural style
 - building heights and forms
 - continuity between building detail in the development and the surrounding area
 - continuity between the buildings within the development
 - the ability of residents to personalise their own dwelling.
3. The results of the consultation have been analysed and the key elements that should be included in the design which support the local vernacular are agreed.

One credit

4. Criteria 1 to 3 are achieved.
5. The designer/developer has demonstrated that the key elements identified in the review and consultation will be implemented in the design of the site.

Two credits

6. Criteria 1 to 5 are achieved.
7. Steps have been taken to reinforce the local identity in a number of aspects. This may include, but is not limited to:
 - use of local materials
 - use of local building forms, heights and architectural features
 - inclusion or retention of historic features/associations (e.g. retaining archaeological foundations, etc.)
 - use of local or regional plant species throughout the development
 - use of public art
 - involving the community in the design of community focal points and open spaces etc.

Compliance Notes

None.

Schedule of Evidence

Ref	Description
1	Summary of the review.
2	Copies of documentation outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
3	Summary of the analysis and confirmation of the key elements that should be included in the design.
5 & 7	Design plans or specifications.

Additional Information

None.

SE 15 – Inclusive design

Step	Category	Mandatory standards	No. of credits available
3	Social and economic wellbeing	No	3

Aim

To create an inclusive community by encouraging the construction of a built environment that optimises accessibility for as many current and future residents as possible.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. An inclusive design and management strategy is produced at the outset of the development including issues of accessibility, inclusion and emergency egress for all occupants and visitors, with specific consideration to people's wellbeing and age, gender, ethnicity, beliefs and/or disability related needs.
2. Community engagement is used to develop the inclusive design strategy through the process in issue 'GO02 - Consultation and engagement'.
3. Where available, national and local authority guidance on procurement of inclusive communities and design has been followed.

Two credits

4. Criteria 1 to 3 are achieved.
5. A person is identified or appointed within the design team to champion and provide oversight on inclusive design and management within the project team, during the outline formulation and ongoing development of the masterplan.

Three credits

6. Criteria 1 to 5 are achieved.
7. An appropriately qualified independent access consultant is commissioned to provide advice on the both strategic and detailed design proposals.
8. Deliberations and decisions taken within the project team are tracked by the project manager based on documentation and preliminary advice obtained from the access consultant. The views of organisational duty holders (such as the champion for inclusive design and management) and of third-party stakeholders are also accounted recorded and considered.
9. There is evidence within the decisions taken that design implications are anticipated and that plans are made to develop operational management strategies. These decisions are recorded and communicated to inform those who will use and manage the environment.

Compliance Notes

Ref	Terms	Description
CN1	Inclusive design and management strategy. See criterion 1	<p>Sets objectives to ensure inclusion and access in the design of the external and internal environment. This includes (but is not limited to):</p> <ul style="list-style-type: none"> — transport interchanges — transport methods — housing and buildings — public realm — open spaces — sports and recreation spaces — highways — footpaths and cycle ways — emergency egress strategies where these will also be affected by the proposals so far developed.
CN2	The role of an inclusive design champion. See criterion 5	<p>Inclusive design champions are not necessarily experts in inclusive design, but are best identified as duty holders operating within the client organisation, who have responsibilities to ensure that inclusive design is given necessary attention.</p> <p>Inclusive champions may be facilities / estates/ operational managers, human resources managers, customer services managers, equalities officers, access officers or others with responsibility for the management implications of a project once complete.</p> <p>Where the client is a private developer, they may wish to identify someone via a partnering agreement with a public sector, charitable or social enterprise or someone in their own organisation responsible for community relations and or sustaining the organisation's stated brand ethos.</p> <p>The inclusive design champion is expected to oversee the project team's attention to the basic policies and principles set out within the Equality Act and, (with regards to the procurement of public works) within the Public Sector Equality Duty, as well as nationally and locally recognised guidance on commissioning inclusive design and then managing environments inclusively.</p>
CN3	The role of an access consultant. See criterion 7	<p>Access consultants may give advice with regards to a range of inclusive design and management matters such as:</p> <ul style="list-style-type: none"> — definitions — key process in project management of the development — the overall concept, procurement and brief — stakeholder engagement and analysis — feasibility studies, design and detail — management implications — implementation and construction — alterations — a post-construction audit.

Ref	Terms	Description
		An access consultant is not expected to do everything with regard to access and inclusion, but is expected to advise and support others in their roles. They may provide advice, but other parties will be involved in implementing the advice in the design of the masterplan. Evidence must show that others have engaged with the advice of the access consultant and how it will be incorporated into design.
CN4	Operational management strategy. See criterion 9	Operational management strategies are strategies developed by those responsible for the management of aspects of the built environment (public realm, buildings, etc.). These strategies pick up issues that the design does not address. Although operational considerations are not confined to access and inclusion, they will cover matters such as how people are received by receptionists, the quality of printed and electronic information, the management of emergency evacuation, auxiliary aid provision (such as inaction loops) etc. Operational management strategies are devised by the party responsible for managing a particular service, building or area. The strategy should deliver operational means of handling access and inclusion in conjunction with inclusive design features of a built environment.

Schedule of Evidence

Ref	Description
1 & 2	A copy of the inclusive design and management strategy with details outlining how it was produced.
3	A copy of the design project briefs and statements highlighting where national and/or local guidance has been followed.
5	A record of correspondence identifying and agreeing who undertakes the inclusive design champion role and a summary of their roles and responsibilities.
7	A contract or letter confirming appointment of an access consultant and a summary of their roles and responsibilities.
8 & 9	Meeting notes or correspondence.

Additional information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Man 04 Stakeholder participation.

Several governmental and non-governmental organisations have developed guidance for inclusive design and access.

The codes of practice prepared by the Equality and Human Rights Commission, especially in connection with the Public Sector Equality Duty and other aspects of the Equality Act 2010.

Approved Document to Part M of the Building regulations sets out minimum standards for access and BS 8300 provides further enhanced guidance with regards to public buildings other than dwellings. Please note however that Part M in setting out minimum requirements and BS8300 is mainly focussed on approaches, access and use of non residential buildings.

Particular attention should be given to sensory and neurological needs as these often get overlooked within inclusive design and management strategies. Information is available from:

- Guide Dogs: www.guidedogs.org.uk
- Royal National Institute of Blind People: www.rnib.org.uk/
- Action on Hearing Loss: www.actiononhearingloss.org.uk/
- National Autistic Society: www.autism.org.uk/

Other sources of valuable information include:

- Guide to Developing Inclusive Communities¹
- Lifetime Neighbourhoods²
- The Lifetime Homes website: www.lifetimehomes.org.uk/
- The Homes and Communities Agency
- Manual for Streets: www.dft.gov.uk
- The Centre for Accessible Environments: www.cae.org.uk/
- The Fieldfare Trust: www.fieldfare.org.uk/
- The Sensory Trust: www.sensorytrust.org.uk/
- The Thomas Pocklington Trust publications relating to inclusion³

¹The Papworth Trust

http://www.papworth.org.uk/page.php?urlid=accessible_design

²Department for Communities and Local Government

<http://www.communities.gov.uk/publications/housing/lifetimeneighbourhoods>

³<http://www.pocklington-trust.org.uk/research/publications/rf32op27>

SE 16 – Light pollution

Step	Category	Mandatory standards	No. of credits available
3	Social and economic wellbeing	No	3

Aim

To ensure that lighting on the development site is designed to reduce light pollution.

Assessed Criteria

The following is required to demonstrate compliance:

One credit

1. The lighting design guide for the development has been completed in line with local authority guidance (where available). As a minimum the lighting design guide must refer to street lighting and any security lighting that will be provided by the developer on the site.

Two credits

2. Criterion 1 is achieved.
3. 100% high efficiency street lighting with limited upward light transmission will be installed.

Three credits

4. Criteria 1 to 3 are achieved.
5. 100% high efficiency lighting with limited upward light transmission will be installed for additional lighting (see compliance note 2).
6. The final lighting design guide for the development outlines how light pollution will be minimised, and the specification of the lighting confirms (where possible) that lighting is low powered and designed / installed to reduce light pollution.

Compliance Notes

Ref	Terms	Description
CN1	Street lighting.	Developers should refer to recognised standards for the Design of

Ref	Terms	Description
	See criterion 3	Street Lighting. In addition lighting guidance from the Urban Design Compendium ¹ should be sought.
CN2	Additional Lighting . See criterion 5	Any additional lighting that is provided within the development should be designed to minimise disruption to local and neighbouring residents. Where applicable this should include sports pitches / sports facilities, commercial areas, car parks etc.

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence with reference to: <ul style="list-style-type: none"> — public lighting that will be provided by the developer — the local authority design guidance for lighting — any private (domestic) security lighting that the developer is installing.
3 & 5	Specifications from lighting design guide and products that will be installed.
6	A copy of the final lighting design guide.

Additional Information

None.

¹Urban Design Compendium:
www.urbandesigncompendium.co.uk/public/documents/UDC2FULL.pdf

SE 17 – Labour and skills

Step	Category	Mandatory standards	No. of credits available
3	Social and economic wellbeing	No	3

Aim

To ensure that the development contributes to the local area by enhancing, diversifying or adding employment opportunities and/or skills training.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

- At least 10% of the labour employed for the construction phase of the development is based locally.

Two credits

- Criterion 1 is achieved.
- The developer commits to employ at least 50% of the labour for the ongoing maintenance and operation of the development (post-construction) from the local area.
- The development will continue to support and promote a legacy skills base within the local area.

One credit

- The developer has engaged with local training providers (see 'SE01 – Economic impact') to build a local skills base and capacity within the local area.

Compliance Notes

Ref	Terms	Description
CN1	Support and promote a legacy skills base. See criterion 4	This credit involves developing a scheme whereby the development is used to support a legacy skills base (for example through training or apprenticeship schemes).
CN2	Build a local skills base. See criterion 6	This credit involves the developer working with a local training provider (such as an FE college) to build skills in the local area.

Schedule of Evidence

Ref	Description
1 & 3	Documentation that commits the developer and project team to the utilisation of locally sourced labour.
4	A letter of commitment from the developer.
5	Copy of an agreement letter from training provider.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Man 02 Responsible construction practices.

RE 04 – Sustainable buildings

Step	Category	Mandatory standards	No. of credits available
3	Resources and energy	No	6

Aim

To increase the sustainability of all buildings within the development.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. The developer and design team have committed to designing the buildings on site to comply with recognised industry best practice standards in sustainable design for one or more of the following key issues: energy, water, waste, embodied impacts of materials, and occupant health and wellbeing.
2. The commitment is confirmed through a planning condition (or other binding mechanism, such as a planning obligation) by the local authority.

Two credits

3. The developer and design team have committed to use a recognised industry best practice standard to measure the level of sustainable design achieved for the buildings on site. The standard covers all of the following key issues: energy, water, waste, embodied impacts of materials and occupant health and wellbeing.
4. The commitment is confirmed through a planning condition (or other binding mechanism, such as a planning obligation) by the local authority.

Three to six credits

5. The developer and design team have committed to using an accredited third party assessment scheme, such as the Code for Sustainable Homes and BREEAM (or equivalent), to measure the level of sustainable design and construction of all buildings on the site. Credits are available for the following ratings achieved on all assessable domestic and non-domestic properties.
6. The commitment is confirmed through a planning condition (or other binding mechanism, such as a planning obligation) by the local authority.

Table 13: Credits available for commitment to achieve a Code for Sustainable homes and/or BREEAM rating

Credit(s)	Code for Sustainable Homes rating	BREEAM rating
3	Level 3	Good
4	Level 4	Very Good

Credit(s)	Code for Sustainable Homes rating	BREEAM rating
5	Level 5	Excellent
6	Level 6	Outstanding

Compliance notes

Ref	Terms	Description
CN1	Code for Sustainable Homes and BREEAM (or equivalent). See criterion 5	Where a developer wishes to use an equivalent accredited third-party assessment scheme for sustainable buildings, this arrangement should be agreed with BRE Global by the assessor. Please contact the BREEAM Helpdesk at breem@bre.co.uk
CN2	Calculating credits for mixed use developments See criterion 5	<p>Where conducting an assessment of a development with a number of building types, the following applies. Determine the number of credits available and proposed floor area for each building type. The assessor should calculate the number of credits to be awarded as follows:</p> $\text{Credits achieved} = \frac{(A_1 \times CS_1) + (A_2 \times CS_2) + \dots + (A_n \times CS_n)}{(A_1 + A_2 + \dots + A_n)}$ <p>Where:</p> <ol style="list-style-type: none"> 1. A = Gross floor area (m²) 2. CS = Credit score 3. 1 - n = Building types

Schedule of Evidence

Ref	Description
All	<p>A letter of commitment from the developer.</p> <p>Detailed documentary evidence of buildings undergoing assessment and the assessment type to be used.</p> <p>A copy of the planning condition (or other binding mechanism, e.g. planning obligation)</p>

Additional Information

The Code for Sustainable Homes can be used to assess all new single occupancy dwellings.

All new non-domestic building can be assessed under BREEAM New Construction.

Existing buildings can be refurbished and assessed under BREEAM Refurbishment for domestic and non-domestic properties.

See www.breem.org for more information.

RE 05 – Low impact materials

Step	Category	Mandatory standards	No. of credits available
3	Resources and energy	No	6

Aim

To reduce the environmental impact of construction of the public realm through the use of low impact materials.

Assessment Criteria

The following is required to demonstrate compliance:

Sustainable materials

One credit

- Contractors and sub-contractors have environmental management policies and procedures in place to ensure the sustainable management and supply of materials used in the public realm.
- Where 40 - 60% of the materials (used in the public realm) on-site achieve an A+ to B rating, as defined in the Green Guide to Specification.

Two credits

- Criterion 1 is achieved.
- Where over 60% of the materials (used in the public realm) on-site achieve an A+ to B rating, as defined in the Green Guide to Specification.

Three credits

- Criterion 1 is achieved
- Where greater than 80% of the materials (used in the public realm) on-site achieve an A+ to B rating, as defined in the Green Guide to Specification

Road construction materials

One credit

- Where greater than 15% (by volume or weight) of the road construction material is locally reclaimed or constituted from recycled material.

Two credits

- Where 25% - 30% (by volume or weight) of the road construction material is locally reclaimed or constituted from recycled material.

Three credits

9. Where greater than 30% (by volume or weight) of the road construction material is locally reclaimed or constituted from recycled material.

Compliance Notes

Ref	Terms	Description
CN1	Green Guide ratings	Green Guide ratings for the specification(s) of each element can be found online at www.thegreenguide.org.uk
CN2	Matching specifications to those in the Green Guide	Exact matches for material specifications are not always found in the Green Guide. But it should be possible to identify a similar specification and use its rating for the purposes of assessment. Where no similar specification can be found, seek guidance from the BREEAM Centre (breeam@bre.co.uk) for the appropriate rating. Reused materials are those that can be extracted from the waste stream and used again without further processing, or with only minor processing, that does not alter the nature of the material (e.g. cleaning, cutting, fixing to other materials).
CN3	On-site	The 'sustainable materials' section of this assessment issue relates only to materials used in the public realm and not in the buildings themselves. See the additional information section in 'SE07 – Public realm' for a definition of public realm. Where building types are unknown commitment must be made to specify low environmental impact materials in the landscaping / infrastructure at a plot level.
CN4	Recycled materials	The Green Guide gives a default A rating to all materials that are being reused on the site.
CN5	No new materials	The maximum available credits for the 'Sustainable materials' and 'Road construction materials' sections can be awarded automatically when no new material is being used on the development (possibly for refurbishment projects).

Schedule of Evidence

Ref	Description
1	Copy of tender specification or contract for contractors and sub-contractors. Commitment from the developer to ensure contractors and sub-contractors sign up to a lead contractor's EMAS/ ISO14001 approved management system.
2 - 6	A copy of the specification clauses or letter from the design team / client.

Ref	Description
	Site plans showing the location and area of each applicable element.
7 – 9	The relevant section from the specification confirming the percentage of locally reclaimed or recycled materials.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Mat 02 Hard landscaping and boundary protection. Please refer to best practice guidance on incorporating recycled content in roads from AggRegain WRAP¹.

¹http://aggregain.wrap.org.uk/recycled_roads.html

RE 06 – Resource efficiency

Step	Category	Mandatory standards	No. of credits available
3	Resources and energy	No	4

Aim

To promote resource efficiency by reducing waste during construction and throughout the life cycle of the development.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

- Where existing buildings on the site have been identified in 'RE02 - Existing buildings and infrastructure' for refurbishment, reuse or demolition, an audit of any existing buildings, structures or hard surfaces is completed to maximise the recovery of material from demolition/refurbishment for subsequent high-grade applications. The audit must be referenced in the waste management strategy/plan and cover:
 - identification and quantification of the key refurbishment/demolition materials.
 - potential applications and any related issues for the reuse and recycling of the key refurbishment and demolition materials.
- Where the works are likely to produce excavation waste (soils and stones), the following is assessed and referenced within the waste management strategy/plan:
 - an estimate of the amount of excavation waste generated
 - how to maximise reuse of excavation waste on site if feasible, and if not, how to maximise the recovery of material.
- The design team has embedded resource efficiency within the overall scheme design with specific reference to WRAP's Designing out Waste principles for any civil engineering works being undertaken onsite and at the building level.
- A waste management strategy / plan has been completed to confirm the estimated amount and types of construction, demolition, and excavation waste from the site development, including infrastructure development and landscaping.

Two credits

- Criteria 1 to 4 are achieved.
- Landscape designs have been informed by and make reference to the waste management strategy / plan, with specific aims to retain construction, demolition and excavation materials and waste on-site.
- Where design work has already started at the building level, design briefs make reference to the Designing out Waste principles and are informed by the waste management strategy / plan. Where plot / building level developer agreements are not yet in place this must be a requirement of the development project.
- Where individual plots are developed independent to the whole site, the developer has provided a written commitment to reduce waste and maximise the recovery of waste during the

construction phase and put in place contractual agreements with the main contractor or waste management contractor.

Three to Four credits

9. Criteria 1 to 8 are achieved.
10. The developer has provided a written commitment that an agreement will be in place at the start of construction to divert non-hazardous construction and demolition waste from landfill (based on the estimate from criterion 2):

Credits	Type of waste	Volume	Tonnage
3	Non demolition	70%	80%
	Demolition	80%	90%
4	Non demolition	85%	90%
	Demolition	85%	95%

Compliance Notes

Ref	Terms	Description
CN1	Pre-demolition audit . See criterion 1	A pre-demolition audit should be carried out using an appropriate methodology. The Institute of Civil Engineers (ICE) has produced guidance on pre-demolition audits including 'the Demolition Protocol'. WRAP and BRE also provide guidance.
CN2	High-grade application . See criterion 1	Crushed material used as fill material onsite is not considered to be a high-grade application. This practice is now commonplace on construction sites.
CN3	WRAP principles of Designing Out Waste. See criterion 3	The five Designing out Waste principles, developed by WRAP ¹ , focus on the early engagement of the design team with the principles of resource efficiency and designing out waste at the building level. This credit relates to the overall development scale and applying these principles at this scale.
CN4	Waste management strategy/plan See criteria 2	A waste management strategy is one that defines: <ul style="list-style-type: none"> — a target benchmark for resource efficiency e.g. m³ or tonnes of non-hazardous construction waste per per 100m². — procedures and commitments for minimising non-haz-

¹WRAP Designing Out Waste: www.wrap.org.uk

In addition developers should refer to WRAP guidance on Designing Out Waste for Civil Engineering: www.wrap.org.uk

Ref	Terms	Description
	and 4	<ul style="list-style-type: none"> — hazardous construction waste in line with the benchmark — procedures for minimising hazardous waste — estimated amounts and types of refurbishment/demolition, excavation waste and construction waste, where applicable — procedures for monitoring, measuring and reporting hazardous and non-hazardous construction, demolition and excavation waste, where applicable — procedures for sorting, reusing and recycling construction and demolition waste, where applicable, into defined waste groups (see Additional Information section 'Best practice waste management strategy/plan'), either on site or through a licensed external contractor — procedures for sorting/reusing onsite, where feasible, and recycling excavation waste, where applicable — the name or job title of the individual responsible for implementing the above.
CN5	Diversion from landfill. See criterion 10	<p>Diversion from landfill includes:</p> <ul style="list-style-type: none"> — reusing the material on site (in-situ or for new applications) — reusing the material on other sites — salvaging or reclaiming the material for reuse — returning material to the supplier via a 'take-back' scheme — recovery of the material from site by an approved waste management contractor to be recycled or sent for energy recovery.

Schedule of Evidence

Ref	Description
1	A copy of the pre-demolition audit.
2 & 4	A copy of the outline waste management strategy/plan, including the amount and types of construction, demolition and excavation waste, where applicable, and how it will be managed.
3	A copy of the design strategy.
6	A copy of the landscape designs or specifications.
7	A copy of the design brief and/or a letter or email of commitment from the developer.
8	Detailed documentary evidence of the space allocated for waste management in the individual plots.
10	Letter or email from the developer. Draft agreement that will be established with the main contractor or waste management contractor.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Wst 01 Construction waste management and Wst 02 Recycled aggregates.

Relevant definitions:

Waste management strategy/plan

aims to promote resource efficiency and to prevent illegal waste activities. Resource efficiency includes minimising waste at source and ensuring that clients, designers and principal contractors assess the use, reuse and recycling of materials and products on and off the site.

Best practice waste management strategy/plan

Best practice is a combination of commitments to:

- Design out waste
- Reduce waste generated on site
- Develop and implement procedures to sort and reuse/recycle construction, demolition and excavation waste on and off site (as applicable).
- Follow guidance from:
 - Defra (Department for Environment, Food and Rural Affairs)
 - BRE
 - WRAP (Waste & Resources Action Programme)
 - CL:AIRE (Contaminated Land: Applications in Real Environments).

BRE's SMARTWaste Plan (www.smartwaste.co.uk) can be used to prepare, implement and review a waste management strategy including measuring waste. As part of the SMARTWaste Membership scheme, energy and water consumption and the procurement of certified timber can also be monitored. Other tools are available from WRAP.

RE 07 – Transport carbon emissions

Step	Category	Mandatory standards	No. of credits available
3	Resources and energy	No	1

Aim

To reduce pollution associated with car use and provide viable alternatives to car ownership.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. A feasibility study/desk-based assessment is undertaken using the information from the transport assessment or transport statement (see TM01 – Transport assessment) to establish appropriate alternative transport options for the development.
2. Travel plans (see TM01 – Transport assessment) for the development set out the appropriate alternative transport options, on the basis of:
 - occupancy of the development
 - potential reduction in greenhouse gas emissions from different solutions
 - costs involved in different solutions
 - existing alternative transport facilities within the community
 - possibility of external funding
 - potential for community management of solutions.

One Credit

3. Criteria 1 and 2 are achieved.
4. At least one alternative means of sustainable transport has been established/ incorporated into the community.
5. The sustainable transport options are advertised in order to ensure all members of the community are aware of the options available.
6. Management plans are in place to monitor use and ensure facilities are well maintained.

Compliance Notes

Ref	Terms	Description
CN1	Alternative sustainable transport. See criterion 1	Compliant alternative transport options are methods of transport which reduce the pollution associated with private car ownership/use within the community. These do not include traditional public transport systems such as trams, trains, buses or

Ref	Terms	Description
		<p>cycling / pedestrian rights of way. These may include, but are not limited to:</p> <ul style="list-style-type: none"> — car pools/clubs — cycle hire schemes — lift sharing clubs — community electric vehicle hire — community work / office space – to avoid the need to commute to offices.
CN2	Management Plan. See criterion 6	The management plan and funding must be based on the findings of the feasibility study.

Schedule of Evidence

Ref	Description
1	A copy or summary of the feasibility study.
2	A copy or summary of the transport plan(s).
4	Detailed information on the services provided in the development.
5	Confirmation and details from the developer/service provider that the options are sufficiently advertised to the community.
6	A copy or summary of the management plan.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 05 Travel plan.

LE 06 – Rainwater harvesting

Step	Category	Mandatory standards	No. of credits available
3	Land use and ecology	No	3

Aim

To ensure that surface water run-off space is used effectively to minimise water demand.

Assessment Criteria

The following is required to demonstrate compliance:

One credit

1. Where 5% to 25% of the total hard surface for the site (roof plus hard-standing) is designed to allow the harvesting of rain water for re-use.
2. Any rainwater collection system is designed in accordance with BS 8515:2009 (to ensure both the demand and yield for the building will be considered when sizing the tank) and the collection area measured in accordance with BSEN 12056-3:2000.

Two credits

3. Criteria 1 and 2 are achieved.
4. Where 26% to 50% of the total hard surface for the site (roof plus hard-standing) is designed to allow the harvesting of rain water for re-use.

Three credits

5. Criteria 1 to 4 are achieved.
6. Where more than 50% of the total hard surface for the site (roof plus hard-standing) is designed to allow the harvesting of rain water for re-use.

Compliance Notes

Ref	Terms	Description
CN1	Use of rainwater. See criterion 1	The percentage of collected rainwater must be used to meet (in part) toilet flushing demand and / or washing machines within buildings. Only once demand from these fitting has been satisfied should rainwater be used for irrigation of planting and landscaping demand.
CN2	Calculation of roof collection area. See criterion 2	The total area of impervious roof surfaces shall be used to calculate the available roof collection area. A calculation method for roof collection area is described in BSEN 12056-3:2000.

Schedule of Evidence

Ref	Description
1, 4 & 6	<p>Master plan drawings and / or example specifications confirming:</p> <ul style="list-style-type: none"> — total roof areas, hard-standing areas — total roof area draining into rainwater collection systems — total hard-standing draining into rainwater collection systems — sum totals for all hard surface areas (roof and hard standing) draining into rainwater collection systems.
2	Calculations confirming all rainwater collection systems have been designed in accordance with BS 8515:2009.

Additional Information

This issue does not conflict with other assessment issues encouraging the use of SuDS such green roofs (for example 'LE03 - Water pollution' and 'SE 13 - Flood risk management'). With careful design it is possible to implement a design solution which includes the use of rainwater harvesting and a green roof. Whilst this is likely to require more specialist equipment, and appropriate advice would need to be sought, this issue does not prevent the use of green roofs with rainwater harvesting systems.

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Wat 01 Water consumption and Pol 03 Surface water run off.

TM 05 – Cycling facilities

Step	Category	Mandatory standards	No. of credits available
3	Transport and movement	No	2

Aim

To promote cycling by ensuring the adequate provision of cyclist facilities.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. Consultation has taken place between the local authority, developer, community representatives and other stakeholders to establish the likely facility requirements. The consultation considers all expected users of the development (residents and non-residents), existing cycling facilities, potential location of facilities and expected demand.
2. The results of the consultation have been analysed and an appropriate level of cycle facilities to promote cycling for the development has been agreed.

One credit

3. Criteria 1 and 2 are achieved.
4. A commitment is made to provide adequate space for cycle storage to accommodate the minimum standards shown below:

Building type	Storage requirements
Residential	Requirements: <ul style="list-style-type: none"> — Studios/1 bedroom dwellings - storage for 1 cycle for every two dwellings — 2/3 bedroom dwellings - storage for 1 cycle — 4 + bedrooms - storage for 2 cycles
Non-Residential	Requirements: <ul style="list-style-type: none"> — Up to 500 users - 1 space per 10 users — 501 – 1000 users - 1 space per 15 users — 1001 + users - 1 space per 20 users

5. A legal requirement is in place to ensure non-residential plot developers provide appropriate number of showers, changing facilities and lockers, and space for drying wet clothes (as per BREEAM New Construction 2011).

Two credits

6. Criteria 1 to 5 are achieved..
7. During the consultation the local authority and developer have agreed a maintenance strategy for the cyclist facilities and dedicated funds are allocated for the maintenance of and adjustment of the cyclist facilities at community focal points.

Compliance Notes

Ref	Terms	Description
CN1	Compliant cycle storage (Non-Residential). See criterion 4	<p>Compliant cycle storage facilities are those that meet the following: Where the calculated number of required cycle storage spaces is less than 4 total provision should be based on the lower of the following:</p> <ul style="list-style-type: none"> — a minimum of four compliant storage spaces must be provided (unless otherwise stated) OR — one space per user (staff and where appropriate other user groups). <p>The space is secure, well lit and covered overhead to protect from the weather. The covered area and the cycle racks are set in or fixed to a permanent structure (building or hardstanding). Alternatively the cycle storage may be located in a locked structure fixed to or part of a permanent structure with CCTV surveillance. The distance between each cycle rack, and cycle racks and other obstructions e.g. a wall, allows for appropriate access to the cycle storage space, to enable bikes to be easily stored and accessed. The facilities are in a prominent site location that is in view /overlooked from either an occupied building or a main access to a building. The majority of the cycle racks are within 100m of a building entrance (ideally within 50m).</p>
CN2	Compliant cycle storage (Residential). See criterion 4	<p>Compliant cycle storage facilities are those that meet the following: The minimum storage area required to store cycles on the floor:</p> <ul style="list-style-type: none"> — 1 cycle: 2 m long x0.75 m wide — 2 cycles: 2 m long x1.5 m wide — 4 cycles: 2 m long x2.5 m wide <p>Where proprietary storage or hanging systems are provided, the space requirements are flexible but the system must allow each cycle to be removed independently. Where cycle storage is provided in a shed, a minimum of 1 m² is required for garden tools (in addition to the above dimensions). The shed must be set on a concrete foundation and secure fixing needs to be provided. Where cycle storage is provided in a garage, adequate space must be provided to store both the bicycle(s) and the car(s) at the same time. Easy and direct access from/to the dwelling(s) and from/to the</p>

Ref	Terms	Description
		<p>cycle store to a public right of way. Access from the store to a public right of way through the dwelling is not acceptable, e.g. where cycles are stored in a shed in the back garden of a mid-terraced home and there is no direct access from the garden to a public right of way. Communal stores must be located within 100m of the front door or the main entrance to a block of flats.</p>
CN3	Funding for maintenance & adjustment. See criterion 7	<p>Guidance should be sought from the local authority as to how much maintenance and adjustment costs typically are. An amount need not be set by the local authority and matched by the developer, but should be used to indicate the levels of financial resource required.</p>

Schedule of Evidence

Ref	Description
1	Detailed documentary evidence outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
2	Summary of the analysis and confirmation of the provision of cyclist facilities within the development.
4	A written commitment from the developer.
5	A copy of the legal requirement.
7	Documentation confirming the maintenance strategy and dedicated funding arrangements.

Additional Information

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 03 Cyclist facilities and Tra 05 Travel plan.

TM 06 – Public transport facilities

Step	Category	Mandatory standards	No. of credits available
3	Transport and movement	No	2

Aim

To encourage frequent use of public transport throughout the year by providing safe and comfortable transport facilities.

Assessment Criteria

The following is required to demonstrate compliance:

Minimum (no credits)

1. Consultation has taken place between the local authority, developer, community representatives and public transport providers to establish the likely facility requirements. As a minimum, the consultation considers the following:
 - occupants and potential visitors and their accessibility needs (the needs of occupants are informed by the demographic profile completed for 'SE02 – Demographic needs and priorities').
 - expected number of users at each public transport stop
 - existing facilities
 - provision of facilities and amenities.
2. The results of the consultation have been analysed and appropriate facilities are planned and designed that encourage the use of public transport.
3. Shelters will be provided at public transport stops, especially those close to key community focal points within the development.
4. Shelters will be of adequate size to accommodate potential users of varying ages and disabilities.

One credit

5. Criteria 1 to 4 are achieved.
6. Shelters within the development will be compliant with items A – H (below).

Two credits

7. Criteria 1 to 6 are achieved.
8. Shelters within the development will be compliant with items I – L (below).

Item	Description
A	Shelters will be designed and sited to provide protection from weather conditions taking into consideration prevailing wind direction, splashes from passing vehicles and protection from the sun.

Item	Description
B	Shelters will provide a safe and comfortable waiting area for users, in particular shelters will be well lit and allow sufficient ventilation to avoid overheating.
C	Shelters will be visible to the surrounding environment and community.
D	Shelters will not obstruct other area users such as pedestrians and cyclists and allow sufficient room for wheelchair users and those with prams/buggies to pass with ease.
E	Shelters will have up-to-date timetabling information prominently on display in the shelter.
F	Shelters will provide sufficient seating for the users of the development for all ages and disabilities, as judged through the consultation with service providers and the local authority.
G	Street furniture will not be positioned where boarding/alighting is expected. Street furniture (apart from seating) should not be situated within the waiting area.
H	Secure cycle parking structures are provided near the public transport shelters/facilities to allow for transfer between modes of transport. The number of cycle spaces accommodated should be determined by the likely users identified in the transport assessment.
I	Litter bins will be provided by each shelter, positioned to avoid any interference with the use of the shelter. Regular refuse collection is negotiated with the local authority.
J	Shelters will have real-time timetable information feeds.
K	Where the consultation identifies a significant risk of vandalism, CCTV that covers the shelter and surrounding area should be installed and the shelter should be constructed of vandal resistant materials.
L	A renewable energy supply (with a storage capacity to work after dark) will be used to power the shelters lighting and real-time timetabling displays.

Compliance Notes

Ref	Terms	Description
CN1	Shelter dimensions . See criterion 4	The dimensions for shelters is location specific and should be decided through consultation with representatives of the local authority, who in turn should relate their decision to the size of the development and the expected usage of the shelter.
CN2	Seating . See	Where seats are provided they should be in bright, "warm"

Ref	Terms	Description
	criterion 4	materials with a non-slip surface, which is strong, easy to clean and quick to dry.
CN3	Pavement obstruction. See criterion 5	Public transport shelters should provide minimum obstruction to the pavement and a recommended width of 1.8m should be allowed for passing pedestrians.
CN4	Shelter from the elements/out of the weather. See criterion 6	Protection from precipitation and prevailing winds. Although this is location dependent, and will be judged by local authorities, it is generally expected that this will comprise a roof, and walls on at least three sides.
CN5	Key community focal points	Key community focal points could include facilities such as local amenities, schools, parks and hospitals or GP surgeries, though the specific focal points are to be determined during consultation.

Schedule of Evidence

Ref	Description
1	Copies of documentation outlining consultation feedback, including (where relevant) agenda and minutes from meetings.
2	Summary of the analysis and confirmation of the facilities to be provided within the development.
3 - 4	Site plans and design specifications detailing the location and specifications of the shelters.
6	Site plans and design specifications detailing the shelters with items A – H clearly addressed.
8	Site plans and design specifications detailing the shelters with items I – L clearly addressed.

Additional Information

Public transport facilities, such as bus stop shelters, can be used to generate electricity for real time bus arrival information through the use of photovoltaic cells. Green roofs can be used to slow surface water run off and to provide habitat to enhance the ecological value of the site.

Please note that meeting requirements under this issue will support compliance with assessment criteria in BREEAM New Construction under Tra 05 Travel plan.

Innovation

Inn 01 – Innovation

Step	Category	Mandatory standards	No. of credits available
N/A	Innovation	No	7

Aim

To support innovation within the design, planning and construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.

Assessment Criteria

The following is required to demonstrate compliance:

Approved Innovations

1. One innovation credit can be awarded for each innovation application approved by BRE Global, where the development complies with the criteria defined within an Approved Innovation application form.

Compliance Notes

Ref	Terms	Description
CN 1	Applying for innovation credits	Any new technology, design or design, planning or construction method or process can potentially be recognised as 'innovative', provided it demonstrates it meets the BREEAM eligibility criteria for Innovation credits. Applications for innovations can be submitted to BRE Global by Licensed BREEAM Assessors using the formal Innovation Application Form. BREEAM Assessors can obtain the application form from BRE Global or via the BREEAM Assessor Extranet. Relevant details of the BREEAM Innovation application and approval process, application fees, innovation credit eligibility criteria and details of previously approved innovations are available separately from the BREEAM Assessor Extranet and BRE Global.

Schedule of Evidence

Ref	Description
1	A copy of the Approved Innovation application or confirmation of the Approved Innovation reference number. Relevant documentary evidence demonstrating specification of the approved innovation.

Appendices

Appendix A - The BREEAM evidential requirements

It is the BREEAM Communities Assessor's role to gather information and use it to evaluate and verify the proposed development's performance against the BREEAM standards. A range of surveys, assessments, plans and designs can be used by the client / project team to demonstrate compliance with the BREEAM assessment criteria.

To aid the assessor, client and project team members in the information gathering exercise, each assessment issue within the scheme document contains a 'schedule of evidence' table. The table and its content serve to outline the typical types of information that the assessor is obliged to ask for at each stage of assessment. Without this information the assessor has no means of verifying compliance with the relevant BREEAM criteria (where BREEAM credits are sought by the project team/client). In addition to the information listed in each issue's schedule, the assessor may ask for additional information types where they feel that this is required in order to adequately demonstrate compliance, given the specific nature of the development or the contents of the document listed.

Documentation will vary from one project to another and as such BREEAM is not overly prescriptive about the form in which evidence should be provided. In general the following types of project information can serve as suitable evidence of compliance for most, if not all BREEAM assessment issues and criteria:

- relevant section/clauses of the building/development specification or contract
- design drawings (e.g. new and existing site plans, elevations, internal layouts)
- certificates of compliance (e.g. Environmental Profiles, FSC, EPC)
- calculation / software modelling results/outputs (e.g. Energy, thermal modelling)
- professional reports / studies (e.g. contaminated land, ecologist report, flood risk assessment)
- project/construction phase programme
- letters of appointment (e.g. professional appointment)
- letters of commitment (e.g. client/contractor commitment)
- letters of action (e.g. client/contractor confirming specific compliance with criteria)
- BREEAM Assessor's site inspection report and photographic evidence
- meeting minutes
- third party information (e.g. maps, public transport timetable, product manufacturers details)
- tenant lease agreements or 'green' clauses from lease agreements.

BRE Global endeavours to ensure that BREEAM requests only types or categories of information which already exist as a result of the design, planning and procurement processes for developments. This information should therefore be readily available and easily referenced if the development is justifiably claiming compliance with BREEAM criteria. Other types of formal information/evidence could be used to demonstrate compliance, provided it demonstrates robust assurance to the same level, or better than those types outlined above or in the schedule of evidence table. The following studies, strategies and assessments may be produced for planning applications and may be used as evidence for BREEAM Communities:

- consultation plan
- economic study
- demographic profile study
- site specific flood risk assessment
- noise impact assessment
- energy strategy and associated feasibility study
- ecological impact assessment
- ecology strategy and associated mitigation/compensation plan
- contaminated land site investigation and risk assessment report
- remediation strategy

- transport assessment or statement
- travel plans
- movement framework
- design and access statement
- microclimatic simulation/study report
- landscape design/green infrastructure plan or strategy
- design specifications
- site drainage plan
- waste management plan
- site drawing and masterplan

It is the assessor's role to inform the project team as to what types of information are required at what stage and who should provide this material. If the information is not provided, the assessor will be unable to verify compliance and award the credit(s). As a result the development may not achieve the required BREEAM rating. All information referenced in an assessment which is submitted to BRE Global Ltd for certification must be verifiable and must be produced by licensed BREEAM Communities Assessor upon request by BRE Global Ltd.

Appendix B - Schedule of Changes to the Scheme Document

The BREEAM–Communities 2012 Scheme Document may, from time to time, be revised and re-issued. A re-issue of a BREEAM version may be required for the following reasons:

1. To clarify criteria, compliance notes or schedule of evidence requirements
2. To update a reference or relevant definition
3. To update or amend calculation procedures
4. To amend the scope to allow for the inclusion of additional building types

This appendix confirms the latest and current issue of BREEAM BREEAM–Communities 2012: Technical Guide SD202: 1.0.2012 and provides details of any additions or changes made to the scheme that have resulted in a re-issue of the scheme document. It is important to stress that a re-issue does not result in changes, deletions or additions to the main assessment criteria or assessment issues. Fundamental changes to assessment criteria are only made as part of a formal scheme update, resulting in a new BREEAM scheme version.

Where a client/assessor has been referencing an issue of the Scheme Document that has subsequently been superseded, they may either continue to use and reference the superseded issue of the Scheme Document or, if deemed appropriate by the assessor, switch to the latest issue. When submitting their certification report the BREEAM Assessor must clarify in their report which issue of the Scheme Document they have used to complete the formal assessment of the building. If two different issues were used throughout the course of the assessment, reference the latest issue used.

The table below outlines any changes/additions made to the scheme and the version number (and therefore date) the change came into effect.

Scheme document	Version no.	Date of issue
SD202	XX.X:2012	XX/XX/2012

Key Type of Change	
A	An addition, insertion, alteration or deletion to the scheme document which does not directly affect the assessment criteria, calculation procedures or schedule of evidence (and therefore assessment of a building)
C	An addition/insertion, deletion or alteration to the scope, assessment criteria, compliance note, evidence required or relevant definitions.

Issue ID / Section	Type	Change	Version no.
All	C	Example text	2.0
Figure 1-1	A	Use cross references as figure or table numbers may change	2.0

Appendix C - References and further guidance

There are many publicly available resources on masterplanning and urban design. The following resources are particularly relevant in the UK context:

Urban Design Compendium, The Homes and Communities Agency (originally published in 2000 by English Partnerships)

Creating successful masterplans: a guide for clients, published online in 2011 by the Commission for Architecture and the Built Environment (CABE)

By Design, Urban design in the planning system: towards better practice, published in 2000 by CABE

Manual for Streets, published for the Department for Transport in 2007

Secured by Design - Principles, published in 2004 by the Association of Chief Police Officers

Appendix D - Example calculation of a BREEAM Communities score and rating

Table 14: An example calculation of a BREEAM Communities score and rating

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
Governance							
GO01	Consultation plan	1	1	100.0	2.3	2.3	7.2
GO02	Consultation and engagement	1	2	50.0	3.5	1.7	
GO03	Design review	2	2	100.0	2.3	2.3	
GO04	Community management of facilities	2	3	66.7	1.2	0.8	
Social and economic wellbeing - Local economy							
SE01	Economic impact	1	2	50.0	8.9	4.4	8.4
SE17	Labour and skills	2	3	66.7	5.9	3.9	
Social and economic wellbeing - Environmental conditions							
SE03	Flood risk assessment	2	2	100.0	1.8	1.8	7.8

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
SE04	Noise pollution	1	3	33.3	1.8	0.6	
SE08	Microclimate	3	3	100.0	1.8	1.8	
SE10	Adapting to climate change	2	3	66.7	2.7	1.8	
SE13	Flood risk management	2	3	66.7	1.8	1.2	
SE16	Light pollution	2	3	66.7	0.9	0.6	

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
Social and economic wellbeing - Social wellbeing							
SE02	Demographic needs and priorities	1	1	100.0	2.7	2.7	12.3
SE05	Housing provision	1	2	50.0	2.7	1.4	
SE06	Delivery of services, facilities and amenities	4	7	57.1	2.7	1.5	
SE07	Public realm	2	2	100.0	2.7	2.7	
SE09	Utilities	2	3	66.7	0.9	0.6	
SE11	Green infrastructure	2	4	50.0	1.8	0.9	
SE12	Local parking	1	1	100.0	0.9	0.9	
SE14	Local vernacular	1	2	50.0	0.9	0.5	
SE15	Inclusive design	2	3	66.7	1.8	1.2	

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
Resources and energy							
RE01	Energy strategy	3	11	27.3	4.1	1.1	14.8
RE02	Existing buildings and infrastructure	1	2	50.0	2.7	1.4	
RE03	Water strategy	1	1	100.0	2.7	2.7	
RE04	Sustainable buildings	4	6	66.7	4.1	2.7	
RE05	Low impact materials	5	6	83.3	2.7	2.3	
RE06	Resource efficiency	3	4	75.0	2.7	2.0	
RE07	Transport carbon emissions	1	1	100.0	2.7	2.7	

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
Land use and ecology							
LE01	Ecology strategy	1	1	100.0	3.1	3.1	8.2
LE02	Land use	2	3	66.7	2.1	1.4	
LE03	Water pollution	1	3	33.3	1.0	0.3	
LE04	Enhancement of ecological value	2	3	66.7	3.1	2.1	
LE05	Landscape	2	5	40.0	2.1	0.8	
LE06	Rainwater harvesting	1	3	33.3	1.0	0.3	
Transport and movement							
TM01	Transport assessment	2	2	100.0	3.2	3.2	10.3
TM02	Safe and appealing streets	3	4	75.0	3.2	2.4	
TM03	Cycling network	1	1	100.0	2.1	2.1	
TM04	Access to public transport	2	4	50.0	2.1	1.1	
TM05	Cycling facilities	1	2	50.0	1.1	0.5	
TM06	Public transport facilities	1	2	50.0	2.1	1.1	

Identifier	Issue name	Credits achieved	Credits available	% of credits achieved	Issue weighting	Issue score	Category score
Innovation							
Inn	Innovation	1	7	14.3	7.0	1.0	1.0
Final BREEAM score							70.1
BREEAM Rating							Excellent

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