BREEAM 2014 Pre-Assessment

1-5 Portpool Lane

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1.0 BREEAM 2014

1.1 BREEAM Overview

BREEAM is the Building Research Establishment's Environmental Assessment Method.

Initially created in the 1980's, the Schemes are periodically updated to ensure the methodology goes above and beyond current building regulations. The aim of this is to encourage environmental design and push forward sustainable construction practices both in the UK and Internationally. BREEAM is now widely used across the world and with 250,000 buildings fully certified and over a million registered for assessment, BREEAM is the world's leading environmental assessment method for sustainable buildings.

BREEAM projects are awarded 'Credits' for compliance with assessment criteria. The criteria are split over ten categories, Management, Health and Wellbeing, Energy, Water, Materials, Transport, Waste, Land Use and Ecology, Pollution and Innovation. The total number of credits achieved is totalled to produce a single overall percentage score. The score translates to a rating ranging over the following scale, Pass (≥30%), Good (≥ 45%), Very Good (≥55%), Excellent (≥70%) and Outstanding (≥ 85%).

The assessments are then reviewed and checked by BRE Global before a certificate is issued.

1.2 BREEAM Around the world

The Map below provides an overview of the uptake of BREEAM assessments across the world. Countries shaded light green have certified BREEAM projects, those indicated in a dark green have a country specific BREEAM Scheme operated by a National Scheme Operator.

1.3 BREEAM New Construction 2014

The BREEAM New Construction 2014 Scheme can be used to assess a wide variety of buildings in the UK. These include public and commercial sector buildings such as Education, Healthcare and Office projects, as well as Prisons, Courts and Multi-residential buildings.

BREEAM New Construction 2014 also has a number of mandatory minimum requirements which are more onerous the higher the target rating is. These must be met for a project to achieve a certain rating.

2.0 THE PROCESS

Early awareness and implementation of the BREEAM requirements will help the Project Team to arrive at a consolidated approach to the environmental and sustainable aspects of a development. Our experience shows that the most successful BREEAM projects are those where the BREEAM Assessor is engaged in the early stages in order to agree a brief that will:

- suit the users of the building
- satisfy all regulatory and BREEAM criteria
- engage all projects stakeholders and design team members
- work on an agreed and realistic budget and keep costs under control

The BREEAM assessor will give advice at key points throughout the project from initial meetings through to project completion and handover. The BREEAM Assessors role is to collate the evidence and submit the report to BRE Global for review and certification.

The three key stages are:

- **Pre-Assessment** – following the initial design team meetings, the Pre-Assessment report will be created. This report outlines the credits targeted, an overview of the project, the credit requirements and the expected score.

- **Design Stage** – this is a 'live' report that the Assessor will update periodically throughout the project and issue to the design team on request. The report provides a 'snapshot' of the projects progress. As the evidence is received from the project team the credits are awarded and this is reflected in the report. This report provides a comprehensive guide to the progress of the project.

- **Post Construction Stage** – following practical completion of the project the Assessor will collate the final evidence and conduct a site visit. From this the final report is submitted to BRE Global and a certificate issued for the project.

3.0 STATUS OF REPORT

3.1 Pre-assessment

This BREEAM Pre-assessment has been prepared for the proposed Office on 1-5 Portpool Lane. The project is targeting a BREEAM rating of Excellent and including at least 60%, 60% and 40% of un-weighted credits under Energy, Water and Material sections respectively, in accordance with the London Borough of Camden Planning Guidance. The BREEAM assessment will involve collation of associated evidence from fully fitted contract works by all relevant parties involved.

The pre-assessment been prepared under BREEAM UK New Construction 2014 – Office and indicates a score of **75.80%** suggesting a BREEAM rating of **Excellent** could be achieved. Also 86.96% of credits in Energy section, 77.78% in Water and 76.92% in Material section have been targeted for this assessment, which cover the second condition by Camden Borough Council.

I, Delaram Moin have compiled this report to the best of my ability and have based all findings in the information that is provided by relevant parties for this report. To the best of my knowledge all the information contained within this report is correct and accurate.

Issue	Date	Description	Author	Reviewed by
A	21.04.2015	Draft for Comment	D. Moin	
B	28.04.2015	Version B with revisions from issue A	C. Hickford	

4.0 SECTIONS

4.1 Management

Credit	Title	Credit		RIBA stage
		Max	Target	
Man 01a	Stakeholder consultation (project delivery)	1	1	1
Man 01b	Stakeholder consultation (third party)	1	1	2
Man 01c	Sustainability champion (design)	1	0	1
Man 01d	Sustainability champion (monitoring progress)	1	0	-
Man 02a	Elemental life cycle cost (LCC)	2	1	2
Man 02b	Component level LCC plan	1	0	4
Man 02c	Capital cost reporting	1	0	-
Man 03a	Environmental management	1	1	5
Man 03b	Sustainability champion (construction)	1	0	-
Man 03c	Considerate construction	2	2	-
Man 03d	Monitoring of construction-site impacts			-
	i) Utility consumption	1	1	-
	ii) Transport of construction materials and waste	1	1	-
Man 04a	Commissioning and testing schedule and responsibilities	1	1	-
Man 04b	Commissioning building services	1	1	-
Man 04c	Testing and inspecting building fabric	1	1	-
Man 04d	Handover	1	1	-
Man 05a	Aftercare support	1	1	6
Man 05b	Seasonal commissioning	1	1	7
Man 05c	Post occupancy evaluation	1	1	7
Sub-total		21	15	

Man 01a **Stakeholder Consultation (Project Delivery)**

Prior to completion of the Concept Design, project delivery stakeholders should have met to identify and define roles, responsibilities and contributions for each key phase of project delivery, taking into consideration the points in the manual. Project team should also demonstrate how the project delivery stakeholder contribution has influenced various stages of the project, as stated in the manual.

Man 01b **Stakeholder Consultation (Third Party)**

Prior to completion of the Concept Design stage, all relevant third party stakeholders need to be consulted by design team. Contributions and outcomes of consultation and the influence on the project must be demonstrated. Feedback to relevant parties should be given prior to completion of detailed design.

Man 01c **Sustainability Champion (Design)**

No credit targeted under this issue.
Design stage sustainability champion appointed to facilitate the setting and achievement of BREEAM's performance target for the project during feasibility stage. The BREEAM performance target must be formally agreed between client and design team and where necessary must be demonstrably achieved by the project design.

Man 01d Sustainability Champion (Monitoring Progress)

No credit targeted under this issue.
Above criteria must be met. Sustainability champion appointed must monitor progress and formally report to client and design team.

Man 02a Elemental Life Cycle Cost (LCC)

An elemental life cycle cost analysis has been carried out, at process stage 2 as defined in manual.

Man 02b Component Level LCC Plan

No credit targeted under this issue.
A component level LCC plan has been developed by the end of Process Stage 4 as defined in the manual.

Man 02c Capital Cost Reporting

No credit targeted under this issue.
Report the capital cost for the building in pounds per square metre (£k/m^2), via the BREEAM Assessment Scoring and Reporting tool, Assessment Issue Scoring tab, Management section.

Man 03a Environmental Management

All site timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy.

The principal contractor for the project:

- Operates an Environmental Management System covering their main operations
- Implements best practice pollution prevention policies and procedures on site.

Man 03b Sustainability Champion (Construction)

A sustainability champion is appointed to monitor the project to ensure ongoing compliance with the relevant sustainability performance/process criteria, and BREEAM targets during Construction, Handover and Close Out stages.

Man 03c Considerate Construction

Achieves or exceeds 'compliance' with the criteria of the compliant scheme.
One credit: a CCS score between 25 and 34 and score of at least 5 in each of the five sections must be achieved.
Two credits: a CCS score between 35 and 39 and score of at least 7 in each of the five sections must be achieved.
Exemplary level performance: a CCS score of 40 or more and score of at least 7 in each of the five sections must be achieved.

Man 03d Monitoring of Construction-site Impacts

Responsibility has been assigned to an individual(s) for monitoring, recording and reporting:
Energy and water consumption and transport resulting from all construction processes.

Man 04a Commissioning and Testing Schedule and Responsibilities

Commissioning of all building services will be carried out in line with current Building Regulations, BSIRA and CIBSE standards. Commissioning manager & specialist commissioning manager will be appointed.

Man 04b Commissioning Building Services

A specialist commissioning manager appointed in design stage to manage commissioning and offer expertise.

Man 04c Testing and Inspecting Building Fabric

Credit Man 04a achieved.
Integrity of building fabric should be quality assured through post-construction testing and inspection.
Defects in the thermographic survey and the airtightness testing reports are rectified before building handover and close out.

Post-Occupancy Evaluation (POE) will be carried out and shared one year after building occupation, to gain building performances feedback.

The POE will be carried out by an independent third party and will cover:-

- Review of the design and construction process
- Feedback from a wide range of building users on:-
    - Internal environmental conditions.
    - Control, operation and maintenance
    - Facilities and amenities
    - Access and layout
    - Other relevant issues
- Sustainable performance

Man 04d Handover

Building User Guides should be developed prior to hand over. A training schedule should also be prepared containing a minimum set of information detailed in the manual.

Building User Guides are provided and are appropriate to all users of the building (general users including staff and if applicable residents, as well as the non-technical facilities management team/building manager).

The Guides cover all functions and uses of the building, ensuring building users are able to use the building effectively. Where relevant, the documents must describe the facilities to be shared and how access to them will be arranged for potential users.

Building and site related information is made readily available to all future building users, enabling them to access and use the building, site and local transport infrastructure/amenities effectively.

Man 05a Aftercare Support

There will be operational infrastructure and resources in place to provide aftercare support to the building occupier, which should include the minimum outlined in the manual. Operational infrastructure and resources should also be in place that allows collection and monitoring of energy and water consumption data for a minimum of 12 months, once occupied.

Man 05b Seasonal Commissioning

The seasonal commissioning activities outlined in the manual should be completed over a minimum of 12 months, once building becomes substantially occupied.

Man 05c Post Occupancy Evaluation

A post-occupancy evaluation (POE) exercise one year after initial building occupation should be completed. This should be completed by an independent party and contain that stated in the manual.

4.3 Health and Wellbeing

Credit	Title	Credits		RIBA stage
		Max	Target	
Hea 01a	Glare control	1	0	4
Hea 01b	Daylighting (building type dependent)	1	0	4
Hea 01c	View out	1	0	-
Hea 01d	Internal and external lighting levels, zoning and control	1	1	-
Hea 02a	Indoor air quality (IAQ) plan	1	1	-
Hea 02b	Ventilation	1	1	-
Hea 02c	Volatile organic compounds (VOC) emission levels (products)	1	1	-
Hea 02d	Volatile organic compounds (VOC) emission levels (post construction)	1	0	-
Hea 02e	Potential for natural ventilation	1	0	-
Hea 03a	Laboratory containment devices and containment areas			3
Hea 03b	Buildings with contaminant level 2 and 3 laboratory facilities			-
Hea 04a	Thermal modelling	1	1	-
Hea 04b	Adaptability - for a projected climate change scenario	1	0	-
Hea 04c	Thermal zoning and controls	1	1	-
Hea 05	Acoustic performance (building type dependent)	3	1	-
Hea 06a	Safe access	1	1	-
Hea 06b	Security of site and building	1	1	2
Sub-total		17	9	

Hea 01a Glare Control

No credit targeted under this issue.

Potential for disabling glare has been designed out of all relevant building areas using a glare control strategy which should also avoid increasing lighting energy consumption.

Hea 01b Daylighting (Building Type Dependent)

No credit targeted under this issue.

Good practice daylighting levels have been met.

Hea 01c View Out

No credit targeted under this issue.

Floor space in relevant building areas has an adequate view out to reduce eyestrain and provide a link to the outside.

Hea 01d Internal and External Lighting Levels, Zoning and Control

New internal & external lighting will need to comply with relevant CIBSE standards.

Manual lighting controls should be easily accessible.

Systems should be designed to avoid flicker and provide appropriate illuminance levels. Internal lighting is zoned to allow for occupant control.

Hea 02a **Indoor Air Quality (IAQ) Plan**

An indoor air quality plan should be produced and will consider:

a) Removal of contaminant sources
b) Dilution and control of contaminant sources
c) Procedures for pre-occupancy flush out
d) 3rd party testing and analysis
e) Maintaining indoor air quality in-use

Hea 02b **Ventilation**

Fresh air provision and internal pollutant minimisation is in compliance with the appropriate standards.
CO2 or air quality sensors specified where necessary.
Air-conditioned/mixed-mode buildings: air intakes and exhausts are over 10m apart and intakes are over 20m from sources of external pollution.

Hea 02c **Volatile Organic Compounds (VOC) Emission Levels (Products)**

All finishing elements and materials will need to be specified in line with appropriate European Standards in respect of VOC's.

Hea 02d **Volatile Organic Compounds (VOC) Emission Levels (Post-Construction)**

No credit targeted under this issue.
VOC and formaldehyde levels tested in accordance with EU standards should be below given levels provided by the WHO and building regulations.

Hea 02e **Adaptability - Potential for Natural Ventilation**

No credit targeted under this issue.
The building ventilation strategy is designed to be flexible and adaptable to the potential building occupant needs and climatic scenarios and should be capable of providing at least two-levels of user control on the supply of fresh air to the occupied space.

Hea 03a **Laboratory Containment Devices and Containment Areas**

Not applicable to this project.

Hea 03b **Buildings with Contaminant Level 2 and 3 Laboratory Facilities**

Not applicable to this project.

Hea 04a **Thermal Modelling**

Thermal modelling carried out using software in accordance with CIBSE guidelines.

Hea 04b **Adaptability - for a Projected Climate Change Scenario**

No credit targeted under this issue.
Thermal modelling is completed. The above criteria are achieved and demonstrate adaptability to a projected climate change environment.

Hea 04c **Thermal Zoning and Controls**

Thermal modelling is completed. Thermal modelling analysis informs temperature control strategy for the building and its users. Strategy for proposed heating/cooling systems demonstrates that it has addressed the criteria in the manual.

Hea 05 Acoustic Performance

An Acoustician is appointed to provide early advice on influencing outline design solutions.

The building should be designed, constructed and fitted out to meet the acoustic performance standards and testing requirements as required for that type of building.

Hea 06a Safe Access

The appropriate safe access provisions should be made where there are external site areas. In addition, the same should be completed for vehicle delivery access and drop-off areas are included in the development.

Hea 06b Security of Site and Building

A suitably qualified security specialist (SQSS) will be consulted (at RIBA Stage 2) and their recommendations will be implemented into the project.

4.5 Energy

Credit	Title	Credits		RIBA stage
		Max	Target	
Ene 01	Energy performance	12	11	-
Ene 02a	Sub-metering of major energy consuming systems	1	1	-
Ene 02b	Sub-metering of high energy load and tenancy areas	1	1	-
Ene 03	External lighting	1	1	-
Ene 04a	Passive design analysis	1	0	2
Ene 04b	Free cooling	1	0	-
Ene 04c	Low zero carbon feasibility study	1	1	2
Ene 05a	Refrigeration energy consumption			
Ene 05b	Indirect greenhouse gas emissions			
Ene 06a	Energy consumption	1	1	-
Ene 06b	Energy efficient features	2	2	-
Ene 07	Pre-requisite: Hea 03 Safe containment in laboratories			
Ene 07a	Design specification			
Ene 07b	Best practice energy efficient measures			
Ene 08	Energy efficient equipment	2	2	-
Ene 09	Drying space			
Sub-total		23	20	

Ene 01 **Energy Performance**

Identify the number of credits available from Energy Performance Ratio (EPR_{NC}) calculated.

Ene 02a **Sub-metering of Major Energy Consuming Systems**

Energy metering systems are installed where appropriate to enable energy consumption to be assigned to end uses.

Ene 02b **Sub-metering of High Energy Load and Tenancy Areas**

Sub-meters are provided for high energy load and tenancy areas.

Ene 03 **External Lighting**

The building has been designed to operate without the need for external lighting. OR

All external lighting will achieve the relevant luminous efficacy and will be controlled to prevent operation during daylight hours.

Ene 04a **Passive Design Analysis**

No credit targeted under this issue.

Analysis of the proposed building design/development is undertaken to identify opportunities for and encourage the adoption of passive design solutions, including free cooling.

Ene 04b **Free Cooling**

No credit targeted under this issue.
Analysis of the proposed building design/development is undertaken to identify opportunities for and encourage the adoption of passive design solutions, including free cooling strategies to reduce cooling energy demand.

Ene 04c Low Zero Carbon Feasibility Study

Feasibility study carried out by energy specialist before completed Concept Design stage to establish most appropriate recognised local low or zero carbon energy sources. These recommendations adopted and a meaningful reduction in regulated CO_2 emissions noted.

Ene 05a Refrigeration Energy Consumption

Not applicable to this project.

Ene 05b Indirect Greenhouse Gas Emissions

Not applicable to this project.

Ene 06a Energy Consumption

Where transportation systems are used, the energy consumption should be calculated in accordance with associated standards and energy reduction measures should be taken.

Ene 06b Energy Efficient Features

Above achieved in addition to specific energy efficient measures for lifts and escalators and/or moving walks.

Ene 07a Design Specification

Not applicable to this project.

Ene 07b Best Practice Energy Efficient Measures

Not applicable to this project.

Ene 08 Energy Efficient Equipment

Identify buildings unregulated energy consuming loads and estimate their contribution to total annual unregulated energy consumption of the building. Identify systems or processes that use significant proportion of total annual unregulated energy demand of development and its operation. Demonstrate meaningful reduction in total annual unregulated energy demand.

Ene 09 Drying Space

Not applicable to this project.

4.7 Transport

Credit	Title	Credits		RIBA stage
		Max	Target	
Tra 01	i) Accessibility index	3	3	-
	OR ii) Dedicated bus service (1 credit)			
Tra 02	Proximity to amenities (building dependent)	1	1	-
Tra 03	Cyclist facilities	2	2	-
Tra 04	Maximum car parking capacity	2	2	-
Tra 05	Travel plan	1	1	-
Sub-total		9	9	

Tra 01 Accessibility Index

Recognition for developments in proximity to good public transport networks, thereby helping to reduce transport-related pollution and congestion.

Tra 02 Proximity to Amenities

Recognition for developments in close proximity of, and accessible to, local amenities which are likely to be frequently required and used by building occupants such as cash machine, post box and food outlet.

Tra 03 Cyclist Facilities

Provision of compliant cycle storage spaces and facilities to encourage safe and healthy cycling.

Tra 04 Maximum Car Parking Capacity

Recognition of developments that limit car parking capacity. Buildings car parking capacity compared to the maximum car parking capacity benchmarks provides number of BREEAM credits.

Tra 05 Travel Plan

To promote sustainable reductions in transport burdens by undertaking a site specific travel assessment/statement and developing a travel plan based on the needs of the particular site.

4.9 Water

Credit	Title	Credits		RIBA stage
		Max	Target	
Wat 01	Water consumption	5	3	-
Wat 02	Water monitoring	1	1	-
Wat 03a	Leak detection system	1	1	-
Wat 03b	Flow control devices	1	1	-
Wat 04	Water efficient equipment	1	1	-
Sub-total		9	7	

Wat 01 Water Consumption

Reducing the demand for potable water through the provision of efficient sanitary fitting, rainwater collection and water recycling systems.

Wat 02 Water Monitoring

A water meter will be fitted to the mains water supply to encourage water consumption management and monitoring to reduce the impacts of inefficiencies and leakage.

Each meter has a pulsed output as well as the capability of being connected to the buildings Building Management System (BMS).

Wat 03a Leak Detection System

Recognition of a leak detection system capable of detecting a major water leak on the mains water supply.

Wat 03b Flow Control Devices

A flow control device will be installed that regulate the supply of water to each WC area/facility to reduce water wastage.

Wat 04 Water Efficient Equipment

Identify a building's total unregulated water demand and mitigate or reduce consumption through systems and/or processes.

4.11 Materials

Credit	Title	Credits		RIBA stage
		Max	Target	
Mat 01	Life cycle impacts	5	4	-
Mat 02	Hard landscaping and boundary protection	1	1	-
Mat 03	Pre-requisite: All timber and timber based products should be 'legally harvested and traded timber'			-
Mat 03a	Sustainable procurement plan	1	1	-
Mat 03b	Responsible sourcing of materials (RSM)	3	2	-
Mat 04	Insulation	1	1	-
Mat 05	Designing for durability and resilience	1	1	-
Mat 06	Material efficiency	1	0	1,2,3,4&5
Sub-total		13	10	

Mat 01 Life Cycle Impacts

Reductions in the building's environmental life cycle impacts through assessment of the main building elements.
The Green Guide rating for the specifications for all major building elements will be determined and entered in to the BREEAM assessor's Mat 01 Calculator. Green Guide ratings for the specification(s) of each element can be found at: www.thegreenguide.org.uk.
Furthermore the life cycle Green House Gas emission for each element will be reported based upon a 60-year building life.

Mat 02 Hard Landscaping & Boundary Protection

Reductions in the environmental life cycle impacts through assessment of the hard landscaping and boundary protection elements. 80% of the external hard landscaping & boundary protection will be A or A+ rated in line with the Green Guide to Specification.

Mat 03a Sustainable Procurement Plan

PRE-REQUISITE:
All timber and timber based products used on the project should be 'legally harvested and traded timber'.
Materials sourced in accordance with a sustainable procurement plan.

Mat 03b Responsible Sourcing of Materials

PRE-REQUISITE:
All timber and timber based products used on the project should be 'legally harvested and traded timber'.
Key building materials are responsibly sourced to reduce environmental and socio-economic impacts.

Mat 04 Insulation

Recognition of the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties. Insulation for the external wall, ground floor, roof and building services will need to be specified.

Mat 05 Designing for Durability and Resilience

The project will include durability and protection measures to prevent damage to the vulnerable parts of the building. Minimum protection measures specified will be for high pedestrian traffic, internal vehicular/ trolley movement and external vehicular collision. Exposed parts of the building should also be protected from material degradation due to environmental factors.

Mat 06 Material Efficiency

No credit targeted under this issue.

Opportunities and measures have been identified and taken to optimise the use of efficient materials to minimise environmental impacts of material use and waste. This should be carried out at each RIBA stage.

4.13 Waste

Credit	Title	Credits		RIBA stage
		Max	Target	
Wst 01a	Construction resource efficiency	3	2	-
Wst 01b	Diversion of resources from landfill	1	1	-
Wst 02	Recycled aggregates	1	0	-
Wst 03	Operational waste	1	1	-
Wst 04	Speculative floor and ceiling finishes	1	1	-
Wst 05	Adaptation to climate change - structural and fabric resilience	1	0	2
Wst 06	Functional adaptability	1	0	2 & 4
Sub-total		9	5	

Wst 01a Construction Resource Efficiency

A Resource Management Plan (RMP) should be developed in line with the BREEAM requirement. The total allowable amount of waste per 100 m^2 of floor area will be <7.5 m^3 or <6.5 tonnes

In addition, a pre-demolition audit will be required where demolition of existing buildings will occur.

Wst 01b Diversion of Resources from Landfill

Non-hazardous construction, demolition and excavation waste generated should be diverted from landfill.

Will be required to divert at least 70% of non-demolition and 80% of demolition waste by volume or 80% of Non-demolition and 90% of Demolition waste by weight from landfill.

Wst 02 Recycled Aggregates

No credit targeted under this issue.

Percentage levels of recycled or secondary aggregate specified against set targets.

The total amount of recycled and/or secondary aggregate specified is greater than 25% (by weight or volume) of the total high-grade aggregate specified for the development.

Wst 03 Operational Waste

Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupants and activities.

Wst 04 Speculative Floor and Ceiling Finishes

Specification of floor and ceiling finishes only where agreed with the occupant or for tenanted areas where the future occupant is not known, carpets, other floor finishes and ceiling finishes are installed in a show areas only to reduce wastage.

Wst 05 Adaptation to Climate Change - Structural and Fabric Resilience

No credit targeted under this issue.

Encourage consideration and implementation of measures to mitigate the

impact of more extreme weather conditions arising from climate change over the lifespan of the building.

Wst 06 Functional Adaptability

No credit targeted under this issue.

Encourage consideration and implementation of measures to accommodate future changes to the use of the building and its systems over its lifespan.

4.15 Land Use and Ecology

Credit	Title	Credits		RIBA stage
		Max	Target	
LE 01a	Previously occupied land	1	1	-
LE 01b	Contaminated land	1	0	-
LE 02a	Ecological value of site	1	1	-
LE 02b	Protection of ecological features	1	1	-
LE 03	Minimising impact on existing site ecology	2	2	-
LE 04a	Ecologist's report and recommendations all buildings except buildings on HM Prison sites	1	1	1 & 2
LE 04a	Ecologist's report and recommendations buildings on HM Prison sites			
LE 04b	Increase ecological value	1	0	-
	OR simple buildings only (1 credit)			
LE 05	Long term impact on biodiversity	2	2	-
Sub-total		10	8	

LE 01a Previously Occupied Land

At least 75% of the proposed development's footprint is on an area of land which has previously been occupied by industrial, commercial or domestic buildings or fixed surface infrastructure.

LE 01b Contaminated Land

No credit targeted under this issue.

Contaminated land specialists' site investigation, risk assessment and appraisal to determine level of contamination. The remediation strategy also needs to be confirmed.

LE 02a Ecological Value of Site

Land within construction zone is defined as 'land of low ecological value', as identified by BREEAM checklist or a Suitably Qualified Ecologist.

LE 02b Protection of Ecological Features

All features of ecological value within or surrounding the construction zone/site boundary will be identified and adequately protected in line with associated standards.

Ecological protection should be constructed prior to any works on site.

LE 03 Minimising Impact on Existing Site Ecology

Change in ecological value 1 – change in ecological value is equal to or greater than zero plant species.

Change in ecological value 2 – change in ecological value is less than zero but equal to or greater than minus 9 plant species.

LE 04a Ecologist's Report and Recommendations

A suitably qualified ecologist (SQE) should be appointed to report on enhancing and protecting the ecology of the site (RIBA stage 1).

The SQE compiles an Ecology Report with appropriate recommendations for protection and enhancement of the site's ecology (RIBA stage 2). The recommendations are implemented on site.

LE 04b Increase Ecological Value

No credit targeted under this issue.

LE 05 Long Term Impact on Biodiversity

A Suitably Qualified Ecologist (SQE) should be appointed prior to work commencing to activities on-site and confirm that all relevant UK and EU legislation has been complied with.

A landscape and habitat management plan covering the first 5 years following handover will be produced for the site.

Additional measures can be adopted including:

- Appointment of Biodiversity Champion by the contractor
- The workforce will be trained on how to protect the ecology during the project
- The contractor will record actions taken to protect the biodiversity
- The creation of a new ecological valuable habitat appropriate the local area
- The contractors' programs site work to minimize disturbance to wildlife.

4.17 Pollution

Credit	Title	Credits		RIBA stage
		Max	Target	
Pol 01	Impact of refrigerants			-
	i) No refrigerant use (3 credits)			-
	ii) Pre-requisite			-
	Impact of refrigerant	2	1	-
	Leak detection	1	1	-
Pol 02	NOx emissions			-
	i) All building types except industrial	3	2	-
	ii) Industrial building types only			
Pol 03a	Flood resilience	2	2	-
Pol 03b	Pre-requisite			-
Pol 03b	Surface water run-off	1	1	-
Pol 03c	Prevention of flooding	1	1	-
Pol 03d	Minimising watercourse pollution	1	0	
Pol 04	Reduction of night time light pollution	1	1	-
Pol 05	Reduction in noise pollution	1	1	-
Sub-total		13	10	

Pol 01 Impact of Refrigerants

Avoidance or reduction of the impact of refrigerants through specification and leak prevention/detection.
No refrigerant required for building
OR
PRE-REQUISITE
All systems must comply with requirements of associated standards.
Where systems used have Direct Effect Life Cycle CO2 equivalent emissions of ≤ 100 $kgCO_{2e}/kW$ cooling/heating capacity. OR where refrigerants in air-conditioning or refrigeration systems have a Global Warming Potential of ≤10.
OR
Any systems using refrigerants that have Direct Effect Life Cycle CO_2 equivalent emissions of ≤ 1000 $kgCO_{2e}/kW$ cooling/heating capacity.
A leak detection system installed.

Pol 02 NO_X Emissions

The plant installed to meet the buildings' heating and hot water demand should have, under normal operation conditions, a dry NO_x emission level (measured at 0% excess O_2) of <70 mg/kWh

Pol 03a Flood Resilience

A Flood Risk Assessment should be undertaken.
To achieve 2 credits, the development should be situated in a flood zone that is defined as having a low annual probability of flooding.
To achieve 1 credit, development has a medium to high annual probability of flooding and is not in a functional floodplain. Development should be raised above flood zone OR should be designed in accordance with the relevant

standards.

Pol 03b Surface Water Run-off

PRE-REQUISITE

An appropriate consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with the following criteria:

Attenuation measures should be employed on-site confirming that run-off levels are not greater at post-construction compared to levels pre-construction, including an allowance for climate change. Relevant maintenance agreements for ownership, long term operation and maintenance of all specified SuDS are in place.

Where flooding will not occur in the event of local drainage system failure AND any additional predicted volume of run-off for the 100 year 6 hour event must be prevented from leaving the site SuDS techniques.

Pol 03c Minimising Water Course Pollution

No credit targeted under this issue.

An Appropriate Consultant (Civil Engineer) should confirm that there will be no discharge from the developed site for rain-fall up to 5mm.

AND

- In areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.
- Pollution prevention measures (SUDS & PPG3) are incorporated into the project
- Oil/Petrol separators are specified where high contamination risk
- Drainage plans of the site will be made available for the building/site occupiers.
- Chemical/liquid gas storage areas have shut-off valves fitted to the site drainage system (in the event of a spillage or bunding failure).
- All external storage and delivery areas designed and detailed in accordance with the recommendations of the Environment Agency's publication Pollution Prevention Pays Guidance
- And a comprehensive, up-to-date drainage plan of site will be made available to occupiers.

Pol 04 Reduction of Night Time Pollution

External lighting pollution has been eliminated through effective design that removes requirement for external lighting without affecting the safety and security of the site and users.

OR where external lighting is used:

The external lighting strategy should be been designed in compliance with Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2011

All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 hr and 07:00 hr.

If safety or security lighting is provided and will be used between 23:00 hr and 07:00 hr, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2of the ILP's Guidance note.

Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.

Pol 05 Reduction in Noise Pollution

Where there are or will be, **no** noise-sensitive areas or buildings within 800m radius of the assessed development.

OR

Where there are or will be noise-sensitive areas or buildings within 800m radius of the assessed development a noise impact assessment in compliance with BS 74451 has been carried out and the following noise levels measured/determined:

- Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed development.
- The rating noise level resulting from the new noise-source.

A suitably qualified acoustic consultant (SQA) should undertake the assessment.

The noise level from the proposed site/building results in a difference no greater than +5dB during the day and +3dB at night compared to the background noise level.

Where the noise source from the proposed development is greater than the levels described attenuation measures need to be installed at the source to a level where compliance with criteria will be met.

4.19 Innovation

Credit	Title	Credits		RIBA stage
		Max	Target	
Man 01i	Project brief and design (simple buildings only)			
Man 03i	Responsible construction practices	1	0	-
Man 05i	Aftercare	1	1	-
Hea 01i	Visual comfort	1	0	-
Hea 02i	Indoor air quality	1	0	-
Ene 01i	Reduction of energy use and carbon emissions	1	0	-
Wat 01i	Water consumption	1	0	-
Mat 01i	Life cycle impacts	1	0	-
Mat 03i	Responsible sourcing of materials	1	0	-
Wst 01i	Construction-site waste management	1	0	-
Wst 02i	Recycled aggregates	1	0	-
Wst 05i	Adaptation to climate change	1	0	-
Pol 03i	Surface water run-off (simple buildings only)			
Sub-total		10	1	

Man 01i **Project Brief and Design (Simple Buildings Only)**

Achieve criteria 8 - 10 of Man 01c and criteria 11 – 12 0f Man 01d.

Man 03i **Responsible Construction Practices**

To achieve this credit the main contractor is required to achieve exemplary compliance of an organisational, local or national considerate construction scheme.

Man 05i **Aftercare**

There is or will be operational infrastructure and resources in place to co-ordinate building management at quarterly intervals for the first 3 years of building occupation. Details in handbook.

Hea 01i **Visual Comfort**

To achieve this credit, the project needs to exceed the Hea 1 requirement.

Hea 02i **Indoor Air Quality**

Focuses on minimising sources of air pollution – VOC emission levels (products). All product categories targeted and formaldehyde emission levels reduced.

Ene 01i **Reduction of Energy Use and Carbon Emissions**

Zero carbon or carbon negative.

Wat 01i **Water Consumption**

To achieve this credit, the project needs to exceed the Wat 01 requirement by achieving 65% improvement in baseline water consumption.

Mat 01i	**Life Cycle Impacts** To achieve this credit, the project needs to exceed the Mat 01 requirement by using the Green Guide to Specification (elemental approach) or using compliant life cycle assessment software tools (whole building approach).
Mat 03i	**Responsible Sourcing of Materials** At least 70% of the available RSM points are achieved.
Wst 01i	**Construction Site Waste Management** To achieve this credit, the project needs to exceed the Wst 01i requirement. In addition, further credits for simple buildings.
Wst 02i	**Recycled Aggregates** To achieve this credit, the project needs to exceed the Wst 02i requirement by the total amount of recycled or secondary aggregate is greater than 35% of the total high grade aggregate specified for the project.
Wst 05i	**Adaptation to Climate Change** Achievement of the credit in addition to Hea 04b criterion 6, at least 8 credits in Ene 01, Ene 04a, 3 credits in Wat 01, Mat 05 criterion 2 and Pol 03a and b should be achieved.
Pol 03i	**Surface Water Run-off (Simple Buildings Only)** Achieve criteria 4 – 14 in Pol 03b.

Full requirement details can be found within the BREEAM New Construction 2014 assessor manual Version 1.0 - which is freely available from: www.brream.org
The manual provides detailed information on the credit criteria and compliance requirements for the assessment.

APPENDIX 1

BREEAM Pre-Assessment Tracker and Results

	Environmental weighting	Credits available	Credits targeted	% Targeted	Weighted Target Score
Management	12.00%	21	15	71.43%	8.57%
Health & Wellbeing	15.00%	17	9	52.94%	7.94%
Energy	15.00%	23	20	86.96%	13.04%
Transport	9.00%	9	9	100.00%	9.00%
Water	7.00%	9	7	77.78%	5.44%
Materials	13.50%	13	10	76.92%	10.38%
Waste	8.50%	9	5	55.56%	4.72%
Land Use & Ecology	10.00%	10	8	80.00%	8.00%
Pollution	10.00%	13	10	76.92%	7.69%
Innovation	10.00%	10	1	10.00%	1.00%
				Credits	74.80%
				Innovation	1.00%
				Total Score	75.80%
					EXCELLENT