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Preliminary Assessment
BREEAM 2014 New Construction
KOKO Hotel Extension

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Executive Summary
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Introduction

Eight Associates have been appointed, as registered BREEAM assessors, to carry out an assessment of the proposed new hotel development at KOKO, in the London Borough of Camden. This assessment is under the BREEAM 2014 New Construction (fully fitted) Methodology.

This summary is a pre-assessment of the development and details the anticipated score following the information provided by the design team at a meeting held in February 2017 and subsequent discussions.

Project Summary

Planning Requirements for the new build non-residential extension are as follows:

- 'Excellent' BREEAM rating.

Score Summary

The site reviewed currently achieves a score of 72.00%, which equates to an Excellent rating.

Eight Associates recommend a safety margin of at least 3-5% to safeguard any rating at formal assessment.

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BREEAM Introduction
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The BREEAM standard

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's first sustainability rating scheme for the built environment. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance.

To date BREEAM has been used to certify over 260,000 building assessments across the building life cycle and is being applied in over 50 countries.

BREEAM is developed, operated and maintained by BRE Global Ltd and the operation and direction of the method is overseen by an independent Sustainability Board, representing a wide cross-section of construction industry stakeholders. Further information about BREEAM, including copies of the BREEAM standards, can be found at www.breeam.org.

Aims of BREEAM

- To mitigate the impacts of buildings on the environment.
- To enable buildings to be recognised according to their environmental benefits.
- To provide a credible, environmental label for buildings.
- To stimulate demand for sustainable buildings.

BREEAM New Construction

BREEAM New Construction is a performance-based assessment method and certification scheme for new buildings. The primary aim of BREEAM New Construction is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost effective manner. It attempts to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

Projects are assessed at design and post-construction stages using a system of environmental issues grouped within the following sections:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use & Ecology
- Pollution
- Innovation

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BREEAM Introduction
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Process of the assessment

Under BREEAM New Construction 2014, assessments take place over two phases:

a. Design Stage: This is based on the final design for the development and the intentions of the design team. Submission before the completion of RIBA Stage 4.
b. Post Construction Stage (PCS): This is based on the built development and requires the BREEAM assessor to carry out a site visit. Submission at RIBA Stage 6.

An interim certificate will be provided following the Design Stage Assessment, with final certification being awarded following the completion of the PCS Assessment.

Ratings

The assessment process results in a rating on a scale of PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING. The rating bands for each are as follows:

Rating	Minimum score required
Pass (P)	30%
Good (G)	45%
Very Good (VG)	55%
Excellent (E)	70%
Outstanding (O)	85%

Mandatory credits

Some credits, or criteria within credits, are mandatory to achieve certain ratings:

BREEAM Issue	P	G	VG	E	O
Man 03: Responsible Construction Practices	-	-	-	1	2
Man 04: Commissioning and Handover	-	-	-	Criterion 10[1]	Criterion 10
Man 05: Aftercare	-	-	-	1	1
Ene 01: Reduction of CO_2 emissions	-	-	-	5	8
Ene 02: Energy Monitoring	-	-	1	1	1
Wat 01: Water Consumption	-	1	1	1	2
Wat 02: Water Monitoring	-	Criterion 1[2]	Criterion 1	Criterion 1	Criterion 1
Mat 03: Responsible Sourcing	Criterion 1[3]	Criterion 1	Criterion 1	Criterion 1	Criterion 1
Wst 01: Construction Waste Management	-	-	-	-	1
Wst 03: Operational Waste	-	-	-	1	1
LE 03: Mitigating Ecological Impact	-	-	1	1	1

[1] A Building User Guide must be developed prior to handover, for distribution to the building occupiers and premises managers.

[2] A water meter must be specified on the mains water supply to each building

[3] All timber and timer-based products used on the project must be legally harvested and traded.

Full details for each credit follow later in this document.

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Score Breakdown
BREEAM 2014 New Construction
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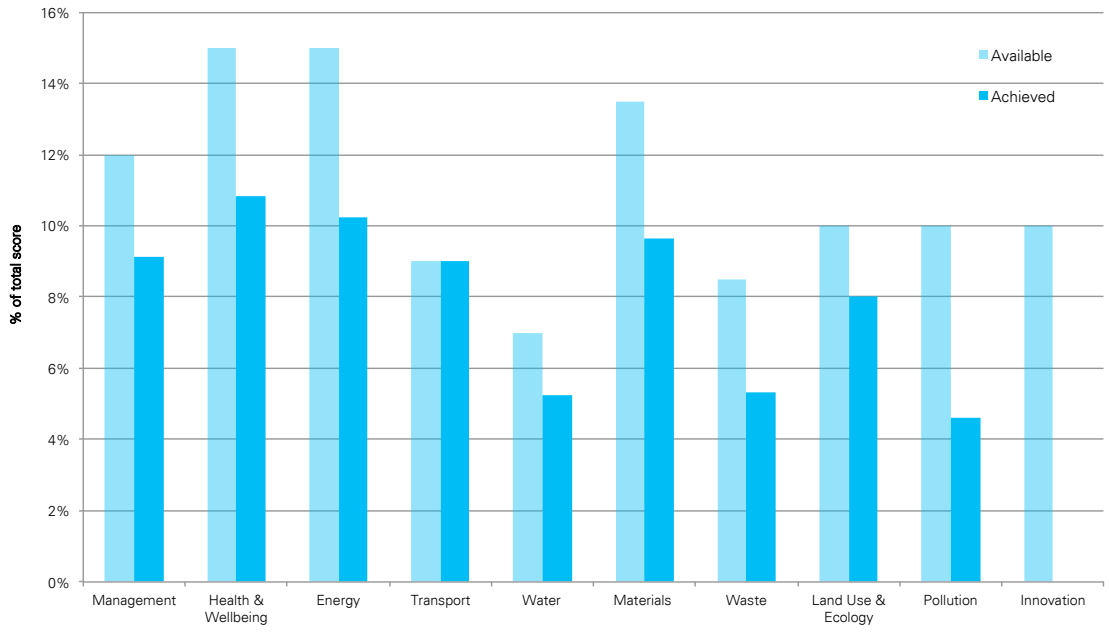
Rating summary

The following summary represents the scheme's preliminary score based on the assumptions in the following pages. Please contact the assessor if a score sheet is required.

Credit Allocation	% Achieved	Weighting	Score
Management	76%	0.120	9.14%
Health & Wellbeing	72%	0.150	10.83%
Energy	68%	0.150	10.22%
Transport	100%	0.090	9.00%
Water	75%	0.070	5.25%
Materials	71%	0.135	9.64%
Waste	63%	0.085	5.31%
Land Use and Ecology	80%	0.100	8.00%
Pollution	46%	0.100	4.61%
Innovation	0%	0.100	0.00%
Rating			**72.00%**
			EXCELLENT

Graphic breakdown

The graph below shows the credits currently targeted (dark blue) and remaining credits in each BREEAM section (light blue).



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Management
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Man 01 – Project Brief and Design	**Stakeholder Consultation (two credits)** The design team have met to identify roles and responsibilities, as well as contributions for each key phase of the project. It has been confirmed that a detailed consultation with the appropriate stakeholders has formed part of the project brief in accordance with BREEAM requirements. **Sustainability Champion (two credits)** The design team has confirmed that a BREEAM Accredited Professional (AP) will be involved to monitor and report progress against the established BREEAM targets by attending key project team meetings during all stages of the design and construction. *In total, four out of four credits are currently targeted for this issue.*	4 of 4
Man 02 – Life Cycle Cost and Service Life Planning	**Elemental and Component level Life Cycle Cost (LCC)** Neither an elemental nor a component level life cycle cost analysis is planned for the development. **Capital cost reporting** The capital cost for the project in pounds per square metre (£/m^2) will be estimated at the design stage, and reported to the BREEAM assessor at the post construction stage. *One of four credits is currently targeted for this issue.*	1 of 4

Management
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Man 03 – Construction Site Impacts

Mandatory requirements:
At least one credit must be awarded under Considerate Construction in order to achieve an Excellent rating.

Timber (pre-requisite) 6 of 6
All timber is to be legally harvested and traded.
This is a pre-requisite for this issue; no credits can be awarded unless this requirement is met.

Environmental Management (one credit)
Although the main contractor has not been appointed the design team confirm that the appointed company will operate an environmental management system.

Sustainability Champion (Construction) (one credit)
The contractor will be required to appoint a Sustainability Champion (a qualified BREEAM AP or BRE Site Sustainability Manager) to ensure on-going compliance with the relevant sustainability performance on site. They will ideally be based on site or be able to undertake regular spot checks to ensure risks are minimised.

Considerate Construction (two credits)
The contractor will be required to register the project under the Considerate Constructors Scheme (CCS) and will be committed to achieve at least 35 points, with a minimum of 7 points in each section.

Monitoring of Construction-site impacts (two credits)
The design team has confirmed that the Sustainability Champion (see above) will be responsible for monitoring, recording and reporting the following:

- Energy (kWh) and water (m^3) consumption arising from the use of construction plant, equipment and site accommodation.
- Transport resulting from delivery of construction materials to site and removal of construction waste from site. The following information must be recorded separately for waste and materials:
  - Litres of fuel used
  - Distance travelled (km)
  - Carbon dioxide emissions ($kgCO_2$ eq)

In total, six of six credits are currently targeted for this issue.

Management
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Man 04 – Commissioning and Handover

Mandatory requirements:
A Building User Guide must be produced in order to achieve an Excellent rating.

Commissioning (two credits) 3 of 4
A member of the design team will be appointed to monitor commissioning in line with best practice (CIBSE, BSRIA and Building Regulations), with a specialist commissioning agent appointed for any complex systems.

Testing and inspecting building fabric (one credit)
The design team has confirmed that the credit for testing and inspecting building fabric is not currently targeted.

Handover (one credit)
The production of a non-technical building user guide in line with the BREEAM requirements is planned. In addition, a training schedule will be prepared for building occupiers / facilities managers to aid handover.

In total, three of four credits are currently for this issue.

Man 05 – Aftercare

Mandatory requirements:
Seasonal Commissioning must be carried out in order to achieve an Excellent rating.

Aftercare support (one credit) 2 of 3
There will be operational infrastructure and resources in place to provide aftercare support to the building occupier and to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied.

Seasonal commissioning (one credit)
Seasonal commissioning activities will be completed 4 times (spring/summer/autumn/winter) at full and part loads over a minimum 12-month period, once the building becomes occupied.

Post Occupancy Evaluation (one credit)
It has confirmed that a post occupancy evaluation (POE) exercise one year after initial building occupation is not intended.

Two of three credits are currently targeted for this issue.

Health & Wellbeing
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Hea 01 – Visual Comfort

Glare control (one credit) 4 of 4

The design team has confirmed that occupant controllable blinds will be provided in all relevant occupied areas to reduce the potential for disabling glare. The glare control strategy will be designed to maximise daylight levels under all conditions, while avoiding glare, in order to avoid increasing lighting energy consumption.

Daylighting (one credit)

The design team has confirmed that daylighting calculations will be carried out to confirm relevant areas meet the daylighting criteria for one credit to be awarded.

View out (one credit)

The design team has confirmed that 95% of floor areas in relevant building areas are within 7m of a wall which has a window, providing an adequate view out.

Internal and external lighting levels, zoning and controls (one credit)

The design team has confirmed the following will be met for the scheme:

- Where specified, all fluorescent and compact fluorescent lamps will be fitted with high frequency ballasts
- Internal lighting will provide illuminance levels in accordance with the SLL Code of Lighting 2012 (and any other relevant industry standard) and external lighting will meet CIBSE lighting levels
- For areas where computer screens are regularly used the lighting design will comply with the appropriate sections of CIBSE Lighting Guide 7.
- All external lighting will provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately
- Internal lighting to be appropriately zoned to allow for occupant control within relevant building areas (external lighting will be specified in accordance with *BS 5489-1:2013 Lighting of roads and pubic amenity areas* and *BS EN 12464-2:2014 Light and lighting – Lighting of workplaces – Part 2: Outdoor workplaces*)
- Internal lighting will be zoned to allow for occupant control in accordance with the relevant BREEAM criteria.

In total, four of four credits are currently targeted for this issue.

Health & Well-being
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Hea 02 – Indoor Air Quality	**Indoor Air Quality plan (one credit)** The design team has confirmed that an indoor air quality plan will be provided in line with BREEAM requirements. **Ventilation (one credit)** The design team has confirmed that the air intakes and extracts will be at least 10m apart and more than 20m from external sources of air pollution. Where these distances are not met, the locations of intakes and extracts will be designed in line with BS EN 13779:2007 Annex 2a. **Volatile Organic Compound (VOC) emission levels (products) (one credit)** The design team has confirmed that all key internal finishes will be specified with low VOC levels in line with BREEAM requirements. **Volatile Organic Compound (VOC) emission levels (post-construction) (one credit)** The design team has confirmed that the credit for this part of the issue will not be targeted at this stage - testing to measure VOC and formaldehyde concentration levels at post-construction stage will not be undertaken. **Adaptability – potential for natural ventilation (one credit)** The design team has confirmed that the credit for this part of the issue will not be targeted as occupied spaces within the building will not be designed to be capable of providing fresh air entirely via natural ventilation. *In total, three of five credits are currently targeted for this issue.*	3 of 5
Hea 04 – Thermal Comfort	Thermal modelling, in line with CIBSE AM11 guidelines will be undertaken for the development using full dynamic thermal analysis software. Summer and winter operative temperature ranges in occupied spaces will be in accordance with the criteria set out in CIBSE Guide A Environmental design. The design team has confirmed that the thermal modelling will include an allowance for a projected climate change environment and will inform the thermal comfort strategy. *Three of three credits are currently targeted for this issue.*	3 of 3

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Health & Well-being
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Hea 05 – Acoustic Performance

1 of 4

The design team has confirmed that, for the bedrooms, the building will comply with the following criteria:

- Airborne sound insulation values will be at least 3dB higher and impact sound insulation values will be at least 3dB lower than the performance standards in the relevant Building Regulations or standards.

Furthermore, for all other relevant building areas the building will comply with the requirements set out in Section 7 of BS 8233:2014 for:

- Sound insulation
- Indoor ambient noise level
- Reverberations times

The above will be confirmed via a programme of pre-completion testing, carried out by a compliant test body.

One of four credits are currently targeted for this issue.

Hea 06 – Safety and Security

2 of 2

Safe access (one credit)

The team have confirmed that there are no external areas as part of the assessed development therefore both available credits will be based on the criteria determining security of the site and building.

Security of site and building (one credit)

The design team has confirmed that a suitably qualified security consultant has been consulted during the planning process and recommendations will be incorporated into the design. An evidence based Security Needs Assessment (SNA) will be required prior to the concept design stage (RIBA stage 2)

Two of two credits are currently targeted for this issue.

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Energy
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Ene 01 – Reduction of CO_2 Emissions **Mandatory requirement:** At least five credits must be achieved in order to secure an Excellent rating.	An Energy Performance Certificate will be produced at design stage, based on Part L 2013 standards. Based on the building services and fabric specified, preliminary energy modelling confirms five of the available twelve credits under this issue will be achieved. Please note that the BREEAM guidance requests a copy of the Building Regulations Output (BRUKL Output Document) based on the design stage of analysis and an as-built copy of the document for the PCR stage. *Five of twelve credits are currently targeted for this issue.*	5 of 12
Ene 02 – Energy Monitoring **Mandatory requirement:** One credit is required for sub-metering of major energy consuming systems in order to achieve an Excellent rating.	Pulsed sub-meters will be provided to ensure the following are met: 1. Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems. 2. The energy consuming systems in buildings with a total useful floor area greater than 1,000m^2 are metered using an appropriate energy monitoring and management system. 3. The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system 4. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs. *One of one credit is currently targeted for this issue.*	1 of 1
Ene 03 – External Lighting	The design team has confirmed that any external lighting will have an average initial luminous efficacy of greater than 60 luminaire lumens per circuit Watt. All external light fittings will be automatically controlled to prevent operation during daylight hours. *One of one credit is currently targeted for this issue.*	1 of 1

Energy
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Ene 04 – Low Carbon Design	**Passive design analysis (one credit)** The design team has confirmed that the requirements of the passive design analysis are achievable for a building of this type. **Free cooling (one credit)** The design team has confirmed that the credit for free cooling will not be targeted at design stage. **Low Carbon Technologies (one credit)** A Low and Zero Carbon technology feasibility study will be carried out however it cannot be confirmed if viable technologies will make a significant contribution of at least 5% in reducing carbon emissions. *One of three credits is currently targeted for this issue.*	1 of 3
Ene 06 – Energy Efficient Transportation Systems	**Energy consumption (one credit)** The design team has confirmed that an analysis of the transport demand and usage patterns for the building will be carried out to determine the optimum number and size of lifts. The energy consumption will be calculated for at least two types of system and the one with the lowest energy consumption will be specified. Regenerative drives will be considered, to ascertain whether these would produce an energy saving greater than the additional standby energy used to support the drives. **Energy efficient features (two credits)** The following three energy efficient features will be specified for each lift: - A stand-by mode during off-peak and idle periods - Low energy lighting across all fittings in the car - A drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. Additionally, regenerative drives must be specified where these are demonstrated to save energy. *Three of three credits are currently targeted for this issue.*	3 of 3

Ene 08 – Energy efficient equipment	The small power and plug-in equipment including white goods will EITHER be awarded an Energy Star rating OR be procured in accordance with the Government Buying Standards. Kitchen and catering facilities will be specified in line with relevant sections of CIBSE Guide TM50. *Two of two credits are targeted.*	2 of 2

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Transport
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Tra 01 – Public Transport Accessibility	Based on the location of the site, full credits will likely be awarded as the site will have a high Accessibility Index. *Three of three credits are currently targeted for this issue.*	3 of 3
Tra 02 – Proximity to Amenities	The development is in close proximity to a number of services for the available credit to be targeted. *One credit is currently targeted for this issue.*	1 of 1
Tra 03 – Cyclist Facilities	Cycle storage (one credit) The design team confirmed that BREEAM-compliant cycle storage will be provided. The number of spaces required must be calculated on a site-wide basis, one cycle space to be provided for every 10 building users. The cycle storage must be covered overhead to protect from the weather, secured in fixed racks, lighting must comply with BREEAM criteria, and storage must be located within 100m of the development. Cyclist facilities (one credit) The design team has confirmed that at least two of the following compliant cycle facilities will be provided: - Showers (one for every 10 cycle spaces) - Changing facilities (appropriately sized) - Lockers (one per cycle space) - Drying spaces *Two of two credits are currently targeted for this issue.*	2 of 2

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Transport
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Tra 04 – Maximum Car Parking Capacity	The design team has confirmed that there are no parking spaces for the site therefore two credits can be awarded. *Two of two credits are currently targeted for this issue.*	2 of 2
Tra 05 – Travel Plan	The design team has confirmed that a site-specific travel plan will be developed as part of the feasibility and design stages. The travel plan will consider all types of travel relevant to the building type and users, and make recommendations for reducing reliance on single occupancy car journeys. *One of one credit currently targeted for this issue.*	1 of 1

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Water
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Wat 01 – Water Consumption

Mandatory requirement:
At least one credit is required in order to achieve an Excellent rating

3 of 5

The design team has confirmed that they will aim for a 40% improvement in water consumption (litres/person/day) compared to BREEAM's notional baseline performance. The following flow rates / capacities will be used as a guideline towards achieving this:

- WCs with effective flush volume of 3 litres
- Wash hand basin taps with a flow rate of 5 litres per minute
- Showers with a flow rate of 8 litres per minute
- Urinals with a flush volume of 3 litres per bowl per hour
- Kitchen taps with a flow rate of 6 litres per minute

Three of five credits is currently targeted for this issue

Wat 02 – Water Monitoring

Mandatory requirement:
A water meter must be specified (even if this issue is not targeted) in order to achieve an Excellent rating

1 of 1

The design team has confirmed that a pulsed water meter will be installed on the mains water supply to each building.

Water-consuming plant or building areas consuming 10% or more of the building's total water demand, will be fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area.

The available credit is currently targeted for this issue.

Wat 03 – Water Leak Detection and Prevention

2 of 2

The design team has confirmed that a major leak detection system will be installed on the mains water supply within the building and between the building and the utilities water meter. The water meter will be:

- Permanent and automated
- Activated when the flow of water is at a flow rate above a pre-set maximum for a pre-set period of time
- Able to identify different flow and leakage rates
- Programmable

The design team has also confirmed that flow control devices will be specified to each communal WC area/facility. This will involve solenoid valves connected to PIR sensors, or similar presence detection system.

Two of two credits are currently targeted for this issue.

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Water
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Wat 04 – Water Efficient Equipment	Soft landscaping is proposed on the new hotel roof however this will likely be low maintenance sedum blankets not requiring irrigation. *One of one credit currently targeted for this issue.*	1 of 1

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Materials
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Mat 01 – Life Cycle Impacts	It is assumed that the majority of the roof, internal walls, external walls, windows, upper floors, and floor finishes will achieve at least an 'A' rating under the Green Guide to Specification. These credits will be reviewed once the materials specification has been confirmed. *Four of six credits are currently targeted for this issue.*	4 of 6
Mat 02 – Hard Landscaping and Boundary Protection	It is assumed that there is minimal hard landscaping within the scope of the development and boundary protection will achieve at least an 'A' rating under the Green Guide to Specification. *The available credit is currently targeted for this issue.*	1 of 1
Mat 03 – Responsible Sourcing of Materials Mandatory requirement: The pre-requisite for this issue must be complied with (even if this issue is not targeted) in order to achieve an Excellent rating.	Pre-requisite The design team has confirmed that all timber used on the project will be sourced in accordance with the UK Government's Timber Procurement Policy. Sustainable procurement plan (one credit available) The design team has confirmed that the main contractor will be required to commit to developing a sustainable procurement plan. Responsible sourcing of materials (3 credits available) One credit is currently targeted as the design team has confirmed that key building elements will be responsibly sourced (e.g. all timber FSC certified, and any bricks, pavers, concrete, glass, metals, plaster etc. covered by BRE Global, BES60001 certification, or EMS certified for both the key process and supply chain extraction process). *In total, two of four credits are currently targeted for this issue.*	2 of 4
Mat 04 – Insulation	The design team has confirmed that any insulation specified and installed for the external walls, ground floor, roof and building services will be A or A+ rated under the Green Guide. *The available credit is currently targeted for this issue.*	1 of 1

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Materials
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Mat 05 – Designing for Robustness	**Protecting vulnerable parts of the building from damage** Materials and features will be specified to protect vulnerable parts of both the internal and external areas of the building. **Protecting exposed parts of the building from material degradation** The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. *The available credit is currently targeted for this issue.*	1 of 1
Mat 06 – Material efficiency	The design team has confirmed that opportunities for optimising material efficiency will be reviewed and reported at each key stage in the design and construction process. *The available credit is currently targeted for this issue.*	1 of 1

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Waste
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Wst 01 – Construction Site Waste Management	**Construction resource efficiency (three credits)** The design team has confirmed that a BREEAM compliant Site Waste Management Plan will be produced and will ensure the non-hazardous waste generated by the building's design and construction (excluding demolition and excavation waste) is less than 7.5m^3 (or 6.5 tonnes) per 100m^2 of gross internal floor area. **Diversion of resources from landfill (one credit)** It is currently foreseen that 70% by volume (80% by weight) of non-hazardous waste generated by the project will be diverted from landfill. *In total, three of four credits are currently targeted for this issue.*	3 of 4
Wst 02 – Recycled Aggregates	It has not been confirmed at this stage whether the main contractor will be specifying any recycled aggregates. *The available credit is not currently targeted for this issue.*	0 of 1
Wst 03 – Operational Waste **Mandatory requirement:** One credit is required in order to achieve an Excellent rating.	The design team have confirmed that a dedicated recyclable waste storage area will be provided for the scheme. The space will be clearly labelled and accessible. *The available credit is currently targeted for this issue.*	1 of 1
Wst 05 – Adaptation to Climate Change	The design team has confirmed that this credit will not be targeted as part of the strategy. *The credit for this issue is not currently targeted.*	0 of 1
Wst 06 – Functional Adaptability	The design team has confirmed that a specific functional adaptation strategy for potential future adaptation will be undertaken for the building. This will include recommendations for measures to be incorporated to facilitate future adaptation. *The available credit is currently targeted for this issue*	1 of 1

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Land Use and Ecology

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LE 01 – Site Selection	**Previously developed land (one credit)** The development is situated on previously developed land. **Contaminated land (one credit)** The site was not contaminated prior to development and therefore no remediation will take place. *One of two credits is currently targeted for this issue.*	1 of 2
LE 02 – Ecological Value of Site and Protection of Ecological Features	The design team have confirmed that an ecologist has been appointed to confirm the ecological value of the existing site. *Two of two credits are currently targeted for this issue.*	2 of 2
LE 03 – Minimising impact on existing site ecology **Mandatory requirement:** One credit is required in order to achieve an Excellent rating.	The design team has confirmed that there will be a neutral change in ecological value of the site as a result of the development. *Two of two credits are currently targeted for this issue.*	2 of 2
LE 04 – Enhancing Site Ecology	The design team have confirmed that an ecologist has been appointed to confirm the ecological value of the existing site. Recommendations provided by the ecologist will be implemented on site to enhance the ecological value on site. *One of two credits is currently targeted for this issue.*	1 of 2

Land Use and Ecology

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LE 05 – Long Term Impact on Biodiversity

The design team has confirmed that a Suitably Qualified Ecologist will be appointed to:

- Advise on how to improve the ecological value of the site.
- Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process.
- Produce a landscape and habitat management plan to cover at least the first five years after project completion.

Additionally, the contractor will be required to meet four out of five additional measures for the improvement of long term biodiversity.

Two of two credits are currently targeted for this issue.

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Pollution
BREEAM 2014 New Construction
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Pol 01 – Impact of Refrigerants	**Pre-requisite** All systems with electronic compressors will comply with the requirements of BS EN 378:2008 (parts 2 and 3) and, where systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. **Impact of refrigerants (two credits)** At present, the cooling strategy of the scheme has not been specified. However, systems using refrigerants will have Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_{2e}) of ≤ 1000 $kgCO_{2e}$/kW cooling/heating capacity. **Leak detection (one credit)** The design team has confirmed that a compliant refrigerant leak detection system will not be specified. *One of three credits is currently targeted for this issue.*	1 of 3
Pol 02 – NO_x Emissions	The design team has confirmed that heat pumps for space heating will be specified, the associated NOx emissions of grid electricity means that no credits can be awarded. *The credits for this issue are not currently targeted.*	0 of 3
Pol 03 – Surface Water Run Off	Flood risk (two credits) A site-specific Flood Risk Assessment has been undertaken for the site, which confirms there is a risk of surface water flooding to the site therefore is in an area of medium flood risk. Surface water run-off (two credits) The design team have confirmed that a suitably qualified expert has been appointed to confirm that surface water run-off rates and volumes will not increase as a result of the development. Minimising watercourse pollution (one credit) The design team has confirmed that a suitably qualified expert has been appointed however it is unsure whether the criteria for this credit will be met. *In total, three of five credits currently targeted for this issue.*	3 of 5

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Pollution
BREEAM 2014 New Construction
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Pol 04 – Reduction of Night Time Light Pollution	The design team has confirmed that external lighting will be designed and installed in compliance with ILP Guidance. All external lighting will have the capacity to be switched off automatically between 11pm and 7am. *The available credit is currently targeted for this issue.*	1 of 1
Pol 05 – Noise Attenuation	A Suitably Qualified Acoustic Consultant will conduct a noise impact assessment in compliance with BS7445:1991. Where noise sources from the development are greater than +5dB (during the day) and +3dB (during the night) compared to the background noise level, attenuation measures will be specified. *The available credit is currently targeted for this issue.*	1 of 1