Delta Green
environmental design

REPORT

Doubletree by Hilton, West End

Sustainability Report

Revision 1

27th November 2015

Delta Green Environmental Design
Integrated Sustainable Solutions

t: +44 (0) 1273 468756
e: admin@deltagreen.co.uk
w: deltagreen.co.uk

Contents

1.0 Introduction

The proposed development at Doubletree by Hilton, West End London involves the extension of the existing hotel to provide a total of 31no new hotel guestrooms. The existing hotel currently has a number of duplex suites occupying the top two floors of the North easterly block along Old Gloucester Street. These are to be demolished, with two new levels constructed above the existing fourth floor level. This block currently links back into the Southampton Row block at fourth floor level, and so this link will also be increased in height by two floors so that the new fifth and sixth floors can be accessed from the corresponding floors on the other side of the hotel. The extension will be limited to these areas, with no external works or alterations to the hotel below. The new floors will comprise solely guestrooms and circulation, with no new facilities located at these levels.

It is understood that the Camden Council Development Policies Adoption DP22 currently requires non-domestic new construction projects over 500sqm to achieve BREEAM certification to a 'Very Good' rating. Whilst the proposed extension falls below this area threshold, it is considered possible that a BREEAM assessment of the proposed development will be required to demonstrate compliance with the BREEAM standard and local planning policy. The building design is to be developed with sustainability issues being a key driver, and therefore a high BREEAM rating should be achieved upon completion of a full BREEAM assessment.

The urban context of the existing building and the limited extent of the proposed extension create a number of design constraints, which will make a BREEAM Excellent rating challenging to achieve. However, the design team are committed to including a variety of sustainability features to target a Very Good rating with the highest possible score. The project team will fully consider all sustainability issues throughout the design and construction process in order to maximise the inclusion of these features and practices wherever possible. A robust BREEAM Very Good rating would indicate a high level of consideration to sustainability, helping to mitigate the impact of the development on both the local and wider environment. Such issues will be a key driver during the design and construction process.

An initial BREEAM workshop was held on site with the design team on 25th November 2015. The primary purpose of this session was to determine the maximum BREEAM rating that could be achieved should a full assessment be completed and to advise the project team of any BREEAM related considerations at this early stage. The review has also allowed any issues that are programme dependant or that could affect the planning process to be identified.

Following the workshop a review of the proposals has been undertaken by a licensed BREEAM assessor against the BREEAM New Construction 2014 Other Buildings – Residential Institutions criteria. This assessment method is considered to be the most appropriate for the development. This review has been based upon initial discussions with the design team and preliminary drawings issued by Morrison Design Chartered Architects. From the initial review against the current BREEAM criteria it is believed that a potential rating of Very Good is achievable. The BREEAM New Construction 2014 manual states that achieving a Very Good rating broadly represents performance equivalent to the top 25% of UK new non-domestic buildings and demonstrates advanced good practice in terms of sustainable construction.

2.0 BREEAM

2.1 BREEAM

The BRE's Environmental Assessment Method (BREEAM) is the world's leading assessment tool to evaluate the sustainability of buildings. BREEAM covers a range of subjects, which are collated into nine environmental sections that are weighted based on their environmental value. These are:

Management	12%
Health and Wellbeing	15%
Energy	15%
Transport	9%
Water	7%
Materials	13.5%
Waste	8.5%
Land Use & Ecology	10%
Pollution	10%
Innovation	up to additional 10%

Each environmental section is then broken down into individual issues, which are allocated credits that can be awarded for compliance with the issue criteria. These credits achieved within each environmental section are multiplied by the section weighting and then summed, resulting in a BREEAM score. The BREEAM rating benchmarks are as follows:

Outstanding	85%	[less than top 1% of UK new build non-domestic =innovator]
Excellent	70%	[top 10% of UK new build non-domestic = best practice]
Very Good	55%	[top 25% of UK new build non-domestic = advanced good practice]
Good	45%	[top 50% of UK new build non-domestic = intermediate good practice]
Pass	30%	[top 75% of UK new build non-domestic = standard good practice]
Unclassified	<30%	

2.2 Pre-assessment Score

In accordance with Camden Council planning policy it is understood that full BREEAM certification of the development may be required prior to occupation. The assessment will therefore be registered with the BRE against the 2014 New Construction method for Other Buildings (residential institutions) – Hotels. The pre-assessment has been completed for the proposed development based on design intent. The criteria are assessed as fully fitted, which assumes that there will be no additional fit out under a separate contract. The BREEAM pre-assessment score of 57.18% achieves a Very Good rating, with all mandatory requirements met. Figure 1 shows the distribution of credits targeted out of those available within the pre-assessment.

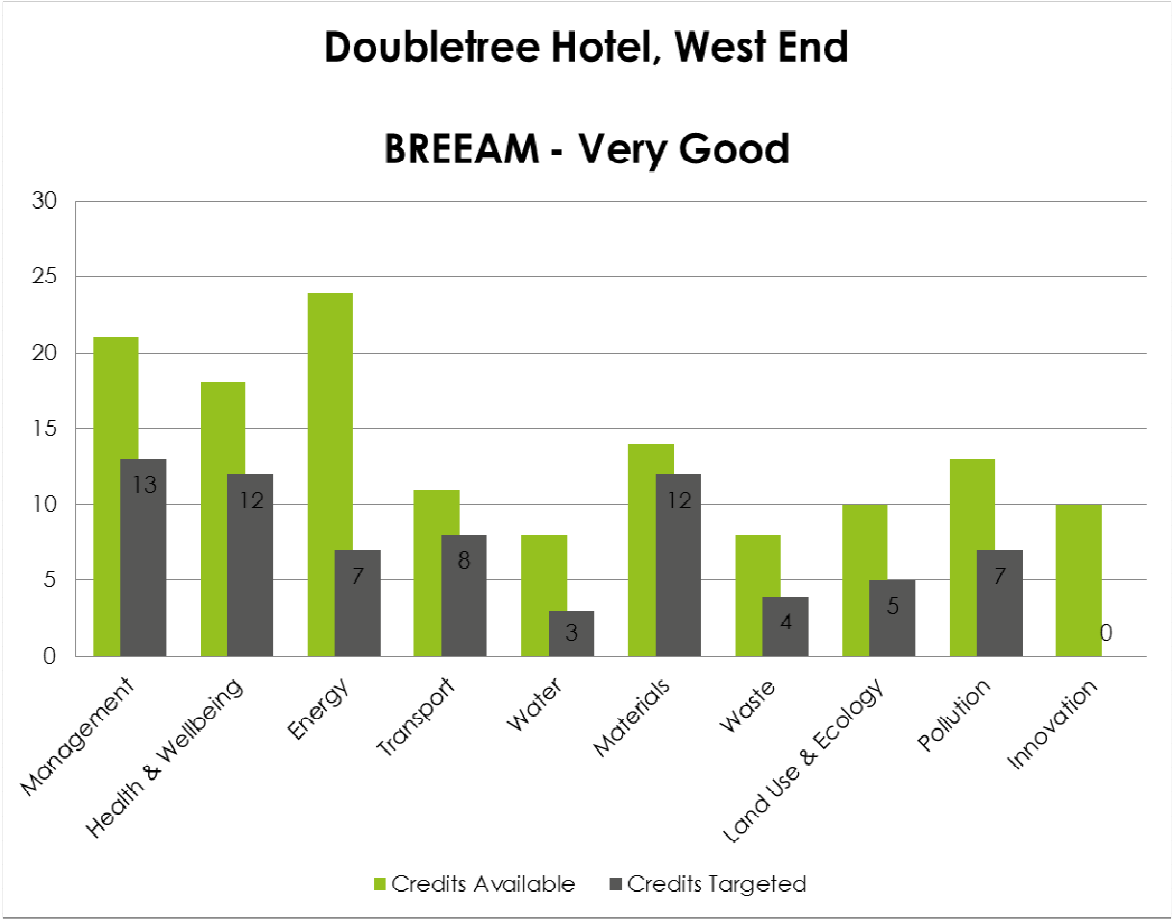


Figure 1 Illustration of BREEAM credits achievable for the proposed development

2.3 BREEAM Pre-assessment Summary

The following provides a summary of the sustainability considerations that will be adopted, which will allow the target BREEAM rating to be achieved.

Management

13 of the 21 available management credits have been targeted within the pre-assessment, which is 61.9% of available credits and contributes 7.4% to the overall score.

During the feasibility stages of the project the project delivery team will meet to discuss their roles, responsibilities and contributions during each phase of the programme. This consultation with the delivery team will allow all parties to fully understand the brief, with the aim to procure a building that is fit for purpose. Any training for the FM team/occupants that is identified will be scheduled and this training schedule will be handed over to the client.

The successful contractor will be required under the contract to register with the Considerate Constructors Scheme and achieve a 'Beyond Best Practice' score greater than 35, with no less than 7 in each section. They will also be committed to monitor site energy, monitor water consumption, monitor delivery and waste vehicle movements and responsibly source all temporary site timber used to facilitate construction. The successful contractor must also operate an Environmental Management System (EMS) that is certified to ISO14001 or equivalent standard.

The new heating/cooling VRV system, air handling plant and electrical services within the extension shall be commissioned by an appropriate person(s) to the required CIBSE and BSRIA Codes, which will ensure the building services are operating efficiently and as the occupants require. Any commissioning will be monitored by a member of the design team, and the commissioning schedule will be accounted for within the main programme of works. The VRV system and AHU in particular will be commissioned by a specialist to ensure that these are commissioned correctly. All systems will be re-commissioned seasonally over a 12 month period to make sure that they have been correctly calibrated to effectively deliver the required loads, and feedback from staff members and guests will be collated to identify any issues that arise from handover.

The building fabric will also be commissioned by way of a thermographic survey. This survey will confirm the continuity of the fabric insulation and will identify any issues relating to thermal bridging or unintentional infiltration.

A non-technical building user guide will be produced that provides an overview of the energy efficient design features of the building, simple instructions for how to use the systems, information on how to save energy and further information about the site and surroundings. This Building User Guide will be handed over to the hotel FM team to allow them to operate the new services in the most appropriate manner.

Within the tender documentation the successful contractor will be required to provide an aftercare service by facilitating any identified training, by being on site at least once a week for the first few weeks after handover and by being contactable if there are any issues within the first 12 months of occupation. This will avoid the delivery of a building that does not meet the client's expectations.

Health & Wellbeing

12 of the 18 available health and wellbeing credits have been targeted within the pre-assessment, which is 66.7 % of available credits and contributes 10.0% to the overall score.

Where required, all guest rooms within the hotel extension will have blinds installed on the windows, which can be operated by occupants to effectively control glare. Lighting to all occupied areas will meet Lux levels recommended by CIBSE guidelines and any fluorescent lamps that are specified will be high frequency to reduce the effects of Sick Building Syndrome.

The new guest rooms will be designed to maximise daylight levels internally. The daylight levels will be determined using specialist software to calculate Average Daylight Factors. These rooms will also be designed to provide occupants with a view out of a window to avoid eye strain when working with computer screens.

Due to the amount of glazing and relatively small room size the solar gain within these could be considerable. Whilst this is beneficial during the winter months, it may pose an overheating risk during the summer. Thermal modelling of the occupied areas will therefore be undertaken to assess the likely peak heating and cooling loads within each room, and the systems will be sized appropriately to meet these loads. This assessment will include modelling with predicted future weather data to allow for a climate change scenario, which will ensure that the overheating risk remains low in years to come. The findings of this assessment will inform the control strategy and system sizing where relevant.

It is a Hilton standard that sound insulation levels between guest rooms significantly improve upon Building Regulations standards, and an acoustic consultant will be appointed to confirm that airborne and impact sound insulation levels between guest rooms achieve at least 8dB improvement. A programme of pre-completion testing will be carried out to confirm that these levels are realised.

Energy

7 of the 24 available energy credits have been targeted within the pre-assessment, which is 29.2% of available credits and contributes 4.4% to the overall score.

The new extension will be designed and constructed with a 'fabric first' approach, using a combination of low u-values and low levels of adventitious air leakage to minimise the heating load. Passive design measures will be fully considered and implemented where possible.

The M&E strategy proposed includes a split VRV system providing heating/cooling, mechanical ventilation with heat recovery and connection to the existing high efficiency water boiler for hot water. This approach offers a strategy that both minimises the energy demand of the extension and delivers this in a highly efficient way. These measures will all contribute to an overall reduction in CO_2 emissions, which will allow the mandatory BREEAM requirement to be met. The heating system, hot water, ventilation system and the lighting/small power will all be separately metered to allow energy uses to be effectively monitored and managed.

A new lift will be installed within an existing lift shaft as part of the proposals. This will be energy efficient with a number of low energy features included. The lift will be selected based upon the findings of an energy analysis against different lift strategies to ensure that the lowest energy option is selected.

Transport

8 of the 11 available transport credits have been targeted within the pre-assessment, which is 72.7% of available credits and contributes 6.5% to the overall score.

Due to the site's central London location the local public transport network provides a large number of transport services for the staff and guests to use. The site is also in close proximity to a number of local amenities, which will enable staff to walk when carrying out errands during breaks rather than using vehicles.

Although cycle storage is not currently included within the proposed design, the design team are reviewing this to determine whether a solution could be provided at basement level. If possible covered cycle storage spaces will

be provided on site for guests and staff to use, and showers and changing facilities will be provided internally for staff to use. This will promote cycling to the site rather than using cars or public transport.

Water

3 of the 8 available water credits have been targeted within the pre-assessment, which is 37.5% of available credits and contributes 2.6% to the overall score.

Due to the nature of the proposed extension the water consumption will be high compared to many other building types, and with this in mid it is important to effectively control the amount of water used. The Hilton standard specification stipulates the use of aerated taps/showers and dual flush WCs and so water consumption will be kept to a minimum by installing these low water consuming sanitary fittings. Due to the constraints of the site a rainwater collection system is not viable.

The incoming water supply to the new upper floors will be metered by a pulsed output meter, which will allow the water consumption within these areas to be effectively monitored and managed. It is understood that the water to the new rooms will be secondary, having first passed through a water softener and storage tank, however the feed from this tank will be metered, and if this is not possible the incoming meter to the hotel will be upgraded to a pulse output meter.

Materials

12 of the 14 available material credits have been targeted within the pre-assessment, which is 85.7 % of available credits and contributes 11.6% to the overall score.

The specific construction method of the new rooms has not yet been finalised, and so there is an opportunity to consult the BRE Green Guide to Specification when selecting construction materials, Therefore, it is anticipated that all materials selected for construction will be A or A+ rated in the BRE Green Guide, demonstrating they have low life cycle embodied energy. This will mitigate the environmental impact of the materials used within construction. As no new hard surfaces or boundary protection will be installed all existing surfaces and boundary walls/fences will automatically achieve a Green Guide A+ rating.

The successful contractor shall be required to responsibly source the majority of construction materials from suppliers capable of providing the relevant Environmental Management System (EMS) certificate. In addition to this, the contractor will implement a sustainable procurement plan, which will include policies and procedures to avoid inefficient ordering and use of materials.

All of the insulation specified for the building fabric and building services will have a high Green Guide rating and high thermal performance. These will be certified under BES6001 or ISO14001 (or equivalent) at both supply chain stage and key process stage wherever possible to ensure that the insulation products used have a minimal environmental impact.

The specification for the materials will have considered the robustness required for the vulnerable areas of the new floors. The durability will be considered to allow more hard wearing materials to be specified where required. This

will protect areas deemed to be at risk, and will ensure the materials used within vulnerable areas are not frequently replaced due to wear, unnecessarily increasing waste from the building.

Waste

4 of the 8 available waste credits have been targeted within the pre-assessment, which is 50.0% of available credits and contributes 4.3% to the overall score.

As the preparation of the building will involve the demolition of the existing duplex rooms the contractor will be required to produce a pre-demolition audit to determine if any of the materials from the demolition are recoverable. This will be referenced within a site waste management plan, which will also include a waste target of less than 3.2 tonnes of construction waste per 100sqm gross internal floor area of new build. In addition to this at least 80% of non-demolition waste and 90% of demolition waste by weight will be diverted from landfill.

The proposed site is in a central urban location with a number of constraints, one of which is the lack of external space available. Notwithstanding this, the existing hotel has a large refuse store, in which a dedicated space for recycling waste will be allocated. This will be clearly labelled to differentiate the recyclable storage area from the general waste. The space will be sufficiently sized to accommodate the waste streams from the whole building.

Land Use & Ecology

5 of the 10 available land use and ecology credits have been targeted within the pre-assessment, which is 50.0% of available credits and contributes 5.0% to the overall score.

The proposed development involves the demolition of two upper levels of the existing hotel and construction of two new levels in their place. As there will be no external works there will be no ecology displaced as a result of the proposals. Although unlikely, if any areas on site are considered to require protection then appropriate measures will be adopted during the construction phase by the contractor.

Where necessary, the contractor will minimise the impact of the construction process on any local wildlife and monitor the effectiveness of any measures adopted in line with the recommendations of the ecologist.

Due to the urban location of the site and the lack of existing ecology the overall impact of the development on site ecology will be negligible.

Pollution

7 of the 13 available pollution credits have been targeted within the pre-assessment, which is 53.8% of available credits and contributes 5.4% to the overall score.

The proposed heating and cooling strategy is a split VRV system, otherwise known as an air source heat pump. This systems utilises high global warming potential refrigerants, and it is important to reduce the risk of these refrigerants escaping to the environment. A refrigerant leak detection system will be installed to detect potential

leaks within each of the rooms, which will include the facility to automatically pump down and store refrigerants upon detection of a leak.

Whilst there is clearly no risk of flooding within the new upper floors, it is important to avoid developing buildings/sites where flooding could occur. The site has been found to be in a low flood risk area, and a site specific flood risk assessment will be provided to demonstrate this. The impact on local drainage systems has also been fully considered. As the impermeable area of the site will not increase from development the run-off from the site into the drains will not increase. A consultant will be appointed to provide calculations demonstrating that this is the case during a peak rainfall event.

The only new external lighting that will be installed 'within the construction zone' is emergency lighting and space lighting for maintenance of the roof level plant, both of which will be used infrequently. Despite this, the lighting will be designed to minimise the risk of light pollution, with the design following guidance published by the Institute of Lighting Professionals.

There is currently a significant quantity of plant located at roof level, which will be relocated and added to during the project. In order to confirm that this plant relocation and increase in capacity will not pose a risk of noise pollution to neighbouring properties an acoustic consultant will undertake a noise impact assessment. Noise pollution is not considered to be a concern due to the background noise levels associated with a city centre site, however in the unlikely event that noise levels from the plant are unacceptable acoustic attenuation will be provided.

3.0 Conclusion

The proposed new development at Doubletree by Hilton, West End has been designed to minimise the environmental impact it has and maximise its sustainability. A number of sustainable features will be incorporated into the design to achieve this.

The proposed design has been assessed against BREEAM New Construction 2014 criteria for Other Buildings (residential institutions) – Hotels. The predicted BREEAM score of 57.18% demonstrates that a robust Very Good rating will be achieved when the full assessment is undertaken. The minimum score required to achieve a Very Good rating is 55%, and therefore the proposed score allows an additional 12.18% over this threshold score to allow for any unforeseen short fall during the assessment process.

The pre-assessment also demonstrates that the local planning policy requirement for a BREEAM Very Good rating will be adhered to.

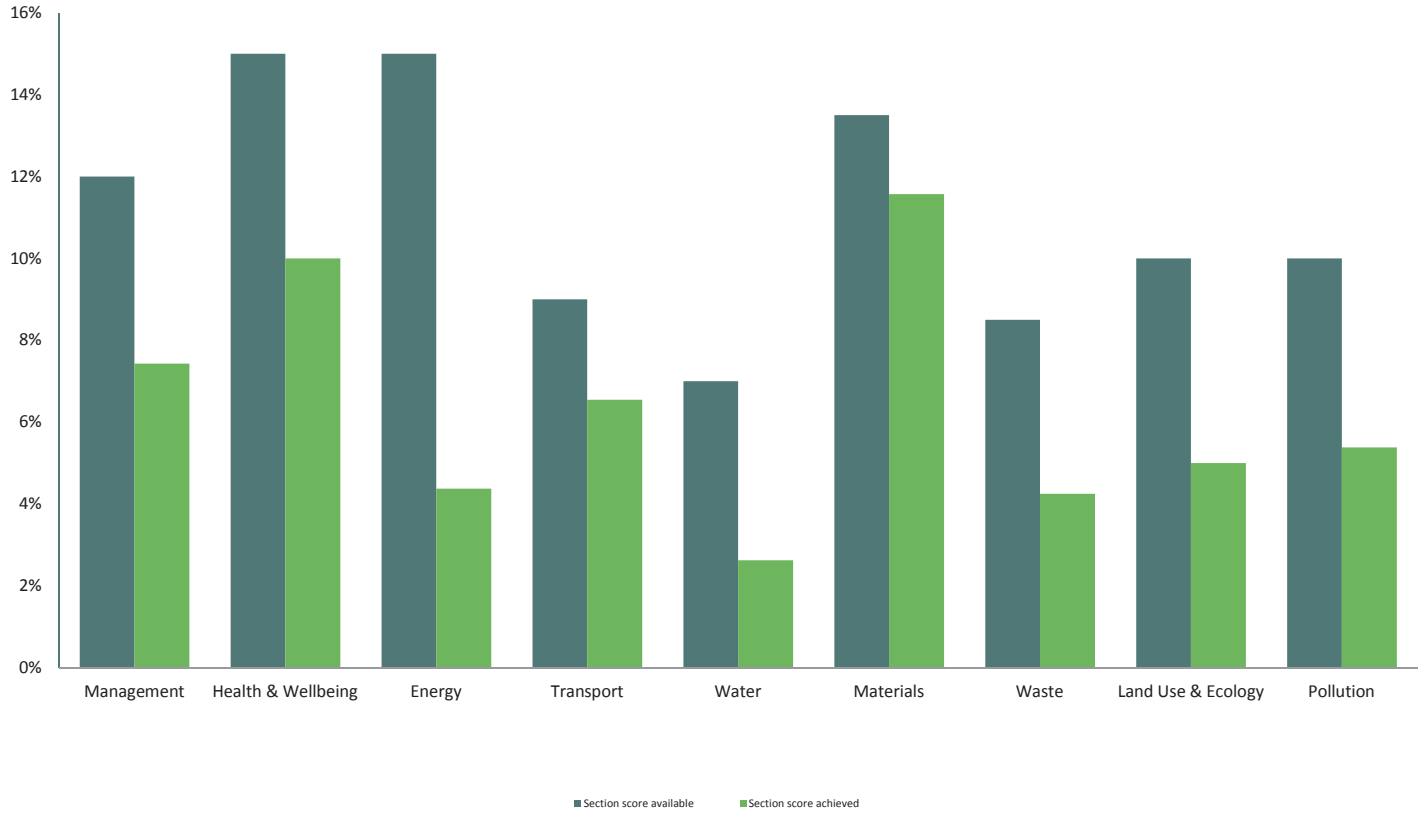
4.0 Appendix – Pre-assessment

BREEAM UK New Construction 2014 Pre-Assessment Estimator: Indicative Rating & Building Performance

Overall Building Performance

Building name	Doubletree by Hilton, West End
Indicative BREEAM rating	Very Good
Indicative Total Score	57.2%
Min. standards level achieved	Very Good level

Building Performance by Environment Section



Environmental Section	No. credits available	Indicative no. credits Achieved	% credits achieved	Section Weighting	Indicative Section Score
Management	21	13	61.9%	12.0%	7.4%
Health & Wellbeing	18	12	66.7%	15.0%	10.0%
Energy	24	7	29.2%	15.0%	4.4%
Transport	11	8	72.7%	9.0%	6.5%
Water	8	3	37.5%	7.0%	2.6%
Materials	14	12	85.7%	13.5%	11.6%
Waste	8	4	50.0%	8.5%	4.3%
Land Use & Ecology	10	5	50.0%	10.0%	5.0%
Pollution	13	7	53.8%	10.0%	5.4%
Innovation	10	0	0.0%	N/A	0

BREEAM UK New Construction 2014 Pre-Assessment Estimator: Assessment Issue Scoring

BREEAM® UK

Building name	Doubletree by Hilton, West End
Building score (%)	57.18%
Building rating	Very Good
Minimum standards level achieved	Very Good level

MANAGEMENT

Man 01 Project brief and design

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will stakeholder consultation (project delivery) take place?	Yes	1	1
Will stakeholder consultation (third party) take place?	No	1	0
Will a sustainability champion (design) be assigned?	No	1	0
Will a sustainability champion (monitoring progress) be assigned?	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	0.57%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Man 02 Life cycle cost and service life planning

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an elemental life cycle cost (LCC)analyses be carried out?	No	2	0
Will a component level LCC plan be developed?	No	1	0
Will the predicted capital cost be reported?	No	1	0
Expected capital cost of the project (if available)		£/m^2	

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Man 03 Responsible construction practices

No. of BREEAM credits available	6	Available contribution to overall score	3.43%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Is all site timber used in the project 'legally harvested and traded timber'?	Yes		
Will/does the principal contractor operate a compliant Environmental Management System?	Yes	1	1
Will a construction stage sustainability champion be assigned?	Yes	1	1
Will a considerate construction scheme be used by the principal contractor? (One credit where 'compliance' has been achieved. Two credits where 'compliance' is significantly exceeded.)	2	2	2
Will construction site impacts be metered/monitored?	Yes		
Will site utility consumption be metered/monitored?	Yes	1	1
Will transport of construction materials and waste be metered/monitored?	Yes	1	1
Will exemplary level criteria be met?	No	1	0

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes		Information not available at design stage
Energy consumption (intensity) - site processes		Information not available at design stage
Distance (total) - materials transport to site		Information not available at design stage
Distance (total) -waste transport from site		Information not available at design stage
Energy consumption (total) - materials transport to site		Information not available at design stage
Energy consumption (total) - waste transport from site		Information not available at design stage
Energy consumption (intensity) - materials transport to site		Information not available at design stage
Energy consumption (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site greenhouse gas emissions

Process greenhouse gas emissions (total) - site processes		Information not available at design stage
Greenhouse gas emissions (intensity) - site processes		Information not available at design stage
Greenhouse gas emissions (total) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (total) - waste transport from site		Information not available at design stage
Greenhouse gas emissions (intensity) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site use of freshwater resources

Use of freshwater resource (total) - site processes		Information not available at design stage
Use of freshwater resource (intensity) - site processes		Information not available at design stage

Total BREEAM credits achieved	6
Total contribution to overall building score	3.43%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Man 04 Commisioning and handover

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will commissioning schedule and responsibilities be developed & accounted for?	Yes	1	1
Will a commissioning manager be appointed?	Yes	1	1
Will the building fabric be commissioned?	Yes	1	1
Will a training schedule for building occupiers/managers at Handover?	Yes	1	1
Will a building user guide be developed prior to handover?	Yes		

Total BREEAM credits achieved	4
Total contribution to overall building score	2.29%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Man 05 Aftercare

No. of BREEAM credits available	3	Available contribution to overall score	1.71%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will aftercare support be provided to building occupiers?	Yes	1	1
Will seasonal commissioning occur over 12months once substantially occupied?	Yes	1	1
Will a post occupancy evaluation be carried out 1 year after occupation?	No	1	0
Will exemplary level criteria be met?	No	1	0

Total BREEAM credits achieved	2
Total contribution to overall building score	1.14%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

HEALTH & WELLBEING

Hea 01 Visual Comfort

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the design provide adequate glare control for building users?	Yes	1	1
Will relevant building areas be designed to achieve appropriate daylight factor(s)?	1	1	1
Will the design provide adequate view out for building users?	Yes	1	1
Will internal/external lighting levels, zoning and controls be specified in accordance with the relevant CIBSE Guides/British Standards?	Yes	1	1
Will exemplary level criteria be met?	No	1	0

Total BREEAM credits achieved	4
Total contribution to overall building score	3.33%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Hea 02 Indoor Air Quality

No. of BREEAM credits available	5	Available contribution to overall score	4.17%
No. of BREEAM innovation credits available	2	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an air quality plan be produced and building designed to minimise air pollution?	No	1	0
Will building be designed to minimise the concentration and recirculation of pollutants in the building?	No	1	0
Will the relevant products be specified to meet the VOC testing and emission levels required?	No	1	0
Will formaldehyde and total VOC levels be measured post construction?	No	1	0
Will the building be designed to, or have the potential to provide, natural ventilation?	No	1	0
Will exemplary level VOCs (products)criteria be met?			

Key Performance Indicators: Indoor air quality

Concentration levels of formaldehyde	INA	Information not available at design stage
Total volatile organic compound (TVOC) concentration	INA	Information not available at design stage

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Hea 03 Safe containment in laboratories

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will an objective risk assessment of proposed laboratory facilities' design be completed?			
Will the manufacture & installation of fume cupboards and containment devices meet best practice standards?			
Will containment level 2 & 3 labs meet best practice safety & performance criteria?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Hea 04 Thermal comfort

No. of BREEAM credits available	3	Available contribution to overall score	2.50%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved

Will thermal modelling of the design be carried out?	Yes	1	1
Will the building design be adapted for a projected climate change scenario?	Yes	1	1
Will the modelling inform the development of a thermal zoning and control strategy?	Yes	1	1

Key Performance Indicators: Thermal comfort

Predicted Mean Vote (PMV)	INA
Predicted Percentage Dissatisfied (PPD)	INA

Total BREEAM credits achieved	3
Total contribution to overall building score	2.50%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Hea 05 Acoustic Performance

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Credits	Credits available	Credits achieved
Will the building meet the appropriate acoustic performance standards and testing requirements for: a. Sound insulation b. Indoor ambient noise level c. Reverberation times?	4	4	4

Total BREEAM credits achieved	4
Total contribution to overall building score	3.33%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Hea 06 Safety and Security

No. of BREEAM credits available	2	Available contribution to overall score	1.67%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Where external site areas are present, will safe access be designed for pedestrians and cyclists?	Yes	1	1
Will a suitably qualified security consultant be appointed and security considerations accounted for?	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	0.83%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

ENERGY

Ene 01 Reduction of energy use and carbon emissions

No. of BREEAM credits available	12	Available contribution to overall score	7.50%
No. of BREEAM innovation credits available	5	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits achieved for this issue?	Define a target number of BREEAM credits achieved
Select the target number of BREEAM credits for the Ene01 issue:	0

Ene 01 Calculator

Country of the UK where the building is located		Confirm building regulation and version to be used:	

New Construction (Fully fitted)

Building floor area		m2
Notional building heating and cooling energy demand		MJ/m2yr
Actual building heating and cooling energy demand		MJ/m2yr
Notional building primary energy consumption		kWh/m2yr
Actual building primary energy consumption		kWh/m2yr
Target emission rate (TER)		kgCO2/m2yr
Building emission rate (BER)		kgCO2/m2yr
Building emission rate improvement over TER		
Heating & cooling demand energy performance ratio (EPR_{ED})		
Primary consumption energy performance ratio (EPR_{PC})		
CO_2 Energy performance ratio (EPR_{CO2})		
Overall building energy performance ratio (EPR_{NC})		

Where specified, please confirm the energy production from onsite or near site energy generation technologies	
Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
Is the building designed to be 'carbon negative' ?	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported?	

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Very Good level

Comments/notes:

Ene 02 Energy monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.63%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment criteria	Compliant?	Credits available	Credits achieved
Will a BMS or sub-meters be specified to monitor energy use from major building services systems?	Yes	1	1
Will a BMS or sub-meters be specified to monitor energy use by tenant/building function areas?			

Total BREEAM credits achieved	1
Total contribution to overall building score	0.63%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Ene 03 External lighting

No. of BREEAM credits available	1	Available contribution to overall score	0.63%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Will external light fittings and controls be specified in accordance with the BREEAM criteria?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.63%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 04 Low carbon design

No. of BREEAM credits available	3	Available contribution to overall score	1.88%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Will passive design measures be used in line with an analysis be carried out during concept design stage (RIBA stage 2 or equivalent)?	No	1	0
Will free cooling measures be implemented in the whole building in line with the passive design analysis?	No	1	0
Will a LZC technology be specified in line with a feasibility study carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent)?	No	1	0

KPI - Low and/or zero carbon energy generation

Total on-site and/or near-site LZC energy generation	INA	kWh/yr

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 05 Energy efficient cold storage

No. of BREEAM credits available	2	Available contribution to overall score	1.25%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria	Compliant?	Credits available	Credits achieved
Will the refrigeration system be designed, installed & commissioned in accrodance with BREEAM criteria?	No	1	0
Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 06 Energy efficient transportation systems

No. of BREEAM credits available	3	Available contribution to overall score	1.88%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Will a transportation system analysis be carried out to determine and specify the optimum number, size and type of lifts that is most energy efficient?	Yes	1	1
Will the relevant energy-efficient features criteria be met?	Yes	2	2

Total BREEAM credits achieved	3
Total contribution to overall building score	1.88%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 07 Energy efficient laboratory systems

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Pre-requisite: Criterion 1 of Hea 03 - risk assessment of laboratory facilities			
Have the occupants' laboratory requirements & performance criteria been confirmed during the preparation of the initial project brief to minimise energy demand?			
Best Practice Energy Practices in Laboratories (table 27)			
Will the laboratory meet criteria item b) Fan power?			
Will the laboratory criteria item c) Fume cupboard volume flow rates?			
Will the lab meet item d) Grouping / isolation of high filtration/ventilation activities?			
Will the laboratory meet criteria item e) Energy recovery - heat?			
Will the laboratory meet criteria item f) Energy recovery - cooling?			
Will the laboratory meet criteria item g) Grouping of cooling loads?			
Will the laboratory meet criteria item h) Free cooling?			
Will the laboratory meet criteria item i) Load responsiveness?			
Will the laboratory meet criteria item j) Cleanrooms?			
Will the laboratory meet criteria item k) Diversity?			
Will the laboratory meet criteria item l) Room air-change rates?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 08 Energy efficient equipment

No. of BREEAM credits available	2	Available contribution to overall score	1.25%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria

Which of the following will be present and likely to be a/the major contributor to 'unregulated' energy use?	Present	Major impact
Ref A Small power and plug in equipment?		
Ref B Swimming pool?		
Ref C Communal laundry?		
Ref D Data centre?		
Ref E IT-intensive operation areas?		
Ref F Residential areas?		
Ref G Healthcare?		
Ref H Kitchen and catering facilities?		Yes

	Compliant	Credits available	Credits achieved
Will the significant majority contributor(s) to 'unregulated' energy use above meet the BREEAM criteria?	Yes	2	2

Total BREEAM credits achieved	2
Total contribution to overall building score	1.25%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 09 Drying space

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria	Compliant?	Credits available	Credits achieved
Will internal/external drying space and fixings be provided?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

TRANSPORT

Tra 01 Public Transport Accessibility

No. of BREEAM credits available	5	Available contribution to overall score	4.09%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra01 issue assessment)	Other Building Type 2

Assessment Criteria	Compliant	Credits available	Credits achieved
Indicative public transport accessibility index (AI):	18.00	5	5
Will the building have a dedicated bus service?			N/A

AI	Indicative Accessibility Index for pre-assessment
0	Poor or no public transport provision
1	A single BREEAM compliant public transport node available
2	Some BREEAM compliant public transport nodes/services available
4	A selection of BREEAM compliant public transport nodes/services available
8	Good provision of public transport i.e. small urban centre / suburban area
10	Very Good provision of public transport i.e. small/medium urban centre
12	Excellent provision of public transport, i.e. medium urban centre
18	Excellent provision of public transport, i.e. large urban/metropolitan city centre

Total BREEAM credits achieved	5
Total contribution to overall building score	4.09%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 02 Proximity to Amenities

No. of BREEAM credits available	1	Available contribution to overall score	0.82%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the building be in close proximity of and accessible to applicable amenities?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.82%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 03 Cyclist facilities

No. of BREEAM credits available	2	Available contribution to overall score	1.64%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra03 issue assessment)	Other Building - transport type 2
How many compliant cycle storage spaces will be provided?	0
What cyclist facilities will be provided?	No compliant facilities

Assessment Criteria	Compliant?	Credits available	Credits achieved
Cycle storage spaces	No	2	0
Cyclist facilities	No		

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 04 Maximum Car Parking Capacity

No. of BREEAM credits available	2	Available contribution to overall score	1.64%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra04 issue)	Other Building - transport type 2
Building's indicative Accessibility Index (sourced from issue Tra01)	18

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will BREEAM's maximum parking capacity criteria for the building type/Accessibility Index be met?	Yes	2	2

Total BREEAM credits achieved	2
Total contribution to overall building score	1.64%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Tra 05 Travel Plan

No. of BREEAM credits available	1	Available contribution to overall score	0.82%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a transport plan based on site specific travel survey/assessment be developed?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

WATER

Wat 01 Water Consumption

No. of BREEAM credits available	5	Available contribution to overall score	4.38%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits to be achieved for this issue?	Define a target % improvement over baseline sanitary fittings
What is the target for % reduction in potable water consumption for sanitary use in the building?	25% - two credits
Please select the calculation procedure used	

Standard approach data

Water Consumption from building micro-components		L/person/day
Water demand met via greywater/rainwater sources		L/person/day
Total net water consumption		L/person/day
Improvement on baseline performance		%

Key Performance Indicator - use of freshwater resource

Total net Water Consumption		m3/person/yr
Default building occupancy		

Alternative approach data

Overall microcomponent performance level achieved	

Total BREEAM credits achieved	2
Total contribution to overall building score	1.75%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.88%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will there be a water meter on the mains water supply to the building(s)?	Yes	1	1
Will metering/monitoring equipment be specified on the water supply to any relevant plant/building areas?	Yes		
Will all specified water meters have a pulsed output?	Yes		
If the site/building has an existing BMS connection, will all pulsed meters be connected to the BMS?	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.88%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Wat 03 Water Leak Detection and Prevention

No. of BREEAM credits available	2	Available contribution to overall score	1.75%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a mains water leak detection system be installed on the building's mains water supply?	No	1	0
Will flow control devices be installed in each sanitary area/facility?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wat 04 Water Efficient Equipment

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Has a meaningful reduction in unregulated water demand been achieved?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

MATERIALS

Mat 01 Life Cycle Impacts

No. of BREEAM credits available	6	Available contribution to overall score	5.79%
No. of BREEAM innovation credits available	3	Minimum standards applicable	No

How do you wish to assess the number of BREEAM credits to be achieved for this issue?	Define the number of Mat 01 credits achieved

Assessment Criteria

Predicted total Mat01 credits achieved	6
Predicted total Mat01 points achieved	
Number of building elements assessed	
Green Guide exemplary level compliant?	
Has IMPACT compliant software been used?	

Key Performance Indicator - embodied green house gas emissions by element	Total area of element m^2	Total impact $kgCO_2$ eq.	Area of element impact data relevant to m^2
External walls			
Windows			
Roof			
Upper floor construction			
Internal wall			
Floor finishes/coverings			

Key Performance Indicator - embodied green house gas emissions for building (assessed elements only)

Total embodied green house gas emissions for building (by assessed elements)	Missing data	$kgCO_2$ eq.		$kgCO_2$ eq./m^2
Proportion of applicable building elements that data reported covers				

Total BREEAM credits achieved	6
Total contribution to overall building score	5.79%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Mat 02 Hard Landscaping and Boundary Protection

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will ≥80% of all external hard landscaping and boundary protection achieve a Green Guide A or A+ rating?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Mat 03 Responsible Sourcing

No. of BREEAM credits available	4	Available contribution to overall score	3.86%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria	Compliant	Credits available	Credits achieved
All timber and timber based products are 'Legally harvested and trader timber'	Yes		
Is there a documented sustainable procurement plan?	Yes	1	1
Percentage of available responsible sourcing of materials points achieved	40.00%	3	2

Please confirm the route used to assess Mat03	Route 2: Proportion of materials responsibly sourced

Total BREEAM credits achieved	3
Total contribution to overall building score	2.89%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Mat 04 Insulation

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Credits available	Credits achieved	
What is the building's targeted insulating index?	2.50	1	1	Note: An insulatic

Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Mat 05 Designing for durability and resilience

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will suitable durability/protection measures be specified and installed to vulnerable areas of the building?	Yes	1	1
Will suitable durability/protection measures be specified and installed to exposed parts of the building?	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Mat 06 Material efficiency

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will material efficiency measures be identified & implemented during all RIBA stages?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

WASTE

Wst 01 Construction Waste Management

No. of BREEAM credits available	4	Available contribution to overall score	4.25%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits to be achieved for this issue?	Define a target number of BREEAM credits		
Select the number of BREEAM credits being targeted for issue Wst 01:	4	BREEAM Wst01 Innovation credits:	0

Assessment Criteria	Compliant?
Construction resource management plan	
Compliant Pre-demolition audit	
Does the excavation waste meet the exemplary level requirements?	

Key Performance Indicators - Construction Waste

Measure/units for the data being reported		
Non-hazardous construction waste (excluding demolition/excavation)		
Total non-hazardous construction waste generated		Note: At the pre-assessment stage this
Non-hazardous non-demolition const. waste diverted from landfill		Note: At this stage this will be a target l
Total non-hazardous non-demolition const. waste diverted from landfill		Note: At the pre-assessment stage this
Total non-hazardous demolition waste generated		Note: At this stage this will be a target l
Non-hazardous demolition waste diverted from landfill		Note: At this stage this will be a target l
Total non-hazardous demolition waste to disposal		Note: At the pre-assessment stage this
Material for reuse		Note: At this stage this will be a target l
Material for recycling		Note: At this stage this will be a target l
Material for energy recovery		Note: At this stage this will be a target l
Hazardous waste to disposal		Note: At this stage this will be a target l

Total BREEAM credits achieved	4
Total contribution to overall building score	4.25%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Wst 02 Recycled Aggregates

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria	Total
What is the target total % of high-grade aggregate that will be recycled/secondary aggregate?	0%

% of high-grade aggregate that is recycled/secondary aggregate - by application

Structural frame	
Bitumen/hydraulically bound base, binder and surface courses	
Building foundations	
Concrete road surfaces	
Pipe bedding	
Granular fill and capping	

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Wst 03 Operational Waste

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will operational recyclable waste volumes be segregated and stored?	Yes	1	0
Will static waste compactor(s) or baler(s) be specified where appropriate?	N/A		
Will vessel(s) for composting suitable organic waste where appropriate?	No		

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Very Good level

Comments/notes:

Wst 04 Speculative Floor and Ceiling Finishes

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wst 05 Adaption to climate change

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	1	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a climate change adaptation strategy appraisal for structural and fabric resilience be conducted by the end of Concept Design (RIBA Stage 2 or equivalent)?	No	1	0
Will emexplary level criteria – Responding to adaptation to climate change be met?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Wst 06 Functional adaptability

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a building specific functional adaptation strategy appraisal be conducted by Concept Design (RIBA Stage 2 or equivalent) and will functional adaptation measures be implemented?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LAND USE & ECOLOGY

LE 01 Site Selection

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will at least 75% of the proposed development's footprint be located on previously occupied land?	Yes	1	1
Is the site deemed to be significantly contaminated?	No	1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LE 02 Ecological Value of Site and Protection of Ecological Features

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Ecological value of the land defined using	The BREEAM checklist

Assessment Criteria	Compliant?	Credits available	Credits achieved
Can the land within the construction zone be defined as 'land of low ecological value'?	Yes	1	1
Will all features of ecological value surrounding the construction zone/site boundary be protected?	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LE 03 Mitigating Ecological Impact

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Data sourced for calculating the change in ecological value from	Assessor's classification of broad habitat type(s) using BREEAM LE03/LE04 Calculator

Assessment Criteria

What is the likely change in ecological value as a result of the sites development?	≥0 species (i.e. no negative change)	Plant species richn

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

LE 04 Enhancing Site Ecology

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a suitably qualified ecologist be appointed to report on enhancing and protecting site ecology?	No	2	0
Will the suitably qualified ecologist's general recommendations be implemented?			
What is the targeted/intended improvement in ecological value as a result of enhancement actions?			

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

LE 05 Long Term Impact on Biodiversity

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a Suitably Qualified Ecologist be appointed to monitor/minimise impacts of site activities on biodiversity?	No	2	0
Will a landscape and habitat management plan be produced covering at least the first five years after project completion in accordance with British Standards?			
Number of applicable measures to improve biodiversity confirmed by SQE:			
Number of applicable measures implemented:			

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

POLLUTION

Pol 01 Impact of Refrigerants

No. of BREEAM credits available	3	Available contribution to overall score	2.31%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Credits available	Credits achieved
Refrigerant containing systems installed in the assessed building?	Yes	2	0
Do all systems (with electric compressors) comply with the requirements of BS EN 378:2008 (parts 2 & 3) & where refrigeration systems containing ammonia are installed, the IoR Ammonia Refrigeration Systems Code of Practice?	Yes		
Global Warming Potential of the specified refrigerant(s) 10 or less?	No		
What is the target range Direct Effect Life Cycle CO2eq. emissions for the system?		kgCO2eq/kW coolth capacity	
Cooling/Heating capacity of the system		kW	
Will a refrigerant leak detection and containment system be specified/installed?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.77%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 02 NO_x Emissions

No. of BREEAM credits available	3	Available contribution to overall score	2.31%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

NO_x emission level - space heating	400.00	mg/kWh
NO_x emission level - cooling	400.00	mg/kWh
NOx emission level - water heating	40.00	mg/kWh
Does this building meet BREEAM's definition of a highly insulated building?	N/A	
Energy consumption: heating and hot water		kWh/m2 yr

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 03 Surface Water Run off

No. of BREEAM credits available	5	Available contribution to overall score	3.85%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
What is the actual/likely annual probability of flooding for the assessed site?	Low	2	2
Will a Flood Risk Assessment be undertaken?	Yes		
Will the site meet the BREEAM criteria for peak rate surface water run off?	Yes	1	1
Will the site meet the criteria for surface water run off volume, attenuation and/or limiting discharge?	Yes	1	1
Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria?	No	1	0

Total BREEAM credits achieved	4
Total contribution to overall building score	3.08%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 04 Reduction of Night Time Light Pollution

No. of BREEAM credits available	1	Available contribution to overall score	0.77%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the external lighting specification be designed to reduce light pollution?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.77%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 05 Noise Attenuation

No. of BREEAM credits available	1	Available contribution to overall score	0.77%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant	Credits available	Credits achieved
Will there be noise-sensitive areas/buildings within 800m radius of the development?	Yes	1	1
Will a noise impact assessment be carried out and, if applicable, noise attenuation measures specified?	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.77%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

INNOVATION

Inn 01 Innovation

No. of BREEAM innovation credits available	10	Available contribution to overall score	10.00%
		Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Man 03 Responsible construction practices	No	1	0
Man 05 Aftercare	No	1	0
Hea 01 Visual Comfort	No	1	0
Hea 02 Indoor Air Quality	No	2	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	1	0
Mat01 Life Cycle Impacts	No	3	0
Mat03 Responsible Sourcing of Materials	No	1	0
Wst01 Construction Waste Management	No	1	0
Wst02 Recycled Aggregates	No	1	0
Wst 05 Adaption to climate change	No	1	0
Number of 'approved' innovation credits achieved?			

Total BREEAM innovation credits achieved	0
Total contribution to overall building score	0.00%
Minimum standard(s) level	N/A

Comments/notes: