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# Sustainability Plan

(Project team responses to S106 item 2.55)

April 2014

This report is a summary of sustainability strategies incorporated in the design of Cartwright Halls student accommodation. The Sustainability Plan is in line with the submitted Sustainability Statement (March 2013), as detailed in sections **a** to **c** below. A brief response is provided for each item separately.

*The Sustainability Plan is a plan substantially in accordance with the draft appended at the eleventh schedule including a post construction review securing the incorporation of sustainability measures in the carrying out of the development in its fabric and in its subsequent management and occupation which shall:*

***a)*** ***Be based on a Building Research Establishment (BRE) Environmental Assessment Method assessment with a target of achieving a Very Good, Excellent or Outstanding rating and attaining at least 60% of the credits in each of Energy and Water, and 40% of the credits in material categories.***

**Response:** The sustainability strategies for the project have been broadly in accordance with the submitted Sustainability Statement for the project. The project is registered with BRE to be assessed under BREEAM. The target rating for the project is Excellent, as detailed in the sustainability statement and the percentage requirements for Energy, Water and Material categories will be achieved.

***b)*** ***Include a pre-implementation review by licensed Assessors of the BRE certifying the measures incorporate in the Sustainability Plan are achievable in the Development and satisfy the aims and objectives of the Council's strategic policies on sustainability contained within its Development Plan***

**Response:** Mecserve Licenced BREEAM Assessor & BREEAM Accredited Professional (Nazli Dabidian) has been involved since stage B in the project and as BREEAM Assessors; as the licenced assessors of the project, we can confirm that the project is progressing broadly in line with our initial BREEAM Pre-assessment included in the

Sustainability assessment. (An updated version of pre-assessment is attached here). Further, the sustainability strategies incorporated in the project, will be in line with the council's strategic policies as detailed in our sustainability statement dated March 2013. The team is progressing with the design and we are receiving the required information to progress with the BREEAM Design stage assessment. We are in the progress of preparing this report for submission to BRE.

***c) And measures to secure a post construction review of the Development by Licensed Assessor of BRE certifying that the measures incorporated in the Sustainability Plan have been achieved in the Development and will be maintainable in the Development's future management and occupation.***

**Response:** the measures required to achieve the post construction BREEAM assessment are incorporated in the project- the targeted credits are those deemed to be maintainable by the occupants and the operators of the building. A full BREEAM Assessment will be completed at post construction stage and the aim is to achieve BREEAM Excellent Rating.

# Appendix A – Updated Sustainability Statement

UNIVERSITY OF LONDON

# GARDEN HALLS, UNIVERSITY OF LONDON

## Sustainability Statement

**April 2014**

# Table of Contents

# 1 Executive Summary

This Sustainability Statement will outline the key features and strategies adopted by the development team to reduce the environmental impact of the proposed redevelopment of Cartwright Halls Student Accommodation.

The BREEAM target rating for the development is currently “Excellent” and the Appendix shows that this target could be achieved with the current design.

The sustainability strategy follows the London Plan and Camden sustainability guidance. In particular the following sustainability features are included in the development:

- The Contractor will be required to achieve a high score under the Considerate Constructors Scheme and the development will be managed in a sustainable way.
- A significant proportion of site waste will be recycled
- The development is designed to provide high level of Health and Wellbeing for the occupants. The building is designed for high indoor air quality and good levels of daylight. Occupant controls and zoning of systems means that high levels of thermal comfort will be achieved. Careful consideration of the facade design will reduce the risk of overheating and achieve excellent acoustic performance
- A large cycle store will be available for students. The location of the site is such that the development has excellent public transportation access.
- The sanitary ware will be highly efficient with low water use fitting throughout. There will be water use monitoring and leak detection to minimise waste.
- The life cycle impact of materials will be considered where specifying new materials, and the materials will be sourced from suppliers with right environmental credentials.
- There will be central and local storage for recyclable waste for the building once operational
- A Green roof is proposed to enhance the ecological value of the site and to help reduce surface water run-off.
- Light and noise pollution will be minimised through the design of external lighting and using attenuation for external plants where required.

# 2 Introduction

This Sustainability Statement provides an outline of the sustainability strategy that has been developed and will be implemented in the detailed design of the proposed development.

Over recent years, global public opinion has been increasingly concerned with the state of the environment and the impact of climate change and there is a need for building owners, developers and designers to design environmentally sustainable buildings.

## 2.1 The Development

The Garden Halls are located on Cartwright Gardens to the south of Euston Road in the London Borough of Camden (see Figure 1). The application is for the redevelopment of the existing student accommodation, comprising the demolition of Canterbury (including York) and Commonwealth Halls, partial-demolition and refurbishment of Hughes Parry Hall and provision of new student accommodation (Sui Generis) to provide a net increase of 187 units (from 1,013 to 1,200 student bedspaces); associated ancillary uses (including Communal areas); two external courtyards; together with public realm improvements to Cartwright Gardens and the surrounding area

This report outlines the proposed energy and sustainability strategy for the proposed refurbishment and new build development at Cartwright Gardens, Camden.

For a detailed description of the proposed development please refer to the Design and Access statement produced by TP Bennett architects and Maccreanor Lavington Architects.

**Figure 1 Existing Situation- Plan**

Table 1 is a schedule of proposed student accommodation blocks with a breakdown of areas and the total Net Internal Area per block. As demonstrated, the total Net Internal Area of student accommodation units is circa 21,913 $m^2$ and the total number of rooms is 1200.

**Table 1 Schedule of Proposed Student Accommodation Blocks**

| | NIA | GIA | GEA |
|---|---|---|---|
| **floor** | **sqm** | **sqm** | **sqm** |
| lower ground | 3,521 | 4,101 | 4,434 |
| ground | 2,607 | 3,795 | 4,080 |
| 1st | 2,210 | 3,447 | 3,756 |
| 2nd | 2,314 | 3,554 | 3,866 |
| 3rd | 2,314 | 3,554 | 3,866 |
| 4th | 2,291 | 3,533 | 3,846 |
| 5th | 2,012 | 2,969 | 3,236 |
| 6th | 1,609 | 2,548 | 2,796 |
| 7th | 845 | 1,419 | 1,559 |
| 8th | 805 | 1,371 | 1,517 |
| 9th | 233 | 380 | 420 |
| 10th | 233 | 380 | 420 |
| 11th | 233 | 380 | 420 |
| 12th | 233 | 380 | 420 |
| 13th | 233 | 380 | 420 |
| 14th | 220 | 366 | 423 |
| 15th | - | - | - |
| 16th | - | - | - |
| **Total** | 21,913 | 32,557 | 35,479 |

| | |
|---|---|
| En suite [C] | 706 |
| Mini clusters [SC] | 15 |
| Dis en suite [C] | 48 |
| Dis studio [SC] | 12 |
| HP en suite [SC] | 245 |
| Wardenial flat [SC] | 2 |
| Town House rooms [SC] | 172 |
| **Total rooms** | 1,200 |

## 2.2 Our Approach

This report reviews the applicable policies and requirements in terms of sustainability for the development. The London Plan policies and the development response to these policies are described and the report refers to Camden Council requirements.

The report also includes a BREEAM Pre-assessment for the development.

# 3 Overview of Environmental Standards, Targets and Policies

This section provides an overview of the environmental rating schemes, mandatory regulations and policy documents applicable to the development.

**Key national policy documents** consulted in the development of this report and environmental strategies include:

- The European Directive on the Energy Performance of Buildings (EPBD)
- The National Planning Policy Framework (March 2012)
- Energy White Paper, "Creating a Low Carbon Economy"[1]

In addition to the standards, targets and policies discussed above, the relevant British Standards; and CIBSE Guidelines were used to assist in determining the most appropriate Ecologically Sustainable Design (ESD) initiatives for the development.

**Key regional environmental policy and guidance documents** consulted in the development of this

- The London Plan – Spatial Development Strategy for Greater London[2], July 2011.
- Sustainable Design and Construction - London Plan Supplementary Planning Guidance (SPG)[3], May 2006

**Key local environmental policy and guidance documents** consulted in the development of this

- The Camden Council - Core Strategy – adopted 2010
- Camden Development Policies 2010-2025, Local Development Framework
- Camden Planning Guidance, Sustainability (CPG3)

1 Energy White Paper, "Creating a Low Carbon Economy", http://www.berr.gov.uk/files/file10719.pdf

2 The London plan – Spatial Development Strategy for Greater London, http://www.london.gov.uk/mayor/strategies/sds/london_plan/lon_plan_all.pdf

3 Sustainable Design and Construction – Supplementary Planning Guidance (SPG), http://www.london.gov.uk/mayor/strategies/sds/docs/spg-sustainable-design.pdf

## 3.1 London Plan Requirements

In July 2011 the Mayor published the replacement spatial development strategy for Greater London: The London Plan (2011). This part of the report summarises the relevant sustainability policies and the project response to each policy.

### 3.1.1 Sustainable Design and Construction

***POLICY 5.3 Sustainable Design and Construction***

London plan asks for all major development to demonstrate:

- Reduction of carbon dioxide on site
- Avoidance of overheating
- Efficient use of natural resources/Water
- Minimising pollution (air/noise/run-off)
- Minimising the generation of Waste
- Avoiding natural hazards and flood
- Ensuring development is comfortable and secure
- Using sustainable materials
- Promoting biodiversity

For residential developments, the government has implemented the Code for Sustainable Homes (CSH) as a national standard for the sustainable design and construction of new homes. The Mayor's approach is compatible with this and it is expected than new development in London will seek to achieve the highest code levels possible, in particular for energy and water.

### 3.1.2 Urban Greening & Green Roofs

***POLICY 5.10 & 5.11 Urban Greening and Green Roofs***

- Development proposals should integrated green infrastructure from the beginning of the design process to contribute to the urban greening including public realm, this includes tree planting, green roofs, walls and soft landscaping.
- Major development should be designed to include roof, wall and site planting, specially green roofs and walls where feasible to deliver adaptation to climate change, sustainable urban drainage, enhancement of biodiversity, accessible roof space, visual improvement and growing food.

The development will integrate soft landscaping where feasible, the development will include green roofs for visual improvement and to enhance biodiversity on site. Figure 2 demonstrates the proposed green roofs for the site.

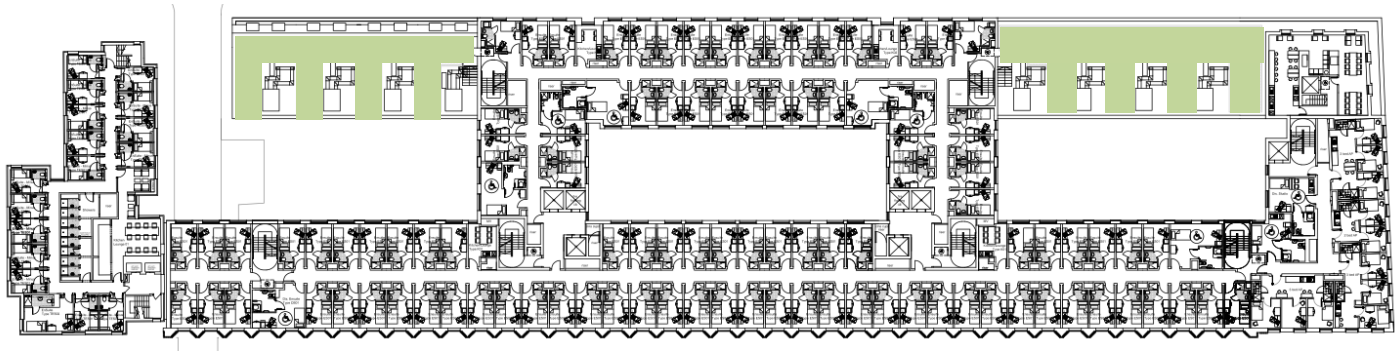

**Figure 2 Proposed Green Roofs for the development**

### 3.1.3 Flood Risk Management

| *POLICY 5.12 Flood Risk Management* |
|---|
| ➢ Development proposals must comply with the flood risk assessment management requirements set out in PPS25 over the lifetime of the development. |

The Environmental Agency map does not show risk of flooding for the area, implying the flood risk in the area is low.

### 3.1.4 Sustainable drainage

***POLICY 5.13 Sustainable drainage***

- Developments should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so. The water run-off should be managed as close to its source as possible in line with the drainage hierarchy (Figure 3)

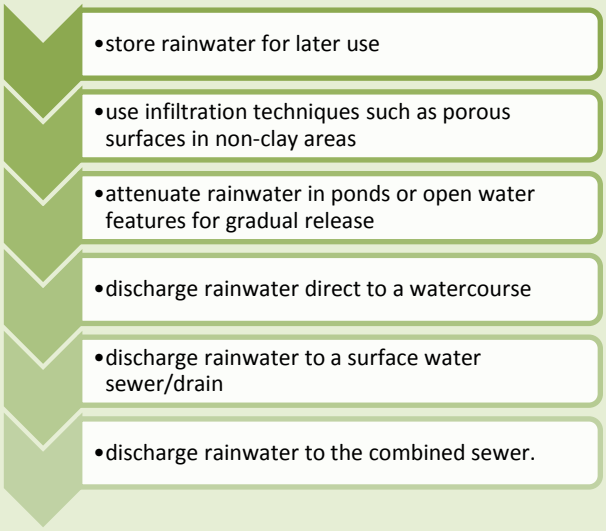


**Figure 3 Drainage hierarchy**

The development includes areas of green roof that will act to reduce surface water run-off rates. There will also be some degree of attenuation of outfalls from lower ground/basement areas.

Discussions have been held with Thames Water with regard to drainage from the site. The intention is to reuse the existing drainage connections from the site. Existing main sewers run relatively close to the level of the existing basement. Thames Water have advised that there is a risk of back charge of waste water from the sewer into the building under certain conditions. Waste from the basement level of the new build will be pumped from a holding tank with a 24 hour capacity.

### 3.1.5 Water Quality and Waste Water

***POLICY 5.14 Water quality and waste water infrastructure***

- Development proposals should minimise the use of mains water by incorporating water saving measures and equipment.
- Residential development should be designed so that mains water consumption to meets a target of 105 litres or less per head per day, equivalent to Code for Sustainable Homes level 3 and 4.

The student units are designed to meet a target of 105 litres or less per head per day. All other sanitaryware installed for the building will be fitted out with water efficient fittings.

### 3.1.6 Air Quality and Ambient Noise

***POLICIES 7.14 & 7.15 Improving Air Quality & Reducing Noise and Enhancing Soundscapes***

Improving Air Quality

- Development proposals should minimise increased exposure to existing poor air quality and make provision to address local problems of air quality (particularly within Air Quality Management Areas.
- Development proposals should promote sustainable design and construction to reduce emissions from construction/demolition process in accordance with the best practice guidance "The control of dust and emissions from construction and demolition"
- Development proposals should be at least "air quality neutral" and not lead to further deterioration of existing poor air quality.
- On site provisions to reduce emissions from a development when practical

Reducing Noise

- The development proposals should seek to reduce noise by minimising the existing and potential adverse impact of noise, from, within the vicinity of development proposal
- The proposals should separate new noise sensitive development from major noise sources wherever practicable through use of distance, screening or internal layout in preference of sole reliance on sound insulation
- The proposals should promote new technologies and improve practices to reduce noise at source.

'The air quality and noise impacts are addressed in the separate Air Quality Assessment and Acoustic Assessment. The Acoustic demonstrated that the proposed design meets all relevant local and national criteria. The Air Quality Assessment demonstrated the development will have an insignificant impact on local air quality.

## 3.2 Camden Policies

Camden Core Strategy and Camden Development policies require any new development in Camden to be sustainable and energy efficient. The details of requirement of the relevant policies are listed in the tables below.

***Policy CS13 (Camden Core Strategy) Tackling climate change through promoting higher environmental standards***

**Reducing the effects of and adapting to climate change**

The council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

a. ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;
b. promoting the efficient use of land and buildings;
c. minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:
    1. ensuring developments use less energy,
    2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;
    3. generating renewable energy on-site;
d. Ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions

**Local energy generation**

The Council will promote local energy generation and networks by:

e. working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them, i.e. in the vicinity of:

– housing estates with community heating or the potential for community heating and other uses with large heating loads;
– the growth areas of King's Cross; Euston; Tottenham Court Road; West Hampstead Interchange and Holborn;
– schools to be redeveloped as part of Building Schools for the Future programme;
– existing or approved combined heat and power/local energy networks and other locations where land ownership would facilitate their implementation.

f. protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road);

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

g. protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir;
h. making sure development incorporates efficient water and foul water infrastructure;
i. requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and down- stream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross.

The development ensures travelling by car will be minimised, the student accommodation has a large cycle storage and there is no car park on site. A travel plan has been prepared and will be adopted to ensure public transport and cycling will be promoted as main means to travel from the student accommodation to the university.

The development makes efficient use of land within the borough. The development provides a high-density of occupation within the footprint of the existing site.

The development is designed to reduce carbon emission by more than 25% in line with London Plan. Energy will be generated on site using CHP and PV panels. Details of energy hierarchy, efficiency strategies and renewable technologies proposed for the building can be found in the separate Energy Statement prepared by Mecserve. This document also outlines how the scheme has been developed to allow for future connection into a Bloomsbury wide district heating network

The scheme has been designed to be passively ventilated with careful consideration having been given to the development of the façade and the balance between adequate daylighting, passive solar heat gain and risk of overheating in summer.

The development incorporates water-efficient sanitaryware and fittings throughout reducing the use of potable water within the development. Consideration has been given to the incorporation of rainwater harvesting and greywater harvesting within the development. As explained in further detail below, the existing drainage infrastructure in the area is not conducive to either approach. The drainage infrastructure is at a level close to that of the existing basements and we have been advised by Thames Water that this puts a risk of back-charge flooding onto the development. The design mitigates this but further storage of water on site would provide additional flooding risk.

The potential area of roof available for collection of rainwater is also limited compared to the anticipated demand for water from WC-flushing. Our proposed strategy has therefore been to use the available roof areas to provide bio-diverse green roofs rather than use them for collection. The green-roof areas will also provide some attenuation to storm water from the building reducing risk of local flooding for this development and neighbouring properties.

***Policy DP22 (Camden Development Policies) Promoting Sustainable Design and Construction***

The Council will require development to incorporate sustainable design and construction measures. Schemes must:

a) demonstrate how sustainable development principles, including the relevant measures set out in paragraph 22.5 below, have been incorporated into the design and proposed implementation; and
b) incorporate green or brown roofs and green walls wherever suitable.

The Council will promote and measure

c) sustainable design and construction by:
d) expecting new build housing to meet Code for Sustainable Homes Level 3 by 2010 and Code Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.;
e) expecting developments (except new build) of 500 $m^2$ of residential floorspace or above or 5 or more dwellings to achieve "very good" in EcoHomes assessments prior to 2013 and encouraging "excellent" from 2013;
f) expecting non-domestic developments of 500sqm of floorspace or above to achieve "very good" in BREEAM assessments and "excellent" from 2016 and encouraging zero carbon from 2019.

The development team have adopted sustainable development principles from the very earliest stages of the project. Mecserve have been appointed as BREEAM Accredited Professionals from the earliest stages of the development to provide advice and guidance.

This report includes a BREEAM pre-assessment for the developments. The scheme is currently targeting a BREEAM 'Excellent' rating in accordance with the guidance. (For details of this please see Section 4 of this report and Appendix.)

***Camden Planning Guidance, Sustainability (CPG3)***

**Water Efficiency**

- The Council expects all developments to be designed to be water efficient by minimising water use and maximising the re-use of water. This includes new and existing buildings.
- The Council will require developments over 10 units or 1000sq m and/or intense water use developments, such as hotels, hostels, student housing etc. to include a grey water harvesting system, unless the applicant demonstrates to the Council's satisfaction that this is not feasible.

The building will be designed to be highly water-efficient. Sanitaryware and fittings will be selected to balance water efficiency with efficacy. Camden Council requires developments of Student Accommodation to consider the use of greywater recycling. This is being considered but is not proposed for this development for the following reasons:

- The building is being developed with a minimum of modification to the line of the existing basements on site. In order to install a greywater recycling system significant ground-works would be required in order to install the buried tanks.
- The greywater tanks would be installed below the level of the local sewer network. This means that all waste water from the building would be required to be pumped including excess greywater that cannot be reused on site.

- Having greywater storage at a level below the existing sewer network presents a risk of flooding the building with foul water.
- Thames Water has advised that the existing location of the drainage infrastructure in the local area presents a risk of back-charge of effluent into the building basement. A design has been adopted to limit the risk of this to the development by storing and pumping waste form the basement level. Providing additional storage and presenting additional risk to the building within the constraints of the existing building line may not be recommended.

The development team have considered the installation of rainwater collection to provide a secondary water supply for irrigation. Investigations were also conducted to see if there is sufficient collection area to enable a small recycling system to be installed to provide flushing to the public WCs in the podium section of the building. Both these options provide limited benefit to the scheme for considerable expense. Neither option has therefore been proposed for the development with the provision of green roof areas being given priority over areas set aside for rainwater collection.

***Camden Planning Guidance, Sustainability (CPG3)***

**Sustainable Materials**

- All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources. This should relate to the WRAP Quick Wins assessments or equivalent as (highlighted in the waste hierarchy information section below). Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved.
- Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.

By retaining and reusing the majority of the existing structure at Hughes Parry tower it is anticipates that a significant proportion of the materials used in the development will be considered to be sustainably sourced. The BREEAM Assessment process will be used to monitor and track this through the development. The contractor will be required to comply with the requirements set by the development team for both using and sourcing materials in a sustainable manner.

***Camden Planning Guidance, Sustainability (CPG3)***

**Local Food Growing**

- We encourage food to be grown wherever possible and suitable
- Rooftops and shared spaces such as gardens and parks provide opportunities for food growing

The nature of the development means that provision of local food growing is not really practical for this site. As student accommodation the buildings will be let on a relatively short timescales and many students will only be in residence during term times. The only areas that would be suitable are the roofscapes. These areas are currently set aside for green-roof, plant and photovoltaic panels. Access to these areas has been deliberately limited for health and safety reasons.

# 4 BREEAM

## 4.1 Overview

The Building Research Establishment Environmental Assessment Method (BREEAM) was developed in 1990 and consists of a suite of rating schemes designed to assess the sustainability and environmental impact of a building / development. The BREEAM tools set a benchmark for the performance of best practise buildings in the United Kingdom.

The BREEAM 2011 tool consists of 9 categories plus an additional innovation category as listed below:

1. Management
2. Health and Well-Being
3. Energy
4. Transport
5. Water
6. Materials
7. Waste
8. Land Use and Ecology
9. Pollution
10. Innovation

A building's BREEAM rating is dependent on the building achieving the necessary credit point percentage benchmarks as well as complying with the mandatory credit points corresponding to the target rating. BREEAM rating tool also has an innovation category where additional credit points can be achieved through implementing new technologies or sustainable initiatives. The final BREEAM rating is determined by applying a series of environmental weightings to the each category of credit points. The rating tool is not designed to have every credit point achievable for every development and there will inevitably be trade-offs between many credit points.

**Table 2 Summary of BREEAM Ratings**

| BREEAM Rating | Percentage of Points Required |
|---|---|
| **Pass** | 30% |
| **Good** | 45% |
| **Very Good** | 55% |
| **Excellent** | 70% |
| **Outstanding** | 85% |

## 4.2 Targets for the Project

The Cartwright Gardends development team has aspiriations to achieve BREEAM rating of Excellent for the project. The BREEAM pre-assessment report for the development can be found in Appendix A. The pre-assessment demonstrates that a rating of 'Excellent' with a score of 72 can be achieved for the development.

# 5 Conclusions

This report and the accompanying pre-assessment demonstrate that sustainable design issues have been carefully considered by the development team and will provide a new student accommodation that exceeds the statutory minimum requirements across a wide range of environmental design criteria.

The report has addressed the relevant sustainable design policies both from Camden and the GLA. This report demonstrates that sustainable design has been considered throughout the design process and will be an integral factor in guiding the development of the design and through construction.

The building will achieve BREEAM Excellent and will reduce the carbon emission by more than 25%. (Please refer to the separate Energy Statement prepared for the building.

The Appendix contains the full BREEAM pre-assessment for the scheme. The pre-assessment shows that the scheme can achieve a score of 72, equivalent to BREEAM rating of Excellent. Please note, the targeted credits, where tradable, can be modified or exchanged as the design progresses.

# Appendix A- BREEAM Pre-Assessment

# BREEAM 2011 New Construction Pre-Assessment Estimator

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a buildings potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.

| | |
|---|---|
| Building name | Cartwright Gardens Redevelopment |
| Indicative building score (%) | 72.03% |
| Indicative BREEAM rating | Pre-Assessment result indicates potential for BREEAM Excellent rating |
| Indicative minimum standards level achieved | Pre-Assessment result indicates the minimum standards for Excellent level |

## MANAGEMENT — Section Weighting 12.00% — Indicative Section Score 11.45%

### Man01 Sustainable Procurement

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 8 | Available contribution to overall score | 4.36% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will roles, responsibilities and a training schedule be defined in accordance with BREEAM? | Yes | 1 | 1 |
| Will a BREEAM AP be appointed at RIBA stage A/B and performance targets contractually agreed? | Yes | 1 | 1 |
| Will a BREEAM AP be appointed to monitor and report progress during RIBA stage B-E ? | Yes | 1 | 1 |
| Willa BREEAM AP be appointed to monitor and report progress during RIBA stage F-L? | Yes | 1 | 1 |
| Will a thermographic survey be conducted and any defects uncovered remedied? | Yes | 1 | 1 |
| Will compliant commissioning of building services be carried out? | Yes | 1 | 1 |
| Will compliant seasonal commissioning of building services be carried out? | Yes | 1 | 1 |
| Will water/energy consumption data be recorded and aftercare support provided for 12 months? | Yes | 1 | 1 |
| Will water/energy consumption be recorded/reported for 3 years post construction? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 8 |
| Total indicative contribution to overall building score | 4.36% |
| Total indicative BREEAM innovation credits achieved | 1 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

## BREEAM 2011 New Construction Pre-Assessment Estimator

Key points:
A thermographic survey is required after construction and the defects needs to be remedied.
Seasonal Commissioning will be carried out
Energy and Water will be monitored and reported in the first three years post construction

### Man02 Responsible Construction Practices

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.09% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

Pre-Assessment question/criteria

| | |
|---|---|
| Which considerate construction scheme will be used or required to be used by the principal contractor? | Considerate Constructors Scheme |
| For the required scheme, what will be the target performance level set for the site/contractor? | A CCS score of 36 or more |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.09% |
| Total indicative BREEAM innovation credits achieved | 1 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

The contractor will be required to achieve Considerate Constructor Score of 36 or more.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Man03 Construction Site Impacts

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 5 | Available contribution to overall score | 2.73% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will site energy consumption be metered/monitored? | Yes | 1 | 1 |
| Will site water consumption be metered/monitored? | Yes | 1 | 1 |
| Will the transport of construction materials and waste to/from site be measured/monitored? | Yes | 1 | 1 |
| Will timber be sourced in accordance with the Government's Timber Procurement Policy? | Yes | 1 | 1 |
| Will/does the principal contractor operate a compliant Environmental Management System? | Yes | 1 | 1 |
| Will the principal contractor adopt best practice pollution prevention policies & procedures? | Yes | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 5 |
| Total indicative contribution to overall building score | 2.73% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The contractor will be required to monitor the construction impact during the construction on monthly basis.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Man04 Stakeholder Participation

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 4 | Available contribution to overall score | 2.18% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will an appropriate level of consultation activities be undertaken? | Yes | 1 | 1 |
| Will an access statement be developed and appropriate building user facilities provided? | Yes | 1 | 1 |
| Will building user guides and relevant user information be provided? | Yes | 1 | 1 |
| Will a post occupancy evaluation assessment be undertaken and information disseminated? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 4 |
| Total indicative contribution to overall building score | 2.18% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

Key points:
The client makes a commitment to carry out a post occupancy evaluation one year after building occupation to gain building performance feedback. This will include a review of the design and construction process , Feedback from a wide range of building users including FM on design and environmental performance, sustainability performance of the development. The information on POE will be disseminated to share lessons learnt.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Man05 Life cycle cost and service life planning

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 3 | Available contribution to overall score | 1.64% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will a feasibility stage Life Cycle Cost (LCC) analysis be commissioned and completed? | Yes | 1 | 1 |
| Will a strategic and system level LCC be commissioned and completed? | Yes | 1 | 1 |
| Will a technical design LCC to be commissioned and completed? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.09% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
A Life Cycle Cost analysis is carried out based on the design in stage C/D in compliance with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| HEALTH & WELLBEING | Section Weighting | 15.00% | Indicative Section Score | 7.50% |
|---|---|---|---|---|

## Hea01 Visual Comfort

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 3 | Available contribution to overall score | 2.81% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will all fluorescent lamps be fitted with high frequency ballasts? | Yes | N/A | N/A |
| Will all relevant building areas be designed to achieve the appropriate daylight factor(s)? | No | 1 | |
| Will the design provide adequate glare control and view out for building users? | No | 1 | 0 |
| Will internal/external lighting be specified in accordance with the relevant CIBSE Guides/British Standards? | Yes | 1 | 1 |
| Will all relevant building areas be designed to achieve exemplary level daylight factor(s)? | | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.94% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

Key points: 80% of the building area will have daylight factor and uniformity in compliance with BREEAM.
80% of the working plane in each kitchen and study will have a view of sky

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Hea02 Indoor Air Quality

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 4 | Available contribution to overall score | 3.75% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will an air quality plan be produced? | Yes | 1 | 0 |
| Will the building be designed to minimise sources of internal air pollution? | No | | |
| Will the relevant products be specified to meet the VOC testing and emission levels required? | Yes | 1 | 1 |
| Will formaldehyde and total VOC levels be measured post construction? | Yes | 1 | 1 |
| Will the building be designed to, or have the potential to provide, natural ventilation? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.88% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
Producing an air quality plan is important as it is the pre-requirement for other credits – the air quality plan should consider removal of contaminant sources, dilution and control of contaminant sources, procedures for pre-occupancy flush out and third party testing and analysis.
A post construction study will be commissioned to measure VOC levels of the development.
We have assumed that the buildings as designed will be capable of providing fresh air entirely via a natural ventilation strategy. ( regardless of the proposed ventilation strategy) i.e. there will be openable windows in all rooms with two level of controls

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Hea03 Thermal Comfort

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.88% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will thermal modelling of the design be carried out? | Yes | 1 | 1 |
| Will the modelling inform the development of a thermal zoning and control strategy? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.88% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
Dynamic thermal model will be carried out
There will be occupant control for heating (where applicable cooling) in each zone.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Hea04 Water Quality

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.94% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will all water systems be designed to comply with the relevant HSE Approved Code of Practice and Guidance? | Yes | 1 | 1 |
| Where humidification is to be provided, will a failsafe humidification system be specified? | N/A | | |
| Will a wholesome supply of accessible, clean and fresh drinking water be supplied for building users? | Yes | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.94% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

Key points:
chilled, mains-fed point of use water coolers accessible to building staff will be installed in convenient locations (for staff and in "staffed" locations)

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Hea05 Acoustic Performance

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 4 | Available contribution to overall score | 3.75% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will/has a suitably qualified acoustician be appointed to provide appropriate design advice? | Yes | | |
| Will the building meet the relevant acoustic performance standards and testing requirements? | Yes | 4 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.94% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
an acoustician needs to be appointed at briefing stage
criteria: Airborne sound insulation values are at least 5dB higher and impact sound insulation values are at least 5dB lower than building regulations standards

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Hea06 Safety and Security

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.88% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Where external site areas are present, will safe access be designed for pedestrians and cyclists? | No | 1 | 0 |
| Will a suitably qualified security consultant be appointed and security considerations accounted for? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.94% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Security Consultant will be consulted and their recommendations will be taken into account in line with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| ENERGY | Section Weighting | 19.00% | Indicative Section Score | 13.10% |
|---|---|---|---|---|

## Ene01 Reduction of $CO_2$ Emissions

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 15 | Available contribution to overall score | 9.83% |
| 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? | Enter building performance data into the Ene01 calculator |

## Ene01 Calculator

### Ene01 Calculator and Key Performance Indicators

| | | |
|---|---|---|
| Building floor area | 33159 | m2 |
| Notional building energy demand | 267.88 | MJ/m2/annum |
| Actual building energy demand | 180.51 | MJ/m2/annum |
| Notional building energy consumption | 197.35 | kWh/m2/annum |
| Actual building energy consumption | 190.16 | kWh/m2/annum |
| Target Emission Rate (TER) | 43.80 | kgCO2/m2/annum |
| Building Emission Rate (BER) | 31.40 | kgCO2/m2/annum |
| Building improvement over TER | 28.00% | |
| Demand Energy Performance Ratio (EPR) | 0.2218 | |
| Consumption Energy Performance Ratio (EPR) | 0.1065 | |
| $CO_2$ Energy Performance Ratio (EPR) | 0.2109 | |
| Overall Building Energy Performance Ratio ($EPR_{NC}$) | 0.5392 | |

| | |
|---|---|
| What is the equivalent % of the building's 'regulated' energy consumption that will be 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' ? | |

## BREEAM 2011 New Construction Pre-Assessment Estimator

| | |
|---|---|
| Total indicative BREEAM credits achieved | 8 |
| Total indicative contribution to overall building score | 5.24% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Excellent level |

Comments/notes:

Key points:
Assuming high performance building envelope, efficient design,  CHP and solar panels – this is just an estimate at this point, as soon as design is frozen we will start the energy model

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene02 Energy Monitoring

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.66% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative 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? | | N/A | N/A |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.66% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

There will be sub-meters installed for the building in compliance with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene03 External Lighting

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.66% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will external light fittings and controls be specified in accordance with the BREEAM criteria? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.66% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

External lighting will be efficient in line with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene04 Low and Zero Carbon Technology

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 5 | Available contribution to overall score | 3.28% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Compliant LZC feasibility study to be undertaken | Yes | 2 | 2 |
| What will be the intended scope of the feasibility study? | Whole life cycle carbon savings/emissions | | |
| Target percentage net reduction in whole life cycle CO2 emissions | 20.00% | 2 | 2 |
| Please confirm the intended energy source of the Low and/or zero carbon system? | Combination of one or more LZC energy sources | | |
| Please select | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 4 |
| Total indicative contribution to overall building score | 2.62% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

Key points:
LCC renewable energy studies will be completed and CHP plus Solar panels will reduce carbon by 20% . This is just an estimation at this stage.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene05 Energy Efficient Cold Storage

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.31% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will the refrigeration system be designed, installed and commissioned in accrodance with BREEAM criteria? | Yes | 1 | 1 |
| Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions? | No | 1 | 0 |
| Will the refrigeration system be a type described as a 'Future Technology' in the Refrigeration Road Map? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.66% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The cold storages will be efficient in compliance with BREEAM .

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene06 Energy Efficient Transportation Systems

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.31% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | N/A |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will a transportation system analysis be carried out to determine the optimum number and size of lifts? | Yes | 1 | 1 |
| Will three energy-efficient features offering the greatest potential energy savings be part of the system? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.31% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
The lifts will be sized based on vertical transport analysis.
Additional energy efficiency studies will be carried out for the lifts and the more energy efficient lift will be installed

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene07 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| | | | |
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| | |
|---|---|
| Total indicative BREEAM credits achieved | N/A |
| Total indicative contribution to overall building score | N/A |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene08 Energy Efficient Equipment

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.31% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria<br>Which of the following will be present and likely to be a/the major contributor to 'unregulated' energy use: | Present | Significant majority contributor |
|---|---|---|
| Small power/plug in equipment? | Yes | Yes |
| Swimming pool? | No | |
| Communal laundry? | Yes | Yes |
| Data centre? | No | |
| IT-intensive operation areas? | No | |
| Residential areas? | Yes | Yes |
| Healthcare? | No | |
| Kitchen and catering facilities? | Yes | Yes |

| | Indicative compliance? | Credits available | Indicative credits achieved | |
|---|---|---|---|---|
| Will the significant majority contributor(s) to 'unregulated' energy use (above) meet the BREEAM criteria? | Yes | 2 | 2 | N/A |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.31% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
Energy efficient equipment will be specified and installed as recommended by Energy Saving Trust, EU Energy Efficiency Labelling Scheme, CIBSE TM50, etc. as applicable

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Ene09 Drying Space

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.66% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will internal/external drying space and fixings be provided? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.66% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Key points:
2m Drying line will be provided for each bedroom.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| TRANSPORT | Section Weighting | 8.00% | Indicative Section Score | 8.00% |
|---|---|---|---|---|

## Tra01 Public Transport Accessibility

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 3 | Available contribution to overall score | 2.67% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

Pre-Assessment question/criteria

| | |
|---|---|
| What is the building type category (for the purpose of Tra01 issue assessment)? | Multi-Residential Accommodation |
| What is the degree of public transport provision for the building's location? | Excellent provision of public transport, i.e. large urban/metropolitan city centre |
| Building's indicative Accessibility Index | 18 |
| Does the building have a dedicated bus service? | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 3 |
| Total indicative contribution to overall building score | 2.67% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The building is located such that it has excellent public transport access.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Tra02 Proximity to Amenities

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.78% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will the building be in close proximity of and accessible to applicable amenities? | Yes | 2 | 2 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.78% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

There are different amenities in close proximity to the building.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Tra03 Cyclist facilities

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.89% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| | |
|---|---|
| What is the building type category (for the purpose of Tra03 issue assessment)? | Student residences and key worker accommodation |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will cycle storage spaces be provided? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.89% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Extensive Cycle storage is proposed for the building.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Tra04 Maximum Car Parking Capacity

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.78% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| | |
|---|---|
| Building type category (for the purpose of Tra04 issue)? | Student residences and key worker accommodation |
| Buildings indicative Accessibility Index (sourced from issue Tra01) | 18 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will the building meet BREEAM's maximum parking capacity criteria for this building type/Accessibility Index? | Yes | 2 | 2 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.78% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

There is no car park proposed for the building.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Tra05 Travel Plan

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.89% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will a transport plan based on site specific travel survey/assessment be developed? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.89% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

A travel plan is being prepared for the building by the transport consultant and the University.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| WATER | Section Weighting | 6.00% | Indicative Section Score | 4.67% |
|---|---|---|---|---|

## Wat01 Water Consumption

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 5 | Available contribution to overall score | 3.33% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

| | |
|---|---|
| Select the level that corresponds closely to the target or likely water component specification? | Level 3 - Three credits |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 3 |
| Total indicative contribution to overall building score | 2.00% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

Low flow efficient sanitary ware will be installed for the building.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wat02 Water Monitoring

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.67% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative 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? | N/A | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.67% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

There will be sub-meters and main meters to monitor water consumption in compliance with the BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wat03 Water Leak Detection and Prevention

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.33% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will a mains water leak detection system be installed on the building's mains water supply? | Yes | 1 | 1 |
| Will flow control devices be installed in each sanitary area/facility? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.33% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

There will be sanitary shut off devices in the toilet facilities in compliance with BREEAM.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wat04 Water Efficient Equipment

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 0.67% |
| No. of BREEAM innovation credits available | No | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will water efficient irrigation methods and/or vehicle wash systems (if relevant) be installed? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.67% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

There will be no irrigation system and the plants will be watered manually if and when needed.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| MATERIALS | Section Weighting | 12.50% | Indicative Section Score | 7.69% |
|---|---|---|---|---|

## Mat01 Life Cycle Impacts

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 6 | Available contribution to overall score | 5.77% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | No |

Pre-Assessment question/criteria

| | |
|---|---|
| How do you wish to assess the number of BREEAM credits achieved for this issue? | Define the building elements and their Green Guide Rating |

For each element below confirm if it is present in the building assessed and where present what the target or actual Green Guide rating is:

| | Element Present | Indicative Green Guide rating | Shell & Core option? |
|---|---|---|---|
| External Walls | Yes | A rating | N/A |
| Roof | Yes | A rating | |
| Windows | Yes | E rating | |
| Upper floor slab | Yes | B rating | |
| Floor finishes/covering | Yes | A rating | |
| Internal walls | Yes | B rating | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 3 |
| Total indicative contribution to overall building score | 2.88% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The Materials will be selected considering their environmental impact and their green guide rating.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Mat02 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will ≥80% of all external hard landscaping and boundary protection achieve a Green Guide A or A+ rating? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.96% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The materials used for hard landscaping will be environmentally friendly where possible.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Mat03 Responsible Sourcing

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 3 | Available contribution to overall score | 2.88% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

Pre-Assessment question/criteria

| | |
|---|---|
| How do you wish to assess the number of BREEAM credits achieved for this issue? | Define the building elements that will be responsibly sourced |

| | |
|---|---|
| Will all timber used on the project be sourced in accordance with the UK Govt's Timber Procurement Policy? | Yes |

For each element below please confirm if it is present or not and, where present, confirm whether or not it will be responsibly sourced and the responsible sourcing tier level:

| Building elements | Element present / assessed | Element responsibly sourced | Responsible sourcing tier level |
|---|---|---|---|
| Structural Frame | Yes | Yes | Tier 3 |
| Ground floor | Yes | Yes | Tier 8 |
| Upper floors (including separating floors) | Yes | Yes | Tier 6 |
| Roof | Yes | Yes | Tier 3 |
| External walls | Yes | Yes | Tier 6 |
| Internal walls | Yes | Yes | Tier 6 |
| Foundation/substructure | Yes | No | |
| Fittings | Yes | No | |
| Hard landscaping | Yes | No | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.96% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

The materials will be sourced from the suppliers with the right environemntal credentials and certifications.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Mat04 Insulation

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 2 | Available contribution to overall score | 1.92% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Is the building targeting an insulating index of 2 or more? | Yes | 1 | 1 |
| Will the building's insulating materials be responsibly sourced? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 1.92% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Insulation to both HVAC and building fabric will have good environmentally rating and will be responsibly sourced.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Mat05 Designing for Robustness

| | | | |
|---|---|---|---|
| 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will suitable durability/protection measures be specified and installed to vulnerable areas of the building? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.96% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The building will be designed to have the right protection in vulnerable areas and high traffic areas.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| WASTE | Section Weighting | 7.50% | Indicative Section Score | 5.00% |
|---|---|---|---|---|

## Wst01 Construction Waste Management

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 4 | Available contribution to overall score | 5.00% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | Yes |

Pre-Assessment question/criteria

| | | | |
|---|---|---|---|
| How do you wish to assess the number of BREEAM credits achieved for this issue? | Define a target number of BREEAM credits to be achieved | | |
| Select the number of BREEAM credits being targeted for the Wst01 issue | 3 | BREEAM Innovation credits | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 3 |
| Total indicative contribution to overall building score | 3.75% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

The contractor will be required to have a compliant SWMP and to monitor the waste generation and recycle more than 90% of the waste as required by BREEAM.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wst02 Recycled Aggregates

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 1.25% |
| No. of BREEAM innovation credits available | 1 | Minimum standards applicable | No |

Pre-Assessment question/criteria

| | |
|---|---|
| How do you wish to assess the number of BREEAM credits achieved for this issue? | Please select |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 0 |
| Total indicative contribution to overall building score | 0.00% |
| Total indicative BREEAM innovation credits achieved | 0 |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wst03 Operational Waste

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 1.25% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | Yes |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will appropriate facilities for the storage of operational recyclable waste volumes be provided? | Yes | 1 | 1 |
| If relevant, will a static waste compactor(s) or baler(s) be specified/installed? | Yes | | |
| If relevant, will a vessel for composting suitable organic waste be specified/installed? | Yes | | |
| Will internal and, if applicable, communal storage & home compost facilities be provided? | Yes | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 1.25% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

The building will have right facilities to sort and store recyclable waste in line with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Wst04 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| | | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | N/A |
| Total indicative contribution to overall building score | N/A |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

# BREEAM 2011 New Construction Pre-Assessment Estimator

| LAND USE & ECOLOGY | Section Weighting | 10.00% | Indicative Section Score | 8.00% |
|---|---|---|---|---|

## LE01 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will at least 75% of the proposed development's footprint be located on previously been developed land? | Yes | 1 | 1 |
| Is the site deemed to be significantly contaminated? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 1.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The site is located on a previously developed land.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## LE02 Ecological Value of Site and Protection of Ecological Features

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 1 | Available contribution to overall score | 1.00% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative 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 | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 1.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The land is of low ecological value.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## LE03 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 |

Pre-Assessment question/criteria

| | |
|---|---|
| What is the likely change in ecological value (plant species richness) as a result of the sites development? | No negative change or improvement in plant species richness |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 2.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | Pre-Assessment result indicates the minimum standards for Outstanding level |

Comments/notes:

There will be no negative impact on the ecological value of the site.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## LE04 Enhancing Site Ecology

| | | | |
|---|---|---|---|
| No. of BREEAM credits available | 3 | Available contribution to overall score | 3.00% |
| No. of BREEAM innovation credits available | 0 | Minimum standards applicable | No |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will a suitably qualified ecologist be appointed to report on enhancing and protecting site ecology? | Yes | 3 | 2 |
| Will the suitably qualified ecologists general recommendations be implemented? | Yes | | |
| What is the targeted/intended improvement in ecological value as a result of enhancement actions? | Small improvement in plant species richness | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 2.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

An ecologist will be on board to ensure the ecological value of the site will be maximised using the proposed landscaping and the green roofs.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## LE05 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will the building meet BREEAM's mandatory criteria for this BREEAM issue? | Yes | 2 | 2 |
| Will a Biodiversity Champion be appointed to monitor/minimise impacts of site activities on biodiversity? | Yes | | |
| Will the contractor provide training for the site workforce on how to protect ecology during the project? | Yes | | |
| Will the contractor record actions to protect biodiversity and monitor their effectiveness during construction? | Yes | | |
| Will a new ecologically valuable habitat, appropriate to the local area, be created? | Yes | | |
| Where flora/fauna habitats exist on site, will the contractor programme site works to minimise disturbance? | N/A | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 2.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

There will be a management plan in place for the green roof and proposed landscaping to ensure these will be protected in long term.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| POLLUTION | Section Weighting | 10.00% | Indicative Section Score | 4.62% |
|---|---|---|---|---|

## Pol01 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will refrigerant containing systems be installed in the assessed building? | Yes | 2 | 0 |
| Is the Global Warming Potential of the specified refrigerant(s) likely to be 10 or less? | No | | |
| What is the target range Direct Effect Life Cycle $CO_2$eq. emissions for the system? | >1000 | kgCO2eq/kW coolth capacity | |
| Will a refrigerant leak detection and containment system be specified/installed? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 0 |
| Total indicative contribution to overall building score | 0.00% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Pol02 $NO_x$ 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 |

| Pre-Assessment question/criteria | Response | |
|---|---|---|
| Please enter the target/maximum $NO_x$ emission level for space heating system | 90.00 | mg/kWh |
| Please enter the target/maximum $NO_x$ emission level for the water heating system | 90 | mg/kWh |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.77% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

Since CHP is proposed, NOx levels required by BREEAM may not be achieved. More detailed design information is required for this.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Pol03 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| What is the actual/likely annual probability of flooding for the assessed site? | Low | 2 | 2 |
| Will a compliant 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? | No | 1 | 0 |
| Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria? | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 3 |
| Total indicative contribution to overall building score | 2.31% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

SUDs will be designed and installed for the site in line with BREEAM requirements. The risk of flooding for the site is low.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Pol04 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will the external lighting be designed to reduce light pollution? | Yes | 1 | 1 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.77% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The external lighting will be desgined to minimise night time pollution in line with BREEAM requirements.

# BREEAM 2011 New Construction Pre-Assessment Estimator

## Pol05 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 |

| Pre-Assessment question/criteria | Response | Credits available | Indicative credits achieved |
|---|---|---|---|
| Will there be, or is there noise-sensitive areas/buildings within 800m radius of the development? | Yes | 1 | 1 |
| Will a noise impact assessment be completed and, if applicable, noise attenuation measures specified? | Yes | | |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 1 |
| Total indicative contribution to overall building score | 0.77% |
| Total indicative BREEAM innovation credits achieved | N/A |
| Indicative minimum standard(s) level | N/A |

Comments/notes:

The building is noise sensitive itself- the building will be designed and a noise impact assessment will be in place to ensure that the building noise impact will be minimised.

# BREEAM 2011 New Construction Pre-Assessment Estimator

| INNOVATION | Section Weighting | 10.00% | Indicative Section Score | 2.00% |
|---|---|---|---|---|

## Inn01 Innovation

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

| Pre-Assessment question/criteria | Exemplary level achieved | Credits available | Indicative credits achieved |
|---|---|---|---|
| Man01 Sustainable Procurement | Yes | 1 | 1 |
| Man02 Responsible Construction Practices | Yes | 1 | 1 |
| Hea01 Visual Comfort | No | 1 | 0 |
| Ene01 Reduction of CO2 Emissions | No | 5 | 0 |
| Ene04 Low and Zero Carbon Technology | No | 1 | 0 |
| Ene05 Energy Efficient Cold Storage | No | 1 | 0 |
| Wat01 Water Consumption | No | 1 | 0 |
| Mat01 Life Cycle Impacts | No | 1 | 0 |
| Mat03 Responsible Sourcing of Materials | No | 1 | 0 |
| Wst01 Construction Waste Management | No | 1 | 0 |
| Wst02 Recycled Aggregates | No | 1 | 0 |

| | |
|---|---|
| Total indicative BREEAM credits achieved | 2 |
| Total indicative contribution to overall building score | 2.00% |
| Indicative minimum standard(s) level | N/A |

Comments/notes: