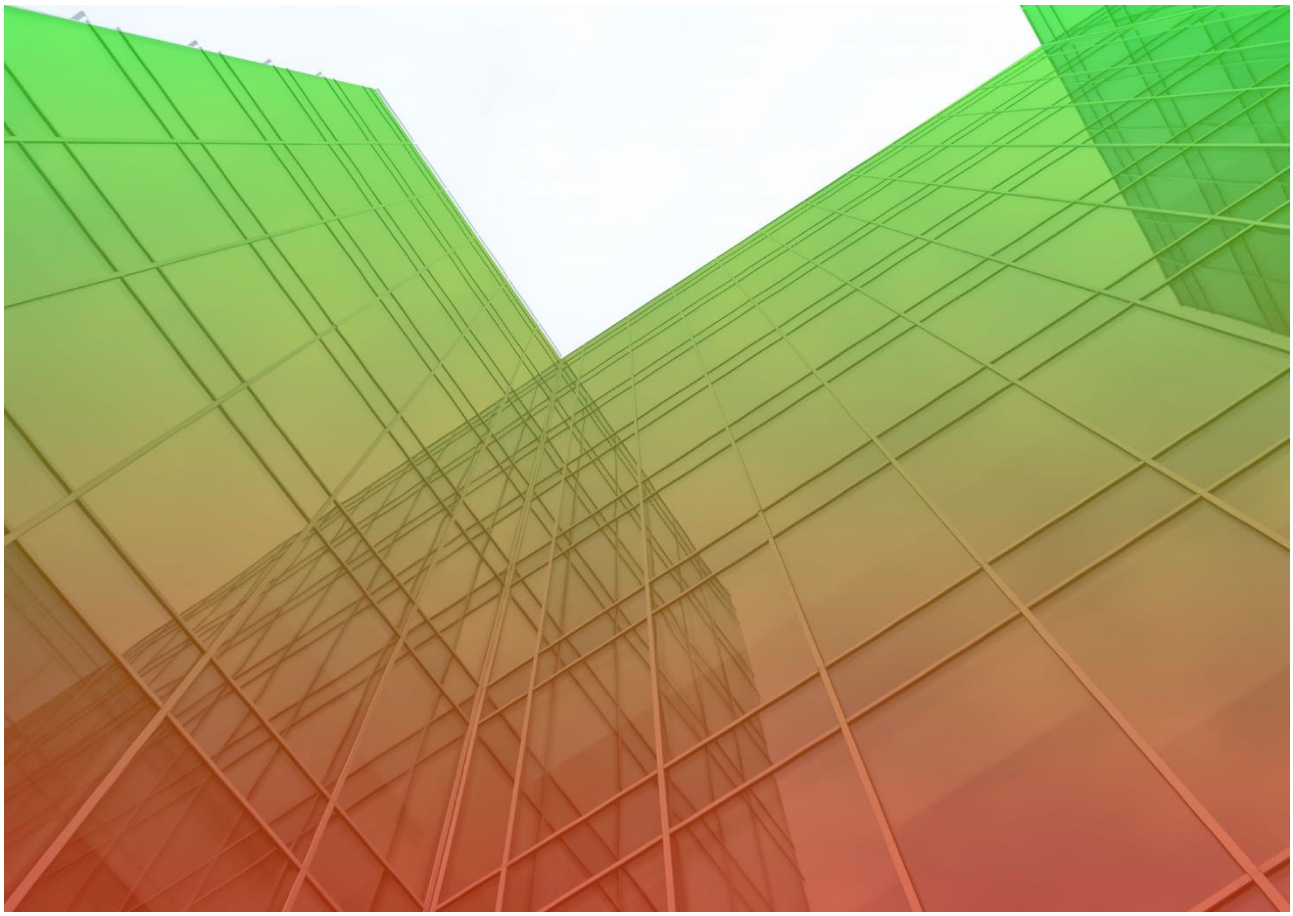
Low Energy Consultancy Ltd
A Briggs & Forrester Group Company

Sustainability Statement

Centric Close

On Behalf of Fairview Ventures Limited



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Document Control

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Preface

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Executive Summary

This Sustainability Statement has been prepared in response to the relevant local, regional and national policies to support a planning application for the proposed development of Centric Close, Camden. This report details how the design has considered the potential environmental impacts and how these impacts can be managed and mitigated in line with the relevant planning policies.

The proposed development has targeted sustainability throughout the lifetime of the building. In particular energy and water efficiency measures integral to the building's design.

The proposed energy solution for the development follows and responds to the Be Lean, Be Clean, Be Green principles of the London Plan and includes various energy efficiency measures as well as low-carbon and renewable energy technologies. The proposed energy strategy will demonstrate that a 35% CO_2 reduction can be achieved when compared to the CO_2 baseline through energy efficiency measures, energy efficient supply and renewable energy contributions.

Water consumption will be reduced through the incorporation of water efficient fixtures and fittings. A water meter and leak detection system will be provided on the mains water supply to each shell only non-domestic building.

The site is classified as Flood Zone 1 and therefore will not be constrained by fluvial flooding issues.

The proposed drainage strategy will use a series of SuDS techniques including green roofs, permeable paving and crate based attenuation with a flow control at the outfall. The drainage strategy will use SuDS measures and attenuation will be provided to mitigate runoff for all storm events up to and including the peak 1 in 100 year plus allowance for the potential effects of climate change through the use of green roofs and cellular storage. All surface runoff from these potentially contaminated catchment areas will benefit from a treatment stage.

The proposed green landscaping features will help to attract wildlife, improve air quality, energy efficiency, attenuate water and reduce the urban heat island effect.

Appropriate recycling facilities will be provided and the reuse and disposal of waste will be guided by a waste management plan.

The scheme will include good practice design standards in regard to air, light and noise pollution.

To minimise air quality impacts during construction a number of best practice mitigation measures will be implemented by the contractor.

Low NOx boilers and CHP plant have been included within the design proposals to minimise site generated emissions. The emissions from the CHP and boiler are not predicted to have any significant adverse impact on the receptors within the development, as well the existing receptors nearby.

Mitigation to achieve internal noise levels will consist of enhanced glazing and mechanical ventilation for habitable rooms facing the railway. Facades facing towards the road will be provided with adequate standard glazing and a good quality trickle vent in habitable rooms.

Sound insulation will be provided on all separating walls and floors between habitable spaces to meet Building Regulations Part E requirements.

Health and wellbeing of the occupants will be improved by providing good daylight levels, sufficient private and semi-private outdoor space and indoor comfort.

The site is expected to be registered with the Considerate Constructors Scheme with the aim of achieving Best Practice standards, which will ensure that the site's impacts on the environment, the workforce and the general public are minimised.

The site is considered to have low ecological value. The ecology of the site will be protected and improved by providing green areas and green roofs and introducing new ecological features.

A Transport Assessment and Travel Plan have been prepared for the proposed development. A number of 'hard' infrastructural and 'soft' information-led measures such as encouraging walking, cycling, public transport use and car clubs have been proposed. The proposals are expected to generate fewer vehicle trips than the current uses on the site.

The BREEAM shell only pre-assessment carried out for the non-residential units demonstrates that the proposed development can potentially achieve an 'Excellent' rating.

The proposed development accords with the high standards of sustainability as prescribed by the London Borough of Camden planning policies. The development will help to improve the area by providing a highly energy efficiency and sustainable development.

1 Introduction

1.1 Background

Low Energy Consultancy Limited (LEC) has been instructed by Fairview Ventures Limited (Fairview) to prepare a Sustainability Statement for the proposed development of Centric Close. The Sustainability Statement has been prepared to support the planning application in response to the local, regional and national legislation and should be read alongside the Energy Strategy, the Design and Access Statement and other supplemental environmental reports submitted with the planning application.

The main aim of this report is to provide an assessment of the sustainability credentials for the proposed development and to describe how the applicable sustainability policies and standards can be met by the proposed design.

The information provided in this report should be treated as indicative at this stage and should be used to inform the planning application for the proposed development with respect to relevant national, regional and local planning policies.

1.2 Description of Development

The proposed development comprises the demolition of existing buildings and the erection of 76 residential units and 1,239 sqm of commercial floorspace (Use Class B1) over 4, 5, 6 and 7 storeys providing a mix of 1, 2 and 3 bed apartments. The development includes a landscaped courtyard and communal amenity areas.

The redevelopment of the site will make a positive enhancement to the visual appearance of the area, providing much needed homes for the local area, including commercial floorspace to reflect the Council's aspirations for the area.

2 Planning Policies

This section summarises the relevant sustainability policy context for the development. The national, regional and local policies and regulations related to energy and sustainability are summarised below.

2.1 National Planning Policy Framework (2012)

The National Planning Policy Framework (NPPF) document sets out the Government's planning policies for England and was published on the 27th March 2012.

The NPPF is designed to consolidate all policy statements, circulars and guidance documents into a single, simpler National Planning Policy Framework, making the planning system more user-friendly and transparent. The framework's primary objective is a sustainable development, therefore focussing on the 3 pillars of sustainability. The framework is split into three sections; planning for prosperity (Economic), planning for people (Social) and planning for places (Environmental), each of which outlines guidance to tackle issues such as housing, transport infrastructure, climate change, business and economic development, etc.

In regard to climate change, the NPPF supports a reduction in greenhouse gas emissions and the delivery of renewable and low carbon energy. Climate change is covered in Section 10 '*Meeting the challenge of climate change, flooding and coastal change'*. In summary the framework advises:

To support the move to a low carbon future, local planning authorities should:

- plan for new developments in locations and ways which reduce greenhouse gas emissions;
- actively support energy efficiency improvements to existing buildings; and
- adopting nationally described standards when setting any local requirement for a building's sustainability.

In determining planning applications, local planning authorities should expect a new development to:

- comply with adopted Local Plan policies on local requirements for decentralised energy supply, unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

2.2 The London Plan

The London Plan requires all developments to actively tackle climate change through their design as an integral part of sustainable development. Chapter 5: London's Response to Climate Change contains the following crosscutting policies supporting London as an exemplar city in adapting to climate change.

1. Policy 5.1 - Climate change mitigation
2. Policy 5.2 - Minimising carbon dioxide emissions
3. Policy 5.3 - Sustainable design and construction
4. Policy 5.5 - Decentralised energy networks

5 Policy 5.6 - Decentralised energy in development proposals
6 Policy 5.7 - Renewable energy
7 Policy 5.8 - Innovative energy technologies
8 Policy 5.9 - Overheating and cooling
9 Policy 5.10 - Urban greening
10 Policy 5.11 – Green roofs and development site environs
11 Policy 5.12 – Flood risk management
12 Policy 5.13 – Sustainable drainage
13 Policy 5.15 – Water use and supplies

Policy 5.1 requires an overall reduction in London's carbon dioxide emissions of 60% (below 1990 levels) by 2025.

Policy 5.2 of the London Plan requires developments to minimise carbon dioxide emissions in accordance with the energy hierarchy:

1 Be lean: use less energy
2 Be clean: supply energy efficiently
3 Be green: use renewable energy

Policy 5.2 also requires major developments to meet the following targets for carbon dioxide emission reduction in buildings. The targets are expressed in the tables below as minimum improvements over Target Emission Rate (TER) outlined in the National Building Regulations.

Residential Buildings

Year	Improvement on 2010 Building Regulations
2013 - 2016	40 % CO_2 emissions reduction
2016 - 2031	Zero Carbon (from 1st October 2016)

Non-Residential Buildings

Year	Improvement on 2010 Building Regulations
2013 - 2016	40 % CO_2 emissions reduction
2016 - 2019	As per the Building Regulation requirements
2019 - 2031	Zero Carbon

Policy 5.6 requires development proposals to select energy systems in accordance with the following hierarchy:

1 Connection to existing heating or cooling networks

2 Connection to site wide CHP network

3 Development of communal heating and cooling networks.

Policy 5.7 requires major developments to provide a reduction in expected carbon dioxide emissions through the use of on-site renewable energy generation where feasible.

In April 2014 the GLA published the revised Sustainable Design and Construction SPG and Energy Planning Guidance which provides direction on how the energy targets need to be assessed and met over new Part L 2013 which came into force on the 6th of April 2014.

As outlined in the Sustainable, Design and Construction SPG, from the 6th April 2014, the Mayor requires a 35% carbon reduction target beyond Part L 2013 of the Building Regulations, which is deemed to be broadly equivalent to the 40% target beyond Part L 2010 (London Plan Policy 5.2 for 2013-2016). This target applies to all Stage 1 applications received by the Mayor on or after 6th April 2014.

The GLA Guidance on Preparing Energy Assessments published in March 2016 states that the zero carbon target for major residential developments will be implemented for Stage 1 schemes on or after the 1st October 2016.

'Zero carbon' homes are defined as homes forming part of major development applications where the residential element of the application achieves at least a 35% reduction in regulated carbon dioxide emissions beyond Part L 2013 of the Building Regulations on-site. The remaining regulated carbon dioxide emissions, to 100%, are to be off-set through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere

The Mayor's Housing Standard's Viability Assessment sets a carbon off-set price of £60 per tonne of carbon dioxide for a period of 30 years.

For the period 2016 to 2019, London Plan Policy 5.2 set the carbon dioxide emissions target for non-residential development to be in line with Part L of the Building Regulations. This target was intended to align with the then expected improvement to Part L of the Building Regulations. However, the Government announced in July 2015 that it does not intend to proceed with the proposed 2016 increase in on-site energy efficiency standards, but will keep energy efficiency standards under review.

The GLA Guidance on Preparing Energy Assessments states that the GLA will continue to require that non-domestic development seek to achieve a 35% reduction against Part L 2013.

Policy 5.3 requires that the highest standards of sustainable design and construction should be implemented to improve the environmental effects of new developments. Major developments should meet the basic standards outlined in the London Plan Supplementary Planning Guidance and this should be clearly demonstrated. The following sustainable design principles are included in the standards:

- Minimisation of CO_2 emissions;
- Stopping the internal overheating of buildings and the contribution to the urban heat island effect;
- Efficient use of natural resources ;
- Minimisation of all pollution;

- Minimise the creation of waste and augment reuse and recycling;
- Avoid the impacts from natural hazards;
- Ensuring developments are comfortable and secure for users;
- Securing sustainable attainment of materials, using local suppliers where feasible;
- The promotion and protection of biodiversity and green infrastructure.

Policy 5.5 states that the Mayor expects 25% of the heat and power used in London to be generated through the use of localised decentralised energy systems by 2025. The Mayor will prioritise the development of decentralised heating and cooling networks at the development and area wide levels; including larger scale heat transmission networks.

Policy 5.6 sets the hierarchy that should be followed when analysing the feasibility of CHP systems and when identifying any opportunities to extend the system beyond the site boundary.

Policy 5.7 requires that major developments should provide a certain level of reduced CO_2 emissions through the use of on-site renewable energy generation.

Policy 5.8 seeks to support and encourage the more widespread use of innovative technologies to reduce carbon dioxide emissions.

Policy 5.9 aims to reduce the reliance of buildings on air conditioning systems, reduce the urban heat island effect and potential overheating.

Policy 5.10 supports urban greening and green infrastructure as methods of mitigating and adaptation to the effects of climate change.

Policy 5.11 requires that all major development proposals should seek to incorporate planting in roofs, walls and on site, where feasible.

Policy 5.12 requires that new developments must comply with the regulations on flood risk assessment and management. The development must also pass the exceptions test addressing flood resilient design and emergency planning requirements.

Policy 5.13 requires that unless impractical or impossible, developments should use sustainable urban drainage systems (SUDS). They should also aim to achieve green field run-off rates and ensure run-off is managed as close to source as possible.

Policy 5.15 requires that the building should not use more than 105 litres of water per day per person. This is to be through the minimisation of mains water usage in construction and incorporating water saving methods in to the development.

2.3 Camden Planning Policy

The site falls within the London Borough of Camden therefore the development should also comply with the local planning policies. These are set out in the Camden Core Strategy 2010 and Development Plan Policies 2010. The local planning policy requirements related to the development are summarised in the following sections:

2.3.1 Camden Local Plan

The Local Development Framework document is the Core Strategy and the key policies relating to sustainability are identified below.

Policy CS11 - Promoting Sustainable and Efficient Travel

Promoting sustainable travel

In order to support Camden's growth and to promote walking, cycling and public transport, the Council will:

- improve public spaces and pedestrian links across the borough, including by focusing public realm investment in Camden's town centres and the Central London area, and extending the 'Legible London' scheme;
- continue to improve facilities for cyclists, including increasing the availability of cycle parking, helping to deliver the London Cycle Hire Scheme, and enhancing cycle links;
- work with Transport for London to improve the bus network and deliver related infrastructure, and support proposals to improve services and capacity on the tube, London Overground and Thameslink.

Making private transport more sustainable

As part of its approach to minimising congestion and addressing the environmental impacts of travel, the Council will:

- expand the availability of car clubs and pool cars as an alternative to the private car;
- minimise provision for private parking in new developments, in particular through:
  - car free developments in the borough's most accessible locations and
  - car capped developments;
- restrict new public parking and promote the re-use of existing car parks, where appropriate;
- promote the use of low emission vehicles, including through the provision of electric charging points; and
- ensure that growth and development has regard to Camden's road hierarchy and does not cause harm to the management of the road network.

Promoting the sustainable movement of freight

The Council will seek to reduce freight movement by road; encourage the movement of goods by canal, rail and bicycle; and minimise the impact of freight movement on local amenity, traffic and the environment.

Policy CS13 - 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 development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

- ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;

- promoting the efficient use of land and buildings;
- minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing in order, all of the elements of the following energy hierarchy:
  - ensuring developments use less energy,
  - making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;
  - generating renewable energy on-site; and
- 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:

- 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;
  - existing or approved combined heat and power/local energy networks and other locations where land ownership would facilitate their implementation.
- protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road);

Water and surface water flooding

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

- protecting our existing drinking water and foul water infrastructure;
- making sure development incorporates efficient water and foul water infrastructure;
- requiring development to avoid harm to the water environment, water quality or drainage systems and prevent/mitigate 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.

Policy CS15 - Protecting and improving our parks and open spaces and encouraging biodiversity

The Council will protect and improve sites of nature conservation and biodiversity, in particular habitats and biodiversity identified in the Camden and London Biodiversity Plans in the borough by:

- designating existing nature conservation sites;
- protecting other green areas with nature conservation value, including gardens, where possible;
- seeking to improve opportunities to experience nature, in particular in South and West Hampstead, Kentish Town and central London, where such opportunities are lacking;

- expecting the provision of new or enhanced habitat, where possible, including through biodiverse green or brown roofs and green walls;
- identifying habitat corridors and securing biodiversity improvements along gaps in habitat corridors;
- protecting trees and promoting the provision of new trees and vegetation, including additional street trees.

Policy CS16 - Improving Camden's health and well-being

The Council will seek to improve health and well-being in Camden by:

- recognising the impact of poor air quality on health and implement Camden's Air Quality Action Plan which aims to reduce air pollution levels.

Policy CS17 - Making Camden a safer place

The Council will seek to improve health and well-being in Camden by:

- encouraging appropriate security and community safety measures in buildings, spaces and the transport system;
- requiring developments to demonstrate that they have incorporated design principles which contribute to community safety and security, particularly in areas with relatively high levels of crime, in particular Camden Town, King's Cross, Bloomsbury, Covent Garden and Kilburn; and
- promoting safer streets and public areas.

Policy CS18 - Dealing with our waste and encouraging recycling

The Council will seek to improve health and well-being in Camden by:

- aiming to reduce the amount of waste produced in the borough and increase recycling and the re-use of materials to meet our targets of 40% of household waste recycled by 2010, 45% by 2015 and 50% by 2020;
- making sure that developments include facilities for the storage and collection of waste and recycling;
- dealing with North London's waste by working with our partner boroughs in the North London Waste Authority to produce a North London Waste Plan, which will ensure that facilities are provided to meet the amount of waste allocated to the area in the London Plan; and
- safeguarding Camden's existing waste site at Regis Road.

2.3.2 Development Policies

Policy DP16 – The transport implications of development

The Council will seek to ensure that development is properly integrated with the transport network and is supported by adequate walking, cycling and public transport links. The following aspects should be assessed and addressed:

- movements to, from and within the site, including links to existing transport networks.
- additional transport capacity off-site (such as improved infrastructure and services) where existing or committed capacity cannot meet the additional need generated by the

development. Where appropriate, the Council will expect proposals to provide information to indicate the likely impacts of the development and the steps that will be taken to mitigate those impacts, for example using transport assessments and travel plans.

Policy DP17 – Walking, cycling and public transport

The Council will promote walking, cycling and public transport use. Development should make suitable provision for pedestrians, cyclists and public transport and, where appropriate, will also be required to provide for interchanging between different modes of transport. Provision may include:

- convenient, safe and well-signalled routes including footways and cycleways designed to appropriate widths;
- other features associated with pedestrian and cycling access to the development, where needed, for example seating for pedestrians, signage, high quality cycle parking, workplace showers and lockers;
- safe road crossings where needed.

Policy DP18 – Parking standards and limiting the availability of car parking

The Council will seek to ensure that developments provide the minimum necessary car parking provision. The Council will expect development to be car free in the Central London Area, the town centres of Camden Town, Finchley Road/Swiss Cottage, Kentish Town, Kilburn High Road and West Hampstead, and other areas within Controlled Parking Zones that are easily accessible by public transport.

Development should comply with the Council's parking standards. Where the Council accepts the need for car parking provision, development should not exceed the maximum standard for the area in which it is located (excluding spaces designated for disabled people). Developments in areas of on-street parking stress should be 'car capped'.

For car free and car capped developments, the Council will:

- limit on-site car parking to:
  - spaces designated for disabled people,
  - any operational or servicing needs, and
  - spaces designated for the occupiers of development specified as car capped;
- not issue on-street parking permits; and
- use a legal agreement to ensure that future occupants are aware they are not entitled to on-street parking permits.

Developments will also be expected to meet the Council's minimum standards for cycle parking.

The Council will:

- strongly encourage contributions to car clubs and pool car schemes in place of private parking in new developments across the borough; and
- seek the provision of electric charging points as part of any car parking provision.

Policy DP20 – Movement of goods and materials

In order to minimise the movement of goods and materials by road the Council will:

- expect development that would generate significant movement of goods or materials both during construction and in operation to minimise the movement of goods and materials by road, and consider the use of more sustainable alternatives such as rail and canal links;
- promote the development and use of freight consolidation facilities and other initiatives with potential to reduce the impact of goods vehicles, and encourage the use of cycle courier services for local deliveries; and
- seek to promote and protect facilities for the movement of goods by rail and water, including facilities for transfer between road, rail and canal.

The Council will expect development that would generate significant movement of goods or materials by road, both during construction and in operation, to:

- be located close to the Transport for London Road Network or other Major Roads;
- avoid any additional need for movement of vehicles over 7.5 tonnes in predominantly residential areas;
- accommodate goods vehicles on site; and
- seek opportunities to minimise disruption for local communities through effective management, including through the optimisation of collection and delivery timings and the use of low emission vehicles for deliveries.

Policy DP22 – Promoting sustainable design and construction

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

- demonstrate how sustainable development principles 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 sustainable design and construction by:

- 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 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 Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- summer shading and planting;
- limiting run-off;
- reducing water consumption;
- reducing air pollution; and
- not locating vulnerable uses in basements in flood-prone areas.

Policy DP23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

- incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;
- limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined above and other sustainable urban drainage methods to reduce the risk of flooding;
- reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment as being at risk of surface water flooding are designed to cope with the potential flooding;
- ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and
- encouraging the provision of attractive and efficient water features.

Policy DP24 – Securing high quality design

The Council will require all developments, including alterations and extensions to existing buildings, to be of the highest standard of design and will expect developments to consider:

- character, setting, context and the form and scale of neighbouring buildings;
- the character and proportions of the existing building, where alterations and extensions are proposed;
- the quality of materials to be used;
- the provision of visually interesting frontages at street level;
- the appropriate location for building services equipment;
- existing natural features, such as topography and trees;
- the provision of appropriate hard and soft landscaping including boundary treatments;
- the provision of appropriate amenity space; and
- accessibility.

Policy DP26 – Managing the impact of development on occupiers and neighbours

The Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include:

- visual privacy and overlooking;
- overshadowing and outlook;
- sunlight, daylight and artificial light levels;
- noise and vibration levels;
- odour, fumes and dust;
- microclimate;
- the inclusion of appropriate attenuation measures.

We will also require developments to provide:

- an acceptable standard of accommodation in terms of internal arrangements, dwelling and room sizes and amenity space;
- facilities for the storage, recycling and disposal of waste;
- facilities for bicycle storage; and
- outdoor space for private or communal amenity space, wherever practical.

Policy DP28 - Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed and will not grant planning permission for:

- development likely to generate noise pollution; or
- development sensitive to noise in locations with noise pollution, unless appropriate attenuation measures are provided.

Development that exceeds Camden's Noise and Vibration Thresholds will not be permitted.

The Council will only grant permission for plant or machinery if it can be operated without causing harm to amenity and does not exceed our noise thresholds.

The Council will seek to minimise the impact on local amenity from the demolition and construction phases of development. Where these phases are likely to cause harm, conditions and planning obligations may be used to minimise the impact.

Policy DP31 – Provision of, and improvements to, open space and outdoor sport and recreation facilities

To ensure the quantity and quality of open space and outdoor sport and recreation facilities in Camden are increased and deficiencies and under provision are not made worse, the Council will only grant planning permission for development that is likely to lead to an increased use of public open space where an appropriate contribution to the supply of open space is made. Priority will be given to the provision of publicly accessible open space.

Policy DP32 – Air quality and Camden's Clear Zone

The Council will require air quality assessments where development could potentially cause significant harm to air quality. Mitigation measures will be expected in developments that are located in areas of poor air quality.

The Council will also only grant planning permission for development in the Clear Zone region that significantly increases travel demand where it considers that appropriate measures to minimise the transport impact of development are incorporated. We will use planning conditions and legal agreements to secure Clear Zone measures to avoid, remedy or mitigate the impacts of development schemes in the Central London Area.

3 Sustainability Assessment Method

3.1 Residential

Following the Deregulation Act 2015 residential units are no longer required to demonstrate compliance against the Code for Sustainable Homes.

This Sustainability Statement describes the proposed sustainability measures which are proposed for the development to achieve high environmental standards and meet the sustainability planning policies.

3.2 Non-residential

The design objective for the non-residential units is to achieve BREEAM Excellent in line with policy. The non-residential units will be designed and built as non-fitted flexible B1 floor space and will be assessed as shell only builds.

Under BREEAM New Construction 2014, this is defined as works that cover the fabric, sub and superstructure of the building including external walls, windows, doors (external) and floors.

BREEAM assesses the sustainability rating of new non-residential development against 10 categories of sustainable design including:

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

Each category consists of a number of issues, and each issue seeks to mitigate the impact of a new build element of the building against performance targets and assessment criteria. BREEAM uses a scale of 'Pass', 'Good', 'Very Good', 'Excellent' and 'Outstanding' to assess the overall level of the environmental performance.

BREEAM Level	% Points Required
Outstanding	≥ 85
Excellent	≥ 70
Very Good'	≥ 55

BREEAM Level	% Points Required
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

At least 70 BREEAM points will need to be achieved through sustainable design to achieve a BREEAM Excellent rating. The BREEAM points will need to be achieved by accomplishing mandatory standards and tradable credits.

Further credits are available on a tradable basis from other categories so that the developer may choose how to add performance credits to achieve the rating for which they are aiming.

Tenants of the non-residential units are currently unknown. Therefore, the initial design of the units has been developed to appeal to a wide range of prospective tenants taking into account practicality and viability of the delivery.

The BREEAM pre-assessment appended to this document demonstrates that the non-residential units can potentially achieve a BREEAM Excellent rating. It should be noted that this pre-assessment has been undertaken early in the design process and is therefore subject to change. It is also important to note that the threshold for BREEAM Excellent can be achieved by attaining other credits within the BREEAM scheme, and not achieving some of those allocated in the pre-assessment. A copy of the pre-assessment is provided in Appendix A.

4 Sustainability Measures and Strategy

4.1 Energy

An Energy Statement by Low Energy Consultancy (LEC) for this development has been produced which describes the design and technology options appraised and proposes the preferred energy strategy option. The energy strategy follows the London Plan Energy Hierarchy: Be Lean, Be Clean and Be Green principles. The overriding objective is to maximise the reductions in total CO_2 emissions through the application of the energy hierarchy with a cost-effective and technically appropriate approach and to minimise the emission of other pollutants.

The development will significantly reduce the regulated CO_2 emissions by incorporating a range of passive design and energy efficiency measures, including improved building fabric standards beyond the requirements of building regulations and energy efficient mechanical and electrical plants. These measures will enable the proposed development to exceed Part L 2013 Target Emission Rates (TER) and Target Fabric Energy Efficiency (TFEE) minimum standards through energy efficiency measures alone.

The energy assessment shows that by implementing the energy efficient design, incorporating enhanced building fabric standards and using efficient energy systems, the regulated CO_2 emissions can be reduced by circa 3.07 tCO_2 per annum for the entire development, which equates to circa 3.3% reduction in regulated CO_2 emissions over the baseline.

The London Plan Policy 5.6 and Camden Core Strategy Policy CS13 encourage the utilisation of decentralised energy networks, where appropriate. An investigation using the London Heat Map has been carried out to identify existing and planned district heating networks in the vicinity of the site. According to the London Heat Map, the site is not located within a district heating opportunity area and there are no existing or potential district heating networks in close proximity to the site.

The development falls on the south perimeter of the Kentish Town decentralised energy cluster area which holds potential for the delivery of a decentralised energy network.

This means that district heating or community heating schemes may potentially be developed around the site and there may be a possibility to connect the development to a wider district heating or community heating scheme in the future. Time scales and/or details for any potential heat networks are currently unknown.

Given the lack of nearby district heating or community heating infrastructure to connect to at present or in the near future, an on-site energy supply option will be implemented.

After reduction of the energy demand, the strategy proposes implementation of an on-site gas-fired Combined Heat and Power (CHP) engine and efficient gas-fired boilers connected to a site-wide district heating network (DHN). The DHN will supply hot water and space heating for the entire development. An on-site district heating system will provide the opportunity for the proposed development to be 'future proofed' to make the best use of efficient energy generation, with current and future technologies.

The energy assessment shows that by use of the proposed site-wide heating network with CHP, it is possible to achieve a reduction of CO_2 emissions of approximately 24.91 tCO_2 per annum for the entire development. This is equivalent to a reduction in the regulated CO_2 emissions from the energy efficient building of circa 27.8%.

The London Plan Policy 5.6 and Camden Core Strategy Policy CS13 encourage reductions in expected CO_2 emissions through the use of on-site renewable energy generation, where feasible. To comply with the policies, it is proposed to provide Photovoltaics (PV) for residential and the non-residential parts of the development. The renewable energy provided by these systems can significantly reduce the regulated CO_2 emissions of the site. The renewable energy systems can achieve a CO_2 reduction of circa 4.66 tCO_2 per annum for the entire development. This is equivalent to a reduction in the regulated CO_2 emissions of circa 7.2%.

The Energy Statement demonstrates that the proposed energy strategy can achieve regulated CO_2 savings of circa 32.64 tCO_2 which is equivalent to circa 35.2% reduction when compared to the regulated CO_2 baseline and circa 16.1% when compared with the regulated and unregulated CO_2 baseline. This demonstrates that the proposed energy strategy can meet the London Plan CO_2 reduction target. The remaining residential regulated CO_2 emissions up to 100% will be offset via cash contributions.

4.2 Water

There are several different measures Fairview will incorporate in the design of the development to reduce water consumption on both an individual dwelling and site-wide scale including a reduction in the use of water in homes, Sustainable Urban Drainage Systems and the appropriate metering of water usage to the 'shell only' non-domestic units.

In response to the London Plan Policy 5.15, all residential units will be provided with water efficient fixtures and fittings to reduce water consumption.

Residential dwellings will be designed to reduce their water consumption to 105 litres of water per person per day, which Fairview have consistently achieved on previous sites. Potable water reduction measures such as flow restrictors to taps and showers and dual flush toilets will be provided to reduce water consumption in line with the target. These measures will help to place less of a burden on the fresh water infrastructure and reduce water bills for the homeowners.

To ensure water consumption can be monitored and managed by the future occupants, a water meter will be provided on the mains water supply to the shell only non-residential units. A pulsed output will be provided to enable connection of the meter to a Building Management System (where applicable).

A water leak detection system is also proposed on the buildings mains water supply to reduce the risks of water leaks and ensure good water conservation.

4.3 Materials

The energy that has been used during manufacture, processing and the transportation of the materials to site, contributes to embodied carbon emissions. These emissions shall be minimised by the selection of materials for walls, floors and windows that are characterised by reduced environmental and life cycle impacts.

Preference will be given to the use of local materials and suppliers where feasible to reduce the transport distances and to support the local economy.

4.4 Flood Risk and Surface Water Management

The London Plan Policy 5.12 and Camden Development Policy DP23 require the minimisation of flood risk and reduction of surface water flow from the site.

4.4.1 Flood Risk

The site is classified as Flood Zone 1 and therefore will not be constrained by fluvial flooding issues. For the BREEAM assessment a Flood Risk Assessment will be carried out at later stage of the project.

4.4.2 Sustainable Drainage Systems

The surface water drainage strategy has been prepared by Infrastructure Design Limited based on the proposed design.

The existing site is currently 100% made ground and impermeable surfaces.

The proposed development involves complete re-development of the current site to create a new residential and mix use buildings surrounded by a green space area and planted trees. These areas will contain a mixture of features that, in comparison to the current impermeable tarmac, will slow the site runoff by intercepting its flow pathways contributing to part of the overall Sustainable Drainage System (SuDS). The proposed drainage strategy will use a series of SuDS techniques including green roofs, permeable paving and crate based attenuation with a flow control at the outfall.

The drainage strategy will use SuDS measures and attenuation will be provided to mitigate runoff for all storm events up to and including the peak 1 in 100 year plus allowance for the potential effects of climate change through the use of green roofs and cellular storage.

Any potentially contaminated runoff will benefit from SuDS treatment prior to discharge into the ground or controlled waters. All surface runoff from these potentially contaminated catchment areas will benefit from a treatment stage.

4.5 Waste

4.5.1 Waste Storage and Recycling Facilities

Camden Core Strategy Policy CS18 and Development Policy DP26 detail the requirements related to waste and recycling. To comply with the requirements, adequate communal waste and recycling spaces will be provided in line with Camden Council's requirements.

4.5.2 Waste Minimisation

Careful consideration will be given to the sustainability of construction materials and the minimisation of waste during the construction phase of the project. Waste will be minimised on site through a variety of design and site measures. The management of construction waste should be carried out in accordance with the Waste (England and Wales) Regulations 2011.

4.5.3 Site Waste Management Plan

A Site Waste Management Plan (SWMP) will be prepared for the development which will provide guidance on the sustainable approach to waste management. Although revoked in December 2013, a SWMP is an important tool to help improve the environmental performance, meet regulatory controls and reduce rising costs of disposing of waste.

The Site Waste Management Plan will seek to improve efficiency and profitability by encouraging reuse, recycling and the recovery of waste. By keeping an audit trail of the waste produced and removed for site

ensures it is taken to a licenced facility, while complying with the Duty of Care Regulations to ensure waste produced is handled safely.

4.6 Pollution

4.6.1 Air Quality

Camden Core Strategy Policy CS16 and Development Policy DP32 detail the requirements related to air quality. To comply with the requirements, an Air Quality Assessment (AQA) has been carried out by MLM Consulting Engineers Limited and an AQA Report has been produced. The report includes a number of mitigation measures to minimise air quality impacts and states that the effective implementation of appropriate mitigation measures outlined below, it is considered that air quality should not present a constraint to the granting of planning permission for the proposed development on this occasion.

4.6.1.1 Construction

To minimise air quality impacts during construction a number of best practice mitigation measures will be implemented by the contractor.

Particle generation from construction and demolition activities can be substantially reduced through carefully selected mitigation techniques and effective management.

Pre-project planning, implementation and on-site management issues are essential for effective dust control. Therefore, before the start of the project, it is suggested to identify which construction activities are likely to generate dust and to draw up action plans to minimise emissions to the atmosphere.

Dust emissions from the construction process will mainly be the sum of a large number of small activities. Therefore, attention to detail is a critical feature of effective management of the total site emissions.

The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance (SPG) provides extensive coverage on the possible dust and emissions control measures. Stakeholder engagement is important, such that local sensitive receptors are notified and consulted properly before any work commence. Site layout should be carefully planned, ensuring dust generating activities and the associated machineries are located away from receptors as far as possible. Green infrastructure is also recommended to control the dispersion of dust, and at the same time improve the local environment.

In terms of mobile vehicles associated with the demolition and construction activities, any vehicle accessing the site during the construction phase should comply with the Low Emission Zone standards as a minimum requirement. Engine idling should be avoided through careful site vehicles management.

A qualitative assessment on the construction phase activities has also been carried out. The risk of the different activities towards dust soiling ranges from ‘Low to Medium’, and that for human health impact ranges from ‘Negligible to Low’. Following implementation of the appropriate mitigation measures as outlined in the report, the impact of emissions during construction of the proposed development would be ‘not significant’.

4.6.1.2 Low NOx Emissions

Low NOx boiler and CHP plant have been included within the design proposals to minimise site generated emissions. The emissions from the CHP and boiler are not predicted to have any significant adverse impact

on the receptors within the development, as well the existing receptors nearby. It is not necessary to adjust the current proposed stack height (1.0m above roof on Block A), or increase the flue gas exit velocity.

An Air Quality Neutral Assessment was compiled to support the planning application for the proposed development. The assessment indicates that the emissions for the proposed heating plant meet the Air Quality Neutral benchmark.

4.6.1.3 Sustainable Transport Measures

The development is well served in terms of the availability and accessibility. All the measures outlined in the Transport Assessment and Transport Plan will reduce reliance on the private motor car and encourage walking, public transport, cycling and other measures to further reduce air quality impacts.

The total NOx and PM10 emissions from the road traffic vehicles meet the Air Quality Neutral Benchmark for the residential element of the development, but not the commercial element. Current guidance recommends that in circumstances where the benchmark is exceeded, mitigation measures to reduce emissions may be applied on-site or off-site. Where this is not practical or desirable, some form of pollutant offsetting could be applied.

4.6.2 Noise and Vibration

Camden Development Policy DP28 detail the requirements related to noise and vibration. A Noise Impact Assessment (NIA) has been carried out by Grant Acoustics and NIA report has been produced. The report includes a number of mitigation measures that are required to meet the Camden's Noise and Vibration criteria.

4.6.2.1 Noise Impact

Internal noise levels have been predicted to typical plots / facades across the development based on the illustrative site layout, room dimensions and glazing areas.

Mitigation will consist of enhanced glazing and mechanical ventilation for habitable rooms facing the railway. Facades facing towards the road will be provided with adequate standard glazing and a good quality trickle vent in habitable rooms.

Sound insulation will be provided on all separating walls and floors between habitable spaces to meet Building Regulations Part E requirements. A testing regime will be provided by the appointed acoustic consultants at detailed design stage which will then be approved by Building Control.

Internal noise levels to proposed workspace at ground floor level of the development has been assessed. The noise levels are predicted to fall within the NR35 noise criterion with enhanced glazing and no ventilation outlets facing or side on to the rail line.

The proposed development is to have some workspace and plant associated with it on the ground floor. Noise limiting criteria should not exceed the cumulative plant noise levels at the closest. The plant should be selected to insure that the noise criteria is met.

4.6.2.2 Vibration

The effect of vibration from the railway line has been measured and assessed against relevant criteria. It is shown that there is a low probability of adverse comment in terms of the impact of vibration on human perception. In terms of the possibility of cosmetic damage to buildings, the assessment shows that the Peak

Particle Velocity (PPV) is less than the limits at which cosmetic damage can occur to buildings. No mitigation is therefore required for vibration. It should be noted that vibration measurements were undertaken within one of the commercial units closest to the railway line due to security reasons.

4.6.3 Lighting

High efficiency internal and external lighting will be used throughout the development in conjunction with a lighting control system incorporating daylight and presence detection as appropriate. This will ensure that lights are switched off when not required to minimise light pollution.

4.7 Health and Wellbeing

4.7.1 Daylighting

To promote sustainable design, the mass and form of the principal building elements have been designed to optimise the amount of direct sunlight, which will help to minimise the use of energy-intensive artificial lighting.

The dwellings benefit from adequately sized windows to the lounge/kitchen and dining areas. This results in good levels of daylighting, improving the health and wellbeing within the units as well as the added benefit of reducing the CO_2 emissions and energy bills for the dwellings.

4.7.2 Private Open Space

According to Camden Core Strategy Policy CS15 and Development Policy DP26, appropriate open space should be provided as part of the development. Suitable open space for residents has therefore been provided by means of private and communal amenity areas including roof top amenity space.

The development proposes landscaped roofs and courtyards which have been designed to provide a tranquil environment. In addition, dwellings have adequately sized balconies which provide private space to the residents.

Outdoor private and semi-private open areas provide residents with valuable external space which has been shown to have significant effect on quality of life.

4.8 Management

4.8.1 Considerate Construction Scheme

The Considerate Constructors Scheme is the national initiative set up by the construction industry to improve its image. Sites and companies that register with the scheme are monitored against five-point code of considerate practice, designed to encourage performance. The Code consists of the five sections; Enhancing the appearance, Respecting the community, Protecting the environment, Securing everyone's safety and Caring for the workforce.

The site is expected to be registered under the Considerate Constructors Scheme prior to the commencement of construction. It is anticipated that the development will target Best Practice standards which equates to a score of between 25 and 34 in accordance with the requirements of the CCS Code of Considerate Practice.

4.8.2 Construction Site Impacts

Construction has the potential for major pollution, mostly through pollution to air (through dust emission) and to water via water courses and ground water. To minimise construction site impacts the contractor will adopt best practice policies in respect of air (dust) pollution and water (ground and surface) pollution occurring.

In addition, in order to minimise the potential impact of construction on local residents and businesses surrounding the application site, a number of mitigating measures would be implemented and enforced throughout the duration of the construction period.

4.8.3 Security

4.8.3.1 Security Features

Significant importance has been given to the security of the prospective occupants of the building. The scheme will therefore provide a secure development with a new residential population that provides natural surveillance to surrounding streets.

The scheme will provide good quality lighting at all entrances to provide convenient and secure access to the development.

The refuse stores and cycle stores will be provided with a good level of internal and external lighting to encourage responsible use and provide safe access for residents.

4.8.3.2 Part Q Building Regulations

The proposed development will comply with Part Q Building Regulations whereby all doors, ground floor and easily accessible windows will be compliant with PAS 24:2012. All entrance doors will be fitted with controlled access for residents.

4.9 Ecology and Biodiversity

Camden Core Strategy Policy CS15 requires new developments to consider ecology and biodiversity aspects of the development site. An Ecological Appraisal has been carried by Aspect Ecology based on the results of a desktop study, Phase 1 habitat survey and a number of detailed protected species surveys.

The proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered highly unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the potential exists to provide a number of net gains in biodiversity as part of the proposals.

4.9.1 Land of Low Ecological Value

The available information confirms that no statutory or non-statutory nature conservation designations are present within or adjacent to the site. Subject to the implementation of a number of standard mitigation measures in respect of pollution prevention, none of the designations within the surrounding area are likely to be adversely affected by the proposals.

The Phase 1 habitat survey has established that the site is dominated by habitats / features of negligible ecological value and the proposals have sought to safeguard off-site features of elevated relative value. New habitat creation has also been proposed within the landscape proposals.

4.9.2 Mitigation Measures

Based on the habitats, ecological features and associated fauna identified within / adjacent to the site, it is recommended that the following mitigation measures are implemented under the proposals.

Pollution Prevention

In order to safeguard against any potential run-off or pollution events during construction, best management practice will be followed in accordance with the advice formerly issued by the Environment Agency in its Pollution Prevention Guidelines or relevant updated documents. This will essentially reduce potential pollution effects on the London Canals SINC to nil, minimising any harm to wildlife associated with the canal, and any connecting watercourses.

Tree Protection

All off-site trees adjacent to the site will be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of off-site trees.

Lighting

The lighting scheme for the proposals will be sensitively designed to avoid illuminating off-site trees to the south and south-east and the off-site railway to the west. Should overnight lighting be required adjacent to these areas during construction or operational phases, it should be directed away from these features and remain lower than 1 lux.

Timing of Works

To avoid a potential offence under the Wildlife & Countryside Act, no clearance of suitable vegetation or removal of the onsite building should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5 m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

Treatment of Contaminated Spoil and elimination of invasive species from site.

Where any excavations or soil disturbance involve land within 7m of off-site Japanese Knotweed, the spoil should be considered to be potentially contaminated by rhizomes of this highly invasive species. As such, it should be treated as contaminated waste, unless otherwise advised by a specialist Japanese Knotweed contractor.

Other species identified as invasive by the LISI are present on site, including Buddleia. It is recommended that this species be eradicated from the site, albeit recolonisation from the adjacent railway line is likely to occur in time.

4.9.3 Ecological Enhancements

The NPPF encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP). The recommendations and enhancements summarised below are considered appropriate given the context of the site and the scale and nature of the proposals. Through implementation of the following ecological enhancements, the opportunity exists for the proposals to deliver a number of net gains for biodiversity at the site.

New Planting

It is recommended that an area of green roof be provided, planted with a range of low growing, native herbs and grasses. Elsewhere, it is recommended that new planting within the site include a range of locally native species of UK provenance. Suitable species for inclusion within the planting could include Oak Quercus robur, Bird Cherry Prunus padus, and Hazel Corylus avellana, whilst native shrub planting species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Yew Taxus baccata and Rose Rosa sp.

Bat Boxes

It is recommended that one Schwegler 1FR and two pairs of adjacent Schwegler 2FR bat tubes be incorporated within the architectural design of the proposed buildings. The provision of these bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle, a national Priority Species. So as to maximise their potential use, the bat boxes should ideally be erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing a south-east, south or south-westerly direction. The precise locations of boxes / roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Bird Boxes

Two bird nesting boxes, such as Swift boxes or, where architectural design allows, Swift brick houses) are to be incorporated within/on the proposed building, thereby increasing nesting opportunities for birds at the site. Ideally, the bird boxes will have greater potential for use if sited as high up as possible on a broadly north-facing aspect. The precise number and locations of boxes should be determined by a competent ecologist, postplanning once the relevant final development design details have been approved.

4.10 Transport

Camden Core Strategy Policy CS11 as well as Development Policies DP16, DP17, DP18 and DP20 detail transport requirements related to new developments.

A Transport Statement and a Travel Plan have been prepared for the site by Vectos. These documents show that the proposed change of use is acceptable in transport and traffic terms.

4.10.1 Transport Assessment

The Transport Statement states that the site has a high level of public transport accessibility (PTAL 6a), particularly due to its proximity to Camden Town Underground Station and numerous bus services which operate locally with a good frequency. A review of the local pedestrian network, which has been undertaken

for routes between the site and key local destinations, demonstrates that the local pedestrian environment is of a high standard.

Long-stay and short-stay cycle parking spaces will be provided in accordance with parking standards provided within the London Plan.

Based on the potential traffic generation of the existing and proposed uses, the proposed development would result in a negligible increase in total vehicle trips during both the AM and PM peaks and, as a result, it is not considered necessary to undertake any further assessment of the development impact on the local highway network.

4.10.2 Travel Plan

A detailed Travel Plan has been prepared which outlines the specific measures to be implemented to enable and encourage sustainable travel choices among residents.

The measures outlined below have been deemed suitable for the situation at the site, however, this list is not exhaustive other potential initiatives could be investigated.

Information Provision

A Sustainable Travel Notice Board will outline the sustainable options for travelling to and from the site. This will be provided in a prominent place within the proposed development.

Travel Information Packs (Welcome Packs) will be provided to residents. This will include information such as a map of the local area highlighting walking and cycling routes, and details of the public transport options in the local area.

Encouraging Cycling

Local cycling routes and information on safe cycling will be provided to all residents as part of their welcome pack. Future residents will also be made aware of the local Santander Cycling Facilities.

Encouraging Walking

Residents will be provided with information and advice concerning safe pedestrian routes to the site, particularly from areas within walking distance. The financial, health and fitness benefits of walking will be promoted.

Encouraging Public Transport

Up-to-date details of bus and rail services, including route information and service frequencies, will also be provided to residents within the welcome packs.

National Rail and TfL Journey Planner websites and enquiry phone numbers will be advertised through all relevant means. Contact details for local taxi operators will be available on the Sustainable Travel Notice Board, and within welcome packs.

Taxis have an important role in providing for resident trips, in particular when other modes of transport may not be available. Details of local taxi companies will be provided.

Car Sharing

Car sharing represents a relatively convenient alternative form of travel and significant potential exists to reduce the number of vehicle trips by residents by implementing and publicising a formal car share scheme.

Car Clubs

Discussions have taken place with both Enterprise Car Club and Zipcar to discuss whether either Car Club operator would be interested in offering memberships to future residents and employees. Both operators have provided proposals, which are inclusive of varying levels of discounted memberships as well as driving credits for future occupiers.

Disabled Access

The external landscaping levels have been designed in such a way as to provide for level access across the site and flush entry across the threshold into each building, thereby negating the need for ramps, and so ensure access is suitable for disabled users.

Furthermore, there are footways of sufficient width along both sides of all local roads with dropped kerbs provided at all crossing points within the immediate vicinity of the site.

Eight residential disabled parking spaces will be provided as part of the development in line with local parking standards.

All London bus routes, which are operated by TfL, are wheelchair accessible with automatic ramps and designated wheelchair spaces.

5 Summary and Conclusions

The proposed sustainability approach is developed to meet the targets and standards set by the relevant planning policies. The proposed development has incorporated a number of key sustainability measures and features which are summarised in the table below:

Issue	Proposed Key Sustainability Measures
Energy	• Residential: Good levels of insulation and energy efficiency measures, connection to an on-site Combined Heat and Power (CHP) system backed up by high efficiency gas boilers and roof mounted PV will be used to achieve the 35% CO_2 reduction target. The remaining residential regulated CO_2 emissions up to 100% will be offset via cash contributions. • Non-residential (shell only): Good levels of insulation, connection to an on-site Combined Heat and Power (CHP) system backed up by high efficiency gas boilers, a highly efficient cooling system and provision of PV panels on the roof have been used to achieve the 35% CO_2 reduction target for modelling purposes.
Water	• All dwellings within the proposed development will be provided with water efficient fixtures and fittings to reduce water consumption below 105 litres per person per day. • A water meter will be provided on the mains water supply to the shell only non-domestic buildings. • A water leak detection system is proposed on the buildings mains water supply to reduce the risks of water leaks and ensure good water conservation.
Materials	• Material will low environmental impact will be used where possible. • Reused and recycled materials will be used where feasible. • Preference will be given to the use of local materials and suppliers where feasible.
Flood Risk and Surface Water Management	• The proposed drainage strategy will use a series of SuDS techniques including green roofs, permeable paving and crate based attenuation with a flow control at the outfall. • The drainage strategy will use SuDS measures and attenuation to mitigate runoff for all storm events up to and including the peak 1 in 100 year plus allowance for the potential effects of climate change through the use of green roofs and cellular storage. • Any potentially contaminated runoff must benefit from SuDS treatment prior to discharge into the ground or controlled waters. All surface runoff from these potentially contaminated catchment areas will benefit from a treatment stage.

Waste	• Dedicated refuse and recycling storage facilities are proposed to accommodate the waste streams associated with the use of residential and non-residential units. • Waste will be minimised on site through a variety of design and site measures. • A Site Waste Management Plan (SWMP) will be prepared for the development which will provide guidance on the sustainable approach to waste management.
Pollution	• Site layout will be carefully planned, ensuring dust generating activities and the associated machineries are located away from receptors as far as possible. • High standard insulating materials are suggested for the proposed development. • Decentralised energy plant will be selected to have low NOx emissions to minimise impact on air quality. • Sustainable travel measures such as cycle storage, encouraging walking, use of public transport and cycling are proposed. • Noise nuisance will be minimised by providing enhanced glazing and mechanical ventilation for habitable rooms facing the railway. • High efficiency internal and external lighting will be used throughout the development in conjunction with a lighting control system incorporating daylight and presence detection as appropriate.
Health and Wellbeing	• The proposed dwellings will be provided with private and/or semi- private open space terraces and gardens. • Sound insulation is expected to be provided on all separating walls and floors between habitable spaces to improve indoor comfort by reducing the likelihood of nuisance noise in line with Part E.
Management	• The site is expected to be registered under Considerate Constructors Scheme and will aim to meet best practice standards. • A number of mitigating measures would be implemented throughout the duration of the construction period to minimise the potential impact of construction on local residents and businesses surrounding the application site. • The design of the scheme has regard to security standards and will comply with Part Q Building Regulations.
Ecology and biodiversity	• An Ecological Appraisal has been carried out and confirms that there is no overriding ecological constraint to the redevelopment of the site. • The existing land can be deemed as ‘land of low ecological value’. • The ecological features of the site will be protected and enhanced where possible. • Ecological measures for pollution prevention, tree protection, and lighting pollution will be incorporated into the design. • Green areas and green roof are incorporated into the design which will help to enhance ecology of the site. • Bat and Bird Boxes will be provided to enhance ecological value of the site.

Transport	• A Transport Assessment Report has been provided which shows that the proposals comply with relevant transport policy and it is considered that sufficient information has been provided to support a positive recommendation for this application to be approved, on transport grounds. • A Travel Plan has been prepared for the site which sets a series of aims and objectives for the development, with the overarching aim defined as the need to encourage sustainable travel by residents of the site. • The development is car free and in close proximity to good transport links and to a wide range of amenities, therefore reducing the need to use a car for travelling. • Cycling, Walking and Use of Public Transport as well as use of car sharing and car clubs will be encouraged.

This Sustainability Statement demonstrates that the proposed development is targeting good standards of design and build-quality. Much attention has been given to reducing the environmental impact throughout the lifetime of the development and not just during occupation.

The BREEAM pre-assessment demonstrates that the non-residential units can potentially achieve BREEAM Excellent rating. It should be noted that this pre-assessment has been undertaken early in the design process and is therefore subject to change. It is also important to note that the threshold for BREEAM Excellent can be achieved by attaining other credits within the BREEAM scheme, and not achieving some of those allocated in the pre-assessment.

In conclusion, this report demonstrates that the proposed development can meet the sustainability planning policy requirements. The design team has carefully considered the site's potential environmental impacts, which will be managed and mitigated in line with the relevant planning policies.

Appendix A – BREEAM Pre-Assessment

BREEAM UK New Construction 2014 Pre-Assessment Estimator

General information

BRE Assessment reference no.	1
Client name	Fairview Ventures Limited
Building end user/occupier	TBC
Assessor name	Sergy Barekyan
Assessor organisation	Low Energy Conultancy Limited

Building details

Building name	Centric Close
Country	England
Building type (main description)	Office
Building type (sub-group)	Office - General office building
Building floor area (GIA) m^2	1139
Building floor area (NIFA) m^2	1139
BREEAM scheme	New Construction
BREEAM version	2014 (SD5076)
BREEAM UK 2014 technical manual issue number	SD5076 Issue 4.0
Project type	New Construction (shell only)
Assessment stage	Pre-Assessment
Location type	London Borough
If applicable, does this industrial building have a heated or cooled operational area?	Option not applicable to building type
Does water heating contribute less than 10% of the buildings total energy consumption?	No
Commercial/industrial refrigeration and storage systems	No
Building user transportation systems (lifts and/or escalators)	No
Laboratory function/area and size category	No laboratory
Laboratory containment level	No laboratory
Fume cupboard(s) and/or other containment devices	No
Unregulated water uses present? (e.g. vehicle wash system, irrigation)	No
If applicable, will this healthcare building house inpatients?	Option not applicable to building type
If applicable, does this industrial building have an office area?	Option not applicable to building type
If applicable, does this building contain areas requiring SAP assessment?	Option not applicable to building type
If SAP used, what proportion of the building's total floor area (GIA) does it apply to?	Option not applicable to building type

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

Building name	Centric Close
Building score (%)	70.00%
Building rating	Excellent
Minimum standards level achieved	Excellent level

MANAGEMENT

Man 01 Project brief and design

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	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?	Yes	1	1
Will a sustainability champion (monitoring progress) be assigned?	Yes	1	1

Total BREEAM credits achieved	3
Total contribution to overall building score	2.50%
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	3.33%
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?	Yes	1	1
Expected capital cost of the project (if available)		£/m^2	

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:

Man 03 Responsible construction practices

No. of BREEAM credits available	6	Available contribution to overall score	5.00%
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?	No	1	0
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.)	1	2	1
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?	No	1	0
Will exemplary level criteria be met?			

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	3
Total contribution to overall building score	2.50%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Excellent level

Comments/notes:

Man 04 Commisioning and handover

No. of BREEAM credits available	1	Available contribution to overall score	0.83%
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?			
Will a commissioning manager be appointed?			
Will the building fabric be commissioned?	No	1	0
Will a building user guide be developed prior to handover?			
Will a training schedule be prepared for building occupiers/managers?			

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 05 Aftercare

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 aftercare support be provided to building occupiers?			
Will seasonal commissioning occur over 12months once substantially occupied?			
Will a post occupancy evaluation be carried out 1 year after occupation?			
Will exemplary level criteria be met?			

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A

Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

HEALTH & WELLBEING

Hea 01 Visual Comfort

No. of BREEAM credits available	3	Available contribution to overall score	4.29%
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?			
How many credits will be targeted for the daylighting criteria?	0	1	0
Will the design provide adequate view out for building users?	No	1	0
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	1
Total contribution to overall building score	1.43%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Hea 02 Indoor Air Quality

No. of BREEAM credits available	1	Available contribution to overall score	1.43%
No. of BREEAM innovation credits available	N/A	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?			
Will building be designed to minimise the concentration and recirculation of pollutants in the building?			

Will the relevant products be specified to meet the VOC testing and emission levels required?			
Will formaldehyde and total VOC levels be measured post construction?			
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		Information not available at design stage
Total volatile organic compound (TVOC) concentration		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

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	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will thermal modelling of the design be carried out?			

Key Performance Indicators: Thermal comfort

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

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

Comments/notes:

Hea 05 Acoustic Performance

No. of BREEAM credits available	1	Available contribution to overall score	1.43%
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?	1	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.43%
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	2.86%
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?	No	1	0
Will a suitably qualified security consultant be appointed and security considerations accounted for?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.43%
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	10.88%
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

Ene 01 Calculator

Country of the UK where the building is located	England	Confirm building regulation and version to be used:	England Part L2A 2013

New Construction (shell only)

Building floor area	1139	m2
Notional building heating and cooling energy demand	98.84	MJ/m2yr
Actual building heating and cooling energy demand	54.42	MJ/m2yr
Notional building primary energy consumption		
Actual building primary energy consumption		
Target emission rate (TER)		
Building emission rate (BER)		
Building emission rate improvement over TER		
Heating & cooling demand energy performance ratio (EPR_{ED})	0.998	
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	3.69
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	11
Total contribution to overall building score	9.97%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Ene 02 Energy monitoring

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
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?			
Will a BMS or sub-meters be specified to monitor energy use by tenant/building function areas?			

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 03 External lighting

No. of BREEAM credits available	1	Available contribution to overall score	0.91%
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	0.91%
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	2.72%
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)?	Yes	1	1

KPI - Low and/or zero carbon energy generation

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

Total BREEAM credits achieved	1
Total contribution to overall building score	0.91%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 05 Energy efficient cold storage

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 the refrigeration system be designed, installed & commissioned in accrodance with BREEAM criteria?			
Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions?			

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 06 Energy efficient transportation 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
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?			
Will the relevant energy-efficient features criteria be met?			

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 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

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

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?		

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

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	3	Available contribution to overall score	3.83%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra01 issue assessment)	Business (office/industrial)

Assessment Criteria	Compliant	Credits available	Credits achieved
Indicative public transport accessibility index (AI):	8.00	3	3
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	3
Total contribution to overall building score	3.83%
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	1.28%
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	1.28%
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	2.56%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra03 issue assessment)	Business - (office/Industrial)
How many compliant cycle storage spaces will be provided?	TBC
What cyclist facilities will be provided?	No compliant facilities

Assessment Criteria	Compliant?	Credits available	Credits achieved
Cycle storage spaces	Yes	2	2
Cyclist facilities	Yes		

Total BREEAM credits achieved	2
Total contribution to overall building score	2.56%
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	2.56%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra04 issue)	Business - (office/Industrial)
Building's indicative Accessibility Index (sourced from issue Tra01)	8

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	2.56%
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	1.28%
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?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.28%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

WATER

Wat 01 Water Consumption

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

How do you wish to assess the BREEAM credits to be achieved for this issue?	
Please select the calculation procedure used	

Standard approach data

Water Consumption from building micro-components	

Water demand met via greywater/rainwater sources	
Total net water consumption	
Improvement on baseline performance	

Key Performance Indicator - use of freshwater resource

Total net Water Consumption	
Default building occupancy	

Alternative approach data

Overall microcomponent performance level achieved	

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

Comments/notes:

Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
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?			
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 BREEAM credits achieved	1
Total contribution to overall building score	1.33%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wat 03 Water Leak Detection and Prevention

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
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?	Yes	1	1
Will flow control devices be installed in each sanitary area/facility?			

Total BREEAM credits achieved	1
Total contribution to overall building score	1.33%
Total BREEAM innovation credits achieved	N/A

Minimum standard(s) level	N/A

Comments/notes:

Wat 04 Water Efficient Equipment

No. of BREEAM credits available	1	Available contribution to overall score	1.33%
No. of BREEAM innovation credits available	No	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Has a meaningful reduction in unregulated water demand been achieved?		1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.33%
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	5	Available contribution to overall score	6.73%
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	5
Predicted total Mat01 points achieved	
Number of building elements assessed	
Green Guide exemplary level compliant?	No
Has IMPACT compliant software been used?	No

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	5
Total contribution to overall building score	6.73%
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	1.35%
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	1.35%
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	5.38%
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	36.00%	3	2

Please confirm the route used to assess Mat03	Route 1: Lowest RSCS point score

Total BREEAM credits achieved	3
Total contribution to overall building score	4.04%
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	1.35%
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 insulatio

Total BREEAM credits achieved	1
Total contribution to overall building score	1.35%
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	1.35%
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?	N/A	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	1.35%
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	1.35%
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	5.50%
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:	1	BREEAM Wst01 Innovation credits:	

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 b
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 b
Non-hazardous demolition waste diverted from landfill		Note: At this stage this will be a target b
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 b
Material for recycling		Note: At this stage this will be a target b
Material for energy recovery		Note: At this stage this will be a target b
Hazardous waste to disposal		Note: At this stage this will be a target b

Total BREEAM credits achieved	1
Total contribution to overall building score	1.38%
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	1.38%
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?	

% 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	1.38%
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	1
Will static waste compactor(s) or baler(s) be specified where appropriate?	N/A		
Will vessel(s) for composting suitable organic waste where appropriate?	N/A		

Total BREEAM credits achieved	1
Total contribution to overall building score	1.38%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding 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	1.38%
No. of BREEAM innovation credits available	N/A	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 exemplary level criteria – Responding to adaptation to climate change be met?			

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	1.38%
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	2.60%

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?	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.60%
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	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Ecological value of the land defined using	A Suitably Qualified Ecologist

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	2.60%
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	2.60%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Data sourced for calculating the change in ecological value from	Suitably Qualified Ecologist site survey of plant species

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	2.60%

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	2.60%
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?	Yes	2	1	
Will the suitably qualified ecologist's general recommendations be implemented?	Yes			
What is the targeted/intended improvement in ecological value as a result of enhancement actions?	<6 species (small positive change)			Plant species richr

Total BREEAM credits achieved	1
Total contribution to overall building score	1.30%
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	2.60%
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

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		Credits available	Credits achieved
Refrigerant containing systems installed in the assessed building?			
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?			
Global Warming Potential of the specified refrigerant(s) 10 or less?			
What is the target range Direct Effect Life Cycle CO2eq. emissions for the system?			
Cooling/Heating capacity of the system			
Will a refrigerant leak detection and containment system be specified/installed?			

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:

Pol 02 NO_x Emissions

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

NO_x emission level - space heating	
NO_x emission level - cooling	

NOx emission level - water heating	
Does this building meet BREEAM's definition of a highly insulated building?	
Energy consumption: heating and hot water	

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:

Pol 03 Surface Water Run off

No. of BREEAM credits available	5	Available contribution to overall score	5.00%
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?	Yes	1	1

Total BREEAM credits achieved	5
Total contribution to overall building score	5.00%
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	1.00%
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	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Pol 05 Noise Attenuation

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 there be noise-sensitive areas/buildings within 800m radius of the development?			
Will a noise impact assessment be carried out and, if applicable, noise attenuation measures specified?			

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:

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	N/A	N/A	0
Hea 01 Visual Comfort	No	1	0
Hea 02 Indoor Air Quality	N/A	N/A	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	N/A	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	N/A	N/A	0

Number of 'approved' innovation credits achieved?	

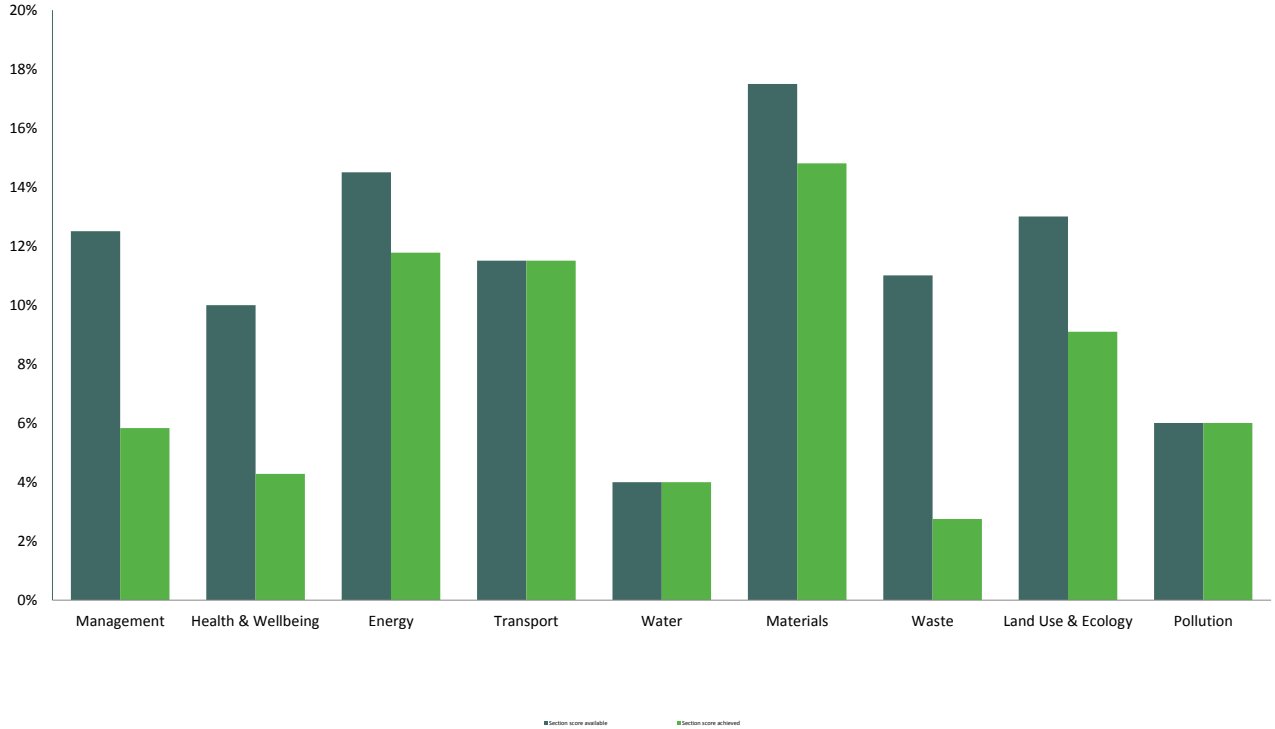
Total BREEAM innovation credits achieved	0
Total contribution to overall building score	0.00%
Minimum standard(s) level	N/A

Comments/notes:

Overall Building Performance

Building name	Centric Close
Indicative BREEAM rating	Excellent
Indicative Total Score	70.0%
Min. standards level achieved	Excellent level

Building Performance by Environment Section



Environmental Section	No. credits available	Indicative no. credits Achieved	% credits achieved	Section Weighting	Indicative Section Score
Management	15	7	46.67%	12.50%	5.83%
Health & Wellbeing	7	3	42.86%	10.00%	4.28%
Energy	16	13	81.25%	14.50%	11.78%
Transport	9	9	100.00%	11.50%	11.50%
Water	3	3	100.00%	4.00%	4.00%
Materials	13	11	84.62%	17.50%	14.80%
Waste	8	2	25.00%	11.00%	2.75%
Land Use & Ecology	10	7	70.00%	13.00%	9.10%
Pollution	6	6	100.00%	6.00%	6.00%
Innovation	10	0	0.00%	N/A	0