ELEMENT SUSTAINABILITY

STEPHENSON HOUSE CAMDEN

SUSTAINABILITY STATEMENT

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June 2017

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Stephenson House, Camden

Client: **Lazari Properties 2 Limited c/o GLP Consulting Engineering Limited**

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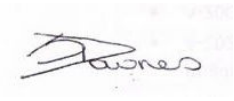
Author		Stacey Downes Sustainability Consultant	5th June 2017
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CONTENTS

1. INTRODUCTION

Element Sustainability has been commissioned by Lazari Properties 2 Limited c/o GLP Consulting Engineering Limited to review the sustainability performance of the proposed development at Stephenson House, Camden.

The purpose of this Statement is to summarise the relevant policy background and requirements of London Borough of Camden (hereafter referred to as the council) and demonstrate the ways in which these policies have been addressed through their proposals, ensuring all practicable measures have been taken in order to deliver a sustainable development at this site.

This statement reviews the sustainable design features of the proposed scheme at the site. The potential BREEAM UK New Construction 2014 rating for the development will also be reviewed. Details of the design attributes, specifications and characteristics of the scheme are appraised in order to demonstrate how the proposals contribute to sustainable development in Camden and seek to mitigate the environmental impacts of the scheme.

2. POLICY REVIEW

This section reviews the planning policy requirements and sustainability targets that are relevant to this scheme.

National Planning Policy

In addition to the local planning policies, the National Planning Policy Framework (NPPF) 2012 is a material consideration. Published on 27th March 2012, it replaces all previous PPSs and PPGs.

The NPPF states that the planning system should play an active role in guiding development to sustainable solutions. There are three dimensions to sustainable development, as stated within the NPPF: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

- An economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;

- A social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

- An environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These roles should not be undertaken in isolation, because they are mutually dependent. Economic growth can secure higher social and environmental standards, and well-designed buildings and places can improve the lives of people and communities. Therefore, to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system.

Pursuing sustainable development requires careful attention to viability and costs in plan-making and decision-taking. To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, enable the development to be deliverable.

At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development - for decision-taking this means approving development proposals that accord with the development plan without delay.

Local Planning Policy

Camden Core Strategy (2010) - Development of new buildings in the London Borough of Camden is guided by the Camden Core Strategy that contains a number of planning policies which promote sustainable construction, as follows:

DP22 – Promoting Sustainable Design and Construction states that the Council will promote and measure sustainable design and construction by expecting non-domestic developments of 500m^2 of floor space or above to achieve 'Excellent' in BREEAM assessments and Code for Sustainable Homes[1].

[1] On the 25th March 2015 the government issued a Written Ministerial Statement setting out the conclusion of the Housing Standards Review. The statement set out a new policy on the application of technical housing standards that applied immediately to all local planning authorities and qualifying bodies. This had a direct effect on the application of existing Code for Sustainable Homes (Code) policies, and the setting of new Code policies. The Government elected to remove the Code and incorporate new additional optional Building Regulations on water and access, and a new national space standard.

CS13 – Tackling Climate Change Through Promoting Higher Environmental Standards states that 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 by:

a) ensuring patterns of land use that minimise car travel by and help support local energy networks;

b) promoting the efficient use of land and buildings; and,

c) minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing all of the elements of the following energy hierarchy.

The Camden Planning Guidance CPG3 - Sustainability document has been prepared to support the policies in the Local Development Framework (LDF). This guidance is consistent with the Core Strategy and Development Policies and forms a Supplementary Planning Document (SPD) which is an additional "material consideration" in planning decisions. It also highlights the Council's requirements and guidelines which support the relevant Local Development Framework (LDF) policies:

- CS13 - Tackling climate change through promoting higher environmental standards;
- DP22 - Promoting sustainable design and construction
- DP23 - Water

In accordance with Development Policy DP22 - Promoting sustainable design and construction, The Camden Planning Guidance CPG3 - Sustainability document encourages developers to achieve the BREEAM standards for new non-domestic buildings presented in Table 1.1.

Table 1.1 - Camden CPG3, Target Sustainability Standards

Time period	Minimum rating	Minimum standard for categories (% of un-weighted credits)
2010-2012	'very good'	Energy 60% Water 60% Materials 40%
2013+	'excellent'	

Code for Sustainable Homes has been withdrawn from Policy, however the Council requires that new residential development submit a Sustainability Statement as part of planning to demonstrate how the development mitigates against the cause of climate change and adapts to climate change.

Emerging Camden Local Plan

Camden's emerging Local Plan will be adopted in late June 2017, where the final Local Plan incorporating all modifications required by the inspector and minor modifications which were consulted on during January 2017 will be published. The emerging Local Plan contains that following relevant policies:

Policy CC1 Climate Change Mitigation require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

Policy CC2 Adapting to Climate Change requires that all development should adopt appropriate climate change adaptation measures such as:

a) The protection of existing green spaces and promoting new appropriate green infrastructure;

b) Not increasing, and wherever possible reducing, surface water run-off through increasing permeable surfaces and use of Sustainable Drainage Systems;

c) Incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate;

d) measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy; and,

e) Non-residential developments of 500 sqm or more shall achieve a BREEAM rating of excellent from 2016 and will encourage zero carbon from 2019.

Any development involving five or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Policy CC3 Water and Flooding requires that development does not increase flood risk and reduces the risk of flooding where possible. The policy requires development to:

a) Incorporate water efficiency measures;

b) Avoid harm to the water environment and improve water quality;

c) Consider the impact of development in areas at risk of flooding (including drainage);

d) Incorporate flood resilient measures in areas prone to flooding;

e) Utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy, unless inappropriate, to achieve a greenfield run-off rate where feasible; and

f) Not locate vulnerable development (such as basement dwellings) in flood-prone areas.

Policy CC4 Air Quality requires that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

Policy CC5 Waste aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031. The policy also requires that developments include facilities for the storage and collection of waste and recycling.

The London Plan (March 2016) provides a framework for achieving sustainable development within London. The plan contains the following relevant policies:

Policy 5.2 Minimising Carbon Dioxide Emissions requires domestic buildings to minimise carbon dioxide emissions in accordance with the energy hierarchy. Policy 5.2 is concerned with minimising carbon dioxide emissions from buildings.

- Development proposals must make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

- Major residential developments must deliver Zero Carbon homes and a minimum onsite 35% carbon dioxide emissions reduction against the current Building Regulation, Part L1A (2013) criteria.

- Major non-domestic developments must deliver a minimum onsite 35% carbon dioxide emissions reduction against the current Building Regulation, Part L2A (2013) criteria.

Policy 5.3 Sustainable Design and Construction requires that the highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime.

London Plan Supplementary Planning Guidance - Sustainable Design and Construction provides additional information to support the implementation of the Mayor's London Plan (the Spatial Development Strategy). The SPG can be taken into account as a further material consideration and is applicable to all development types. The SPG includes a relevant chapter that contains standards intended to assist developers in the conservation of energy, water and other resources.

Housing Supplementary Planning Guidance (Housing SPG) (March 2016) provides guidance on the implementation of housing policies in the 2015 London Plan and the 2016 Minor Alterations to the Plan (MALP). It replaces the 2012 Housing SPG.

This guidance states that from the 1st October 2016 the Mayor will apply a zero carbon standard to new residential development and non-domestic developments by 2019. The remaining regulated carbon dioxide emissions, to 100 per cent, 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 (in line with policy 5.2).

The London Plan states that domestic schemes consisting of ten or more dwellings and non-domestic schemes of more than 1,000 sqm are defined as a 'major' development.

BREEAM

In accordance with the planning policy requirements, the developer is required to achieve a BREEAM 'Excellent' rating for the new build scheme. Due to the type of non-domestic elements of the development proposals two different BREEAM assessments are applicable to the development, these are as follows:

- BREEAM UK 2014 Non-Domestic New Construction Office (shell and core); and,
- BREEAM UK 2014 Non-Domestic New Construction Retail (shell only).

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings. The standard aims to mitigate the life cycle impacts of buildings on the environment and enable buildings to be recognised according to their environmental benefits.

The building's performance is assessed under a number of categories, including:

- Energy;
- Water;
- Transport;
- Materials;
- Land use and ecology;
- Pollution;
- Health and wellbeing; and
- Management.

The BREEAM rating benchmarks for BREEAM UK New Construction projects are assessed using the 2014 versions of BREEAM are presented in Table 2.2.

Table 2.2 – BREEAM Rating Benchmarks

BREEAM Rating	% Score Required
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30

BREEAM UK New Construction scheme is a performance based assessment method and certification scheme for new non-domestic buildings.

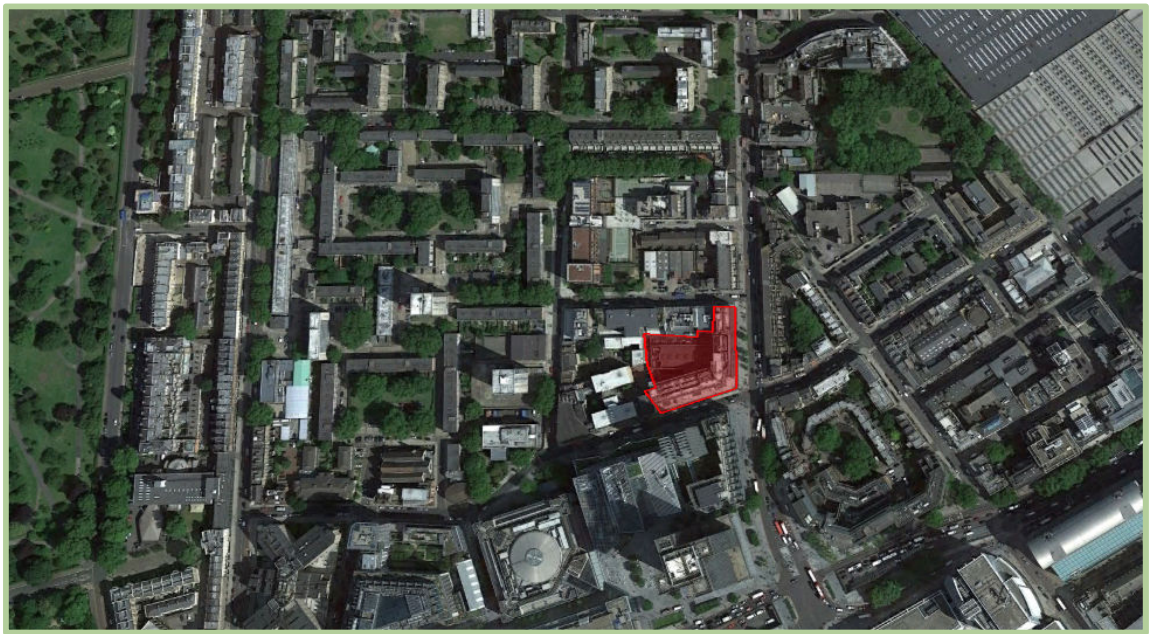
The primary aim of BREEAM UK New Construction is to mitigate the life cycle impact of new buildings on the environment in a robust and cost effective manner. This is achieved through integration and the use of the scheme by clients and their project team at key stages in the design and construction process.

In accordance with the planning policy requirements, the developer is required to achieve a BREEAM 'Excellent' rating for the non-domestic elements of the scheme.

3. DEVELOPMENT PROPOSALS

The proposed scheme is located within the highly developed urban area of the London Borough of Camden. The proposed site currently includes the existing approximately 14,000m^2 multi storey building (see Figure 3.1). The plot is bound by Hampstead Road to the east, Drummond Street to the south, Williams Road and buildings to the north. The site is also flanked by buildings to the west.

Figure 3.1 – Pre-Development Site



The proposals include a complete strip-out of all finishes and services (external and internal) leaving only the existing structural frame. The scheme will deliver a mixed use development comprising office, residential and a retail at the ground floor. The proposed accommodation schedule can be found in Table 3.1.

Table 3.1 – Proposed Accommodation Schedule

Proposed Accomodation	Proposed Units/Floor Area (NIA)
Office Accomodation	13,891m^2
Flexible Office & NHS Clinic	881m^2
Retail Accomodation	851m^2
Café Accomodation	113m^2
Residential Accomodation	
3B5P Apartment	6
1B2P Apartment	1
2B4P Apartment	3
2B3P Duplex	3
2B3P Apartment	3
3B5P Duplex	1
	Total = 17

The proposed floor plans and elevations are presented in Figures 3.2 and 3.10.

Figure 3.2 – Proposed Lower Ground Floor Plan

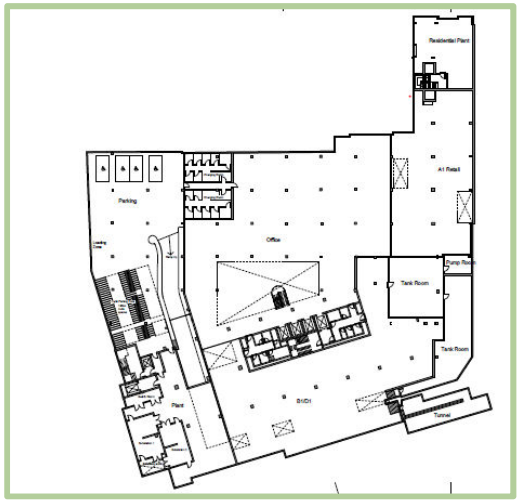


Figure 3.3 – Proposed Ground Floor Plan

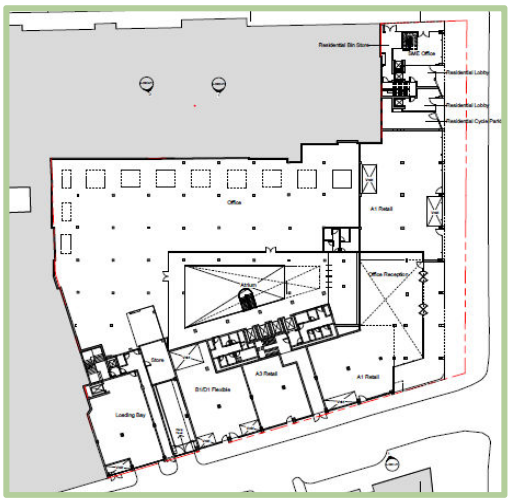


Figure 3.4 – Proposed First Floor Plan

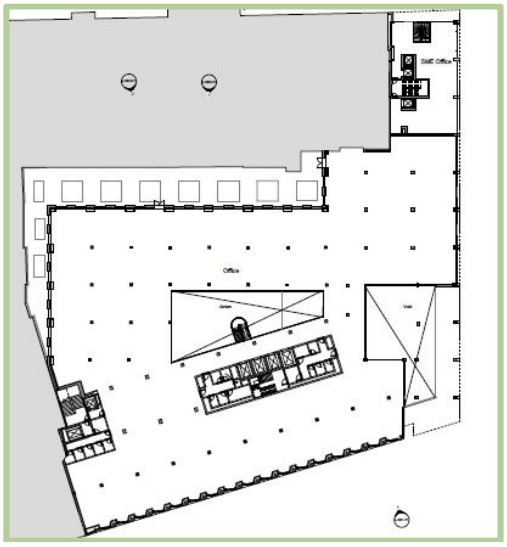


Figure 3.5 – Proposed Second Floor Plan

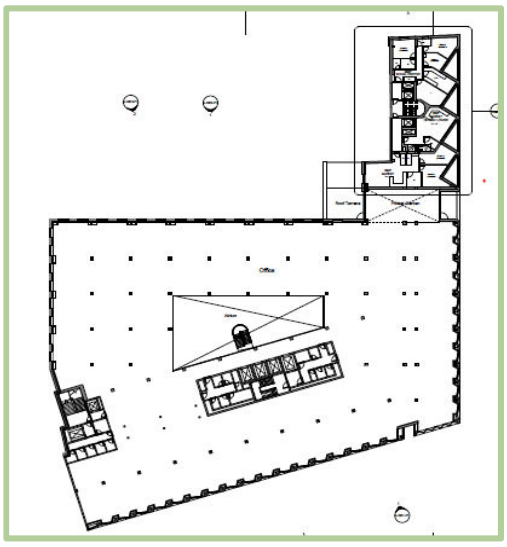


Figure 3.6 – Proposed Third Floor Plan

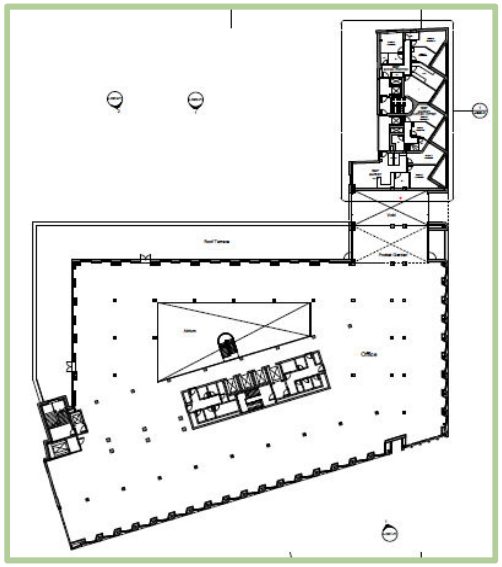


Figure 3.7 – Proposed Fourth Floor Plan

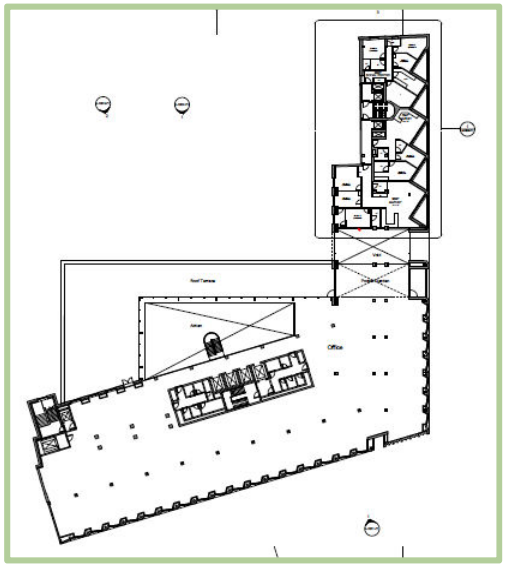


Figure 3.8 – Proposed Fifth Floor Plan

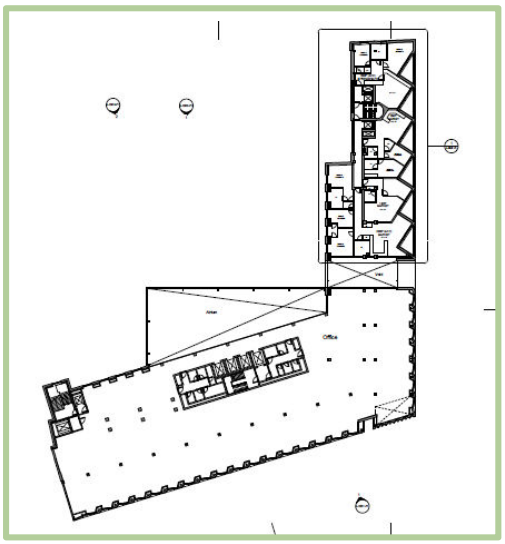


Figure 3.9 – Proposed Sixth Floor Plan

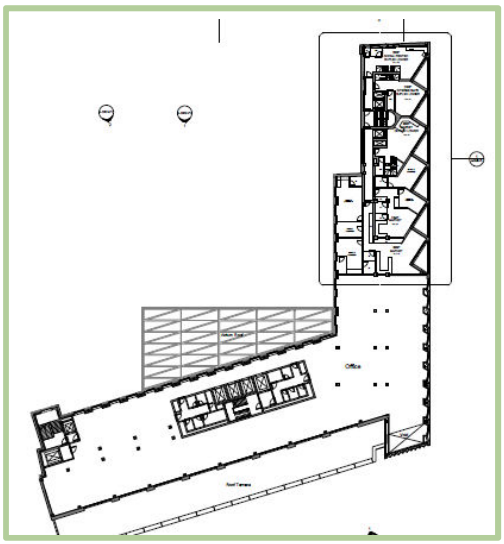
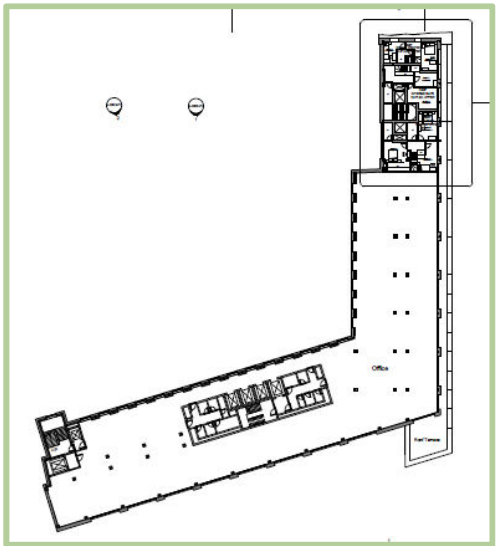


Figure 3.10 – Proposed Seventh Floor Plan



4. DOMESTIC SUSTAINABILITY PERFORMANCE

This section provides an appraisal of the development proposals and details the specific approach, design features and specifications which will contribute to reducing the environmental impact of the residential elements of the Stephenson House scheme. This section outlines those commitments that have been made by Lazari Properties 2 Limited c/o GLP Consulting Engineering Limited to ensure this scheme contributes to sustainable development and meets the Council's policy aims. This section responds directly to the Council's current planning policies.

Sustainability Performance

The key specifications, site characteristics and design measures of the scheme are considered below. These will mitigate the environmental impact of the scheme throughout both the construction stage and the future occupation of the development.

Energy

In order to limit energy demand and carbon dioxide (CO_2) emissions from the operation of the apartments, the following design features will be integrated within the scheme to enable the occupants to lead a low impact lifestyle:

Energy Strategy -

- The proposed approach to emissions reduction for the new build will be first through a fabric led energy strategy, in accordance with the principles of the energy hierarchy;
- The energy efficiency of the new build development will be improved through the application of a significantly enhanced material specification, exceeding Approved Document ADL1A (2013) criteria;
- The enhanced material specification will be supplemented by a highly efficient servicing strategy and photovoltaic arrays; and,
- The proposed heating strategy for the new build dwellings will be provided by high efficiency communal gas fired boilers delivering both space and water heating.

Further details of the proposed approach to reducing the energy demand and associated carbon dioxide emissions of these dwellings and the strategy to zero carbon will be detailed in the Energy Statement.

General Principles -

- Provision of A and A+ rated white goods (where applicable);
- Provision of EU energy efficiency labelling scheme details to assist in purchasing of energy efficient white goods;
- Space and equipment provided for drying of clothes;
- 100% low energy and/or LED internal lighting;
- All external space lighting to be provided by dedicated energy efficient fittings and controls;
- Cycle storage space for each dwelling will be provided to encourage sustainable modes of transport; and,
- The new development will also be designed to be car free encouraging residents to use public transport and the local amenities.

Water

These dwellings will be designed to reduce mains/potable water consumption and will include water efficient devices and equipment.

- A water efficiency strategy will be determined for the site. This will include 'A' rated appliances (where provided);
- All dwellings will be specified with individual water meters;
- Specification of efficient water fixtures throughout the scheme (low flow taps and showers, dual flush WCs and low volume baths); and,
- In order to reduce the demand, the sanitary fixtures will be specified to achieve a calculated daily consumption of <105litres/person/day, with an additional 5 litres person/day for external water use exceeding the regulatory standard. This target is in line with the London Plan Supplementary Planning Guidance.

Biodiversity and Ecology

- The development proposals are on a pre-developed site. The proposed development looks to be contained within the existing hard standing footprint of the grounds and building. The following measures will seek to enhance the appearance and ecological value of the site:
    - An ecologist will be appointed in order to determine the ecological value of the site and provide recommendations to enhance the ecological value;
    - The planting provision will be designed to provide an enhancement to both the ecological and aesthetic value of the site. Post development landscape planting will be selected to improve and strengthen the ecological value of the site; and
    - Native species will be selected for planting.

Materials

This development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This is demonstrated by the selection of:

- Materials with low environmental impact throughout their lifecycle will be selected;
- Materials responsibly sourced from suppliers operating an Environmental Management System or procuring timber from FSC and PEFC sources, for example will be prioritised;
- Materials containing or emitting toxic substances, such as volatile organic compounds (VOCs) or formaldehyde, are avoided as far as possible;
- Consideration will be given to local sourcing of construction materials where feasible; and,
- The proposed residential accommodation is distributed across six floor to the north east corner of the Stephenson House building. Early consideration into resource efficiency has been identified within the current proposals, as the existing building will be stripped back to the core structure which will be re-used and extended to accommodate the proposed mixed use development. This ensures that land and material use is optimised across the development.

Waste

Construction Waste -

Best practice techniques to prevent and minimise waste during the design and construction phases of the development will be adopted, as follows:

- A site waste management plan will be implemented; this will identify opportunities to minimise waste generation by;
    - Forecasting waste production on site;
    - Site procedures (reduce, reuse and recover); and,
    - Monitoring actual waste generated.
- To divert at least 85% of construction waste from landfill; and,
- This scheme will promote the minimisation of waste in site development and seek to maximise the use of recycled materials in construction.

Domestic Waste -

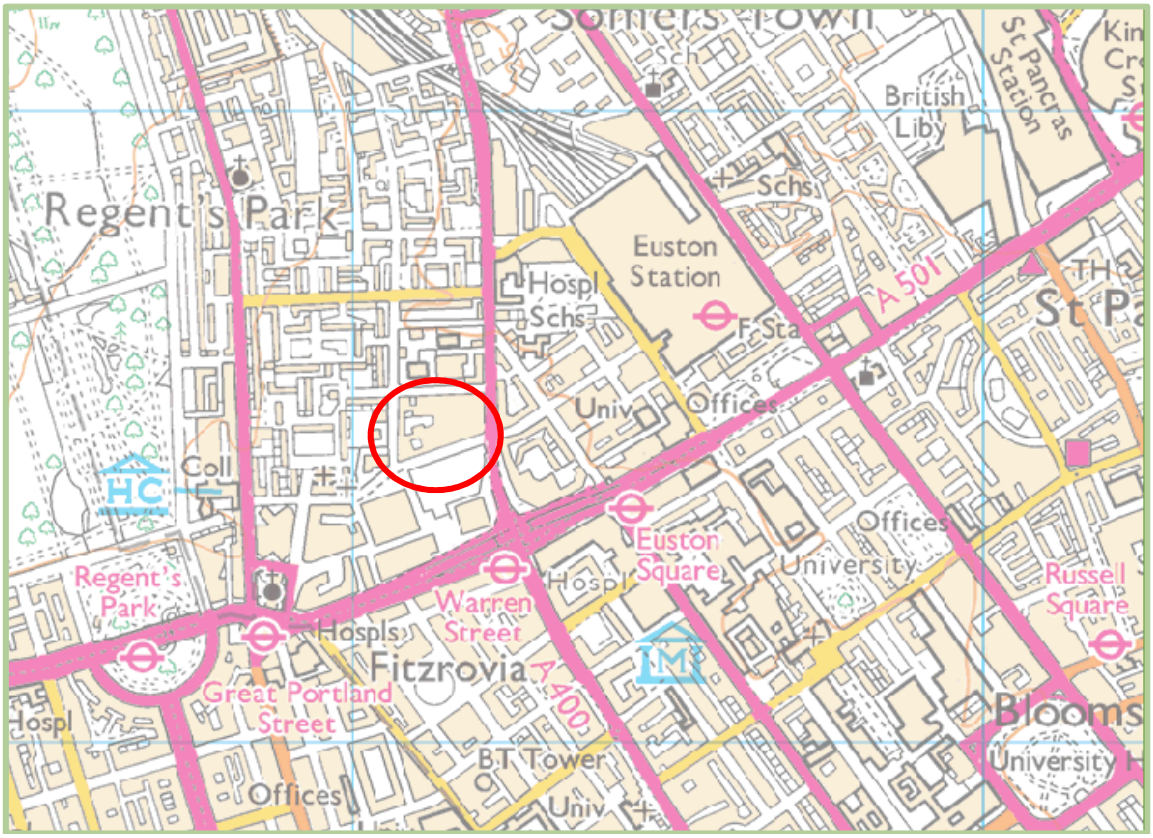
The dwellings will provide infrastructure and facilities that meet the needs of the residents and building users for segregated storage, thereby optimising the ability to recycle waste:

- Communal bin storage provision at ground level will enable residents and building users to make full use of Local Authority recycling services; and,
- A waste management strategy will be developed, ensuring that adequate sized bin storage areas for each residential apartment and the ground floor commercial unit, access for collection personnel and vehicles will be established and other aspects of waste management will be designed into the development at an early stage of the design. The strategy will allow for storage of general waste and recyclable materials in order to optimise the recycling rates achieved by the London Borough of Camden.

Surface Water Run-off

- The site is pre-developed and consists of 100% hardstanding;
- The proposals show no increase in the impermeable surface area of the site;
- The development site benefits from being located in a low flood risk zone, data provided on the Environment Agency website suggests the development has a low probability of flooding and lies within Zone 1 (see Figure 4.1); and,
- There is no increase of the impermeable surfacing as a result of the proposed new development. The development proposals show a neutral impact on surface water runoff, pre-developed to post-development. Although the drainage strategy is yet to be fully determined at this early stage of the development cycle, the developer commits to ensuring the peak rate and volume of surface water run-off will be no greater post-development than pre-development.

Figure 4.1 - Flood Risk Map (Stephenson House)



Pollution

To reduce emissions of nitrogen oxide (NOx) and gases with high Global Warming Potential (GWP) into the atmosphere, the dwellings will be specified with:

- High efficiency boilers with Nitrogen Oxide emissions of less than 40mg/kWh; and,
- Insulating materials that have a global warming potential of less than 5 will be specified throughout the development to reduce the construction phase impact of this scheme upon climate change.

Additionally, Pollution Prevention Guidance will be adhered to in respects to air (dust) and water (ground and surface) pollution during the demolition and construction phase.

Health and Wellbeing

To enable the occupants of this development to lead lower impact lifestyles and enhance their quality of life, the following measures will be delivered at the proposed development:

- Good levels of natural day lighting will be achieved within all apartments. This will provide a good quality of life for the occupants and reduce the need for energy to light the dwellings;
- Sound insulation will be specified to accord Part E building regulations compliance standard. This will be verified by pre-completion testing;
- Private outdoor space will form part of the design, in the form of individual balconies or terraces for each apartment; and,
- All dwellings will comply with the London and National Space Standards, to ensure that all dwellings are of a sufficient size and provide more flexibility and comfort for the future occupants.

Management

In order to minimise the impact of the development during construction and operation whilst providing a safe place to live, the proposals include the following provision:

- This scheme will comply with Secure by Design criteria; and,
- Construction site impacts will be minimised as follows:
    - Monitor, report and set targets for CO_2 of energy arising from site activities; and,
    - Monitor, report and set targets for CO_2 of water consumption arising from site activities.

Transport and Access

Access

A Transport Assessment of the proposed scheme has been completed. The site is in a highly sustainable location in terms of transport connections with basic facilities all within easy walking distance of the site.

Transport Links -

- The Public Transport Accessibility Level (PTAL) rating for the site is the highest and confirmed to be a rating of 6b due to its excellent access to public transport options;
- The site lies on the boundary of Zone 1 of the London transport network, with rail, the Underground network within close proximity to the site;
- There is a very good level of public transport provision in the area;
    - Cycling - Cycle links to adjacent communities are located in all directions surrounding the proposed development site.
    - Bus - The nearest bus stop is located less than 63m from the site on Drummond Street connecting the site to local communities such as Hampstead Heath, Wood Green and the surrounding area.
    - Underground - The proposed site is located just over 200m from Warren Street underground station. The station is located on the Northern and Jubilee line and provides regular connections to Morden, Edgware and Brixton with further connections to central London. Euston Square underground station is located approximately 350m to the south east of the site. The station is served by the Circle, Metropolitan, Hammersmith and City lines and provides services to a number of destination including Watford, Hammersmith and Edgware Road.
    - Rail – Euston railway station is located approximately 350m to the north east of the site providing connections to local communities and services to the north of the country such as Birmingham, Manchester, Liverpool and Scotland. St Pancreas International Railway Station is also located within proximity to the site, approximately 2.3km to the north east providing further services to reginal destinations and across to France; and,
    - Pedestrian Access - Safe pedestrian access to all public transport modes is provided for via the existing pedestrian footways surrounding the site.

Local Amenity Access -

- Residents are able to walk to local amenities and shops, situated along Hampstead Road and Drummond Street; and,

- The site benefits from very good links to local amenity space and recreational facilities. The Regents Park is located 750m to the west of the site and St James Gardens is located 400m to the north east of the site.

Disability Access -

- Disabled access provision within the scheme itself will be in accordance with Building Regulation, Part M criteria as far as possible; and,

- Lift access will be provided to provide access to all floors.

5. BREEAM ASSESSMENTS PERFORMANCE

This section provides an appraisal of the proposed developments sustainability performance and details the specific approach, design features and specifications which may contribute to reducing the environmental impact of this scheme.

Two BREEAM Pre-Assessment reports have been completed to determine the feasible credits and potential BREEAM rating for the non-domestic elements of the proposed scheme at the Stephenson House development. These are as follows:

- BREEAM 2014 UK Non-Domestic New Construction Shell and Core Pre-Assessment (Office); and
- BREEAM 2014 UK Non-Domestic New Construction Shell only Pre-Assessment (Retail).

Working alongside the qualified BREEAM assessor, the technical design team will review the individual credit criteria and award of credits within the Pre-Assessments to optimise the building's BREEAM performance.

In reviewing and assessing the feasibility of the BREEAM credit award and the overall BREEAM performance of this scheme, constraints arising from the nature of the proposed development site and location have been considered. All credits allocated within this BREEAM Pre-Assessments will require further technical verification from the design team during the formal Design Stage and Post Construction BREEAM assessment.

BREEAM Credit Award Review

An overview of the BREEAM credit award for each issue is presented below. The BREEAM 2014 New Construction Pre-Assessment reports are presented within the appendices of this document and contains a full commentary on the individual credit award and specification requirements.

Management

Project Brief and Design -

- Stakeholder consultation covering project delivery and relevant third parties. This will encourage an integrated design process that optimises building performance.

Life cycle cost and service life planning –

- Recognising and encouraging the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding; and,
- Reporting the capital cost of the building to promote economic sustainability.

Construction Site Impacts -

- All timber and timber-based products used on the project will be 'Legally harvested and traded timber';
- The principal contractor will demonstrate sound environmental management practices and consideration for neighbours across their activities on-site; and,
- Site related energy and water impacts are monitored and reported to ensure ongoing compliance during the Construction, Handover and Close Out stages and to improve awareness and understanding for future projects. Construction site impacts will be minimised as follows:
    - Monitor, report and set targets for carbon dioxide or energy arising from site activities;
    - Monitor, report and set targets for water consumption arising from site activities; and,

- Monitor and record data from the transport movements and impacts resulting from delivery of construction materials to site and construction waste from site.

Commissioning and Handover -

The provision of the following processes and handover guidance will be provided to encourage a planned handover and commissioning process which will reflects the needs of the building occupants:

- Schedule of commissioning including optimal timescales and appropriate testing and commissioning of all building services systems and building fabric in line with best practice;
- Inspecting, testing, identifying and rectifying defects via an appropriate method (only applicable to the retail shell only assessment); and,
- Provision of a non-technical Building User Guide and user/operator training timed appropriately around handover and proposed occupation.

Health and Wellbeing

Visual Comfort -

- Internal and external lighting systems are designed to avoid flicker and provide appropriate illuminance (lux) levels, to ensure best practice in visual performance and comfort for building occupants.; and,
- The external lighting strategy will be designed to reduce unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Thermal Comfort (applicable to the office shell and core assessment only) –

To ensure that appropriate thermal comfort levels are achieved throughout the design, and controls are selected to maintain a thermally comfortable environment for occupants within the building, the following will be undertaken:

- Thermal modelling will be carried out to appropriate standards;
- Projected climate change scenario(s) will be considered as part of the thermal model; and
- The thermal modelling analysis will informed the temperature control strategy for the building and its users.

Indoor Air Quality (applicable to the office shell and core assessment only) -–

- Minimising sources of air pollution through careful design specification and planning. The building ventilation strategy is designed to be flexible and adaptable to potential future building occupant needs and climatic scenarios.

Acoustic Performance –

- The building will meet appropriate acoustic performance standards and testing requirements in relation to indoor ambient noise levels. This will ensure that the building's acoustic performance including sound insulation which meets the appropriate standards for its purpose.

Safety and Security -

- Secure By Design - Security needs will be understood and taken into account in the design and specification. This will ensure effective measures are implemented that promote safe and secure use of the building.

Energy

Reduction of CO_2 Emissions –

- The proposed approach to emissions reduction at this site will be through a fabric led energy strategy plus low and/or zero technologies, in accordance with the principles of the Energy Hierarchy; and,
- The scheme will improve upon current building regulation Part L2A (2013) criteria for scheme in accordance with the current local planning policies and the BREEAM mandatory 'excellent' rating requirement.

Low Carbon Design –

- A feasibility study will be carried out to establish the most appropriate on-site/near-site low or zero carbon (LZC) energy source(s) for the building and is specified.

Energy Monitoring (applicable to the office shell and core assessment only) -

- Energy metering systems will be installed to enable energy consumption to be assigned to end uses; and,
- Sub-meters will be provided for high energy load and tenancy areas. These are a powerful tool to help facilities management to organise and manage their consumption, target certain areas of over-use and streamline controls to improve efficiency over time and seasons.

External Lighting –

- All new external light fittings, where provided, within the construction zone will be dedicated low energy; and,
- External light fittings will be controlled through a time switch, or daylight sensor, to prevent operation during daylight hours.

Energy Efficient Transportation Systems (applicable to the office shell and core assessment only) -

- An analysis of the proposed transportation demand and usage patterns will determine the optimum number and size of lifts required. This would encourage the implementation of energy efficient and suitably sized systems; and,
- Energy efficient installations will be specified.

Transport

- As previously discussed in Section 4 of this statement, the Stephenson House site achieves the highest Public Transport Accessibility Level of 6b due to the highly sustainable location in terms of transport connections with basic facilities all within easy walking distance of the site;
- Excellent public transport provision links the development site to the wider region, thus enabling building users to rely entirely upon modes of transport other than the car;
- The site is well located in close proximately to a range of local amenities, be it in the immediate vicinity, walking distance or via established public transport links;
- Limited vehicle parking provision will be provided to encourage the use of more sustainable modes of transport; and,
- Secure cycle storage will be provided for the development, promoting building occupants to choose more sustainable modes of transport and helping reduce congestion and emissions associated with the building.

Water

Water Consumption and Monitoring –

- The buildings will be specified with efficient water fixtures and controls. This will result in a reduction in water consumption (litres/person/day); The mandatory minimum criteria for the BREEAM Excellent' rating will be achieved and a potential improvement targeted, which is a 50% improvement over the set water consumption baseline *(applicable to the office shell and core assessment only);*

- Leak detection would be incorporated, leakage especially in the case of water can be a drain on the resource and particularly difficult to establish without data collection;

- Flow control devices (e.g. a presence detector and controller) and shut off valves will be fitted to each WC area/facility to ensure water is supplied only when needed and prevent minor water leaks *(applicable to the office shell and core assessment only);*

- The design team will identify the building's total unregulated water demand and mitigate or reduce consumption through systems and/or processes such as irrigation systems for landscaping; and,

- A water meter on the mains water supply to the building will be specified to monitor and manage consumption and sub- metered to tenant areas.

Materials –

This development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in construction. This is demonstrated by the selection of:

Materials Life Cycle Impacts –

- Materials with a low environmental impact throughout their lifecycle will be specified. The BRE's Green Guide to specification will be consulted to optimise the material selection and their associated environmental performance and life cycle impact;

Hard Landscaping and Boundary Protection (where specified) –

- Hard landscaping and boundary protection elements with a low environmental impact throughout their lifecycle will be specified. The BRE's Green Guide to specification will be consulted to optimise the material selection to reduce the environmental impacts;

Responsible Sourcing of Materials -

- All timber used on the project will be responsibly sourced in accordance with the UK Government's Timber Procurement Policy (FSC sourced timber, for example);

- Materials will be selected which have a low environmental impact throughout their life cycle;

- Suppliers and manufacturers who operate Environmental Management Systems will be prioritised;

- Responsible sourcing of materials will be managed by the contractor. All timber used within the development will be responsibly sourced, verified by the FSC or PEFC standard; and,

- Consideration will be given to local sourcing of construction materials where feasible.

Insulation -

- The use of thermal insulation which has a low embodied environmental impact relative to its thermal properties will be specified throughout the development to reduce the construction phase impact of this scheme upon climate change.

Designing for Robustness –

- Adequate protection will be provided for exposed elements of the building and landscaped areas, therefore minimising the frequency of replacement materials.

Waste

Construction Waste -

Prior to commencement of the construction phase, a construction resource management plan will be produced by the developer to limit the on and off site environmental impacts of construction. The waste management strategy will also include the following:

- Procedures to reduce construction waste related to on-site construction and off site manufacture/fabrication; and,

- Diverting non-hazardous construction (on-site and dedicated off-site manufacture/fabrication), demolition and excavation waste (where applicable) generated by the project from landfill.

Operational Waste -

- Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the building occupant(s) and activities will optimise recycling rates.

Speculative Floor and Ceiling Finishes (applicable to the office shell and core assessment only) -

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

Functional Adaptability –

- A building-specific functional adaptation strategy will be undertaken by the design team, which includes recommendations for measures to be incorporated to facilitate future adaptation.

Biodiversity

Selection and Ecological Value of the Site –

- The proposed scheme is located on a previously occupied site; and,

- The land within the construction zone has been confirmed to be of low ecological value;

Minimising Impact on Existing Site Ecology and Enhancement -

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

- Advice and recommendations will be sought from the suitably qualified. To promote actions taken to enhance the ecological value of the site as a result of development; and,

- Any planting provision will be designed to provide an enhancement to both the ecological and aesthetic value of the site.

Pollution

Surface Water Management -

- As previously reviewed in Section 4 of this statement, the development site is located within Flood Risk Zone 1, low annual probability of flooding; and,

- The volume of surface water run-off will be limited such that the development will not result in an increased discharge from the site and the peak rate of discharge will be reduced through the provision of flow control techniques and surface water attenuation.

Reduction of night time light pollution -

- The external lighting strategy will be designed to reduce unnecessary light pollution through effective design, energy consumption and nuisance to neighbouring properties.

Reduction of noise pollution -

- Measures to reduce the likelihood of disturbance arising as a result of noise from fixed installations on the development affecting nearby noise-sensitive buildings.

Potential BREEAM Score and Rating

The BREEAM Pre-Assessments (presented in the Appendix A and B of this Statement) show that the building is expected to performs as follows (minimum required = 70% for BREEAM Excellent):

- BREEAM 2014 New Construction Office assessment score = **72.0%**

- BREEAM 2014 New Construction Retail assessment score = **73.5%**

- Overall BREEAM rating = Potential for **BREEAM 'Excellent' rating.**

The proposals are expected to exceed the following unweighted credits in the following sections; 60% in the energy category, 40% in the materials category and 60% in the water category in the BREEAM assessment (see Figures 5.1 and 5.2).

Figure 5.1 – Office BREEAM Performance by Environmental Section

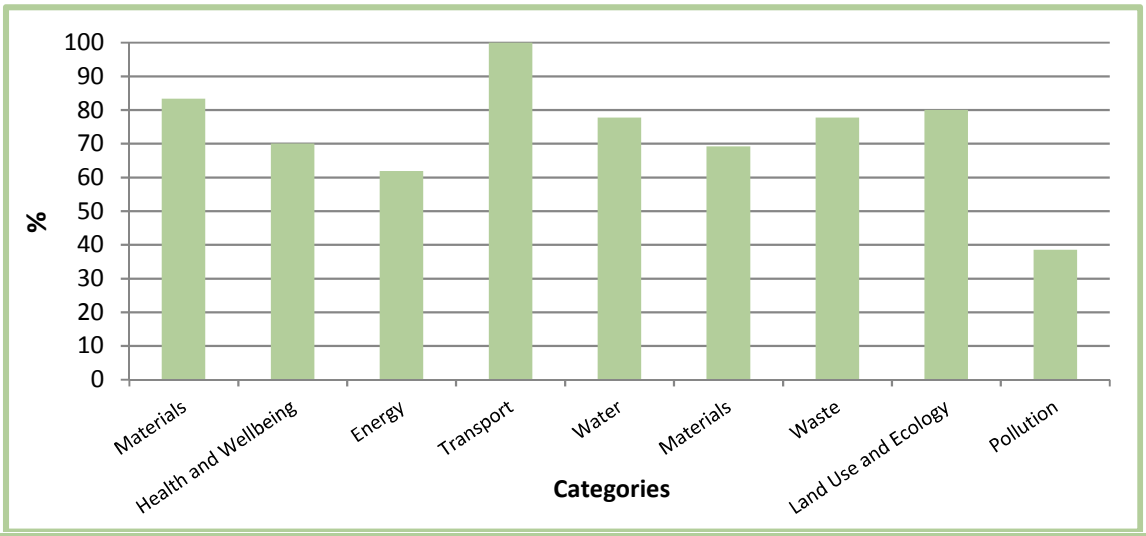
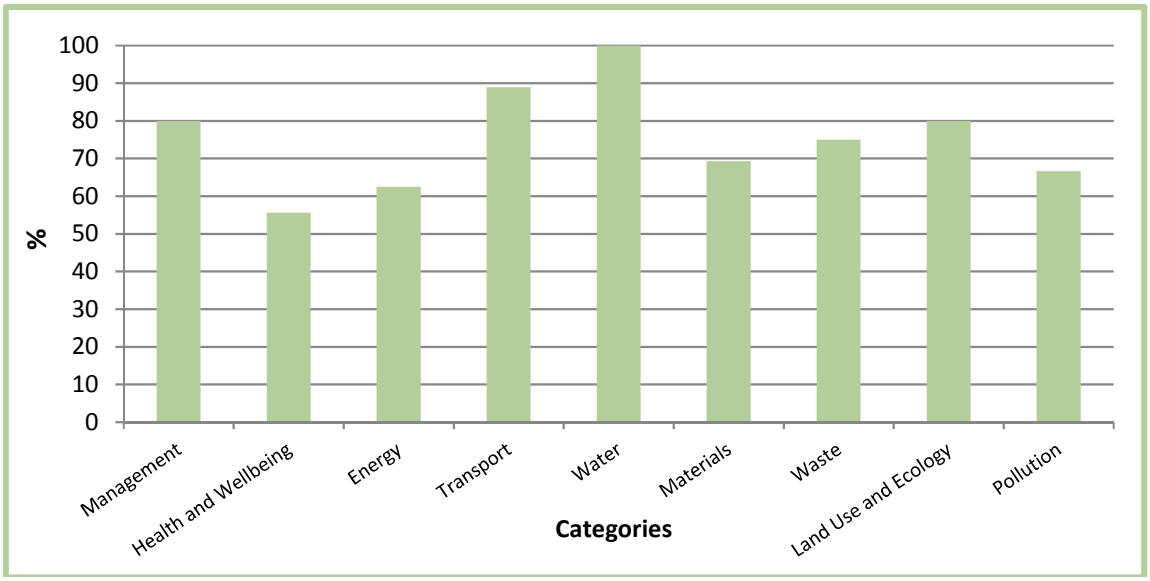


Figure 5.2 – Retail BREEAM Performance by Environmental Section



Working alongside the qualified BREEAM assessor, the technical design team has reviewed the individual credit criteria and award of credits within the Pre-Assessments in order to optimise the building's BREEAM performance.

In reviewing and assessing the feasibility of the BREEAM credit award and the overall BREEAM performance of this scheme, constraints arising from the nature of the proposed development site and location have been considered. All credits allocated within this BREEAM Pre-Assessment will require further technical verification and additional feasibility assessment during the formal Design Stage and Post Construction BREEAM assessment.

6. CONCLUSION

This Statement has reviewed the sustainability performance of the proposed mixed use development at Stephenson House, Camden against national and local policies and detailed the potential BREEAM rating for the scheme.

The key issues of the Camden Planning Guidance CPG3 – sustainability document in accordance with the Core Strategy have been achieved by the proposals. These are as follows:

- The non-domestic elements of the proposed scheme will be designed in accordance with the BREEAM criteria and achieve the required 'Excellent' rating. This represents 'best practice' for new non-domestic buildings in the UK and as detailed in Section 5, the scheme is expected to perform well in all areas of the assessments. This is in accordance with the adopted Core Strategy Policy DP22 and emerging Local Plan policy CC2.

- The proposals are expected to exceed the following unweighted credits in the following sections; 60% in the energy category, 40% in the materials category and 60% in the water category in the BREEAM assessment.

- The non-domestic elements of the development will improve upon Building Regulations Part L2A criteria and meet the mandatory BREEAM 'Excellent' energy criteria.

- A minimum onsite 35% reduction in regulated CO_2 emissions below the Part L 2013 compliance criteria for the domestic element of the development will be achieved plus a carbon offset payment to meet the zero carbon emissions performance target.

- Water management for the development will be specified consumption of the development will be minimised; Water management will target a 40% improvement upon the BREEAM 2014 baseline case. The residential units will be specified with sanitary fixtures which will achieve a calculated daily consumption of <105litres/person/day exceeding the regulatory standard. This will reduce the developments internal water demand in line with the London Plan Supplementary Planning Guidance, adopted Core Strategy Policy DP23 and emerging Local Plan Policy CC3.

- The development site is located within Flood Risk Zone 1. The site drainage strategy will be designed to manage the surface water runoff to ensure that the peak rate and volume of surface water run-off will be no greater post-development than pre-development. In accordance with adopted Core Strategy Policy DP23 and emerging Local Plan Policy CC3.

- Waste arising during construction and occupation/operation will be minimised. A site waste management plan will be adopted during construction. The development will be provided with waste facilities and a comprehensive waste management plan for the site. The provision of suitable space and facilities will allow the main building functions to segregate and store operational recyclable waste. In accordance with emerging Local Plan Policy CC5.

- Construction site management procedures will minimise adverse impacts on the environment and control pollution generated during the construction phase. These include a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling of materials. A commitment will be made to minimise waste and pollution.

- In accordance with the BREEAM criteria materials are proposed to be responsibly sourced, materials with low environmental impact will be selected and local suppliers will be prioritised. In combination this procurement strategy will minimise and conserve energy associated with transportation and waste generation.

Furthermore, the proposals accord with the aims of the National Planning Policy Framework, as follows:

- The proposals include the redevelopment of a previously developed occupied site and represents a very efficient use of land.

- Construction practices that minimise adverse impacts on the environment will be adhered to including a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling, a commitment will be made to minimise waste and pollution; and

- Exceeding the regulatory compliance criteria and achieving BREEAM 'Excellent' across the mixed-use scheme will assist in mitigating the impact of climate change and it environmental impact.

In conclusion, the proposals reviewed within this statement for the scheme at Stephenson House will deliver an efficient and sustainable scheme, providing a quality redevelopment that accords with the guidance provided within the London Borough of Camden's adopted and emerging policies.

Appendix A - BREEAM New Construction Pre-Assessment Overview – Office (Shell and Core)

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

Key - Mandatory Criteria
Mandatory criteria for BREEAM 'Excellent'
RIBA Stage Sensitive Credits
RIBA Stage 2 stipulated within BREEAM Criteria
RIBA Stage 3 stipulated within BREEAM Criteria
RIBA Stage 4 stipulated within BREEAM Criteria

Issue		Credits for Issue	Credit Target	Comments
Management				
Man 1 - Project Brief and Design				
Man 1a	Stakeholder Consultation (Project Delivery)	1	1	Stakeholder consultation covering project delivery and relevant third parties.
Man 1b	Stakeholder Consultation (Third Party)	1	1	
Man 1c	Sustainability Champion (Design)	1	0	Credit Not Sought
Man 1d	Sustainability Champion (Monitoring Progress)	1	0	Credit Not Sought
Man 2 - Life Cycle Cost and Service Life Planning				
Man 2a	Elemental LCC	2	2	An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008.
Man 2b	Component LCC	1	1	A component level LCC option appraisal has been developed by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865:2008
Man 2c	Capital Cost Reporting	1	1	Report the capital cost for the building in pounds per square metre (£K/M2), via the BREEAM Assessment Scoring and Reporting tool, assessment issue tab. Management section
Man 3 - Responsible Construction Practices				
Man 3 (P)	Timber Procurement **(M)**	Y	Y	All timber to be legally harvested and trade'.
Man 3a	Environmental Management	1	1	1) The Main Contractor operates an ISO14001 certified EMS; 2) The Main Contractor implements PPG 6 compliant pollution prevention policies.
Man 3b	Sustainability Champion	1	0	Credit Not Sought

Issue		Credits for Issue	Credit Target	Comments
Man 3c	Considerate Construction	2	2	The Main Contractor achieves a score of 35 under the CCS scheme, with no section below a score of 7.
Man 3d	Monitoring of Construction site impacts (Energy and Water)	1	1	Main Contractor sets targets, monitors and reports on energy and water consumption each month, based on site activities.
Man 3e	Monitoring of Construction Site Impacts (Transport)	1	1	Main Contractor monitors transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution; as well as Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate.
Man 4 - Commissioning and Handover				
Man 4a	Commissioning, Testing Schedule and Responsibilities	1	1	The following must for elements of the commissioning process: - A Commissioning / Testing Schedule identifying timescales for commissioning and re-commissioning of all complex and simple services, as well as testing and inspecting the building fabric. - Commissioning to be carried out in accordance with current Building Regulations and in line with applicable CIBSE and BSRIA guidelines; - An appropriate member of the design team will be appointed to monitor pre-commissioning, commissioning and any required re-commissioning; - The main contractor will account for the commissioning programme, responsibilities and requirements within the main programme of works.
Man 4b	Commissioning Building Services	1	1	For buildings with complex building services and systems, a specialist commissioning manager is appointed during the design stage with responsibility for: a. Undertaking design reviews and giving advice on suitability for ease of commissioning; b. Providing commissioning management input to construction programming and during installation stages; c. Management of commissioning, performance testing and handover/post-handover stages. Where there are simple building services, this role can be carried out by an appropriate project team member, provided they are not involved in the general installation works for the building services system(s).

Issue		Credits for Issue	Credit Target	Comments
Man 4c	Testing and Inspecting the Building Fabric	1	1	The project will be subject to both air-tightness testing and a continuity of thermal insulation inspection via thermographic testing. Any defects identified in the thermographic survey or the airtightness testing reports are rectified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building/element.
Man 4c	Handover	1	1	A Building User Guide in accordance with the BREEAM standard will be developed prior to handover and training, and handed to the occupier.
MAN 05 - Aftercare				
Man 5a	Aftercare Support	1	0	Credit Not Applicable
Man 5b	Seasonal Commissioning	1	0	Credit Not Applicable
Man 5 c	Post Occupancy Evaluation	1	0	Credit Not Applicable
Health and Wellbeing				
HEA 1 - Visual Comfort				
Hea 1a	Glare Control	1	0	Credit Not Applicable
Hea 1b	Daylighting	1	0	Credit Not Sought
Hea 1c	View Out	1	0	Credit Not Sought
Hea 1d	Internal and External Lighting	1	1	Internal and external lighting systems are designed to avoid flicker and provide appropriate illuminance (lux) levels. Internal lighting is zoned to allow for occupant control.
Hea 2 - Indoor Air Quality				
Hea 2a	Indoor Air Quality Plan	1	0	Credit Not Applicable
Hea 2b	Ventilation	1	1	The building has been designed to minimise the concentration and recirculation of pollutants in the building
Hea 2c	Volatile organic compound (VOC) emission levels (products)	1	0	Credit Not Applicable

Issue		Credits for Issue	Credit Target	Comments
Hea 2d	Volatile organic compound (VOC) emission levels (post construction)	1	0	Credit Not Applicable
Hea 2e	Potential for Natural Ventilation	1	0	Credit Not Sought
Hea 4 - Thermal Comfort				
Hea 4a	Thermal Comfort	1	1	The building complies with the following: - Full dynamic thermal modelling is carried out in accordance with CIBSE AM11; - Modelling confirms that thermal comfort levels will be maintained in accordance with CIBSE Guide A, Table 1.5. NAT VENT ONLY: Overheating risk is limited in accordance with CIBSE TM52.
Hea 4b	Adaptability for Climate Change	1	1	The thermal modelling demonstrates that the relevant requirements set out in above are achieved for a projected climate change environment. Where thermal comfort criteria are not met for the projected climate change environment, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements.
Hea 4c	Thermal zoning and controls	1	0	Credit Not Applicable
Hea 5 - Acoustic Performance				
Hea 5a	Performance Standard	1	1	Where the building meets the acoustic performance standards and testing requirements detailed in Table - 20 (see Checklists and tables) for all relevant functional areas.
Hea 6 - Safety and Security				
Hea 5a	Safe Access	1	N/A	Credit Not Applicable
Hea 5b	Consultation with ALO	2	2	Secure by Design - Security needs are understood and taken into account in the design and specification
Energy				
Ene 1 - Reduction of CO2 Emissions				
Ene 01	Reduction of CO2 Emissions	12	6	It is assumed that the development will achieve an EPRnc of 0.45, and hence, 6 credits.

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Ene 2 - Energy Monitoring				
Ene 2a	By Energy Use	1	1	Over 90% of energy uses to be sub-metered, in accordance with CIBSE TM39. This must be via BMS for buildings over 1000m2 in floor area; or via meters with pulsed outputs for future connection for smaller buildings.
Ene 2b	By Building Area	1	1	Sub-meters are provided for high energy load and tenancy areas.
Ene 3 - External Lighting				
Ene 3	External Lighting	1	1	The average initial luminous efficacy of the external light fittings in the construction zone is 60 lamp lumen per circuit watt or greater AND All fittings are automatically controlled to prevent function during day light hours, as well as with presence sensors in areas of intermittent pedestrian traffic.
Ene 4 - Low Carbon Design				
Ene 4a	Passive Design Analysis	1	0	Credit Not Sought
Ene 4b	Free Cooling	1	0	Credit Not Sought
Ene 4c	LZC Technology	1	1	A feasibility study has been carried out to establish the most appropriate on-site/near-site low or zero carbon (LZC) energy source(s) for the building/development and is specified.
Ene 6 - Energy Efficient Transportation Systems				
Ene 6	Lifts & Escalators	3	3	The lift supplier should be asked to provide a lift transport analysis and system comparison in compliance with BREEAM requirements - to confirm that the system with the lowest energy consumption has been specified. The lift should have the following three energy efficient features: a. The lifts operate in a stand-by condition during off-peak periods. b. The lift car uses energy-efficient lighting and display lighting i.e. an average lamp efficacy, across all fittings in the car, of > 55 lamp lumens/ circuit watt and lighting switches off after the lift has been idle for a prescribed length of time. c. The lift uses a drive controller capable of variable-speed, variable-voltage, variable-frequency (VVVF) control of the drive motor. Where demonstrated to save energy, then the lift must have a regenerative drive unit.

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Ene 8 - Energy Efficient Equipment				
Ene 8	Energy Efficient Equipment	2	0	Credit Not Sought
Transport				
Tra 1 - Public Transport Accessibility				
Tra 1	Accessibility Index	3	3	PTAL 6b AI of 54.08
Tra 2 - Proximity to Amenities				
Tra 2	Proximity to Amenities within 500m	1	1	The development is within 500m of a cash machine, food store and a post box.
Tra 3 - Cyclist Facilities				
Tra 3a	Cycle Storage	1	1	Requirement: 1 cycle space for every 10 staff.
Tra 3b	Cycle Facilities	1	1	Credit awarded for provision of cyclist compliant facilities.
Tra 4 - Maximum Car Parking Capacity				
Tra 4	Car Parking Capacity	1	1	Recognition of developments that limits car parking capacity (where no car parking spaces are provided the full award of credits can be awarded).
Tra 5 - Travel Plan				
Tra 5	Travel Plan	1	1	Travel Plan and Transport assessment required specific to the development.
Water				
Wat 1 - Water Consumption				
Wat 1	Water Consumption	5	3	Three credits assumed - 40% improvement on the BRE baseline performance to be achieved.
Wat 2 - Water Monitoring				
Wat 2	Water Monitoring	1	1	The main supply to each building will be fitted with a water meter with a pulsed output. Any external taps must also be sub-metered.

Issue		Credits for Issue	Credit Target	Comments
Wat 2a	Water Sub Meters			Any water uses accounting for over 10% of total consumption will be sub-metered.
Wat 3 - Water Leak Detection and Prevention				
Wat 3a	Water Leak Detection	1	1	Recognition of leak detection systems capable of detecting a major water leak on the mains water supply
Wat 3b	Water Leak Prevention	1	1	Flow control devices that regulate the supply of water to each WC area/facility to reduce water wastage.
Wat 4 - Water Efficient Equipment				
Wat 4	Unregulated Water Use	1	1	Irrigation system to be specified in accordance with the BREEAM criteria.
Materials				
Mat 1 Life Cycle Impacts				
Mat 1	Life Cycle Impacts	5	4	Assessment of the following major elements of the building: a) External Walls b) Windows c) Upper floors d) Roof e) Floor finishes
Mat 2 - Hard Landscaping and Boundary Protection				
Mat 2	Hard Landscaping and Boundary Protection	1	1	Reductions in the environmental life cycle impacts through assessment of the hard landscaping and boundary protection elements.
Mat 3 - Responsible Sourcing of Materials				
Mat 3a	Timber Procurement	M	M	All timber used on site will be sourced in accordance with the UK Government's Timber Procurement Policy.

Issue		Credits for Issue	Credit Target	Comments
Mat 3b	Sustainable Procurement Plan	1	1	Production of a sustainable procurement plan
Mat 3c	Major Building Elements	3	1	Responsible sourcing on the major building elements (1 credit and 18%).
Mat 4 - Insulation				
Mat 4a	Embodied Impact of Insulation	1	1	All insulation in the shell development will be specified as types that achieve an A or A+ rating, according to the Green Guide to Specification Online.
Mat 5 - Designing for Robustness				
Mat 5	Designing for Robustness	1	1	1) Vulnerable internal and external areas of the building will be identified, with suitable durability / protection / design measures taken, for example: - Protection from high pedestrian traffic in main entrances, public areas and thoroughfares (i.e. 'Severe Duty' wall specifications, kick plates to doors, easily washable and durable flooring); ◦ Protection against any internal trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas (i.e. wall guards); ◦ Protection against potential vehicular collision where cars / delivery vehicles will be manoeuvring within 1m of the external building facade (i.e. ARMCO Barriers, bollards, raised kerbs.) 2) The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. The project architect should review Table 47 of the BREEAM guidelines.
Mat 6 - Material Efficiency				
Mat 6	Material Efficiency	1	0	Credit Not Sought

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Waste				
Wst 1 - Construction Waste Management				
Wst 1a	Construction Resource Efficiency	3	3	Targets will be set within the Site Waste Management Plan, and procedures put in place, to ensure that less than 3.4 m3 / 3.2 T per 100 m2 (gross floor area) of non-hazardous construction waste (excluding excavation / demolition waste) will be produced on site.
Wst 1b	Diversion of waste from Landfill	1	1	Targets and procedures will be put in place to ensure that over 70% by volume / 80% by weight of construction waste generated is diverted from landfill and that materials will be sorted into key waste groups.
Wst 2 -Recycled Aggregates				
Wst 2	Recycled Aggregates	1	0	Credit Not Sought
Wst 3 - Operational Waste				
Wst 3	Operational Waste	1	1	Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. There will be no composting / compactor bailer needed for the site.
Wst 4 - Speculative Floor and Ceiling Finishes				
Wst 4	Speculative Floor and Ceiling Finishes	1	1	The building occupants (s)/tenants will specify floor and ceiling finishes.
Wst 5 - Adaptation to Climate Change				
Wst 5	Structural and Fabric Resilience	1	0	Credit Not Sought
Wst 6 - Functional Adaptability				
Wst 6	Functional Adaptation Strategy	1	1	Encourage consideration and implementation of measures to accommodate future changes to the use of the building and its systems over its lifespan.

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

	Issue	Credits for Issue	Credit Target	Comments
Land Use and Ecology				
Le 1 - Site Selection				
LE 1a	Previously Developed Land	1	1	Credit awarded as the development site is a pre-developed site and at least 75% of the proposed building footprint is on a previously developed site. Second credit has been withheld as no evidence has been provided to confirm contamination levels at the site.
LE 1b	Contaminated Land	1	0	It is assumed that there is no significant contamination on site.
Le 2 - Ecological Value of Site and Protection of Ecological Features				
LE 2a	Ecological Value of Site	1	1	The site is of low ecological value as determined by a Suitably Qualified Ecologist.
LE 2B	Protection of Ecological Features	1	1	Either no ecological features are present or ecological features will be protected on site during construction if applicable.
Le 3 - Mitigating Ecological Impact				
LE 3	Mitigating Ecological Impact	2	2	An ecologist has been appointed to provide a habitat survey of the existing site, and to provide calculations to confirm the pre and post development species count, based on their planting recommendations. It is currently thought that there will be either no negative change in the number of species on site.
Le 4 - Enhancing Site Ecology				
LE 4a	Ecologist Recommendations	1	1	A suitably qualified ecologist will be appointed to make recommendations for the general enhancement and protection of the site ecology. All of the ecologist's recommendations will be implemented.
LE 4b	Species Change	1	1	There will be a small positive change in the number of species on site.

Issue		Credits for Issue	Credit Target	Comments
Le 5 - Long Term Impact on Biodiversity				
LE 5	Long Term Impact on Biodiversity	2	2	A suitably qualified ecologist will be appointed prior to the commencement of site works, to advise on compliance with relevant EU and UK legislation. A 5 year biodiversity management plan will be prepared by the ecologist. Furthermore, the applicable additional requirement will be implemented as per the Ecology report.
Pollution				
Pol 1 -Impact of Refrigerants				
Pol 1	Direct Effect Life Cycle Emissions	3	0	Credit Not Sought
Pol 2 - NOx Emissions				
Pol 2	NOx Emissions	3	0	Credit Not Sought
Pol 3 Surface Water Run-Off				
Pol 3a	Flood Risk	2	2	A PPS25 compliant Flood Risk Assessment will be commissioned to confirm that the site is in a LOW flood risk area.
Pol 3b	Surface Water Run-Off - Peak Rate	1	1	The site will be attenuated such that water run off is the same or less than it was prior to development.
Pol 3c	Surface Water Run-Off - Volume , Attenuation / limiting discharge	0	0	Credit Not Sought at this stage, possible additional credit.
Pol 3d	Minimising water course pollution	1	0	Credit Not Sought

BREEAM 2014 New Construction (Office) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Pol 4 - Reduction of Night Time Light Pollution				
Pol 4	Reduction of Night Time Light Pollution	1	1	All external lighting will be controlled via time switch to deactivate between the hours of 2300 to 0700. The lighting system will be specified in accordance with Table 1 (and associated notes) of the ILP Guidance Notes for the Reduction of Obtrusive Light, 2005. Security lighting can be active between 2300 - 0700, provided that this part of the lighting system complies with the lower lighting levels recommended during these hours.
Pol 5 - Reduction of Noise Pollution				
Pol 5	Noise Attenuation	1	1	An acoustician will be appointed to measure background noise levels in accordance with BS7445, to ensure that the works do not increase background noise levels.
Innovation Credit				
	Innovation Credits	10	0	Credits Not Sought.
		Total =	**72% 'BREEAM Excellent' Rating**	

Appendix B - BREEAM New Construction Pre-Assessment Overview – Retail (Shell Only)

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Key - Mandatory Criteria
Mandatory criteria for BREEAM 'Excellent'
RIBA Stage Sensitive Credits
RIBA Stage 2 stipulated within BREEAM Criteria
RIBA Stage 3 stipulated within BREEAM Criteria
RIBA Stage 4 stipulated within BREEAM Criteria

Issue		Credits for Issue	Credit Target	Comments
Management				
Man 1 - Project Brief and Design				
Man 1a	Stakeholder Consultation (Project Delivery)	1	1	Stakeholder consultation covering project delivery and relevant third parties.
Man 1b	Stakeholder Consultation (Third Party)	1	1	
Man 1c	Sustainability Champion (Design)	1	0	Credit Not Sought
Man 1d	Sustainability Champion (Monitoring Progress)	1	0	Credit Not Sought
Man 2 - Life Cycle Cost and Service Life Planning				
Man 2a	Elemental LCC	2	2	An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:2008.
Man 2b	Component LCC	1	1	A component level LCC option appraisal has been developed by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865:2008
Man 2c	Capital Cost Reporting	1	1	Report the capital cost for the building in pounds per square metre (£K/M2), via the BREEAM Assessment Scoring and Reporting tool, assessment issue tab. Management section
Man 3 - Responsible Construction Practices				
Man 3 (P)	Timber Procurement **(M)**	Y	Y	All timber to be legally harvested and trade'.
Man 3a	Environmental Management	1	1	1) The Main Contractor operates an ISO14001 certified EMS; 2) The Main Contractor implements PPG 6 compliant pollution prevention policies.
Man 3b	Sustainability Champion	1	0	Credit Not Sought

Issue		Credits for Issue	Credit Target	Comments
Man 3c	Considerate Construction	2	2	The Main Contractor achieves a score of 35 under the CCS scheme, with no section below a score of 7.
Man 3d	Monitoring of Construction site impacts (Energy and Water)	1	1	Main Contractor sets targets, monitors and reports on energy and water consumption each month, based on site activities.
Man 3e	Monitoring of Construction Site Impacts (Transport)	1	1	Main Contractor monitors transport of materials from the factory gate to the building site, including any transport, intermediate storage and distribution; as well as Transport of construction waste from the construction gate to waste disposal processing/recovery centre gate.
Man 4 - Commissioning and Handover				
Man 4a	Commissioning, Testing Schedule and Responsibilities	1	0	Credit Not Applicable to Shell Only Assessment
Man 4b	Commissioning Building Services	1	0	Credit Not Applicable to Shell Only Assessment
Man 4c	Testing and Inspecting the Building Fabric	1	1	The project will be subject to both air-tightness testing and a continuity of thermal insulation inspection via thermographic testing. Any defects identified in the thermographic survey or the airtightness testing reports are rectified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building/element.
Man 4c	Handover	1	0	Credit Not Applicable to Shell Only Assessment
MAN 05 - Aftercare				
Man 5a	Aftercare Support	1	0	Credit Not Applicable to Shell Only Assessment
Man 5b	Seasonal Commissioning	1	0	Credit Not Applicable to Shell Only Assessment
Man 5 c	Post Occupancy Evaluation	1	0	Credit Not Applicable to Shell Only Assessment

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Health and Wellbeing				
HEA 1 - Visual Comfort				
Hea 1a	Glare Control	1	0	Credit Not Applicable to Shell Only Assessment
Hea 1b	Daylighting	1	0	Credit Not Sought
Hea 1c	View Out	1	0	Credit Not Sought
Hea 1d	Internal and External Lighting	1	1	Internal and external lighting systems are designed to avoid flicker and provide appropriate illuminance (lux) levels. Internal lighting is zoned to allow for occupant control.
Hea 2 - Indoor Air Quality				
Hea 2a	Indoor Air Quality Plan	1	0	Credit Not Applicable to Shell Only Assessment
Hea 2b	Ventilation	1	0	Credit Not Applicable to Shell Only Assessment
Hea 2c	Volatile organic compound (VOC) emission levels (products)	1	0	Credit Not Applicable to Shell Only Assessment
Hea 2d	Volatile organic compound (VOC) emission levels (post construction)	1	0	Credit Not Applicable to Shell Only Assessment
Hea 2e	Potential for Natural Ventilation	1	0	Credit Not Sought
Hea 4 - Thermal Comfort				
Hea 4a	Thermal Comfort	1	0	Credit Not Applicable to Shell Only Assessment
Hea 4b	Adaptability for Climate Change	1	0	Credit Not Applicable to Shell Only Assessment
Hea 4c	Thermal zoning and controls	1	0	Credit Not Applicable to Shell Only Assessment
Hea 5 - Acoustic Performance				
Hea 5a	Performance Standard	1	1	Where the building meets the acoustic performance standards and testing requirements detailed in Table - 20 (see Checklists and tables) for all relevant functional areas.
Hea 6 - Safety and Security				
Hea 5a	Safe Access	1	N/A	Credit Not Applicable
Hea 5b	Consultation with ALO	2	2	Secure by Design - Security needs are understood and taken into account in the design and specification

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Energy				
Ene 1 - Reduction of CO2 Emissions				
Ene 01	Reduction of CO2 Emissions	12	8	It is assumed that the development will achieve an EPRnc of 0.6, and hence, 8 credits (For Shell only assessment only the heating and cooling energy demand is assessed).
Ene 2 - Energy Monitoring				
Ene 2a	By Energy Use	1	0	Credit Not Applicable to Shell Only Assessment
Ene 2b	By Building Area	1	0	Credit Not Applicable to Shell Only Assessment
Ene 3 - External Lighting				
Ene 3	External Lighting	1	1	The average initial luminous efficacy of the external light fittings in the construction zone is 60 lamp lumen per circuit watt or greater AND All fittings are automatically controlled to prevent function during day light hours, as well as with presence sensors in areas of intermittent pedestrian traffic.
Ene 4 - Low Carbon Design				
Ene 4a	Passive Design Analysis	1	0	Credit Not Sought
Ene 4b	Free Cooling	1	0	Credit Not Sought
Ene 4c	LZC Technology	1	1	A feasibility study has been carried out to establish the most appropriate on-site/near-site low or zero carbon (LZC) energy source(s) for the building/development and is specified.
Ene 6 - Energy Efficient Transportation Systems				
Ene 6	Lifts & Escalators	3	0	Credit Not Applicable to retail units as no lift is specific to this area
Ene 8 - Energy Efficient Equipment				
Ene 8	Energy Efficient Equipment	2	0	Credit Not Applicable to Shell Only Assessment

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Transport				
Tra 1 - Public Transport Accessibility				
Tra 1	Accessibility Index	3	3	PTAL 6b AI of 54.08
Tra 2 - Proximity to Amenities				
Tra 2	Proximity to Amenities within 500m	1	1	The development is within 500m of a cash machine, food store and a post box.
Tra 3 - Cyclist Facilities				
Tra 3a	Cycle Storage	1	1	Requirement: 10 spaces total publicly accessed.
Tra 3b	Cycle Facilities	1	0	Credit Not Sought
Tra 4 - Maximum Car Parking Capacity				
Tra 4	Car Parking Capacity	N/A	0	Credits Not Applicable to a Retail Assessment.
Tra 5 - Travel Plan				
Tra 5	Travel Plan	1	1	Travel Plan and Transport assessment required specific to the development.
Water				
Wat 1 - Water Consumption				
Wat 1	Water Consumption	N/A	N/A	Occupants/tenants to specifiy internal water fitting not the developer.
Wat 2 - Water Monitoring				
Wat 2	Water Monitoring	1	1	The main supply to each building will be fitted with a water meter with a pulsed output. Any external taps must also be sub-metered.
Wat 2a	Water Sub Meters			Any water uses accounting for over 10% of total consumption will be sub-metered.
Wat 3 - Water Leak Detection and Prevention				
Wat 3a	Water Leak Detection	1	1	Recognition of leak detection systems capable of detecting a major water leak on the mains water supply

Issue		Credits for Issue	Credit Target	Comments
Wat 3b	Water Leak Prevention	N/A	N/A	Credit Not Applicable to Shell Only Assessment
Wat 4 - Water Efficient Equipment				
Wat 4	Unregulated Water Use	1	1	Irrigation system to be specified in accordance with the BREEAM criteria (where applicable)
Materials				
Mat 1 Life Cycle Impacts				
Mat 1	Life Cycle Impacts	5	4	Reductions in the building's environmental life cycle impacts through assessment of the main building elements. As follows: • External Walls • Windows • Roof • Upper floor slab • Floor finishes/covering
Mat 2 - Hard Landscaping and Boundary Protection				
Mat 2	Hard Landscaping and Boundary Protection	1	1	Reductions in the environmental life cycle impacts through assessment of the hard landscaping and boundary protection elements.
Mat 3 - Responsible Sourcing of Materials				
Mat 3a	Timber Procurement	M	M	All timber used on site will be sourced in accordance with the UK Government's Timber Procurement Policy.
Mat 3b	Sustainable Procurement Plan	1	1	Production of a sustainable procurement plan
Mat 3c	Major Building Elements	3	1	Responsible sourcing on the major building elements (1 credit and 18%).
Mat 4 - Insulation				
Mat 4a	Embodied Impact of Insulation	1	1	All insulation in the shell development will be specified as types that achieve an A or A+ rating, according to the Green Guide to Specification Online.

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Mat 5 - Designing for Robustness				
Mat 5	Designing for Robustness	1	1	1) Vulnerable internal and external areas of the building will be identified, with suitable durability / protection / design measures taken, for example: - Protection from high pedestrian traffic in main entrances, public areas and thoroughfares (i.e. 'Severe Duty' wall specifications, kick plates to doors, easily washable and durable flooring); ◦ Protection against any internal trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas (i.e. wall guards); ◦ Protection against potential vehicular collision where cars / delivery vehicles will be manoeuvring within 1m of the external building facade (i.e. ARMCO Barriers, bollards, raised kerbs.) 2) The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. The project architect should review Table 47 of the BREEAM guidelines.
Mat 6 - Material Efficiency				
Mat 6	Material Efficiency	1	0	Credit Not Sought
Waste				
Wst 1 - Construction Waste Management				
Wst 1a	Construction Resource Efficiency	3	3	Targets will be set within the Site Waste Management Plan, and procedures put in place, to ensure that less than 3.4 m3 / 3.2 T per 100 m2 (gross floor area) of non-hazardous construction waste (excluding excavation / demolition waste) will be produced on site.
Wst 1b	Diversion of waste from Landfill	1	1	Targets and procedures will be put in place to ensure that over 70% by volume / 80% by weight of construction waste generated is diverted from landfill and that materials will be sorted into key waste groups.
Wst 2 -Recycled Aggregates				
Wst 2	Recycled Aggregates	1	0	Credit Not Sought

Issue		Credits for Issue	Credit Target	Comments
Wst 3 - Operational Waste				
Wst 3	Operational Waste	1	1	Provision of suitable space and facilities to allow for segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities.
Wst 4 - Speculative Floor and Ceiling Finishes				
Wst 4	Speculative Floor and Ceiling Finishes	0	0	Credit Not Applicable to a Retail Assessment
Wst 5 - Adaptation to Climate Change				
Wst 5	Structural and Fabric Resilience	1	0	Credit Not Sought
Wst 6 - Functional Adaptability				
Wst 6	Functional Adaptation Strategy	1	1	Encourage consideration and implementation of measures to accommodate future changes to the use of the building and its systems over its lifespan.
Land Use and Ecology				
Le 1 - Site Selection				
LE 1a	Previously Developed Land	1	1	Credit awarded as the development site is a pre-developed site and at least 75% of the proposed building footprint is on a previously developed site. Second credit has been withheld as no evidence has been provided to confirm contamination levels at the site.
LE 1b	Contaminated Land	1	0	It is assumed that there is no significant contamination on site.
Le 2 - Ecological Value of Site and Protection of Ecological Features				
LE 2a	Ecological Value of Site	1	1	The site is of low ecological value as determined by a Suitably Qualified Ecologist.
LE 2B	Protection of Ecological Features	1	1	Either no ecological features are present or ecological features will be protected on site during construction if applicable.

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Le 3 - Mitigating Ecological Impact				
LE 3	Mitigating Ecological Impact	2	2	An ecologist has been appointed to provide a habitat survey of the existing site, and to provide calculations to confirm the pre and post development species count, based on their planting recommendations. It is currently thought that there will be either no negative change in the number of species on site.
Le 4 - Enhancing Site Ecology				
LE 4a	Ecologist Recommendations	1	1	A suitably qualified ecologist will be appointed to make recommendations for the general enhancement and protection of the site ecology. All of the ecologist's recommendations will be implemented.
LE 4b	Species Change	1	1	There will be a small positive change in the number of species on site.
Le 5 - Long Term Impact on Biodiversity				
LE 5	Long Term Impact on Biodiversity	2	2	A suitably qualified ecologist will be appointed prior to the commencement of site works, to advise on compliance with relevant EU and UK legislation. A 5 year biodiversity management plan will be prepared by the ecologist. Furthermore, the applicable additional requirement will be implemented as per the Ecology report.
Pollution				
Pol 1 -Impact of Refrigerants				
Pol 1	Direct Effect Life Cycle Emissions	3	0	Credit Not Sought
Pol 2 - NOx Emissions				
Pol 2	NOx Emissions	3	0	Credit Not Sought

BREEAM 2014 New Construction (Retail) Assessment
Project: Stephenson House
Date: May 2017

Issue		Credits for Issue	Credit Target	Comments
Pol 3 Surface Water Run-Off				
Pol 3a	Flood Risk	2	2	A PPS25 compliant Flood Risk Assessment will be commissioned to confirm that the site is in a LOW flood risk area.
Pol 3b	Surface Water Run-Off - Peak Rate	1	1	The site will be attenuated such that water run off is the same or less than it was prior to development.
Pol 3c	Surface Water Run-Off - Volume , Attenuation / limiting discharge	0	0	Credit Not Sought at this stage, possible additional credit.
Pol 3d	Minimising water course pollution	1	0	Credit Not Sought
Pol 4 - Reduction of Night Time Light Pollution				
Pol 4	Reduction of Night Time Light Pollution	1	1	All external lighting will be controlled via time switch to deactivate between the hours of 2300 to 0700. The lighting system will be specified in accordance with Table 1 (and associated notes) of the ILP Guidance Notes for the Reduction of Obtrusive Light, 2005. Security lighting can be active between 2300 - 0700, provided that this part of the lighting system complies with the lower lighting levels recommended during these hours.
Pol 5 - Reduction of Noise Pollution				
Pol 5	Noise Attenuation	N/A	0	Credit Not Applicable to Shell Only Assessment
Innovation Credit				
	Innovation Credits	10	0	Credits Not Sought.
		Total =	**73.5% 'BREEAM Excellent' Rating**	