13 BLACKBURN ROAD

SUSTAINABILITY STATEMENT

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Client
WHIP Ltd

Project
13 Blackburn Road

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13 Blackburn Road
Sustainability statement

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Sustainability statement

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Confidentiality and Third-Party Responsibility

Revision Table

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00	06/05/2020	-	-
01	29/05/2020	All	Final changes for planning submission
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Contents

1 Executive summary

This Sustainability Statement has been prepared by chapmanbdsp to support the planning application for the proposed development at 13 Blackburn Road. It details the sustainable design features of the development and demonstrates how they relate to applicable planning policy guidance as listed below:

- National Planning Policy Framework (NPPF) (2019);
- The London Plan (2016) with consideration given to the forthcoming Draft London Plan (2019);
- The London Borough of Camden Planning Policy.

BREEAM New Construction, Non-domestic 2018 Assessment tool has been used as a basis to optimise the environmental strategy of the development and to demonstrate the sustainability credentials of the scheme in line with Camden Planning Policy. Each of the criteria has been discussed and developed during sustainability workshops led by a BREEAM Assessor/Accredited Professional within the chapmanbdsp environmental team and attended by the relevant project team members. The meetings have ensured that all members of the development team have a good understanding of the criteria and how to successfully integrate each of the policy requirements, BREEAM credits and process into the design.

The pre-assessment document highlights the current approach developed by the team, subject to further development through detailed design. It is currently considered that a rating of BREEAM 'Excellent' could be achievable for the non-domestic elements with a current targeted score of approximately 76.0%.

A formal assessment will take place once tender documentation is complete with each targeted credit fully evidenced by the design team to confirm compliance and the final score and rating.

The BREEAM assessor and AP have been and will continue to form an integral part of the design team and a consistent point for reference, review and inquiry regarding the approach described in this report. This approach is proven to offer a robust route to successful BREEAM certification and holistic sustainable design.

Further details of the specific policies this report delivers on are given in Section 3.

Details of how each policy has been met are provided in Sections 4 - 10.

2 Introduction

chapmanbdsp has been commissioned by West Hampstead Investments Partnership Ltd to provide a Sustainability Statement in support of the detailed planning application for the proposed development at 13 Blackburn Road in the London Borough of Camden.

2.1 Site location and proposed development

The proposed works include demolition of existing building and construction of three buildings and connecting pavilion standing between 1 and 9 storeys (plus basement) in height, comprising 53 dwellings, 4,802sqm of commercial floorspace, new public square, public realm improvements, landscaping and resident's facilities including cycle, refuse and parking facilities.

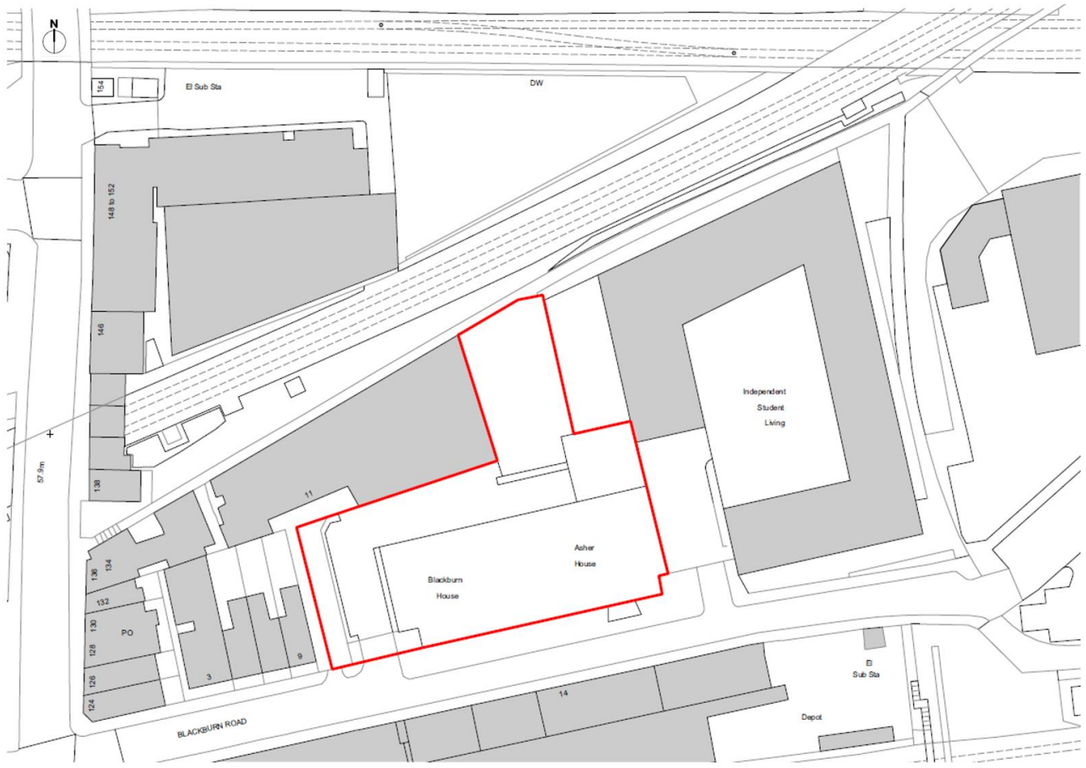

Figure 2.1 - Location plan of the proposed development site

2.2 Report structure

This introductory section is followed by a comprehensive review of national/regional/local policies relating to sustainability (Section 3). After which, Sections 4 - 10 detail the sustainability strategy for the scheme related to climate change mitigation & adaptation, energy, water efficiency, flood risk and SUDs, pollution, sustainable materials, construction & waste, landscaping & biodiversity and sustainable transport & accessibility.

BREEAM New Construction, Non-domestic 2018 Assessment tool has been used as a basis to optimise the environmental strategy of the development and to demonstrate the sustainability credentials of the scheme. Section 11 summarises the results of the BREEAM pre-assessment carried out for the scheme to date. This is provided in Section 11.

2.3 Report objectives

The objectives of this report are to:

- Demonstrate how the proposed development will meet the sustainability standards required by the relevant National, Regional and Local planning policy;
- Identify areas for consideration at the early stages of the project to facilitate the incorporation of the principles of sustainable design and construction into the design of the development; and
- Summarise the result of the BREEAM pre-assessments exercise carried out for the scheme, detailing the commitments made by the client and the design team at this a stage of the development.

3 Planning context

3.1 National Planning Policy Framework (NPPF) (2019)

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. Planning law requires that applications for planning permission be determined in accordance with the development plan unless material considerations indicate otherwise. The NPPF must be taken into account in preparing the development plan and is a material consideration in planning decisions. Planning policies and decisions must also reflect relevant international obligations and statutory requirements.

The purpose of the NPPF is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways:

a) An economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) A social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) An environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

This sustainability statement has been developed in line with the NPPF.

3.2 National Policy

Building Regulations Approved Document Part L

Part L of the Building Regulations is the mechanism by which the government is driving reductions in the regulated
CO2 emissions from new buildings. The current version is Part L 2013

Part L has five key criteria which must be satisfied as follows:

Criterion 1 - Achieving the Target Emission Rate (TER)
Criterion 2 - Limits on design flexibility
Criterion 3 - Limiting the effects of solar gains in summer
Criterion 4 - Building performance consistent with the Building Emission Rate (BER)
Criterion 5 - Provision for energy-efficient operation of the building

Criterion one requires that the building as designed is not predicted to generate CO2 emissions in excess of that set by the Target Emission Rate (TER) calculated in accordance with the approved Standard Assessment Procedure (SAP) 2012. It also requires that the building's fabric performs well enough to minimise heating and cooling demands. This is defined by the Target Fabric Energy Efficiency (TFEE).

Criterion two places upper limits on the efficiency of controlled fittings and services.

Criterion three requires that occupied spaces buildings are not subject to excessive solar gains.

It is generally considered that the current version of Building Regulations is now outdated and is outperformed in this instance by the London Plan policy.

3.3 The London Plan (2016)

This Spatial Development Strategy for Greater London includes objectives to reduce the capital's impact on and exposure to the effect of climate change. The most relevant policies for this Sustainability Statement are:

Policy 5.3: Sustainable Design and Construction

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. Developments should incorporate the following sustainable design principles:

- Minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems);
- Avoiding internal overheating and contributing to the urban heat island effect;
- Efficient use of natural resources (including water), including making the most of natural systems both within and around buildings;
- Minimising pollution (including noise, air and urban runoff);
- Minimising the generation of waste and maximising reuse or recycling;
- Avoiding impacts from natural hazards (including flooding);
- Ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions; and
- Securing sustainable procurement of materials, using local supplies where feasible, and promoting and protecting biodiversity and green infrastructure.

Other relevant policies

The following other London Plan policies are considered relevant to this Sustainability statement:

- Policy 5.2: Minimising Carbon Dioxide Emissions;
- Policy 5.6: Decentralised Energy in Development Proposals;
- Policy 5.7: Renewable Energy;
- Policy 5.9: Overheating and Cooling;
- Policy 5.10: Urban Greening;
- Policy 5.11: Green roofs and development site environs;
- Policy 5.12: Flood Risk Management;
- Policy 5.13: Sustainable Drainage;
- Policy 5.16: Waste net self-sufficiency;
- Policy 5.17: Waste capacity;
- Policy 6.9: Cycling;
- Policy 6.10: Walking;
- Policy 7.14: Improving Air Quality;
- Policy 7.15: Reducing and managing noise, improving and enhancing the acoustic environment and promoting appropriate soundscape;
- Policy 7.19: Biodiversity and Access to Nature.

3.4 Greater London Authority (GLA) Supplementary Planning Guidance (SPG) on Sustainable Design and Construction (April 2014)

This Supplementary Planning Guidance (SPG) provides guidance on what measures developers can include in their building designs and operations to achieve the sustainability targets set out in the London Plan. This guidance document includes 3 main sections:

- Chapter 2: Resource Management;
- Chapter 3: Adapting to climate change and greening the city; and
- Chapter 4: Pollution Management – Land, Air, Noise, Light and Water.

3.5 GLA Energy Assessment Guidance, 2018

In October 2018, the GLA released guidance on preparing Energy Assessments as part of planning applications. Within this guidance, it is stated that as of January 2019, all applications must report on carbon emissions using the emerging SAP10 carbon factors. This will ensure that the assessment of new developments better reflects the actual carbon emissions associated with their expected operation.

	SAP2012 carbon factor ($kgCO_2e/kWh$)	SAP10.0 carbon factor ($kgCO_2e/kWh$)
Gas	0.216	0.210
Electricity	0.519	0.233

Table 3.1 – SAP2012 and SAP10.0 carbon factors

All developments are required to undertake an analysis of the risk of overheating as per the Building Regulations requirements, i.e. Criterion 3 of the Part L2A. However, the regulations recognise that the test does not cover all factors influencing overheating, further modelling is required. Therefore, all developments are required to undertake dynamic overheating modelling in line with the guidance and data sets in CIBSE TM52 and TM49 respectively.

3.6 Camden Local Plan (2017)

The Camden Local Plan is the key strategic document in Camden's development plan as it sets out the vision for shaping the future of the Borough and contains policies for guiding planning decisions. The Local Plan was adopted by Council on 3 July 2017 and has replaced the Core Strategy and Camden Development Policies documents as the basis for planning decisions and future development in the borough. Key policies are:

- Policy A3 Biodiversity;
- Policy A4 Noise and vibration;
- Policy CC1 Climate change mitigation;
- Policy CC2 Adapting to climate change;
- Policy CC3 Water and flooding;
- Policy CC4 Air quality;
- Policy CC5 Waste;
- Policy T1 Prioritising walking, cycling and public transport
- Policy T2 Parking and car-free development
- Policy T3 Transport infrastructure; and
- Policy T4 Sustainable movement of goods and materials.

3.7 Camden Planning Guidance (2018-2019)

The Council has reviewed its Camden Planning Guidance (CPG) documents to support the delivery of the Camden Local Plan following its adoption in 2017. The adopted CPG documents can be 'material considerations' in planning decisions, although they have less weight than the Local Plan or other development plan documents. Key CPG documents for the sustainability appraisal are:

- Air Quality CPG (March 2019);
- Biodiversity CPG (March 2018)
- Energy efficiency and adaptation CPG (March 2019);
- Transport CPG (March 2019); and
- Water and flooding CPG (March 2019).

3.8 Emerging Policy - Draft London Plan, December 2019

The first draft of the London Plan was launched for consultation in December 2017, with two updated draft versions that include minor suggested changes being published in August 2018, July 2019 and December 2019. It is currently in review and could be adopted in 2020. The GLA have advised that although the draft London Plan is not yet adopted it can be referred to during the Planning Application Process.

Whilst many of the draft London Plan proposals have been considered during design development, this strategy aims to respond to the currently adopted policies only at this time.

Key proposed policy targets considered include:

- Major development to be Net Zero Carbon (taken to mean a 100% reduction in regulated CO_2 emissions from the relevant Building Regulations baseline);
- Minimum 35% on-site emissions reduction;
- Minimum 15% (commercial)/reduction in regulated CO_2 through energy efficiency measures; and
- Proposed developments to demonstrate a pathway to zero carbon on-site by 2050.

4 Climate Change

The GLA SPG on Sustainable Design and Construction – Chapter 3: 'Adapting to climate change and greening the city': 'Design', Camden Local Plan policy CC1 and CC2 and Camden's Energy efficiency and adaptation CPG (March 2019), provide further guidance on how developers should incorporate climate change adaptation and greening priorities outlined in the London Plan.

Climate change brought about by man-made emissions of greenhouse gases and its effects are complex and include:

- Increased average temperatures;
- Rising sea levels;
- Increased precipitation; and
- More frequent extreme weather.

Action to address climate change falls into two categories: mitigation and adaptation. Mitigation measures are designed to reduce greenhouse gas emissions to slow down or stop climate change, whilst adaptation measures are designed to adjust society and buildings to cope with climate change. The proposed development incorporates the following climate change mitigation and adaptation features in line with the London Plan and London Borough of Camden planning requirements.

4.1 Climate Change Mitigation

The energy strategy of the scheme has considered multiple measures in line with the energy hierarchy to mitigate the effects of climate change through the specification of passive design, energy-efficient systems and low and zero carbon (LZC) technologies. The measures mitigate energy use in the first instance whilst also providing a significant proportion of the estimated resultant energy use via renewable energy sources. These actions help to reduce fossil fuel usage and greenhouse gas emissions equivalent to 57 tonnes of CO_2 per annum. It represents a 54% saving in regulated carbon emissions when compared to the Building Regulations Part L2013 baseline. This is over and above the current London Plan targets and a significant step toward enabling the development to achieve zero regulated carbon emissions in the future.

A brief summary of the strategy and the resultant energy and carbon emission savings can be found in Section 5 of this report, with further details provided in the Energy Statement prepared by chapmanbdsp and submitted as part of this application.

4.2 Climate Change Adaptation

Adapting to hotter, drier summers

Alongside energy conservation and carbon emission savings, the energy strategy of the scheme has considered measures to adapt to the effects of climate change through an optimised design to mitigate the risk of overheating. Measures have been developed in line the London Plan Cooling Hierarchy promoting passive design measures before active cooling systems and have been verified using best practice modelling methods (CIBSE TM52 for non-domestic areas and TM59 for domestic areas). Further testing will continue through detailed design to maintain these standards as the design develops.

Refer to Section 5 of this report and the submitted Energy Statement prepared by chapmanbdsp for a detailed summary of the features proposed to limit the risk of overheating for the scheme.

In addition to these measures, green / biodiverse roof finishes will be implemented across most of the proposed blue roof areas, where possible. The proposed green areas will contribute to reducing the 'urban heat island' effect and will positively impact the development.

Trees and vegetation at ground level can either remove more water from the soil or retain moisture to help keep ground conditions moist and prevent damage occurring to the building via soil shrinkage. The proposals support this theory and provide vegetation that will help to mitigate this risk whilst also providing shade to transient areas of the development.

Hotter, drier summers also introduce the risk of water shortage and drought. The proposed development will significantly reduce its demand for mains water supply through the use of water-efficient fittings. The proposed fittings will ensure that:

- The non-domestic areas will consume 50% less potable water than a conventional scheme.
- Domestic areas will exceed the requirements of the Building Regulations Part G regarding the maximum water use per person per day and target indoor water use of less than 105 litres/person/day.

External planting is also at-risk during periods of drought and will be developed so that it does not use excessive amounts of water. This will be achieved via the following measures:

- Drought resistant planting which will also maximise the support for native fauna.
- Irrigation of soft landscaping will be predominantly by natural precipitation, however where mechanical irrigation systems are required, these will be drip-fed subsurface irrigation systems incorporating soil with suitable sensors and control to prevent excessive water use.

The proposed landscape design aims weave the Blackburn Road development in to the fabric of the wider West Hampstead public realm, creating valuable amenity space. The aim is to create valuable and functional amenity space that is accessible, whilst also maximising green space within the site constraints present.

The streetscape allows the opportunity for tree planting, but within the courtyard/pavillion areas, which will be sat above a basement, large scale planters will be employed in order to maximise planting potential. Combined with the proposed glass lightwell walkway, the strategy will enable good access and movement circulation within the space.

The proposed planting scheme is shown in Figure 4.1 below.

Figure 4.1 – Proposed planting scheme that will be established using drought resistant planting

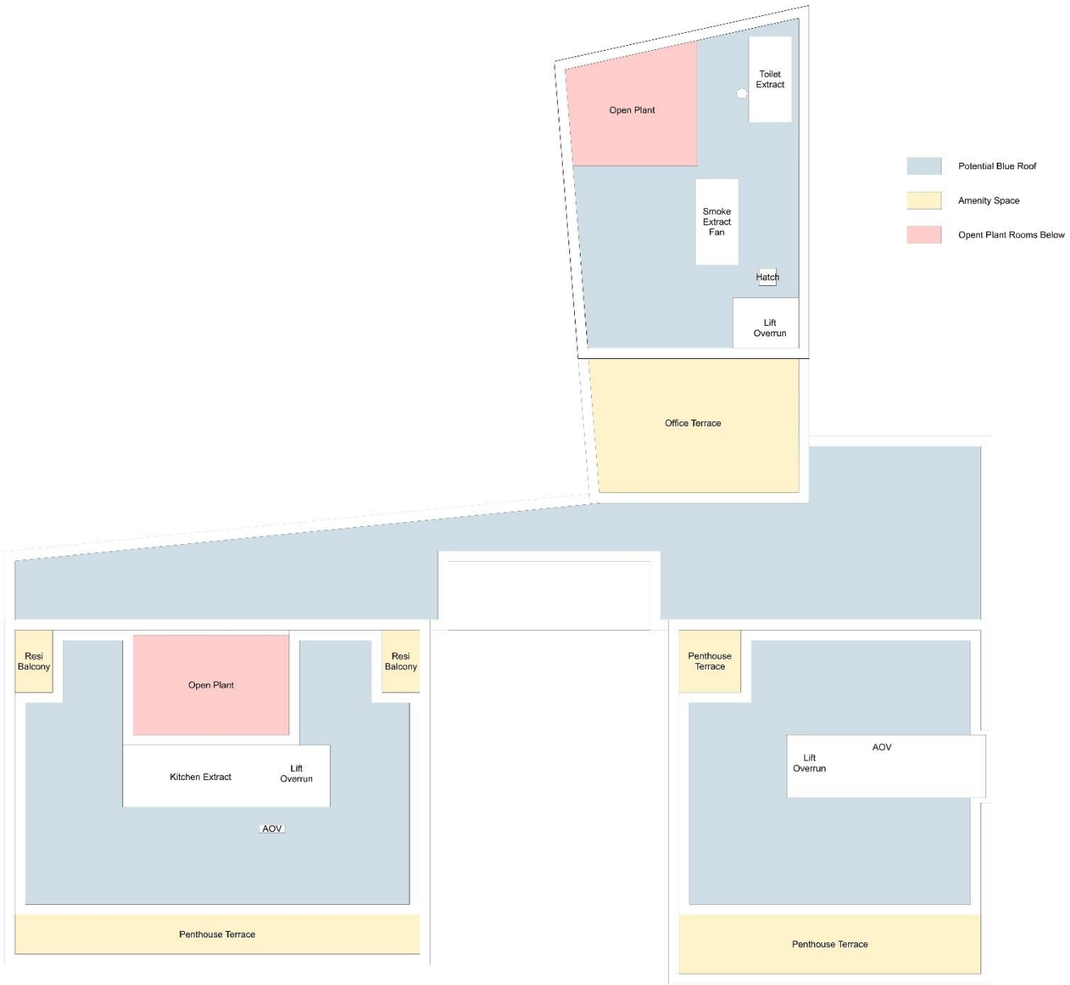

Figure 4.2 – Location of potential blue roofs

Adapting to heavier rainfall and flood risk management

In regard to surface water run-off, a Sustainable Drainage System (SuDS) scheme will be implemented that reduces the peak surface water discharge rate. This will ensure that the building will not flood in the event of local infrastructure failure and that the post development surface water run-off volume will be no greater than in the pre-developed state. The development endeavours to not increase the surface water catchment / impermeable area from that of the existing, therefore, the run-off volume will not exceed the existing by default.

Refer to Section 6.1 for further details.

More extreme weather events

Key BREEAM credits are included in the pre-assessment target score which aid in the development of buildings utilising resilient materials. Workshops during detailed design will identify key measures for successful implementation success as resilient foundations and facades.

5 Energy

The energy strategy for this proposed development focuses on providing spaces that are comfortable throughout the year that are designed to mitigate energy consumption and carbon emissions. The design approach for the proposed development follows the GLA energy hierarchy, i.e. be 'lean, clean, and green', to achieve the following targets:

- 10% and 15% reduction in regulated carbon emissions against Part L 2013 Building Regulations minimum performance through passive design & energy efficiency measures (Be Lean) for the domestic and non-domestic areas of the proposed development.
- A renewables' contribution of 20% regulated carbon emissions (Be Green); and
- An on-site reduction of 35% beyond Part L 2013 for the proposed development (Total cumulative)

These targets are in line with the GLA's Sustainable Design and Construction SPG, Camden Planning Policy and guidance as well as the requirements set out in the Draft London Plan (July 2019).

The design approach targets demand reduction measures, giving priority to the optimisation of the building fabric to reduce the need for heating, cooling, and artificial lighting. The objective is to have buildings as energy-efficient (i.e. 'lean') as possible without relying on systems or technologies which require energy to operate and deliver low carbon performance. Where energy is required to operate systems, the efficient plant has been selected to minimise demand.

The following passive design features are proposed;

- High levels of envelope insulation to prevent heat loss
- Airtight construction to prevent heat loss
- Thermal bridges between building elements minimised to prevent heat loss
- Optimised glazing-to-solid ratios to minimise heat loss and overheating risk and cooling (offices only) whilst maximising daylight.
- Highly efficient double glazing throughout with low-emissivity coatings to minimise heat loss and prevent excessive solar gains.

The following energy-efficient plant is proposed;

- High-efficiency mechanical ventilation systems with heat recovery (MVHR) for commercial and domestic areas
- Low energy lighting throughout with occupant detection and daylight control.
- Smart meters, system controls and diagnostics systems to operate the building effectively.

The following renewable energy sources are proposed;

- A 5th generation ambient loop site-wide energy network utilising air source heat pumps in parallel with water source heat pumps to provide highly efficient heating and hot water across the development.

With this design approach, the domestic and non-domestic areas of the proposed development achieve 16% and 26% reduction in regulated carbon emissions for the 'Be Lean' scenario respectively. The proposed development achieves overall a 54% reduction in regulated carbon emissions over Part L 2013 using SAP 10 carbon factors and a 33% renewable contribution.

A detailed summary of the approach to energy conservation and carbon emissions savings are provided in the Energy Strategy provided as part of this planning application.

Site-wide energy hierarchy

	Carbon dioxide emissions (Tonnes CO_2 per annum)		
	Regulated	Unregulated	Total
Part L 2013 compliant building	106	56	162
Be Lean	84	56	140
Be Clean	84	56	140
Be Green	49	56	105

Table 5.1 - CO_2 emissions after each stage of the energy hierarchy for the proposed development

		Carbon dioxide savings (Tonnes CO_2 per annum)		%	
		Regulated	Total	Regulated	Total
Be Lean	Savings from demand reduction	23	23	21%	14%
Be Clean	Savings from CHP	0	0	0%	0%
Be Green	Savings from renewable energy	35	35	33%	21%
Total cumulative savings		**57**	**57**	**54%**	**35%**

Carbon shortfall	49 tCO_2 /year
Cash-in-lieu contribution	£87,920

Table 5.2 - Regulated & unregulated CO_2 savings from each stage of the energy hierarchy for the proposed development

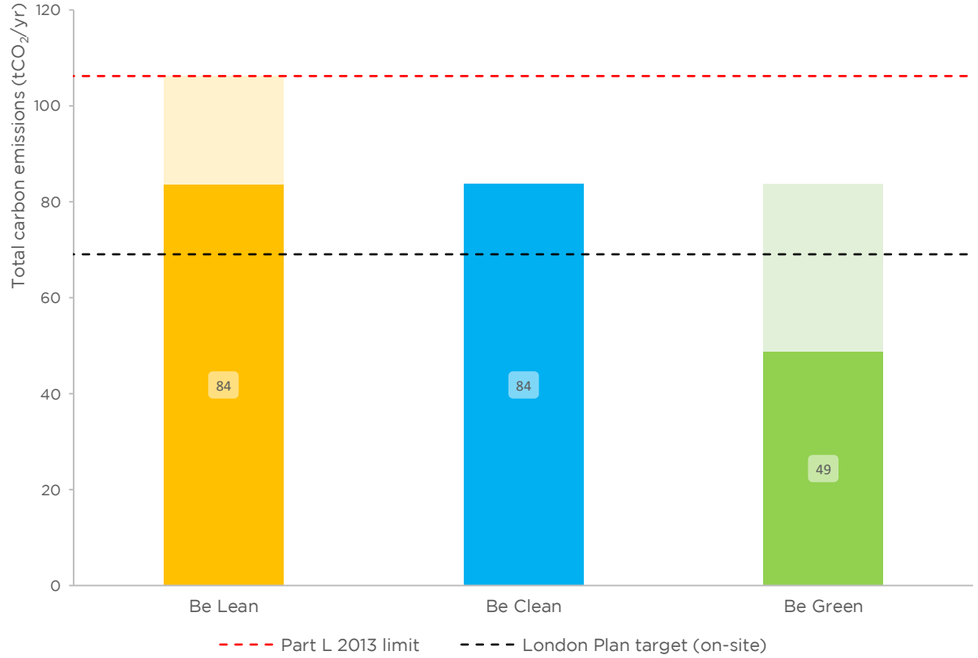

Figure 5.1 - Regulated CO_2 emissions after each stage of the energy hierarchy for the proposed development

6 Water, Flood Risk & Drainage

Consideration has been made with regards to the conservation of water resources through water efficiency measures, in addition to the risk posed by flooding. This includes the use of Sustainable Urban Drainage Systems (SuDS) to reduce the risk of surface water flooding, in line with GLA SPG on Sustainable Design and Construction – Chapter 2: 'Resource Management', Chapter 3: 'Adapting to climate change and greening the city', London Plan Policy 5.12: 'Flood Risk Management, Policy 5.13: 'Sustainable Drainage' and Camden Local Plan policy CC3 Water and flooding.

6.1 Flood Risk and SuDS

A Flood Risk Assessment is not required for planning for the proposed development. The development is located in Flood Zone 1 and a site-specific Flood Risk Assessment will be prepared (post-planning) to facilitate the BREEAM process that demonstrates that the development is at low risk from all sources of flooding.

The flood risk and drainage strategy for the scheme will meet the London Borough of Camden flood risk and drainage requirements and will also ensure the scheme achieves 4 BREEAM credits for Pol 03 – Surface water run-off credits for the assessment of the non-domestic areas of the proposed development.

The SuDS Hierarchy has been followed in order to employ the most suitable and practicable SuDS techniques to improve surface water run off rates from the site, reducing the surface water load on the existing Thames Water sewer network. It is proposed to capture and attenuate surface water through a number of blue roof systems and a below ground geo-cellular tank.

The proposed blue roofs look to manage surface water at source, reducing the peak surface water discharge rate from a number of roof areas, as well as promoting evaporation which can help to reduce the total volume of run-off. It is proposed that green / biodiverse roof finishes will be implemented across most of the proposed blue roof areas. These roofs will further reduce both the total and peak surface water discharge, as well as providing benefits to biodiversity and water quality.

Surface water from the remaining roof areas, the podium area and the majority of the external areas will be attenuated within a geo-cellular attenuation tank. This will be located within the external area, beyond the basement line, adjacent to Blackburn Road and discharge will be restricted via a vortex flow control.

It is proposed that the access road area to the east of the site will continue to drain as existing as the scope of works in this area is limited and the existing drainage and utilities, which also serve the adjacent site, are to be maintained.

All foul water drainage from above ground floor will offset at high-level within the building and drop to the below ground drainage network. All ground floor drainage will be connected to this network. All foul drainage below ground floor level will be positively pumped, discharging to the high-level suspended gravity network.

It Is proposed that all foul and surface water from the site will outfall to the existing combined demarcation manhole within the access road, before discharging via the existing 300mm diameter connection to the sewer within Blackburn Road.

Refer to the SuDS statement prepared by Elliott Wood for further details.

6.2 Water Efficiency

Water consumption in the UK has risen by more than 50% over the last 25 years. This represents a huge strain on natural water resources such as reservoirs and rivers and has a knock-on effect on wetland habitats and ecosystems.

Water use can be minimised by installing water-efficient equipment and appliances and increasing awareness of water consumption. The scheme will incorporate water-efficient fittings in line with the following BREEAM - Water credits' and London Borough of Camden requirements:

- The non-domestic areas will consume 50% less potable water than a conventional scheme; this will achieve 4 credits under the BREEAM 2018 requirements.
- Domestic areas will exceed the requirements of the Building Regulations Part G regarding the maximum water use per person per day and target indoor water use of less than 105 litres/person/day.

The water conservation strategy proposed for the scheme incorporates flexibility in the specification of water fittings and appliances, recognising the rapid industry progress in this field, and allowing the inclusion of new and innovative solutions where they are proven to offer:

- Occupant satisfaction.
- Technical Performance; and
- Economic competitiveness.

The following features will be also included for the non-domestic areas:

- A water meter with a pulsed output will be provided for the water supply of the building and each tenanted area.
- Flow control devices that regulate the supply of water to each WC area/facility according to demand will be installed (therefore minimising water leaks and wastage from sanitary fittings); and
- A major leak detection system will be installed for the non-domestic scheme enabling major leaks to be identified early, to prevent damage to the building and minimise wasted potable water.

In addition to the water conservation measures detailed above, future occupants of the scheme will be encouraged to adopt a more responsible attitude to water use. They will be provided with a non-technical guide which details the operation and performance of the building, including information on water-efficient fittings, recommendations for their most efficient usage, and details on external water use.

6.3 Non-potable water use

External planting will be designed to mitigate water use primarily using drought-resistant planting, which will also maximise the support for native fauna.

Irrigation of soft landscaping will be predominantly by natural precipitation, however where mechanical irrigation systems are required, these will be drip-fed subsurface irrigation systems incorporating soil with suitable sensors and control to prevent excessive water use.

7 Materials & Waste

Preference has been given to the selection of sustainable materials with a low environmental impact over their life cycle, as well as sustainable procurement and waste disposal. This review has been undertaken in the context of the GLA SPG on Sustainable Design and Construction – Chapter 2: 'Resource Management' and the following London Plan and Camden planning policies;

- London Plan Policy 5.16: Waste net self-sufficiency;
- London Plan Policy 5.17: Waste capacity;
- London Plan Policy 5.3: Sustainable Design and Construction.
- Camden Local Plan Policy CC5 Waste;

The environmental impact of construction activities will be minimised through the implementation of best practice measures detailed in the following sections.

7.1 Sustainable Construction

Sustainable construction practices include good site management to encourage resource efficiency, increased material recovery and the avoidance of the disposal of waste to landfill.

As part of achieving a sustainable approach to construction, the main contractor will be encouraged to commit to reducing the impact of the construction processes on the environment. The contractor will be required to monitor and mitigate construction site impacts throughout the construction period (in particular: energy, water, transport of materials to the site and waste from the site). Best practice pollution prevention policies will be adopted in respect of air (dust) and water pollution arising from site activities. To minimise air (dust) pollution, skips will be covered, dust-generating site activities will be dampened down and wet cutters will be used. Low emission and efficient equipment will be used on site.

A construction management plan will be in place prior to commencement of activities on site. The construction management plan will appropriately demonstrate how the impacts of air/water pollution, noise and vibration will be mitigated during the construction of the development. Where feasible, timber used on site will be reclaimed, reused or responsibly sourced.

The contractors will be also required to minimise the ecological impact of construction activities. Section 9 covers the proposed measures in more detail.

7.2 Construction materials

The proposed development will give preference to the selection of sustainable materials and the minimisation of waste. The following measures will be considered to demonstrate that the materials specified are sourced, managed and used in a sustainable manner.

- The BRE's Green Guide to Specification will be used to determine the proposed materials' green rating and their impact on the environment. Where possible the team will aim to use A and A+ rated materials as these have the lowest environmental impact;
- The use of locally sourced materials will be prioritised, where feasible to reduce transport-related emissions and to support local supply chains;
- Responsible sourcing of materials from suppliers that operate an Environmental Management System will be prioritised. 100% of all timber included in the construction of floors, roofs, walls and staircase will be legally sourced;
- Recycled aggregates will be considered for the scheme in particular for the concrete frame elements and foundations;
- The use of insulation materials with low Global Warming Potential (GWP) will be prioritised;
- The use of high VOC content paints, sealants and all ozone-depleting materials including insulation will be avoided where feasible; and
- Specific consideration will be given to flexibility, durability and strength of materials selected for the scheme.

7.3 Demolition and construction waste

The developer is committed to the minimisation of waste and will employ methods such as the acquisition of a Site Waste Inventory prior to the site clearance which will identify any hazardous wastes and the opportunity for the recycling of materials within the construction process.

A Waste Management Strategy will include an Outline Construction Waste Management Plan which will require:

- Management of the construction site in order to provide opportunities to segregate materials for ease of reuse and recycling in order to minimise waste to landfill;
- Where possible, material to be processed at sites as close as possible the scheme site; and
- The use of resources such as water, diesel and timber will be recorded and managed in a sustainable manner.

In line with BREEAM requirements, the following targets have been set for the maximum amount of waste generated from construction activities and for the amount of waste to be diverted from landfill:

- Maximum amount of construction waste generated for the non-domestic areas: 13.3m^3 or 11.1 tonnes per 100m^2 GIA; and
- Non-Domestic Areas (BREEAM New Construction 2018 target): 70% of volume (or 80% of tonnage) of non-demolition waste and 80% of volume (or 90% of tonnage) of demolition waste.

7.4 Operational waste

To encourage the recycling of operational waste, a dedicated space for the segregation and storage of operational recyclable waste generated will be provided for the non-domestic areas. The space will be:

- Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams;
- Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors; and
- Of a capacity appropriate to the building type, size, number of units and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates.

8 Pollution

The development has minimised its impact on noise, air and light pollution in line with the guidance of the GLA SPG on Sustainable Design and Construction – Chapter 4: 'Pollution Management' and the following London Plan and Camden policies;

- London Plan Policy 5.3: Sustainable Design and Construction
- London Plan Policy 7.14: Improving Air Quality;
- London Plan Policy 7.15: Reducing and managing noise, improving and enhancing the acoustic environment and promoting appropriate soundscape;
- Camden Local Plan Policy A4 Noise and vibration;
- Camden Local Plan Policy CC4 Air quality;

8.1 Land contamination

Contamination of the site from previous uses will be assessed during the site investigation at detailed design stages. Remediation will be identified and carried out as recommended by the results of the investigation. Further information is provided in the civil and structural engineering reports supporting this application.

The Proposed Development is not proposing to include uses that could lead to land contamination.

8.2 Operational air pollution

Traditional means of providing heat and hot water to a development during operation have required gas-fired boilers and combined heat and power units (CHP). These often have an impact on local air quality. The proposed development seeks to minimise the generation of air pollution by pursuing a heat pump led heating system. Operated using grid electricity, the system not only provides an efficient source of heat energy but will not contribute to local air pollution whilst in operation.

8.3 Operational noise pollution

An environmental noise and vibration assessment has been carried out by Ion Acoustics.

A noise survey measuring the existing noise levels on site was conducted, along with a vibration monitoring exercise measuring vibration from a railway line running along the north site boundary. Results indicate that improved façade sound insulation is required to attenuate the noise from the road and railway. With suitable consideration of the relevant façades, appropriate internal noise levels can be achieved

Noise limits for any future plant have also been derived alongside proposed measures to mitigate the impact of the plant on the surrounding area including plant screening.

Further information is provided in the Planning Noise Report submitted alongside this report.

8.4 Operational Light Pollution

Light pollution from the scheme during operation will be minimised through careful lighting design. The external lighting will be designed in compliance with the guidance in the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011. Lighting will be designed so that it is directed to where it is needed and does not spill into neighbouring residential properties or affect wildlife.

All external lighting specified for the non-domestic scheme (except for safety and security lighting) will include appropriate controls to ensure they can be automatically switched off between 11 pm and 7 am.

External lighting for the domestic areas will be controlled via daylight cut-off sensors or timers.

Safety and security lighting system will comply with the lower levels of lighting recommended during these hours in the ILP's Guidance notes. Where specified, illuminated advertisements will be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.

8.5 Operational water pollution

Measures to mitigate water pollution during operation are described in Section 6.

8.6 Demolition and Construction impact

The developer has committed to the minimisation of construction impacts via the application of a Construction Management Plan (CMP). An initial CMP has been drafted by TTP consulting and has identified main issues and challenges for the site including:

- Local residents and adjacent buildings;
- Restricted access to the site and accommodating construction vehicles on-site; and
- Construction programme.

In response to the requirements of the planning policies, this plan addresses the following issues:

- Noise;
- Vibration;
- Dust;
- Smoke;
- Emissions;
- Detailed scope of enabling and construction works;
- Contact arrangements;
- Routing of site traffic;
- Waste Storage, Separation and Disposal; and
- Site security.

The CMP is a live document that will be reviewed and updated as needed as construction works progress. To date, it has been produced with detailed input from the demolition contractor. The construction contractor has yet to be appointed and information on works to be undertaken during the construction phase are indicative and will be reviewed following their appointment.

In addition to the CMP, the proposed development will be signed up to the Considerate Constructors Scheme (CCS) and is expected to target performance beyond best practice. CCS seeks to improve the image of the construction industry by striving to promote and achieve best practice under this Code. The five sections of the CCS promote the following:

- Care about Appearance: Constructors should ensure sites appear professional and well managed.
- Respect the Community: Constructors should give utmost consideration to their impact on neighbours and the public.
- Protect the Environment: Constructors should protect and enhance the environment.
- Secure everyone's Safety: Constructors should attain the highest levels of safety performance.
- Value their Workforce: Constructors should provide a supportive and caring working environment.

9 Landscape & Biodiversity

A Suitably Qualified Ecologist (SQE) from Clarkson & Woods Ltd. has been appointed as part of the development team to assess the current ecological value of the site and make recommendations for the protection and enhancement of the site and on-site measures during construction aiming at protecting features of ecological value, in line with the GLA SPG on Sustainable Design and Construction – Chapter 2: 'Resource Management', Chapter 3: 'Adapting to climate change and greening the city', and the following London Plan and Camden planning policies;

- London Plan Policy 5.10: Urban Greening;
- London Plan Policy 5.11: Green roofs and development site environs;
- London Plan Policy 7.19: Biodiversity and Access to Nature; and
- Camden Local Plan Policy A3 Biodiversity.

9.1 Ecologist's site survey findings

The exterior of the main building features areas of metal cladding. These panels provided small crevices behind them, similar to structures which have been confirmed as having supported significant pipistrelle bat roosts in urban environments within Britain and Europe. Consequently, roosting bats cannot be completely ruled out, but are considered highly unlikely to be present.

The flat roofs of the buildings were in very good condition, and therefore no significant bat roost access points or bird nesting opportunities were present around the roofs.

The remainder of the site was almost exclusively hard standing with almost no ecological value. The only exception was the three ornamental trees at the front of the site, which have very low potential to support small nesting bird species (although no evidence of nesting birds was recorded during the survey).

In summary, the site is currently of very low ecological value,

9.2 Ecologist's key recommendations

The Ecologist has made the following recommendations, which will be considered and implemented where possible.

- The site lies along the 'London B-Lines' project route - a project to create and connect valuable habitat for pollinators in a band running north-south through the city of London. Ecological enhancements are therefore particularly valuable in contributing to this project.
- To reduce the risk of impacting roosting bats, cladding removal during demolition should not be undertaken during the months of August, September and October when pipistrelle bats tend to favour the use of large building roosts for mating purposes.
- Ideally, cladding should be removed during winter/spring, when bats are most likely to be absent from the building.
- Works should be preceded by a toolbox talk to the contractors, delivered by a qualified and licenced ecologist. They should outline the process to be followed should bats/evidence of roosting bats be found during the works.
- Best practice lighting measures should be implemented within the site, to minimise light spill on to habitats outside of the site boundary. This should ensure that any external lighting is sited under 4m in height to reduce unnecessary light spill, particularly on to the habitats associated with the railway line to the north of the site.
- Green roofs on all three of the buildings. The inclusion of a green roof is a requirement of local Camden planning policy and would provide a large area of potentially valuable habitat on site.
- Green roof areas such as bee/bug hotels.
- Green walls if possible.
- Integrated artificial bird and bat boxes in the fabric of the new buildings. Ideally located on the northern elevations of the buildings, they would provide good connectivity to the habitats associated with the railway line.

9.3 Project proposals

The proposed planting scheme is shown in Figure 9.1 below. It identifies biodiverse roofs atop the development.

In order to maximise the impact of the biodiverse roofs whilst also minimising excessive potable water use, the roofs will be developed with drought-resistant planting. Irrigation of soft landscaping will be predominantly by natural precipitation, however, where mechanical irrigation systems are required, these will be drip-fed subsurface irrigation systems incorporating soil with suitable sensors and control to prevent excessive water use.

The implementation of these biodiverse roofs also helps to mitigate the urban heat island effect and contributes to the climate change adaptation measures discussed in Section 4.

The remaining recommendations made by the Ecologist will be considered at the relevant stage of design development and included where possible and necessary.

Figure 9.1 – Proposed planting scheme that will be established using drought resistant planting

10 Sustainable transport / Accessibility

To reduce the dependency on travel by car, consideration has been given as to how the development can be designed to encourage the use of public transport and/or other forms of sustainable transport within the context of the GLA SPG on Sustainable Design and Construction – Chapter 2: 'Resource Management', and the following London Plan and Camden planning policies:

- London Plan Policy 6.9: 'Cycling';
- London Plan Policy 6.10: 'Walking';
- Camden Plan Policy T1 Prioritising walking, cycling and public transport;
- Camden Plan Policy T2 Parking and car-free development;
- Camden Plan Policy T3 Transport infrastructure; and
- Camden Plan Policy T4 Sustainable Movement of Goods and Materials.

A site-wide Travel Plan has been developed for both domestic and non-domestic users of the site. It sets out targets and measures for promoting sustainable transport use for occupants and visitors including walking and cycling, public transport.

No on-site or on-street parking is provided with the exception of statutory requirements for disabled users and delivery vehicles. The intention is to keep private car trips to a minimum, aspiring to be a car-free development.

Residential cycle parking will be provided in the form of two-tier stands and Sheffield stands to encourage access for all.

Based on the proposed schedule of accommodation, the residential stores should provide a minimum of 72 long-stay spaces and 3 short-stay spaces. There will be a total of 90 spaces and hence the level of provision is in accordance with the Intend to Publish version of the London Plan.

There will be 90 spaces for staff and visitors within a basement level store and hence the level of provision is in accordance with the relevant policy guidance.

The proposals also seek to open up the current footpaths by removing the fenced area in front of the site, effectively widening the pedestrian route in front of the site.

Refer to the Transport Statement prepared by TTP Consulting for further details.

11 BREEAM strategy

11.1 Introduction

In line with the London Borough of Camden Local Plan, the proposed development has adopted BREEAM New Construction 2018 Assessment tool as the framework to benchmark its wider sustainability performance.

The proposed development is targeting a BREEAM (Building Research Establishment's Environmental Assessment Method) rating of 'Excellent' in line with the Camden Local plan, demonstrating it incorporates exemplary standards of sustainable and inclusive urban design and architecture.

11.2 Background

BREEAM is the leading environmental assessment method for UK non-residential buildings and UK domestic refurbishments. It sets the standard for best practice design and encourages and certifies the incorporation of best environmental practice within the building design and construction.

The BREEAM assessment process involves the evaluation of the building's performance against the scheme and its criteria using an independent third-party auditor: a BREEAM Assessor. The BREEAM certificate provides formal verification that the Assessor has completed an assessment of the building in accordance with the requirements of the scheme and its quality standards and procedures. A BREEAM certificate verifies that a building's BREEAM rating, at the time of certification, accurately reflected its performance against the BREEAM standards

11.3 BREEAM schemes

The BREEAM scheme applicable to the proposed development is BREEAM NC (New Construction) 2018 – Office.

11.4 BREEAM categories

The BREEAM standard assesses and awards credits based on the environmental performance of non-residential developments within a framework of nine categories as shown in Table 11.1.

The categories within BREEAM are weighted according to their level of importance. Each category is allocated a different number of credits and therefore individual credits carry specific weightings, as a percentage of the total points scored.

Category	BREEAM NC 2018 - Shell & Core
Management	11.0%
Health & Wellbeing	8.0%
Energy	14.0%
Transport	11.5%
Water	7.0%
Materials	17.5%
Waste	7.0%
Land Use and Ecology	15.0%
Pollution	9.0%
Innovation	10.0%
Total	**110.0%**

Table 11.1 – BREEAM categories weighting factors

11.5 BREEAM Levels

The total number of credits awarded for each of the BREEAM categories is summed and the appropriate category weighting applied. The weighted score of each category is added together to produce a single environmental score and the corresponding rating achieved based on the resultant score.

Total Percentage Score (equal to or greater than)	BREEAM Rating
<30%	Unclassified
30%	Pass
45%	Good
55%	Very Good
70%	**Excellent**
85%	Outstanding

Table 11.2 – BREEAM rating thresholds

11.6 Pre-assessment summary and next steps

A BREEAM Pre-Assessment has been carried out for the proposed development. Each of the BREEAM criteria was fully discussed at a Sustainability workshop led by a BREEAM assessor/ Accredited Professional within the chapmanbdsp Environmental team and attended by the project team. The meeting has ensured that all members of the development team have a full understanding of the successful integration of the BREEAM credits and process into their design.

The current prediction is that an 'Excellent' rating could be achieved, with a targeted score of 76.0%.

The BREEAM pre-assessment checklist provides an approximate indication of how a future formal assessment will score and the rating that will be achieved. The pre-assessment checklist should therefore not be used as a guarantee of a subsequent rating but will inform how credits should be targeted during the formal assessment procedure.

The BREEAM pre-assessment of the proposed development demonstrates that the design will holistically incorporate sustainable principles into the full range of sustainability aspects covered by BREEAM: management, health & wellbeing, energy, transport, water, materials, waste, land use & ecology and pollution.

Formal assessments will take place once the tender documentation is produced and will require submission of a full evidence bundle from the client and the design team to show compliance with the credits.

The BREEAM assessor and BREEAM Accredited Professional have been and will continue to form an integral part of the design team and a consistent point for reference, review and questions. Experience has proved that this approach offers the surest route to a successful BREEAM certification and holistic sustainable design.

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core P – Pre-requisite to achieve the credit Red - mandatory minimum performance standards to achieve Excellent			Credits available	Targeted	Potential	Not targeted
Management						
Man 01	Project brief and Design	Project delivery planning	1	1		0
		Stakeholder consultation (interested parties)	1	1		1
		Prerequisite for BREEAM AP (Concept and Developed Design)	P	P		-
		BREEAM AP (Concept Design)	1	1		0
		BREEAM AP (Developed Design)	1	1		0
Man 02	Life cycle cost and service life planning	Elemental LCC	2		2	0
		Component level LCC options appraisal	1		1	0
		Capital cost reporting	1	1		0
Man 03	Responsible construction practices	Prerequisite - Legally harvested and traded timber	P	P		-
		Prerequisite - For Healthcare NHS buildings only	n/a	n/a	n/a	n/a
		Environmental management	1	1		0
		Prerequisite for the BREEAM AP credit	P	P		-
		BREEAM AP (site)	1	1		0
		Responsible construction management	2	2		0
		Monitoring of construction site impacts	2	2		0
Man 04	Commissioning and handover	Commissioning - testing schedule and responsibilities	1	1		0
		Commissioning - design and preparation	1	1		0
		Testing and inspecting building fabric	1			1
		Handover	1	1		0
Man 05	Aftercare	Aftercare support	n/a	n/a	n/a	n/a
		Commissioning - implementation	n/a	n/a	n/a	n/a
		Post-occupancy evaluation (POE)	n/a	n/a	n/a	n/a
		Total	**18**	**14**	**3**	**1**
		Credit value	**0.61%**			
Health & Wellbeing						
Hea 01	Visual comfort	Control of glare from sunlight	n/a	n/a	n/a	n/a
		Daylighting	2		2	0
		View out	1		1	0
		Internal and external lighting levels, zoning and control	1	1		0
Hea 02	Indoor air quality	Prerequisite - Indoor air quality (IAQ) plan	P	P		P
		Ventilation	1			1
		Emissions from construction products	n/a	n/a	n/a	n/a
		Post-construction indoor air quality measurement	n/a	n/a	n/a	n/a
Hea 04	Thermal Comfort	Thermal modelling	1	1		0
		Design for future thermal comfort	1	1		0
		Thermal zoning and controls	n/a	n/a	n/a	n/a
Hea 05	Acoustic performance	Sound insulation	n/a	n/a	n/a	n/a

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core P – Pre-requisite to achieve the credit Red - mandatory minimum performance standards to achieve Excellent			Credits available	Targeted	Potential	Not targeted
		Indoor ambient noise level	1	1		0
		Room acoustics	n/a	n/a	n/a	n/a
Hea 06	Security	Security of site and building	1			1
Hea 07	Safety and security	Safe access	1			1
		Outside space	1	1		0
		Total	**11**	**5**	**3**	3
		Credit value	**0.73%**			
Energy						
Ene 01	Energy Performance	Energy performance	9	4		5
		Prerequisite - Prediction of operational energy consumption	-	-		-
		Prediction of operational energy consumption	4			4
Ene 02	Energy monitoring	Sub-metering of end-use categories	1	1		
		Sub-metering of high energy load and tenancy areas	1	1		
Ene 03	External lighting	External lighting	1	1		
Ene 04	Low Carbon Design	Passive design analysis	1	1		
		Free cooling	1			1
		Low and zero carbon technologies	1	1		
Ene 05	Energy efficient cold storage	Refrigeration energy consumption	n/a	n/a	n/a	n/a
		Indirect greenhouse gas emissions	n/a	n/a	n/a	n/a
Ene 06	Energy Efficient Transportation Systems	Energy consumption	1	1		
		Energy-efficient features	1	1		
Ene 07	Energy efficient laboratory systems	Design specification	n/a	n/a	n/a	n/a
		Best practice energy efficient measures	n/a	n/a	n/a	n/a
Ene 08	Energy efficient equipment	Energy efficient equipment	n/a	n/a	n/a	n/a
		Total	**21**	**11**		10
		Credit value	**0.67%**			
Transport						
Tra 01	Public Transport Accessibility	Travel plan	2	2		0
Tra 02	Sustainable transport measures	Prerequisite	P	P		-
		Transport options implementation	10	10		
		Total	**12**	**12**		**0**
		Credit value	**0.96%**			
Water						
Wat 01	Water consumption	Water consumption	5	4		1
Wat 02	Water monitoring	Water monitoring	1	1		0
Wat 03	Water Leak Detection & Prevention	Leak detection system	1	1		0
Wat 03	Water Leak Detection & Prevention	Flow control devices	1	1		0

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core P – Pre-requisite to achieve the credit Red - mandatory minimum performance standards to achieve Excellent			Credits available	Targeted	Potential	Not targeted
Wat 04	Water Efficient Equipment	Water efficient equipment	1	1		0
		Total	**9**	**8**		**1**
		Credit value	**0.78%**			
Materials						
Mat 01	Building a life cycle assessment (LCA)	Superstructure - Comparison with the BREEAM benchmark during Concept Design			1	0
		Superstructure - Comparison with the BREEAM benchmark during Technical Design			1	0
		Superstructure - Option appraisal during Concept Design		2.67		0
		Superstructure - Options appraisal during Technical Design		1.33		0
		Substructure and hard landscaping options appraisal during Concept Design				0
Mat 02	Environmental Product Declarations (EPD)	Specification of products with a recognised environmental product declaration (EPD)	1		1	1
Mat 03	Responsible sourcing of materials	Prerequisite - Legally harvested and traded timber	P	P		P
		Enabling sustainable procurement	1	1		0
		Measuring responsible sourcing	3	1	1	1
Mat 05	Designing for durability and resilience	Designing for durability and resilience	1	1		0
Mat 06	Material Efficiency	Material efficiency	1	1		0
		Total	**14**	**9**	**4**	**1**
		Credit value	**1.25%**			
Waste						
Wst 01	Construction Waste Management	Pre-demolition audit	1	1		0
		Construction resource efficiency	3	1	1	1
		Diversion of resources from landfill	1	1		0
Wst 02	Use of recycled and sustainably sourced aggregates	Prerequisite	P			P
		Project Sustainable Aggregate Points	1			1
Wst 03	Operational Waste	Operational waste	1	1		0
Wst 04	Speculative ceiling and floor finishes	Speculative floor and ceiling finishes	1	1		0
Wst 05	Adaptation to Climate Change	Resilience of structure, fabric, building services and renewables installation	1	1		0
Wst 06	Functional Adaptability	Design for disassembly and functional adaptability - recommendations	1	1		0
		Disassembly and functional adaptability – implementation	1	1		0
		Total	**11**	**8**	**1**	**2**
		Credit value	**0.64%**			
Land use and ecology						
LE 01	Site Selection	Previously occupied land	1	1		0
		Contaminated land	1			1
LE 02	Ecological value of site	Prerequisite - Assessment route selection	P	P		

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core P – Pre-requisite to achieve the credit Red - mandatory minimum performance standards to achieve Excellent			Credits available	Targeted	Potential	Not targeted
		Survey and evaluation	1	1		0
		Determining the ecological outcomes for the site (Routes 1 and 2)	1	1		0
LE 03	Minimising Impact on Existing Site Ecology	Prerequisite – Identification and understanding the risks and opportunities for the site	P	P		
		Planning, liaison, implementation and data	1	1		0
		Managing negative impacts of the project	2	2		0
LE 04	Enhancing Site Ecology	Prerequisite - Identifying and understanding the risks and opportunities for the project	P	P		
		Enhancement of ecology				
		Liaison, implementation and data collation	1	1		0
		Enhancement of ecology	3	2	1	0
LE 05	Long Term Impact on Biodiversity	Prerequisite - Roles and responsibilities, implementation, statutory obligations	P	P		
		Planning, liaison, data, monitoring and review management and maintenance	1	1		0
		Landscape and ecology management plan (or similar) development	1	1		0
		Total	**13**	**11**	**1**	**1**
		Credit value	**1.15%**			
Pollution						
Pol 01	Impact of refrigerants	No refrigerant use	-			0
		Refrigerant pre-requisite	P	P		0
		Impact of refrigerants: DELC of ≤ 100 CO_2-eq/kW	1			1
		Impact of refrigerants: DELC of ≤ 1,000 CO_2-eq/kW	1	1		0
		Leak detection	1		1	0
Pol 02	Local air quality	Local air quality	2	2		0
Pol 03	Surface water runoff	Pre-requisite	P	P		P
		Flood Resilience	2	2		0
		Pre-requisite for surface water run-off credits	P	P		P
		Surface Water Run-Off - Rate	1	1		0
		Surface Water Run-Off - Volume	1	1		0
		Minimising watercourse pollution	1		1	0
Pol 04	Reduction of night-time light pollution	Reduction of night-time light pollution	1	1		0
Pol 05	Noise attenuation	Reduction of noise pollution	1	1		0
		Total	**12**	**9**	**2**	**1**
		Credit value	**0.75%**			
Innovation						
Man 03	Responsible construction practices		1	1		
Hea 01	Visual Comfort		1			
Hea 02	Indoor air quality		2			
Ene 01	Reduction in CO2 emissions		5			5

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core P – Pre-requisite to achieve the credit Red - mandatory minimum performance standards to achieve Excellent		Credits available	Targeted	Potential	Not targeted
Wat 01	Water Consumption	1			
Mat 01	Life cycle impacts	3	1		2
Mat 03	Responsible sourcing of materials	1			
Wst 01	Construction Waste Management	1			
Wst 02	Recycled aggregates	1			
Wst 05	Adaptation to Climate Change	1	1		0
AI	AI - Approved Innovation	1			
	Total	**10**	**3**		**7**
	Credit value	**1.00%**			
Total Target Score			76.0 %	88.3 %	110%
			Excellent	Outstanding	Outstanding

12 Conclusion

This report has been prepared by chapmanbdsp to detail the sustainability features of the development and demonstrate how they relate to the relevant planning policy documents including the National Planning Policy Framework, the London Plan and London Borough of Camden's local policies.

The adopted strategy for the proposed development demonstrates that the design will holistically incorporate sustainable principles into the full range of sustainability aspects that are in line with the relevant planning policies. These are related to:

- Energy;
- Climate Change Mitigation & Adaptation;
- Water Efficiency;
- Flood Risk and SUDs;
- Pollution;
- Sustainable Construction Processes/Materials & Recycling;
- Landscaping & Biodiversity; and
- Sustainable Transport/Accessibility.

In addition, the BREEAM New Construction 2018 Assessment tool was used to optimise the environmental strategy of the development and to demonstrate the sustainability credentials of the scheme. Each of the criteria was fully discussed at a Sustainability workshop led by a BREEAM Assessor/Accredited Professional within chapmanbdsp environmental team and attended by the project team. The pre-assessment shows that a BREEAM 'Excellent' rating is targeted for the office spaces with a targeted score of 76.0%.