Camden Mixed Developments Limited

Grand Union House

Sustainability Statement

February 2021
70009120

Public

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Sustainability Statement

PROJECT NO. 70009120

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1 EXECUTIVE SUMMARY

This Sustainability Statement is submitted in support of a detailed planning application ('the Application') made on behalf of Camden Mixed Developments Limited ('the Applicant') for the adaptive re-use, alterations and extensions ('the Proposed Development') to Grand Union House, 16-20 Kentish Town Road, London NW1 8NH ('the Site').

WSP has been commissioned by the Applicant to develop the Sustainability Statement for the Proposed Development in Camden, which will be submitted as part of the planning application.

Part-demolition, re-build and upward extension to provide additional Class E office and commercial floorspace, six residential units (Class C3), new areas of landscaping and public realm.

This Sustainability Statement has been produced to detail and demonstrate how the design of the development addresses the various issues that contribute to a sustainable development by following the below guidance documents:

- National Planning Policy Framework (updated in 2019);
- Camden Local Plan (2017)
- Camden Planning Guidance: Energy Efficiency and Adaptation (January 2021)

This report summarises the status of the sustainable design progress and describes proposed initiatives planned for the detailed design and construction stages.

The Site was found to respond to the issues raised in the policy documents in the following areas as shown in Table 1-1:

Table 1-1 Summary of Proposed Measures for the development

KEY SUSTAINABILITY AREA	PROPOSED MEASURES
BREEAM	A BREEAM Pre-assessment has been carried out for the Proposed Development with an indicative score of **87.62**% equating to a rating of 'Outstanding'. Furthermore, as requested by Camden Local Plan all the minimum standard required per category for Energy, Water and Materials have been meet and exceeded.
Optimising the Use of Land	The Proposed Development is optimising the use of the existing site by ensuring that 100% of the development is located on previously developed land and is optimising both the density and amenity space of the development. Access to private and communal amenity spaces has been given to tenants with potential for individual food growing. The Proposed Development will also increase the social and economic value of the local area while aiming to minimise its environmental impacts as much as possible.
Energy & CO_2 Emissions	The Proposed Development has made a significant contribution towards GLA and Camden's target in decreasing the national carbon dioxide emissions by reducing its own carbon emission by 54.9% saving following the New London's Plan energy hierarchy.
Water Efficiency	The Proposed Development has maximised the opportunities of water saving measures which include the use of water saving fixtures and fittings, optimised water management through leak detection, reduced water flow rates and the installation of water meters in all tenant and residential units. Additionally, residential units have been designed to meet the water consumption rate of 105 l/p/d.
Materials	The Proposed Development has ensured that materials used on site will have a low embodied energy and all the timber used on site will be sustainably sourced from accredited FSC or PEFC sources. Additionally, a compliant BREEAM LCA has been carried out to establish the embodied carbon footprint of the development over a 60-year lifecycle and various design options to reduce carbon has been considered. Furthermore, the external materials will be specified to have low toxicity to humans and the environment, to be durable to cater for their level of use and exposure and the Proposed Development will maximise the use of pre-fabricated materials. A pre-demolition audit will be carried out prior to works commencing on site.
Waste	The Proposed Development has ensured that both construction and the operational waste is managed in accordance with the waste hierarchy; that most of the excavation and demolition waste is reused or recycled and 80% per volume non-hazardous waste will be diverted from landfill. Furthermore, the Proposed Development aims to provide sufficient internal space for the storage of recycled and compostable materials and waste in each building.
Climate Change Adaptation	The Proposed Development has been carefully designed to take the likely impacts of climate change into account. It has reduced its external heat rejection to the atmosphere; has incorporated some planting to combat the effects of climate change; and reduced its reliance on air conditioning systems by using solar control glazing, mechanical ventilation and reducing internal heat gains. A FRA was carried out to identify sustainable measures for water conservation and managing surface water runoff which should be included in the design. Blue roofs have been incorporated on the residential block and extensive planting are proposed throughout to help with surface water drainage and SuDS strategy.
Pollution Management	The Proposed Development has ensured that the development will minimise sources of noise and vibration. Dust and other air pollution will also be minimised during construction, enforced through the Considerate Contractors Scheme (CCS). An air quality assessment has been carried out to identify and minimise the impact on air quality and mitigate exceedance of air pollutants. Additionally, all external lighting will be designed in compliance with the ILE guidance note and sustainable measures have been used in the development to control surface water runoff.

Health & Wellbeing	The Proposed Development has included a variety of initiatives aimed at providing a healthy and safe environment to people working in and visiting the development alike such as increased ventilation provision over and above the regulatory requirements; choice of materials with low volatile organic compounds (VOC) or other chemical components, and good practice acoustic design. The building layout will be inclusive and accessible to all ages and different physical abilities and will incorporate the principles of 'Secured by Design' to design out crime.
Ecology & Biodiversity	An ecologist assessed the site to be of negligible ecological and biodiversity importance. Every effort has been taken into consideration to create opportunities for attracting biodiversity and habitat to improve the site ecological value through the inclusion of planters on the terraces located on level 4 and 5 and Blue roofs located on the residential rooftops.
Transportation & Accessibility	The Proposed Development has ensured the development provides sufficient and appropriate cycle spaces, on-site changing facilities, including lockers and showers and access to low carbon modes of transportation such as the Santander Cycle Hire. Additionally, due to its PTAL excellent rating, the Proposed development will be 'car-free' and will have no negative impact on the neighbouring traffic congestion. The 12 existing parking spaces designated for Grand Union Walk residents will be retained but will be relocated to within the north west corner of the basement car park.

2 APPROACH TO SUSTAINABILITY AT GRAND UNION HOUSE

Figure 2-1 CGI Image of Grand Union House

2.1 SUSTAINABILITY STRATEGY

Considering the principles of sustainability early in the design and planning process is a positive step to ensuring that the new development is sustainable in terms of construction, operation, the local community, the environment and its future occupation.

This Sustainability Statement appraises proposed design solutions which apply to Grand Union House (referred to Proposed Development hereafter) to ensure that they meet the current and relevant planning requirements. The appraisal identifies key legislative drivers, local planning policy and client targets regarding sustainable development and establishes how these objectives are met by the design.

A sustainable approach is presented as the desired result for human development as well as the means with which to balance current and future social, economic and environmental needs. It is important to acknowledge sustainable development as per the definition set out by the United Nations:

'…. development which improves people's quality of life within the carrying capacity of supporting ecosystems.'

The Proposed Development has therefore endeavoured to ensure that social, economic and environmental issues are dealt with in an integrated and equal manner. The sustainability of the design, construction and proposed community structure of the development has been assessed as well as considering its contribution to sustainable development within the local area.

2.2 DEVELOPMENT DESCRIPTION

PROPOSED DEVELOPMENT

The proposed development comprises the partial demolition, re-build and upward extension to provide additional Class E office and commercial floorspace, six residential units (Class C3), new areas of landscaping and public realm.

The development will provide approximately 6,656m^2 GIA of office space, 251m^2 GIA of ground floor retail space and 523m^2 GIA of residential space, 6No. units (3 x 2 Bed, 3 x 1 Bed, one of which is fully wheelchair accessible).

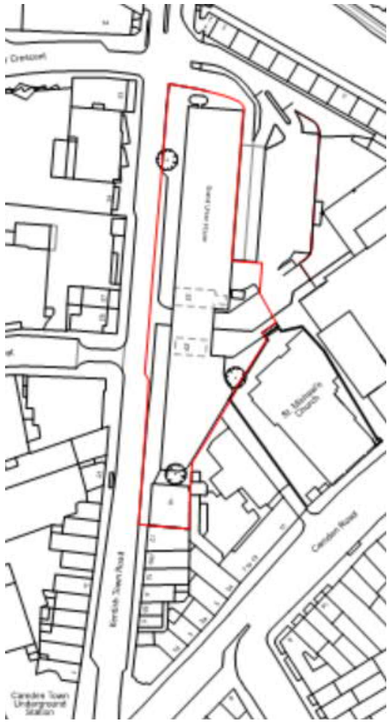


Figure 2-2: Site Plan

3 POLICY CONTEXT

Figure 3-1- London Borough of Camden map

3.1 OVERVIEW

The Proposed Development is designed in alignment with current national, regional and local policy.

The London Borough of Camden's approach to sustainable development is underpinned by policies from the National Planning Policy Framework (NPPF) and the London Plan set out within its current policies contained in the Local Plan.

3.2 NATIONAL POLICY

ATIONAL PLANNING POLICY FRAMEWORK (UPDATED IN 2019)

The National Planning Policy Framework (NPPF) was updated initially in July 2018 with minor amendment in February 2019, which replaces the 2012 NPPF. Plans and decisions should apply a presumption in favour of sustainable development.

The NPPF sets the planning context for sustainable design and construction. It is this that Local Planning Policies are based on and adapted to account for regionally specific requirements.

The NPPF identifies three dimensions to sustainable development - economic, social and environmental – which should be applied jointly and simultaneously:

- **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;
- **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
- **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.

The NPPF promotes the pursuit of sustainable development by seeking positive improvements to the built and natural environment, and to people's quality of life. This will include:

- Delivering a sufficient supply of homes
- Building a strong, competitive economy
- Ensuring the vitality of town centres
- Promoting healthy and safe communities
- Promoting sustainable transport
- Supporting high quality communications
- Making effective use of land
- Achieving well-designed places
- Protecting green belt land
- Meeting the challenge of climate change, flooding and coastal change
- Conserving and enhancing the natural environment
- Facilitating the sustainable use of materials.

3.3 LOCAL POLICY – LONDON BOROUGH OF CAMDEN

CAMDEN LOCAL PLAN (JUNE 2017)

The Camden Local Plan (adopted in June 2017) set out the Council's planning policies and its replace the current Core Strategy and Development Policies planning documents (adopted in 2010). It ensures that Camden continues to have robust, effective and up-to-date planning policies that respond to changing circumstances and the borough's unique characteristics and contribute to delivering the Camden Plan and other local priorities. The Local Plan will cover the period from 2016-2031. Key aspects are presented in Table 3-1.

Table 3-1 Camden Local Plan Key Policies

POLICY NUMBER	SUMMARY OF POLICY
Policy C1 – Health and Wellbeing	Positively contribute to creating high quality, active, safe and accessible places; and; Proposals for major development schemes to include a Health Impact Assessment (HIA).
Policy C5 – Safety and Security	Where a development has been identified as being potentially vulnerable to terrorism, the Council will expect counter-terrorism measures to be incorporated into the design of buildings and associated public areas to increase security.
Policy C6 – Access for all	The Council will seek to promote fair access and remove the barriers that prevent everyone from accessing facilities and opportunities.
Policy A2 – Open Space	The Council will protect, enhance and improve access to Camden's parks, open spaces and other green infrastructure.
Policy A3 – Biodiversity	The Council will protect and enhance sites of nature conservation and biodiversity. The Council will protect, and seek to secure additional, trees and vegetation.
Policy A4 – Noise and Vibration	The Council will seek to ensure that noise and vibration is controlled and managed. Development should have regard to Camden's Noise and Vibration Thresholds
Policy CC1 – Climate Change mitigation	The Council will 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. To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment.
Policy CC2 – Adapting to Climate change	The Council will require development to be resilient to climate change. Any development with 500sq.m or more of any additional floor-space is required to demonstrate the above in a **Sustainability Statement**. Non-domestic developments of 500sq.m of floor-space or above to achieve **BREEAM "Excellent**", **encouraging zero carbon in new development from 2019.**
Policy CC3 – Water and Flooding	The Council will seek to ensure that development does not increase food risk and reduces the risk of flooding where possible.
Policy CC4 – Air Quality	The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough. Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution.
Policy CC5 – Waste	The Council will seek to make Camden a low waste borough.
Policy T1 – Prioritising walking, cycling and public transport	The Council will promote sustainable transport by prioritising walking, cycling and public transport in the borough.
Policy T2 – Parking and car-free development	The Council will limit the availability of parking and require all new developments in the borough to be car-free.

Other relevant development plan documents to Grand Union House are:

- Camden Planning Guidance: Energy Efficiency and Adaptation (January 2021)

As stated earlier the local plan requires that Sustainability Statements must be submitted with all planning applications to ensure that sustainability is integrated into designs for all development. They should include:

- BREEAM pre-assessment; (Included in the Appendix A of this report)
- Energy statement in line with New London Plan requirements; (A separate Energy Statement has been produced) which includes a section on the Low and Zero Carbon Feasibility assessment.
- Demonstration of climate change resilience measures. (Included in Section 10 of this report)

As stated earlier this report serves as the Sustainability Statement for the Proposed Development, with the relevant environmental, social and economic aspects covered in the following chapters. The following chapters of this report will outline the design initiatives and methods used to comply in first instance with the Camden Local Plan (2017) and the Camden Energy Efficiency and Adaptation (2021) detailed in section 4 – 14.

4.1 COMMERCIAL AREAS: BREEAM

BREEAM is a market-focused tool aimed at encouraging significant improvements in the performance of buildings through the recognition and demonstration of improvements made to those buildings.

The BREEAM score provides a means of measuring the environmental impact of a building throughout its life and so benchmarking this against other buildings. There are a number of key uses for the methodology, which provide the following benefits:

- Maximising the building's environmental performance during the design, construction and operation of new build, refurbishment and fit out schemes.
- Specifying environmental requirements in the procurement and management of developments.
- Providing an independently verifiable measurement tool for use within Environmental Management Systems.
- Providing an independently verifiable environmental label for marketing and promotional purposes.

The BREEAM rating is divided into five levels, with PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING being the achievable ratings. The percentage score achieved within the assessment is categorised accordingly, based on calculations in the BREEAM 2018 software.

Minimum score required for Design and Procurement Assessment are in the table below:

Table 4-1 – Rating Levels

RATING	PERCENTAGE REQUIRED
Pass	30%
Good	45%
Very Good	55%
Excellent	**70%**
Outstanding	85%

A minimum BREEAM score of 70% is required to achieve a BREEAM rating of excellent. Where the BREEAM score targeted throughout the assessment results in 70% or above accrued overall but fails to meet the mandatory requirements, the building will not be able to achieve BREEAM Excellent rating status.

Achieving Excellent typically requires all mandatory requirements for Excellent and targeted tradeable BREEAM issues to be achieved to accrue sufficient points overall.

REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY CC2 – SUSTAINABLE DESIGN AND CONSTRUCTION MEASURES

The Council will promote and measure sustainable design and construction by:

- ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation;
- encourage new build residential development to use the Home Quality Mark and Passivhaus design standards;
- Expecting non-domestic developments of 500 sqm of floor-space or above to achieve "Excellent" in BREEAM assessments and encouraging zero carbon in new development from 2019.
  - Minimum standard required (un-weighted credits) for these BREEAM categories are:
    - Energy 60%;
    - Water 60%; and
    - Materials 40%
- The submission of a pre-assessment report at the planning application stage. The report should summarise the design strategy for achieving your chosen level of BREEAM and include details of the credits proposed to be achieved.

4.3 PRELIMINARY ASSESSMENT

RESIDENTIAL UNITS

The design of the dwellings will be guided by the principles of Home Quality Mark and Passive Design Standards.

COMMERCIAL UNITS

Due to the majority of floor area being speculative office space we have carried out a high-level pre-assessment under BREEAM 2018 New Construction – office use. At this stage it is assumed that the office floor areas will be developed to a Shell and Core standard only, for future fit out by tenants.

The BREEAM Pre-assessment report has been produced by the project's BREEAM Accredited Professional (AP) informed through consultation with the client and the design team members. This has ensured the appropriateness and achievability of the credit targeted to attain the desired rating. This section of the report presents the proposed strategy for the Proposed Development to achieve as a minimum an 'Excellent' rating according to the Camden Local Plan.

This report summarises the indicative performance of the Proposed Development against BREEAM New Construction 2018 for Offices Shell & Core scheme. If requested, the Retail/leisure spaces could be assessed separately post planning.

The indicative target score for the Proposed Development at the current stage is 87% equating to a BREEAM Outstanding rating. A further 4% has been identified as potential additional score, subject to further feasibility and

cost review by the design team. As seen from the Table 4-2 Camden's minimum standard required for Energy (60%), Water (60%) and Materials (40%) categories have all been meet and exceeded.

It is important to note that at this stage of design the pre-assessment is not fixed, and some credits may be replaced by others and additional credits may be targeted whilst the detailed design progresses. The BREEAM Pre-assessment report can be found in Appendix A.

A summary of the credits targeted is shown in Table 4-2 and Figure 4-1.

Table 4-2 – Pre-assessment Score Summary by Issue Category

Category	Section Weighting	Credits Available	Credits Targeted		Additional Identified		Minimum Standard Required
Management	11.0%	18	18	11.00%	0	0.00%	100%
Health & Wellbeing	8.0%	11	10	7.27%	1	0.73%	91%
Energy	14.0%	21	17	11.33%	0	0.00%	81%
Transport	11.5%	12	12	11.50%	0	0.00%	100%
Water	7.0%	9	7	5.44%	0	0.00%	78%
Materials	17.5%	14	11	13.75%	2	2.50%	79%
Waste	7.0%	11	9	5.73%	1	0.64%	82%
Land Use & Ecology	15.0%	13	12	13.85%	0	0.00%	92%
Pollution	9.0%	12	9	6.75%	0	0.00%	75%
Innovation	10.0%	10	1	1.00%	0	0.00%	10%
Total				**87.62%**		**3.86%**	

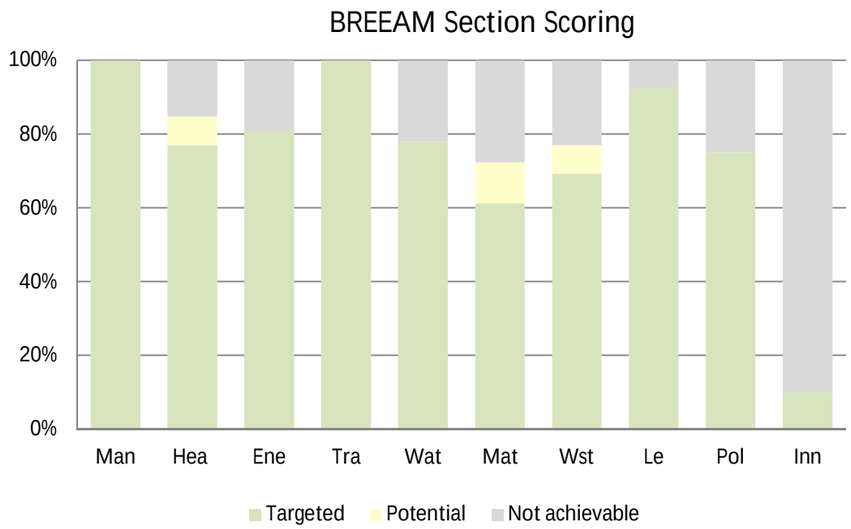


Figure 4-1 Pre-assessment Score Summary by Issue Category

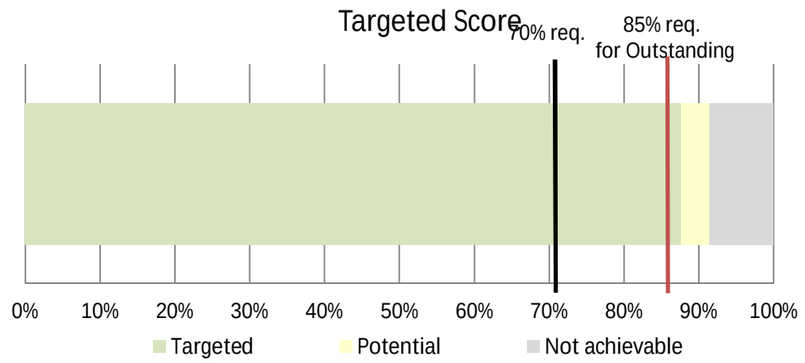


Figure 4-2 Targeted BREEAM Score

4.4 SUMMARY

To demonstrate that sustainable design standards is integral to the design, construction and operation of the Proposed Development, as requested by Camden Local Plan, a BREEAM Pre-assessment report has been produced to demonstrate how the design aims to achieve BREEAM Excellent rating as a minimum, with aspirations of achieving Outstanding. Furthermore, all the minimum standard required per category for Energy, Water and Materials have been meet and exceeded.

5 OPTIMISING THE USE OF LAND

5.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY A2 – NEW AND ENHANCED OPEN SPACE

- Ensure developments seek opportunities for providing private amenity space;
- Seek temporary provision of open space where opportunities arise.

5.2 DESIGN APPRAISAL

A separate Design and Access Statement has been prepared to accompany the Planning Submission of the Proposed Development and should be referred to in the first instance on information about the site layout, building design quality and social-economics benefits of the Proposed Development.

OPTIMISING THE USE OF LAND

The Proposed Development has been designed to maximise the use of the existing site, this includes utilising 100% of the previously developed land and increasing the density of the development while maintaining the footprint of the existing site.

Furthermore, the proposed mixed-use development will deliver circa 6,656m^2 GIA of office space, 251m^2 GIA of ground floor retail space and 523m^2 GIA of residential space, 6No. units (3 x 2 Bed, 3 x 1 Bed, one of which is fully wheelchair accessible).

LOCAL FOOD GROWING AND PRODUCTION

All resident will have access to private amenity space such as winter gardens or/and private balconies where there is a potential for individual food growing.

SOCIAL AND ECONOMICAL VALUE

The Proposed Development will add positive benefits to the local area by delivering circa 6,907m² (GIA) commercial space while having a minimal impact on local traffic as there will be no parking spaces provided on site. During the construction phase, the Proposed Development will help generate many direct and indirect employments. For further information, please refer to the Design and Access Statement report prepared by Philip Architects.

The development will also add positive benefits by delivering 6 residential units which will increase the housing supply in Camden and help meet Camden's housing targets.

5.3 SUMMARY

The Proposed Development has complied with Camden Local Plan in optimising the use of the existing site, by ensuring 100% of the development is located on a previously developed land.

Access to private amenity space will be given to all residents with potential for individual food growing. The building's density and amenity space will be optimised, and the social and economic value of the local area will be increased whilst minimising its environmental impacts as much as possible.

Figure 5-1 Front View of the Retail Spaces on the Ground Level

6 ENERGY AND CO_2 EMISSIONS

6.1 REQUIREMENTS AND TARGETS

NEW LONDON PLAN (2021) & SUSTAINABLE DESIGN AND CONSTRUCTION SPG

ENERGY AND CARBON DIOXIDE EMISSIONS

- The overall carbon dioxide emissions from a development should be minimised through the implementation of the energy hierarchy.
- Development should be designing to meet the following Regulated carbon dioxide standards:
  - Residential buildings (2016-2031): Zero Carbon
  - Non-domestic building (2016-2019): 35% carbon emissions improvement upon Building Regulations Part L 2013
- Developments should contribute to ensuring resilient energy infrastructure and a reliable energy supply, including from local low and zero carbon sources.
- Developers are encouraged to include innovative low and zero carbon technologies to minimise carbon dioxide emissions with developments and keep up to date with rapidly improving technologies.

ENERGY DEMAND ASSESSMENT

- Applications are to be accompanied by an energy demand assessment

USE LESS ENERGY

- The design of developments should prioritise passive measures
- Developers should aim to achieve Part L 2013 Building Regulations requirements through design and energy efficiency alone, as far as is practical.

EFFICIENT ENERGY SUPPLY

- Developers should assess the potential for their development to:
  - Connect to an existing district heating or cooling network;
  - Expand an existing district heating or cooling network, and connect to it; or
  - Establish a site wide network, and enable the connection of existing buildings near the development

RENEWABLE ENERGY

- Major developments should incorporate renewable energy technologies to minimise overall carbon dioxide emissions, where feasible.

CARBON DIOXIDE OFF-SETTING

- Where developments do no achieve the Mayor's carbon dioxide reduction targets set-out, the developers should contribute to the local borough's carbon dioxide off-setting fund.

MONITORING ENERGY USE

- Developers are encouraged to incorporate monitoring equipment and systems where appropriate to enable occupiers to monitor and reduce their energy use.

SUPPORTING A RESILIENT ENERGY SUPPLY

- Developers are encouraged to incorporate equipment that would enable their schemes to participate in demand side response opportunities.

CAMDEN LOCAL PLAN (2017) & CPG: ENERGY EFFICIENCY AND ADAPTATION (2021)

ENERGY HIERARCHY

- All development is expected to reduce their carbon dioxide emissions by the following the steps in the energy hierarchy to reduce energy consumption.
- Developments involving 500sq m (gross internal) floor-space or more are required to submit an energy statement which demonstrates how carbon dioxide emissions will be reduced in line with the energy hierarchy.

ENERGY EFFICIENCY: NEW BUILDINGS

- All new development is to be designed to minimise carbon dioxide emissions by being as energy efficient as is feasible and viable.
  - Natural systems
  - Preventing Overheating
  - Thermal Performance
  - Mechanical Systems
  - Other energy efficient technology
- Development will be expected to achieve 60% of the un-weighted credit in the Energy category of their BREEAM Assessment.

DECENTRALISED ENERGY NETWORKS AND COMBINED HEAT AND POWER

- Developments will aim to connect to a decentralised energy network and use the heat unless developers can demonstrate it is not technically feasible or financially viable.
- Where a development is not connecting immediately to a network the following measures need to be included in your scheme:
  - space in the plant room for a heat exchanger, any other plant and pipe and electricity connections; and
  - Pipes from the plant room to the property boundary where the decentralised energy pipe is most likely to be located.
- Financial Contribution: if your scheme does not connect to a Decentralised energy network or have a secure agreement to do so within 3 years, and does not include combined heat and power, a financial contribution may be required to enable expansion of the network and future connection.

- To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment.
- All developments are to target at least a 20% reduction in carbon dioxide emissions through the installation of on-site renewable energy technologies.
- When assessing the feasibility and viability of renewable energy technology, the Council will consider the overall cost of all the measures proposed and resulting carbon savings to ensure that the most cost-effective carbon reduction technologies are implemented in line with the energy hierarchy.

6.2 DESIGN APPRAISAL

A separate Energy Statement has been prepared by WSP to accompany the Planning Submission and should be referred to for full details, a summary is provided below.

Emphasis has been placed on maximising energy demand reduction for the building as well as reducing carbon emissions based on the energy hierarchy of 'Be Lean – Be Clean – Be Green'.

An energy assessment has been carried out using detailed energy model of the whole building with performance compared to the notional building following the Part L2A (new construction) methodology. It can be expected that significantly greater reductions in carbon emissions would be achieved compared to the existing building rather than the new build equivalent.

The proposals for the scheme have been developed in accordance with the desire to achieve an energy efficient and sustainable development. The building will be designed to achieve optimum energy performance and will incorporate the following design features.

NON-RESIDENTIAL

- 6,658.2m^2 of office space (NIA) and 239.7m^2 of ground floor commercial space (NIA)
- Significantly exceed the limiting fabric requirements of Part L2A (2013) of the Building Regulations.
- Energy efficient building services plant (including low specific fan power air handling units with heat recovery and DC variable speed fan coil units) will be specified throughout where it is to be provided as part of the base building scheme; and
- Low energy LED/fluorescent lighting incorporating daylight and motion controls will be specified throughout;
- The non-residential will be served by a central variable refrigerant flow (VRF) system. Refrigerant pipework will be distributed from the external units in the plant enclosure at Level 4, via risers located strategically throughout the building.
- It is not currently possible to serve the development from a district heating network as there are currently no existing networks near to the development;
- A CHP engine has not been proposed for the site as the true carbon savings of the technologies have diminished with the decarbonisation of the grid. Using up to date carbon emission factors for grid electricity causes CHP engines to produce more carbon than a standard boiler system;
- Therefore, the space heating and DHW demand shall be met with VRF;
- A significant PV array is proposed to be located on the roof of the level 04. This will provide a further reduction in carbon emissions from the development.
- The retail units will be completed to shell and core standard only, providing base services for future extension by tenants, who will be responsible for provision of services to suit their particular requirements. Retail units to be served by individual direct expansion units, with adequate provision for installation by tenants provided. The retail areas will be separately metered.

RESIDENTIAL

- Significantly exceed the limiting fabric requirements of Part L1A (2013) of the Building Regulations;
- A CHP engine has not been proposed for the site as the true carbon savings of the technologies have diminished with the decarbonisation of the grid. Using up to date carbon emission factors for grid electricity causes CHP engines to produce more carbon than a standard boiler system;
- The residential apartments will be provided with heating and domestic hot water (DHW) from a packed heat pump (per apartment). The heat pump is located within the utility cupboard of each apartment, connected to a roof mounted external unit via pipework located in the risers. The heat pump also contains an internal DHW tank for storage.
- Low energy LED lighting will be specified throughout; and
- A PV array is proposed to be located on the roof of the residential block. This will provide a further reduction in carbon emissions from the development.

OVERHEATING SUMMARY

The strategy for minimising cooling demand in accordance with London Plan Policy SI 4 and Camden Policy CC2 for the Proposed Development is as follows:

- The residential elements do not have any South facing glazing which helps to reduce the solar gains entering the dwellings
- The bedrooms are on the East side of the dwellings. Therefore, there is reduced solar gains entering these rooms reducing the risk of sleep being disturbed in the night due to increased temperatures.
- 100% low energy lighting will be provided to reduce internal heat gains within the apartments.
- A highly efficient fabric specification is proposed incorporating glazing with low-e solar shield glass to protect the interior from solar gain.
- MVHR has been specified throughout to provide background ventilation.
- When natural ventilation is applied, the development complies with CIBSE TM59.
- However, due to air quality and acoustic issues a natural ventilation strategy may not be appropriate and comfort cooling will be required.

TOTAL CARBON EMISSIONS REDUCTION

The three principal steps taken; Be Lean (Use Less Energy), Be Clean (Supply Energy Efficiently) and finally Be Green (Renewable Technology measures) are summarised below. The target (Building Regulations compliant) carbon emissions for the Proposed Development are calculated to be 141.11 MT CO_2 per annum.

DEMAND REDUCTION (BE LEAN)

Through the application of the measures identified in Section 5 the regulated carbon emissions are shown to be 123.50 MT CO_2 per annum.

HEATING INFRASTRUCTURE (BE CLEAN)

As the development is not proposing to connect to a district heating network or to provide a CHP to serve the building, there are no subsequent carbon savings in this stage of the Energy Hierarchy. Therefore, the total carbon emissions are the same as the Be Lean stage of the hierarchy and total 123.50 MT CO_2 per annum.

RENEWABLE ENERGY (BE GREEN)

The feasibility of a range of renewable technologies has been assessed in the context of the London Plan. It was concluded that only the incorporation of ASHPs and PV could be suitable for inclusion in the proposals; these are ideal technologies to serve the heating load of the highly efficiency building fabric and also low domestic hot water demand as well as generating zero carbon onsite electricity. This reduces the regulated carbon emissions to 79.72 MT CO_2 per annum.

PART L FABRIC ENERGY EFFICIENCY

Accredited Design SAP2012 software was used to determine the FEE standards for a sample of typical apartments. An analysis has been undertaken on the all residential units to establish the performance of the fabric in relation to the TFEE. Results for TFEE and the Dwelling FEE (DFEE) for all residential units are as follows:

Table 6-1 Fabric energy efficiency and carbon emissions results by residential block

	AVERAGE DFEE (KWH/M²)	AVERAGE TFEE (KWH/M²)	% DFEE<TFEE
Residential Block	52.06	52.88	1.6%

6.3 SUMMARY

In direct response to the information outlined within the 2020 Greater London Authority (GLA) Guidance on preparing Energy Assessments, the results outlined previously are summarised in the tables across, with the results presented against the overall carbon reduction target.

The proposals for the Proposed Development outlined within this energy strategy are considered to maximise the potential carbon savings which can be achieved on site through the provision of:

- A highly efficient building fabric and optimal g-values to reduce the cooling load.
- Efficient building services plant, including air handling plant with low specific fan powers and heat recovery.
- Maximised use of LED and low energy fixtures elsewhere.
- The use of ASHPs to provide low energy and low carbon heat to the building. This is a long-term low carbon solution as the National Grid is decarbonising.
- Onsite zero carbon electricity generation through PV arrays.

Overall, the development is shown to achieve a **54.9%** reduction in carbon emissions compared to the Part L 2013 baseline. This significantly exceeds the on-site target of a 35% reduction in carbon emissions from Part L 2013 for the development. The proposed energy strategy for the development is a long-term low carbon solution, has significant benefits relating to improving local air quality within the Camden and aligns with the Mayor's plans in the forthcoming New London Plan.

	TOTAL REGULATED EMISSIONS (MT CO_2)	UNREGULATED EMISSIONS (MT CO_2)	REDUCTION IN REGULATED EMISSIONS (%)
Part L 2013 Compliant Development*	79.42	70.48	-
Be Lean	75.81	70.48	4.5%
Be Clean	75.81	70.48	4.5%
Be Green	35.79	70.48	**54.9%**

Table 6-2 Development regulated carbon dioxide savings from each stage of the energy hierarchy

	REGULATED CARBON DIOXIDE EMISSIONS SAVINGS (MT CO_2 PER ANNUM)	REGULATED CARBON DIOXIDE EMISSIONS SAVINGS (%)
Savings from energy demand reduction	3.61	4.5%
Savings from energy efficient supply	0.0	0.0%
Savings from renewable energy	40.02	50.4%
Total Cumulative Savings	43.63	54.9%
Total Target Savings	79.42	35%
Annual Surplus	N/A	N/A

7 WATER EFFICIENCY

7.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY CC3 - WATER

Camden Local Pan requires development to:

- incorporate water efficiency measures;
- avoid harm to the water environment and improve water quality;
- The Council expects all developments to be designed to be water efficient by minimising water use and maximising the re-use of water. This includes new and existing buildings.
- The Council will require buildings with gardens or landscaped areas that require regular maintenance to be fitted with water butts.

7.2 DESIGN APPRAISAL

The Proposed Development will be designed to minimise water use and impact on urban drainage. Water supplied to the Proposed Development will not give rise to significant adverse effects to the environment as control and leak detection will be installed where appropriate. The Proposed Development will be designed to minimise water use through:

WATER CONSERVATION AND REUSE

The development employs best practice design regarding water conservation and will have reduced mains water demand over typical building performance. Proposed water saving features includes:

- Water efficient sanitary fittings such as low flush WCs and low flow taps and showers with flow regulators will be installed in the dwellings. A daily water consumption of 105 l/person/day will be targeted for the dwellings to be achieved through the provision of low flow sanitary fixtures and fittings.
- In the non-residential areas, the sanitary fittings will be specified such that a reduction over a notional building consumption is at least 25%.

As the design progresses, the Proposed Development (non-residential units) will aim to achieve the ‘best practice’ level of the AECB water standards as required by planning.

The development is currently targeting 7 out of 9 water credits in the BREEAM assessment.

MANAGING WATER USE

To ensure ongoing sustainability performance during building operation, water use will be appropriately and effectively managed.

Water meters will be installed, and it will encourage residents to monitor and reduce their water consumption.

Additionally, in non-residential areas water meters will be linked to a central Building Management System which will enable monitoring and evaluation of water usage by the building management team

LEAK DETECTION AND PREVENTION

Systems will be specified to detect a major water leak on the mains supply both within the building and between the building and the utilities water meter.

Proximity controls will be installed in the office toilet blocks to ensure that water supply is turned off when toilets are not in use.

WATER USE DURING CONSTRUCTION

Water consumption targets will be set for the construction site and usage will be monitored.

WATER RECYCLING

The provision of a rainwater attenuation is currently unfeasible due to the lack of access to the basement levels of the property. Therefore, rainwater harvesting is not incorporated into the design of the development.

7.3 SUMMARY

The Proposed Development has complied with Camden’s policies by ensuring the development has maximised the opportunities for incorporation water saving measures which include the use of water saving fixtures and fittings, optimised water management through leak detection, reduced water flow rates and the installation of water meters in all tenant and residential units. Additionally, residential units have been designed to meet the water consumption rate of 105 l/p/d. As design progresses the non-residential areas will aim to achieve ‘best practice’ level of the AECB water standards.

Due to restricted access to the basement, rainwater harvesting is not incorporated into the design of the development.

8 MATERIALS

8.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

- All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources.
- Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.
- A Construction Management Plan will be required and will help manage on site impact arising from demolition and construction processes.
- Where a 'site waste management plan' (SWMP) is required (in projects with an estimated construction cost of over £300,000) it should include a pre-demolition audit of materials completed by a qualified professional and submitted with an application, in accordance with the Demolition Protocol.

8.2 DESIGN APPRAISAL

The Proposed Development addressed the following aspects:

ENVIRONMENTAL IMPACT

Material efficiency is a priority for the Design Team and one of the key considerations for detailed design. Potential measures for reducing the material demand and for designing out waste will be explored by all key design team disciplines at each design stage.

The environmental impact of the proposed materials palette has regard for selecting components that score well under the BRE's 'The Green Guide to Specification'[1]. Furthermore, the design team will review the wider environmental impact of the materials considered when choosing between different options. This will include reviewing Environmental Product Declarations.

Insulation materials to be used for the Proposed Development will be specified to have a low or zero Global Warming Potential (GWP) and low Ozone Depletion Potential (ODP).

Furthermore, a BREEAM Compliant environmental lifecycle analysis (LCA) has been carried out to establish the embodied carbon footprint of the development over a 60-year lifecycle. The baseline will provide a starting point against which to research various design options to reduce carbon emissions. These carbon-reduction-options could take many forms, including but not limited to alternative material specifications, resource efficiency initiatives or using alternative methods of construction.

REUSE & RECYCLED CONTENT

It is anticipated that a Demolition Audit will be carried out prior to works commencing on site to establish types and quantities of expected demolition materials, pending the appointment of a Contractor. The Contractor will be encouraged to utilise demolition materials directly on site if and where feasible, e.g. the use of crushed bricks and concrete for blinding concrete and mass concrete fill. The development's structural steel frame will be specified to contain some recycled content.

It is envisaged that most of the structure element on the ground floor will be retained. No new foundation is proposed at this stage of the design.

The Mayor's target of at least 10% total value of materials used to be derived from recycled and reused content is expected to be exceeded with the proposed design. This can be made up of demolition material from the site and/or specification of materials with recycled content. However, it is difficult to state exactly what percentage of reused materials will be utilised or what level of recycled content will be possible at this stage in the design. Nevertheless, we estimate the following recycled content percentages for the various building components, based on WRAP guidance[2] as shown in Table 8-1:

Table 8-1 - Estimated recycled content in construction materials

ELEMENT	BUILD UP	ESTIMATE RECYCLED CONTENT (%)
Foundations (commercial)	All foundations in the development will be retained.	n/a
Structural Frame (commercial)	Steel Frame	Structural steel sourced in the UK typically contains up to 40% recycled matter. The steel reinforcement, when sourced in the UK, will typically be made from nearly 100% steel scrap.
Structural Frame (Residential)	Concrete Frame	Concrete is likely to contain 5-10% recycled content (assume up to 50% Ground-granulated blast-furnace slag (GGBS), as well as up to 20% recycled and/or secondary aggregates).
Façade (commercial)	Double glazed curtain walling systems; Aluminium cladding	The aluminium/steel fixing system will have a high recycled content of 50% or above (depending on country of origin and production processes). Glazing elements is likely to contain low recycled content (<10%).
Façade (Residential)	Brick with mineral wool insulation Double Glazed windows	Clay Brick will typically contain 10% recycled materials or more. Mineral wool insulation to the curtain wall system is likely to contain at least 50% recycled material. Glazing elements is likely to contain low recycled content (<10%).
Internal Walls (Residential and/or office back of house)	Plasterboard on metsec framing system, concrete blockwork	Plasterboard could contain up to 84% recycled material, and Mineral wool will contain at least 50% recycled material. Metal stud could contain 60% recycled material. Blockwork can contain a high recycled material percentage depending on the type (density and compressive strength) required.

[1] www.thegreenguide.org.uk
[2] http://www.wrap.org.uk/sites/files/wrap/Const%20Product%20Guide%20Version%204.1.pdf

Floor / Ceiling finishes (offices)	Show room – assume carpet on raised access floor, on composite floor, and plasterboard suspended ceilings	Carpet will typically contain 25% recycled materials or more. OSB/plywood boards could have a high recycled content of 80% or more. Gypsum board ceiling tiles typically contain 30-80% recycled matter.
Floor / Ceiling finishes (Residential)	Mix of possible materials depending on areas (carpet, linoleum, vinyl, tiles) Paint	Carpet will typically contain 25% recycled materials or more, linoleum has a typical recycled content of 24%, vinyl usually has a recycled content of 25% and tiles could have a recycled content of up to 40% (if resin bonded).
Floor Finishes – Back of House (BOH)	Mix of possible materials depending on areas (carpet, linoleum, vinyl, tiles)	Carpet will typically contain 25% recycled materials or more, linoleum has a typical recycled content of 24%, vinyl usually has a recycled content of 25% and tiles could have a recycled content of up to 40% (if resin bonded).

RESPONSIBLE SOURCING

The responsible sourcing of materials will be a key consideration in the selection of suppliers, and a sustainable procurement strategy will be produced for the development prior to construction. Materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard will be prioritised.

All timber specified will be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) accreditation – which ensures that the harvest of timber and non-timber products maintains the forest's ecology and its long-term viability.

Where viable the design team will specify materials that are grown or made locally. Likewise, the appointed contractor will be asked to prioritise local sourcing of materials.

Natural resource depletion will be minimised throughout the development, and materials such as peat and natural weathered limestone will not be used in the buildings or landscape features.

HEALTHY MATERIALS

Internally, the design and specifications will ensure that environmentally sensitive (non-toxic) building materials are used throughout. Specifically, the design and specification of materials used internally will be based on the use of products that contain low levels of or no Volatile Organic Compounds (VOCs).

The selection criteria for external materials will include the specification of low toxicity to humans and the wider environment, especially those that deplete stratospheric ozone.

DESIGNING FOR DURABILITY AND RESILIENCE

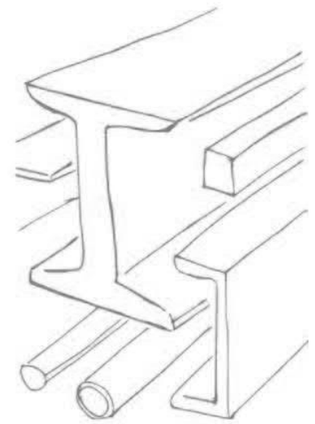
The non-residential development has been designed as a Shell and Core project and all interior office and flexible retail/leisure spaces are designed as open plan office/retail/leisure space. The design of its structural grid, dimensions and floor-to-floor height will allow for enough flexibility that will assist with future adaptations. The open plan spaces within the buildings will make it easier for occupants to use floor area more effectively as their needs change, or as their business expand.

8.3 SUMMARY

The Proposed Development has complied with Camden Local policy by ensuring, as far as practicable that materials used on site will have a low embodied energy; some of the key elements of the building envelope will achieve a rating of A+ to D in the BRE's 'The Green Guide' to specification and all the timber used on site will be sustainably sourced from accredited FSC or PEFC sources.

Additionally, a compliant BREEAM LCA has been carried out to establish the embodied carbon footprint of the development over a 60-year lifecycle and various design options to reduce carbon has been considered. Furthermore, the external materials will be specified to have low toxicity to humans and the environment, to be durable to cater for their level of use and exposure and the Proposed Development will maximise the use of prefabricated materials.

A pre-demolition audit will be carried out prior to works commencing on site.



9 WASTE

9.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY CC5 – WASTE

- The Council will seek to make Camden a low waste borough.
- The Council will make sure that developments include facilities for the storage and collection of waste and recycling.

9.2 DESIGN APPRAISAL

The waste hierarchy, which is represented in Figure 9-1, identifies a methodical approach to dealing with waste to minimise the environmental impact and has been used to guide the early design. The waste hierarchy ranks the different ways in which waste can be treated so that it limits the amount of resources used and waste generated.

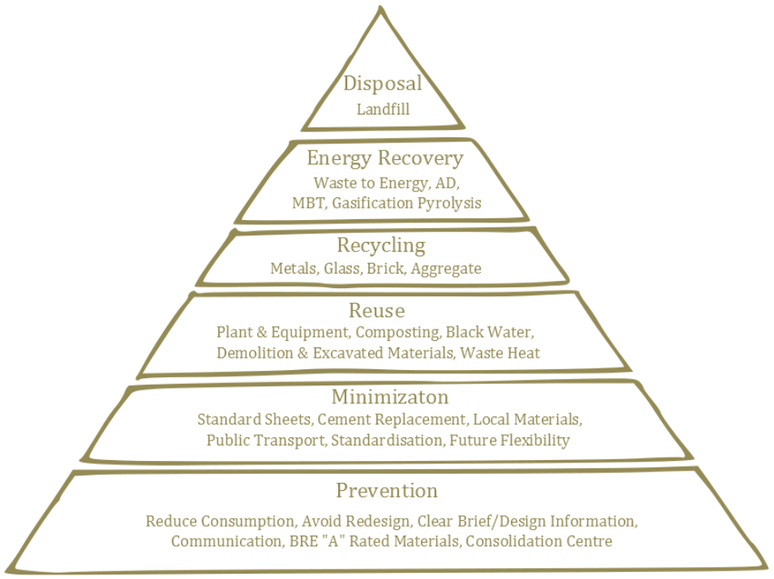


Figure 9-1 - Hierarchy to design out waste

CONSTRUCTION WASTE

The Proposed Development will incorporate best practice waste reduction measures developed in line with the waste hierarchy to reduce, reuse, and recycle. These include:

- Exploring the potential for using prefabricated and standardised modulation components
- As stated in the Section 8 Materials, a pre-demolition audit will be produced to understand the potential for salvaging components and recycling of demolition waste

A Resource Management Plan will be drafted during detailed design and later completed by the appointed contractor, including the following:

- Setting of a target benchmark for Construction Site Waste Management (in line with BREEAM Wst 01)
- Procedures and commitments for minimising non-hazardous waste in line with the benchmark.
- Procedures for minimising hazardous waste
- Procedures for monitoring, measuring and reporting hazardous and non-hazardous site waste
- Procedures for sorting, reusing and recycling construction waste into defined waste groups.
- 80% per volume or 90% by tonnage non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.

MANAGEMENT OF OPERATIONAL WASTE: COMMERCIAL WASTE

A Waste Management Strategy produced by WSP as part of the Transport Assessment will be submitted as part of the planning application submission, please refer to the report for further information, however a summary is provided below:

- Residents will be responsible for transporting their waste from their individual apartments directly to the residential waste store on the ground floor, and for separating their recyclables into the appropriate containers. Dedicated space will be provided for the segregation, storage and collection of recyclables, refuse and food waste. The residential waste will be collected on a weekly basis by LBC waste collection operatives, who will transport the bins to the refuse collection vehicle on Kentish Town Road.
- For the retails units, occupiers will be required to provide waste storage areas within their premises. The individual occupier's waste stores should have sufficient capacity to allow refuse and recycling to be segregated.
- For the office units, a dedicated waste store will be provided at ground floor level, which is large enough to allow recyclables to be segregated from refuse. Facilities Management (FM) will be responsible for transporting the waste from the office units to the office waste store and separating recyclables into the correct container. The office waste will be collected three times a week from Kentish Town Road.'.

9.3 SUMMARY

The Proposed Development has complied with Camden local policy by ensuring that both the construction and the operational waste is managed in accordance with the waste hierarchy. Every effort has been taken to ensure most demolition waste is reused or recycled and 80% per volume non-hazardous waste will be diverted from landfill.

Moreover, the Proposed Development will also provide sufficient internal space and collection area for the storage of recycled and compostable materials and waste in the development.

10 CLIMATE CHANGE ADAPTATION

10.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY CC1 – CLIMATE CHANGE MITIGATION

- The Council will 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.
- The Council will promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy;
- ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks;
- support and encourage sensitive energy efficiency improvements to existing buildings;
- require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and
- Expect all developments to optimise resource efficiency.

POLICY CC2 ADAPTING TO CLIMATE CHANGE

The Council will require development to be resilient to climate change.

All development should adopt appropriate climate change adaptation measures such as:

- the protection of existing green spaces and promoting new appropriate green infrastructure;
- not increasing, and wherever possible reducing, surface water run-off through increasing permeable surfaces and use of Sustainable Drainage Systems;
- incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and
- Measures to reduce the impact of urban overheating, including application of the cooling hierarchy.

FLOODING

- Developments must not increase the risk of flooding and are required to put in place mitigation measures where there is known to be a risk of flooding.
- All sites in Camden over one hectare or 10,000sqm require a Flood Risk Assessment in line with the National Planning Policy Framework.
- The assessment should be site specific and concentrate on the management of surface water run-off, and / or ground water where applicable, and should address the number of impermeable surfaces resulting from the development and the potential for increased flood risk both on site and elsewhere within the catchment. These must be prepared by a suitably qualified professional and should be submitted with a planning application.
- All developments are expected to manage drainage and surface water on-site or as close to the site as possible, using Sustainable Drainage Systems (SUDS) and the drainage hierarchy.
- The Council will expect developments to achieve a greenfield surface water run-off rate once SUDS have been installed. As a minimum, surface water run-off rates should be reduced by 50% across the development.
- The Council will seek to ensure that development does not increase food risk and reduces the risk of flooding where possible.

10.2 DESIGN APPRAISAL

The Proposed Development has been carefully designed to take the likely impacts of climate change into account.

TACKLING INCREASED TEMPERATURE AND DROUGHT

URBAN HEAT ISLAND

The following proposed measures will help reduce external overheating and provide benefits in terms of balancing the microclimate:

- All air handling systems will be equipped with heat recovery systems to reduce as far as possible the amount of process heat expelled to the external environment.
- To further contribute to the adaptation and reduction of the effects of climate change, the Proposed Development will include planting on the pavement level and external terraces. Please refer initially to Section 13 ’ in this report, and the Landscape Statement and Public Realm Strategy prepared for further details on plant species and their water demand.

OVERHEATING

Refer to the Energy Statement for full details and overheating/solar gain results. A summary of the strategy for reducing overheating is as follows:

- The residential elements do not have any South facing glazing which helps to reduce the solar gains entering the dwellings
- The bedrooms are on the East side of the dwellings. Therefore, there is reduced solar gains entering these rooms reducing the risk of sleep being disturbed in the night due to increased temperatures.
- 100% low energy lighting will be provided to reduce internal heat gains within the apartments.
- A highly efficient fabric specification is proposed incorporating glazing with low-e solar shield glass to protect the interior from solar gain.
- MVHR has been specified throughout to provide background ventilation.
- When natural ventilation is applied, the development complies with CIBSE TM59.
- However, due to air quality and acoustic issues a natural ventilation strategy may not be appropriate and comfort cooling will be required.

INCREASING TREE COVER

URBAN GREENING & TREES

The Proposed Development has endeavoured to increase the urban greening of the site by incorporating some element of greening which consist of new trees on pavement level, some heavy planting on the terrace area and planting on the roof level which will include some greenery but very limited due to loading restriction and PV installations.

RESILIENT FOUNDATIONS

The foundations of the Proposed Development will be retained and no additional strengthen is required.

FLOOD RISK

SURFACE WATER FLOODING AND SUSTAINABLE DRAINAGE

The Proposed Development is located within Flood Zone 1 and is therefore considered to be at a low probability of tidal and fluvial flooding. In addition, no historic instances of tidal and fluvial flooding have been recorded on or within the vicinity of the Proposed Development. This zone comprises land assessed as having less that a 1 in 1,000 annual probability of river or sea flooding in any year (<0.1%) so not liable to flood.

A Flood Risk Assessment (FRA) has been carried out for the development. For additional information please refer to the report.

SURFACE WATER DRAINAGE STRATEGY & SUDS

Blue roofs have been incorporated on the residential block and extensive planting are proposed throughout to help with surface water drainage and SuDS strategy. For additional information please refer to the Landscape Statement.

Please note that foul and surface water from the site, will discharge to the local TW combined sewer which site within Kentish Town Road.

10.3 SUMMARY

The Proposed Development has complied with Camden local policy in ensuring it has reduced its external heat rejection to the atmosphere; has incorporated extensive planting to combat the effects of climate change; and reduced its reliance on air conditioning systems by using solar control glazing, mechanical ventilation and reducing internal heat gains.

A FRA was carried out to identify sustainable measures for water conservation and managing surface water runoff which should be included in the design. Blue roofs have been incorporated on the residential block and extensive planting are proposed throughout to help with surface water drainage and SuDS strategy.

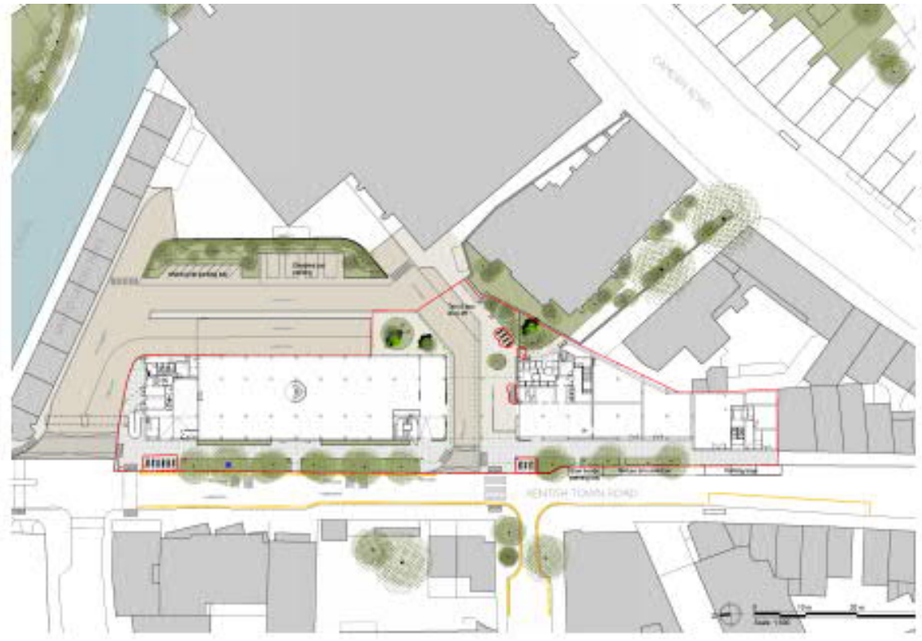


Figure 10-1 Proposed Landscape Strategy

11 POLLUTION MANAGEMENT

11.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY CC4 – AIR QUALITY

- The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.
- Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution.

POLICY A4 NOISE AND VIBRATION

- The Council will seek to ensure that noise and vibration is controlled and managed. Development should have regard to Camden's Noise and Vibration Thresholds.

11.2 DESIGN APPRAISAL

LAND CONTAMINATION

The Proposed Development is in a previously developed land and the existing foundation will be retained; therefore it is assumed the land is not contaminated and a preliminary risk assessment is not required to be carried out.

AIR QUALITY

An Air Quality assessment has been carried out by WSP with the aim to minimise air pollution. Please refer to the report for full details, a summary of the findings is provided below. A qualitative assessment of the potential impacts on local air quality from construction activities has been carried out for this phase of the Proposed Development using the IAQM methodology.

- This identified that there is a medium to low risk for both dust soiling impacts and particulate matter concentrations due to construction activities. However, through good site practice and the implementation of suitable mitigation measures, the effect of dust and PM_{10} releases would be significantly reduced. The residual effect of dust and PM_{10} generated by construction activities on air quality are therefore not significant. The residual effect of emissions to air from construction vehicles and plant on local air quality is not significant.
- An assessment of the exposure of the future users of the Proposed Development to potentially elevated pollutant concentrations has also been undertaken. All future receptors at all floors are expected to exceed the NO_2 annual mean limit value. PM_{10} and $PM_{2.5}$ were identified to be within the air quality limit values. Details of the ventilation strategy will be made available at detailed design stage.
- In accordance with the requirements of the Greater London Authority, the assessment shows that the Proposed Development is air quality neutral with regards to both building and transport emissions.
- Providing that mitigation measures are in place for the construction and operational phases, it is considered that the development proposals comply with national and local policy for air quality.

NOISE

During the period of construction, the requirements defined in the CCS scheme limit the noise impacts allowed by construction activities. These requirements suggest that noisy construction activities should be restricted and should be appropriate to the area and time of day.

Throughout the construction phases the applicant and the principal contractors will select equipment that will minimise the noise and vibration effects, wherever feasible.

Furthermore, a noise assessment has been carried out which also makes recommendations for plant location and noise attenuation for further details please refer to the Acoustic Assessment report prepared by WSP.

LIGHT POLLUTION

Due cognisance has been given to the impact on light pollution. The lighting scheme/intelligent building features for the Proposed Development will be designed so that it does not produce unacceptable levels of light pollution. The proposed design minimises light spillage to the night sky in the following ways:

- The external lighting design will follow the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.

WATER POLLUTION

SURFACE WATER RUNOFF

The building's rainwater drainage systems will be designed to BS EN 12056pt3:2000. Design rainfall intensities have been selected for the roof types and the associated risk of flooding to the building as:

- Category 1- for pitched roof areas of the development where there will be no risk to the building in the event of blockages.
- Category 2 - for roof areas of the development where the build-up of water is not acceptable or there is a possible risk to the building (e.g. flat roof areas).

Rainwater will be collected from all roof surfaces of the development. Rainwater will be conveyed from all roof areas by gravity.

Rainwater outlets at the top of the building shall be untapped to ensure the rainwater drainage system is vented. Where pipes are required to run internally, they will be insulated to eliminate noise and condensation. Access will be provided at all changes of direction, branches and connections to the drainage system.

Rainwater outlets at roof levels will drain into high level rainwater pipes and, where possible, combine in central rainwater down pipes located within the core risers.

The drainage offsets will be routed at ground level where the floor heights can accommodate longer runs of horizontal drainage.

The location of rainwater pipes and roof outlets will be developed further during the next phase of the design. The current scheme is for the rainwater drainage to be at high level within the offices beneath the roof levels. For the high-level drainage to be removed from these spaces, the roof will require falls across its entire span to fall to outlets at the cores.

11.3 SUMMARY

The Proposed Development has complied with Camden local policy by ensuring that the development will minimise sources of noise and vibration. Dust and other air pollution will also be minimised during construction, enforced through the Considerate Contractors Scheme (CCS). An air quality assessment has been carried out to identify and minimise the impact on air quality and mitigate exceedance of air pollutants. Additionally, all external lighting will be designed in compliance with the ILE guidance note and sustainable measures have been used in the development to control surface water runoff.

12 HEALTH AND WELLBEING

12.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY C1 – HEALTH AND WELLBEING

The Council will improve and promote strong, vibrant and healthy communities through ensuring a high-quality environment with local services to support health, social and cultural wellbeing and reduce inequalities.

Measures that will help contribute to healthier communities and reduce health inequalities must be incorporated in a development where appropriate.

The Council will require:

- development to positively contribute to creating high quality, active, safe and accessible places; and

POLICY C5 – SAFETY AND SECURITY

The Council will aim to make Camden a safer place.

- require developments to demonstrate that they have incorporated design principles which contribute to community safety and security, particularly in wards with relatively high levels of crime, such as Holborn and Covent Garden, Camden Town with Primrose Hill and Bloomsbury;
- require appropriate security and community safety measures in buildings, spaces and the transport system;
- promote safer streets and public areas;
- Where a development has been identified as being potentially vulnerable to terrorism, the Council will expect counter-terrorism measures to be incorporated into the design of buildings and associated public areas to increase security.

POLICY C6 ACCESS FOR ALL

The Council will seek to promote fair access and remove the barriers that prevent everyone from accessing facilities and opportunities.

The Council will:

- expect all buildings and places to meet the highest practicable standards of accessible and inclusive design so they can be used safely, easily and with dignity by all;
- expect spaces, routes and facilities between buildings to be designed to be fully accessible;
- encourage accessible public transport; and
- Secure car parking for disabled people.

The Council will seek to ensure that development meets the principles of lifetime neighbourhoods.

12.2 DESIGN APPRAISAL

The Proposed Development will incorporate best design practice to promote health and wellbeing among the occupants, these measures include:

SECURITY

The architectural design of the Proposed Development will provide safe and comfortable environments for office, retail/leisure staff, resident and visitors. The design team have actively liaised with the Local Security Officer to assist with creating a development which offers minimum risk for terrorist activities, design out crime, anti-social behaviour and where practical, the principles of “Secured by Design” have been incorporated. For more information on how principles of Secured by Design have been implemented in the development please refer to the Design and Assess Statement.

INDOOR COMFORT AND CONTROL

Specialist consultants have assisted with the development of the design to ensure that comfortable conditions will be provided for all types of occupant as well as visitors:

- Thermal comfort provision and appropriate controls are a key design consideration as detailed in the Energy Statement and are confirmed through thermal modelling of the building.
- Good access to daylight and views out has informed the space layouts and specification of the façade, primarily aided by the placement of the lift cores to one side.
- The proposed design includes good practice acoustic design with improvement in sound insulation levels over the limits set by Building Regulations Part E.

INDOOR AIR QUALITY

Commercials: The building services strategy ensures that air is supplied through mechanical ventilation with heat recovery systems to provide a constant supply of tempered fresh air. These will be designed to provide increased levels of ventilation compared to the minimum requirements of the Building Regulations.

Residential: Each apartment will be provided with a mechanical ventilation heat recovery (MVHR) unit to provide whole apartment ventilation. The MVHR will operate continuously by supplying air to living areas and bedrooms, and extracting via the kitchen and bathrooms

HEALTHY MATERIALS

As stated earlier, internal the external materials will be specified to have low toxicity to humans and the environment. The design and specifications of materials will ensure that environmentally sensitive (non-toxic) building materials are used throughout. Specifically, the design and specification of materials used internally will be based on the use of products that contain low levels of or no Volatile Organic Compounds (VOCs).

ACCESS AND INCLUSIVE DESIGN

Design proposals have taken into consideration external and internal accessibility requirements for all elements of the building. The Proposed Development will cater for occupants of all ages and physical abilities.

Excellent public transport, road network connectivity and lifts will ensure easy access to all amenities within the development as detailed in the Design and Assess Statement.

12.3 SUMMARY

The Proposed Development has complied with local policy by ensuring the development provides a comfortable environment for its occupants with the use of appropriate building fabric, building systems and controls, which includes low levels of VOCs materials in the development; the development is inclusive and accessible to all ages with different physical abilities and has incorporated principles of ‘Secured by Design’ to design out crime.

13 ECOLOGY AND BIODIVERSITY

13.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY A3 - BIODIVERSITY

The Council will:

- Protect and enhance sites of nature conservation and biodiversity.
- require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species;
- secure management plans, where appropriate, to ensure that nature conservation objectives are met; and
- Work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.
- Ecological surveys carried out in accordance with this guidance are expected to be submitted upfront with any planning application and will be used to assess the impact of the development on biodiversity, within the site, the locality, or where appropriate, on the regional or national resource.
- Lighting can have negative impacts on biodiversity. Unnecessary lighting should be avoided. Where lighting may harm biodiversity timers or specific coloured lighting will be required to minimise any disturbance.

TREES AND VEGETATION

The Council will protect, and seek to secure additional, trees and vegetation. The Council will:

- require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 ‘Trees in relation to Design, Demolition and Construction’ and positively integrated as part of the site layout;
- expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;
- Expect developments to incorporate additional trees and vegetation wherever possible.
- The Council will expect all developments to incorporate brown roofs, green roofs and green walls unless it is demonstrated this is not possible or appropriate. This includes new and existing buildings.

13.2 DESIGN APPRAISAL

BIODIVERSITY & ECOLOGY

An ecological desk study and an extended Phase 1 habitat survey were carried out on the existing site. The survey included an external inspection to assess the potential of the existing building on site to support roosting bats. The site study concluded that the existing site is of negligible ecological and biodiversity value and no roosting bats were discovered. For full information please refer to the Arboriculture Assessment.

GREEN INFRASTRUCTURE

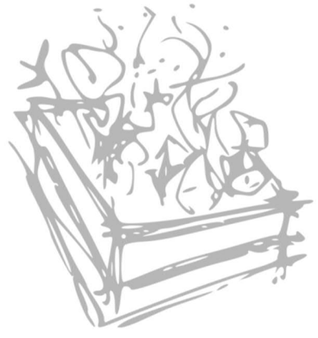
Figure 13-1 Front View of the Proposed Landscape Strategy

The Proposed Development has maximised all opportunities to incorporate greening into the design of the development. The design has been carefully developed to accommodate external green open terraces on Level 4 and 5 which will include some seating areas.

For full detailed information about the plant species and ecological value please refer to the Design and Assess Statement and/or the Landscape Statement.

13.3 SUMMARY

The Proposed Development has complied with Camden local policy. An ecologist assessed the site to be of negligible ecological and biodiversity importance. Every effort has therefore been taken into consideration to create opportunities for attracting biodiversity and habitat to improve the site ecological value through the inclusion of trees on the pavement level and green terraces on level 4 and 5 and blue roofs.



14 TRANSPORTATION AND ACCESSIBILITY

14.1 REQUIREMENTS AND TARGETS

CAMDEN LOCAL PLAN

POLICY T1 – PRIORITISING WALKING, CYCLING AND PUBLIC TRANSPORT

- The Council will promote sustainable transport by prioritising walking, cycling and public transport in the borough.

POLICY T2 – PARKING AND CAR-FREE DEVELOPMENT

- The Council will limit the availability of parking and require all new developments in the borough to be car-free.

14.2 DESIGN APPRAISAL

A separate Transport Statement (including Servicing Management Plan) and Travel Plan has been prepared by WSP to accompany the planning submission and should be referred to in the first instance on information relating to transportation and accessibility, a summary is provided below:

PUBLIC TRANSPORT ACCESS

The nearest station is Camden Town Underground Station which is served by both branches of the Northern Line. It is located within Zone 2 and provides frequent and fast services into Central London. The site has a PTAL of 6b and therefore employees, residents and visitors will be encouraged to travel to the site by public transport wherever possible. The site is also located in an area with good cycle and pedestrian infrastructure.

PEDESTRIAN & CYCLE ACCESS

The proposed pedestrian access will be reviewed and any improvements such as future public realm improvements will be presented within the Transport Assessment and Travel Plan. A proposed zebra crossing will be provided on Kentish Town Road outside of the site, providing pedestrian access to the new Camden Town underground station entrance, providing excellent accessibility for those travelling to and from the site.

CYCLE STORAGE & FACILITIES

The proposed on-site cycle parking provision which will be covered and secure. The cycle parking provision will adhere to London Borough Camden (LBC) and New London Plan cycle parking standards for all land uses.

Figure 14-1 Proposed Long and Short-Stay Cycle Provision

LAND USE	UNITS/AREA	LONG-STAY	SHORT STAY
A1 (food)	237	2	12
A1 (non-food)	90	0	0
B1 Office	6,989	94	11
C3 Residential	6 units	11	2
Total		**107**	**25**

Showers, changing facilities and lockers will be provided separately for the commercial uses.

CAR & MOTORCYCLE PARKING PROVISION

The development will be ‘car-free’ albeit the 12 existing parking spaces designated for Grand Union Walk residents will be retained but will be relocated to within the north west corner of the basement car park.

LBC’s Local Plan states that parking for disabled people for both residential and non-residential developments should be provided where it can be demonstrated as necessary, considering existing availability of on-street parking for Blue Badge holders. Considering there are on street spaces near to the Site Which Blue Badge holders can use for free with no time limit, which are within appropriate distance of the entrances to the residential, office and ground floor flexible uses of the proposed building, there is no need to provide blue badge car parking on Site. However, one Blue Badge bay will be provided on street on Kentish Town Road.

CYCLE HIRE DOCKING STATION

The nearest Santander Cycle Hire docking station is the ‘Greenland Road’ and ‘Hawley Crescent’ located 220m and 120m respectively from the Proposed Development and accommodates 33 docking points combined.

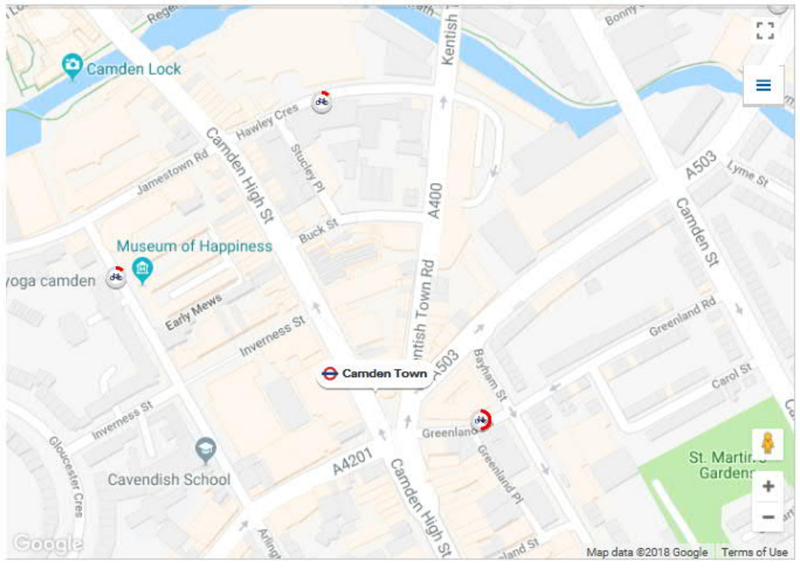


Figure 14-2 Santander Cycle Map of the Proposed Development- Taking from TFL website (05/09/2018)

14.3 SUMMARY

The Proposed Development has complied with Camden local planning policy by ensuring the development provides sufficient and appropriate cycle spaces, on-site changing facilities, including lockers and showers and access to low carbon modes of transportation such as the Santander Cycle Hire. Additionally, due to its PTAL excellent rating, the Proposed development will be ‘car-free’ and will have no negative impact on the neighbouring traffic congestion.

The 12 existing parking spaces designated for Grand Union Walk residents will be retained but will be relocated to within the north west corner of the basement car park.

15 CONCLUSION

Considering the principles of sustainability early in the design and planning process is a positive step to ensuring that the Proposed Development is sustainable in terms of construction, operation, the local community, the environment and its future occupation.

A review of national, regional and local planning policies was undertaken, with emphasis on the updated 2019 National Planning Policy Framework (NPPF) and the Camden local planning policy (2017) and CPG Energy Efficiency and Adaptation (2021).

The Proposed Development responds to the issues raised in the policy documents in the following areas:

- Environmental Rating Methods
- Optimising the use of land
- Energy and CO_2 Emissions
- Climate Change Adaptation
- Water Efficiency
- Materials
- Waste Management
- Pollution Management
- Health and Wellbeing
- Ecology & Biodiversity
- Transportation and Accessibility

The Proposed Development has endeavoured to ensure that social, economic and environmental issues are dealt with in an integrated and equal manner. The sustainability of the design, construction and proposed community structure of the development has been assessed as well as considering its contribution to sustainable development within the local area.

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APPENDIX A

BREEAM PRE-ASSESSMENT

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