



14 Blackburn Road Sustainability Statement

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1 Introduction

This sustainability statement has been prepared by JAW Sustainability for Hampstead Asset Management Limited and development partners Fifth State, in support of the planning application made for the redevelopment on 14 Blackburn Road, London, NW6 1RZ, located in West Hampstead, within the London Borough of Camden. The site stretches east to west along Blackburn Road and is located behind properties that front West End Lane. The south of the site borders the railway, with West Hampstead Overground and Underground station located approximately 162m west of 14 Blackburn Road. The current site is occupied by a builder's merchants (Builder Depot Limited).

The proposed development comprises the demolition of low quality buildings (Builder Depot Limited) for a mixed use development comprising purpose built student accommodation (Sui Generis), affordable housing (Use Class C3), lower ground and ground floor flexible commercial/business space comprising of showrooms, retail and ancillary offices (Use Class E/Sui Generis) and a café/PBSA amenity space (Use Class E/Sui Generis). Additional works such as a service yard, cycle parking, hard and soft landscaping, amenity spaces and plant are to be included in the proposed development.

The proposed development would deliver 192 purpose-built student accommodation rooms, 35 affordable homes (C3) and 1,619sqm of lower ground and ground floor commercial floorspace.



Figure 1-01 – Proposed Development Site

2 Policy

2.1 Sustainability

Camden Local Planning 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.

We [Camden Council] will:

- promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy;
- require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met;
- 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.

For decentralised energy networks, we will promote decentralised energy by:

- working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them;
- protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and
- requiring all major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible establishing a new network.
- 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.

Camden Local Plan Policy CC2 – Adapting to Climate Change

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

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

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

Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Sustainable Design and Construction Measures

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

- a. ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation;
- b. encourage new build residential development to use the Home Quality Mark and Passivhaus design standards;
- c. encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve “excellent” in BREEAM domestic refurbishment; and
- d. expecting non-domestic developments of 500 sqm of floorspace or above to achieve “excellent” in BREEAM assessments and encouraging zero carbon in new development from 2019.

Camden Local Planning Policy CC3 – Water and Flooding

The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible.

We will require developments to:

- a. incorporate water efficiency measures;
- b. avoid harm to the water environment and improve water quality;
- c. consider the impact of development in areas at risk of flooding (including drainage);
- d. incorporate flood resilient measures in areas prone to flooding;
- e. utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and
- f. not locate vulnerable development in flood-prone areas.

Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable.

The Council will protect the borough’s existing drinking water and foul water infrastructure, including the reservoirs at Barrow Hill, Hampstead Heath, Highgate and Kidderpore.

Camden Local Planning 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.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council’s Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to elevated levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in change an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan.

Camden Local Planning Policy CC5 – Waste

The Council will seek to make Camden a low waste borough.

We will:

- a. aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031;
- b. deal with North London’s waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;
- c. safeguard Camden’s existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and
- d. make sure that developments include facilities for the storage and collection of waste and recycling.

2.2 The London plan

Policy SI 1: Improving Air Quality

- A. Development Plans, through relevant strategic, site-specific and area-based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.
- B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:
 - 1. Development proposals should not:
 - a) lead to further deterioration of existing poor air quality
 - b) create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits
 - c) create unacceptable risk of elevated levels of exposure to poor air quality.
 - 2. In order to meet the requirements in Part 1, as a minimum:
 - a) Development proposals must be at least Air Quality Neutral
 - b) Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retrofitted mitigation measures
 - c) Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1
 - d) Development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure.
- C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:
 - a) how proposals have considered ways to maximise benefits to local air quality, and
 - b) what measures or design features will be put in place to reduce exposure to pollution and how they will achieve this.
- D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.
- E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

Policy SI 2 Minimising Greenhouse Gas Emissions

- A. Major development should be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:
 - 1. be lean: use less energy and manage demand during operation
 - 2. be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly
 - 3. be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site
 - 4. be seen monitor, verify and report on energy performance.
- B. Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.
- C. A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:
 - a. through a cash in lieu contribution to the borough's carbon offset fund, or
 - b. off-site provided that an alternative proposal is identified, and delivery is certain.
- D. Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver carbon reductions. The operation of offset funds should be monitored and reported on annually.
- E. Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, which are not covered by Building Regulations, i.e. unregulated emissions.
- F. Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

Policy SI 3 Energy infrastructure

- A. Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.
- B. Energy masterplans should be developed for large-scale development locations (such as those outlined in Part A and other opportunities) which establish the most effective energy supply options. Energy masterplans should identify:
 - 1. major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
 - 2. heat loads from existing buildings that can be connected to future phases of a heat network
 - 3. major heat supply plant including opportunities to utilise heat from energy from waste plants
 - 4. secondary heat sources, including both environmental and waste heat
 - 5. opportunities for low and ambient temperature heat networks
 - 6. possible land for energy centres and/or energy storage
 - 7. possible heating and cooling network routes
 - 8. opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
 - 9. infrastructure and land requirements for electricity and gas supplies
 - 10. implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector
 - 11. opportunities to maximise renewable electricity generation and incorporate demand-side response measures.
- C. Development Plans should:
 - 1. identify the need for, and suitable sites for, any necessary energy infrastructure requirements including energy centres, energy storage and upgrades to existing infrastructure
 - 2. identify existing heating and cooling networks, identify proposed locations for future heating and cooling networks and identify opportunities for expanding and inter-connecting existing networks as well as establishing new networks.
- D. Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system:
 - 1. the heat source for the communal heating system should be selected in accordance with the following heating hierarchy:
 - 2. connect to local existing or planned heat networks
 - 3. use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
 - 4. use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network)
 - 5. use ultra-low NOx gas boilers
 - 6. CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements in Part B of Policy SI 1 Improving air quality

- 7. where a heat network is planned but not yet in existence the development should be designed to allow for the cost-effective connection at a later date.

- E. Heat networks should achieve good practice design and specification standards for primary, secondary and tertiary systems comparable to those set out in the CIBSE/ADE Code of Practice CP1 or equivalent.

Policy SI 4 Managing Heat Risk

- A. Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.
- B. Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:
 - 1. reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
 - 2. minimise internal heat generation through energy efficient design
 - 3. manage the heat within the building through exposed internal thermal mass and high ceilings
 - 4. provide passive ventilation
 - 5. provide mechanical ventilation
 - 6. provide active cooling systems.

Policy SI 5: Water infrastructure

- A. In order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner.
- B. Development Plans should promote improvements to water supply infrastructure to contribute to security of supply. This should be done in a timely, efficient and sustainable manner taking energy consumption into account.
- C. Development proposals should:
 - 1. through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)
 - 2. achieve at least the BREEAM excellent standard for the 'Wat 01' water category¹⁶⁴ or equivalent (commercial development)
 - 3. incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise futureproofing.

- D. In terms of water quality, Development Plans should:
1. promote the protection and improvement of the water environment in line with the Thames River Basin Management Plan, and should take account of Catchment Plans
 2. support wastewater treatment infrastructure investment to accommodate London's growth and climate change impacts. Such infrastructure should be constructed in a timely and sustainable manner taking account of new, smart technologies, intensification opportunities on existing sites, and energy implications. Boroughs should work with Thames Water in relation to local wastewater infrastructure requirements.
- E. Development proposals should:
1. seek to improve the water environment and ensure that adequate wastewater infrastructure capacity is provided
 2. take action to minimise the potential for misconnections between foul and surface water networks.
- F. Development Plans and proposals for strategically or locally defined growth locations with particular flood risk constraints or where there is insufficient water infrastructure capacity should be informed by Integrated Water Management Strategies at an early stage.

- 3) opportunities for managing as much waste as possible on site
 - 4) adequate and easily accessible storage space and collection systems to support recycling and re-use
 - 5) how much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy
 - 6) how performance will be monitored and reported.
- C. Development Plans that apply circular economy principles and set local lower thresholds for the application of Circular Economy Statements for development proposals are supported.

Policy SI 7 Reducing waste and supporting the circular economy

- A. A Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:
- 1) promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
 - 2) encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products
 - 3) ensure that there is zero biodegradable or recyclable waste to landfill by 2026
 - 4) meet or exceed the municipal waste recycling target of 65 per cent by 2030¹⁶³
 - 5) meet or exceed the targets for each of the following waste and material streams:
 - a) construction and demolition – 95 per cent reuse/recycling/recovery
 - b) excavation – 95 per cent beneficial use¹⁶⁴
 - 6) design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.
- B. Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:
- 1) how all materials arising from demolition and remediation works will be re-used and/or recycled
 - 2) how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life

3 Sustainability Strategy

3.1 Energy Performance

An energy and overheating strategy has been developed for the proposed development following the energy hierarchy 'Be Lean, Be Clean, Be Green', 'Be Seen'. Energy calculations using Building Regulations approved and accredited software have been undertaken at each stage to calculate the savings associated with the measures incorporated.

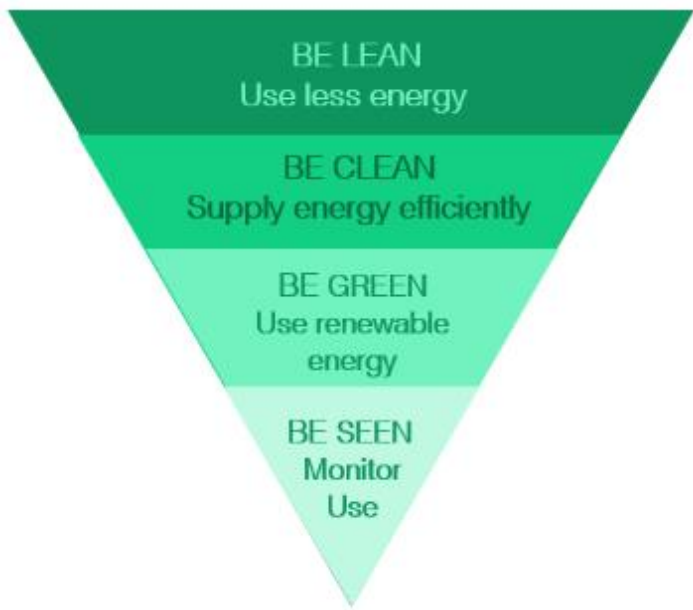


Figure 3-01 - The Energy Hierarchy

A full energy and overheating strategy has been undertaken by CGP MEP which demonstrates a saving of 84% CO₂ or 0.6tonnes CO₂ per annum saving over the Part L baseline for the residential aspect of the development. The PBSA development demonstrates a saving of 35% CO₂ or 2.8 tonnes CO₂ per annum over the Part L baseline. Please refer to the CGP Energy & Overheating report for further details.

3.1.1 Solar Gain Control and Daylight

Solar gains are a passive form of heating from the sun's radiation and are beneficial to a building during winter months as they provide an effective source of heat and reduce internal heating requirements. However, during summer, they must be controlled to prevent overheating. This can be achieved through glazing and shading design to allow low-angle winter sunlight while limiting high-angle summer sun.

3.1.2 Overheating

The building follows the steps in the cooling hierarchy to minimise overheating. A separate dynamic overheating assessment has been conducted by CGP MEP which addressed The Part O requirements which outlines and follows the CIBSE TM59 guidelines. The methodology used to complete the overheating assessment is based on the theory of adaptive comfort which states that the acceptable temperature for occupants in space “track” the mean indoor temperature over a preceding period.

Internal heat generation will be minimised by implementing:

- Low output, energy efficient lighting such as LED and CFL
- Low heat output, energy efficient equipment
- Insulated pipework on centralised hot water systems via Air Source Heat Pumps to prevent heat build-up in corridors and risers

As natural ventilation is not considered a viable option at Blackburn Road, the whole development will be mechanically ventilated. All studios within the PBSA block will be served by individual MVHR units that will be installed with additional boost fans to supplement airflow at peak temperatures.

Each apartment in the residential block will be provided with an MVHR to provide mechanical ventilation to all required spaces. Hybrid MVHR with heat/cooling recovery units will be added to serve rooms that were failing to assist in reducing overheating.

3.2 Water Efficiency

Water fittings will be specified with the following or similar flow rates to meet the target water consumption of 105l/p/day and to achieve an improvement of minimum 25% over the notional baseline as per the BREEAM 2018 Wat 01 Criteria for the residential aspect of the development, specified under 'Policy 5.15 Water Use and Supplies' – Greater London Authority:

- WC - 4 litre effective flush volume
- Urinal - 3 litre/bowl/hour
- WHB taps - 6 l/min
- Showers - 8 l/min
- Baths - 160 litres to overflow
- Kitchen taps - 8.3 l/min
- Kitchenette taps - 7 l/min

For the commercial aspect of the development, water fittings will be specified with the following flow rates to meet the target water consumption of 105l/p/day and to achieve an improvement of minimum 40% over the notional baseline as per the BREEAM 2018 Wat 01 Criteria, specified under 'Policy 5.15 Water Use and Supplies' – Greater London Authority:

- WC - 3.75 litre effective flush volume
- Urinal - 1.5 litre/bowl/hour
- WHB taps - 5 l/min
- Showers - 6 l/min
- Baths - 140 litres to overflow
- Kitchen taps - 7.3 l/min
- Kitchenette taps - 6 l/min

- Domestic sized dishwashers - 12 l/cycle

Water meters will be installed to encourage residents to limit their consumption.

Water reduction targets will be in line with building control. The development will incorporate flow restrictors to showers and taps and will be designed to minimise water usage per person per day.

3.3 Materials

Materials will be specified to reduce the embodied carbon of the development, wherever possible. This will be achieved through both effective material selection and design optimisation to minimise required material masses.

Insulating materials will be specified to maximise thermal performance whilst still paying attention to the environmental impact of the materials used, by specifying mineral wool. If possible, materials with a high recycled content will be specified.

Responsible sourcing will also be pursued. All timber used on site during the construction phase and within the building will be from legal sources. Where possible, FSC or equivalent timber will be used. Sourcing of other materials will include products where the manufacturer employs an environmental management system such as ISO 14001 or BES 6001. Where possible, materials will be sourced locally.

Non-toxic materials will be used wherever possible, including the specification of products with low VOC content in line with European testing standards.

All the building elements will achieve high ratings on the BRE Green Guide to Specification. Materials will be specified to have a low embodied energy, taking into account whole life cycle analysis.

A separate Life Cycle Assessment has been conducted to ensure that the development reduces embodied carbon, which concluded that the total emissions for stages A-C (excluding B5 and B6), including carbon sequestration, are 1149 kgCo2e/m² GIA. Please refer to Table 1.0 for benchmark comparisons.

Please refer to the WLCA report undertaken by JAW Sustainability for full details.

3.3.1 Whole Life Carbon Assessment

A Whole Life Carbon Assessment has been conducted by JAW Sustainability to assess the whole life cycle carbon emissions of the proposed development and to inform design decisions to reduce life cycle carbon emissions.

The total Whole Life Cycle Carbon calculated at this stage of design is 14,201,737 kgCo₂e. With a total project GIA of 12355m² this equates to 1149 kgCO₂e/m² Please refer to the ‘Whole Life Cycle Analysis’ report by JAW Sustainability for further details.

Life Cycle Stage	Estimated carbon emissions	GLA benchmark RESIDENTIAL	Embodied carbon rating (Industry-wide)
Product & Construction Stages Modules A1-A5 (excl. sequestration)	557.951 kgCO ₂ e/m ²	Meets GLA benchmark (<850 kgCO ₂ e/m ²) but misses the aspirational target (<500 kgCO ₂ e/m ²).	Modules A1-A5 achieve a band rating of ‘C’, meeting the LETI 2020 Design Target for good practice.
Use and End-Of-Life Stages Modules B-C (excl. B6 and B7)	247.787 kgCO ₂ e/m ²	Meets GLA target (<350 kgCO ₂ e/m ²) and aspirational benchmark (<300 kgCO ₂ e/m ²).	N/A
Modules A-C (excl B6, B7 and incl. sequestration)	803.434 kgCO ₂ e/m ²	Meets GLA target (<1200 kgCO ₂ e/m ²) and narrowly misses achieving the aspirational benchmark (<800 kgCO ₂ e/m ²).	Modules A1-B5, C1-4 (incl sequestration) achieve a letter band rating of ‘C’, meeting the LETI2020 Design Target for good practice’
Operational Energy Use (Modules B6 and B7)	346 kgCO ₂ e/m ²	See energy strategy for further information	
Reuse, Recovery, Recycling Stages Module D	-136.90 kgCO ₂ e/m ²	N/A	

Table 1.0 – Benchmark comparisons for GLA LCA KgCO₂e/m²

3.4 Waste Management and Construction

Construction site waste will be managed in such a way to reduce the amount of waste produced as much as possible, and the waste hierarchy will be followed. In addition, 95% of waste that does arise will be recycled using an external waste contractor.

In line with the new London Plan Policy SI 7 a Circular Economy Statement has been prepared by JAW Sustainability. The Circular Economy Statement concludes key commitments that can be categorised into the following sections: conserve resources, increase efficiency and source sustainably, design to eliminate waste (and ease for maintenance) and manage waste sustainably and at the highest value. These are outlined below.

3.4.1 Conserve Resources Increase Efficiency and Source Sustainably

To minimize resource use in building construction, unnecessary materials will be avoided through standardization, rationalization, and waste reduction. Emphasis will be placed on minimizing energy and water consumption, while incorporating recycled wood to reduce land-use change (LUC). Additionally, materials with high recycled content, such as concrete, steel, and wood products, will be prioritized during specification. Key points from the circular economy statement the development will:

- Prioritise pile foundations over raft foundations at the detailed design stage, as they typically use less material whilst providing a similar level of structural integrity
- Repetitive units have been stacked, and kitchens/bathrooms have been coordinated to minimise pipework runs
- PV will be utilised throughout the scheme and maximised on all unused roof space. This will maximise on site generation and minimise additional energy demands stemming from the development.
- The provision to extend the building vertically in the future, if required, has been considered to maximise the GIA available per GFA. Supplying maximum accommodation for students and residents whilst minimising the need for land use and LUC.

3.4.2 Design to Eliminate Waste and for Ease of Maintenance

Design for longevity with durable materials and systems will be prioritized, while minimizing waste and maintenance through standardized designs and off-site coordination to avoid overordering. Key points from the circular economy statement are stated below:

- Brick external walls will be used which have a lifespan beyond the design life of the development. This should allow for recovery of masonry brickwork at the end of the building's lifecycle (subject to state of repair)
- An overheating study was conducted to reduce overheating in future climate scenarios
- Internal walls to be provided in all residential spaces to last the life span of the development. Internal walls are primarily non-structural and as such provide options for adaptability and refurbishment beyond the design life of the development
- Prefabricated bathroom units are used throughout the development. The use of prefabricated units significantly reduces pre-consumer waste from construction phases.

3.4.3 Manage Waste Sustainably and at the Highest Value

Material quantities will be scheduled and ordered carefully to avoid overordering and ensure deliveries are timed to prevent environmental damages. Space is allocated in student units for municipal waste separation in shared areas and recycling bins on the ground floor for collected waste, with organic bins provided in units.

A pre-demolition audit has also been prepared for the development to ensure waste minimisation and forward planning regarding the selection of beneficial end of life scenarios for these existing materials. This has been prepared in order to meet GLA target landfill avoidance rates for demolition and excavation waste generated by redevelopment. Key points from the circular economy statement the development will:

- 95 percent of construction and demolition waste should be diverted from landfills for reuse/recycling/recovery
- 95 percent of excavation should be put to beneficial use, such as landscaping, quarry infill etc. Opportunities to re-use or put to beneficial use should be considered
- Local waste processors that have a proven record of meeting GLA targets will be identified
- Waste will be segregated on site to maximise opportunities for re-use and recycling

For further details on the above, please see the Circular Economy Statement produced by JAW Sustainability provided as part of this submission.

3.5 Pre – Demolition Audit

A pre-demolition audit has been undertaken for the development by JAW Sustainability to ensure waste minimisation and forward planning regarding the selection of beneficial end of life scenarios for the existing materials. This has been prepared to meet target landfill avoidance rates for demolition and excavation waste generated by redevelopment.

The demolition activities will total approximately 6146.76 KgCO₂e. As the project has set a target for minimum 95% from landfills, the total embodied carbon that will be sent to landfills will be 307.338 KgCO₂e. Thus, by targeting high reuse, recycle and recovery rates, the negative impacts associated with the demolition process and the demolished materials can be mitigated and offset.

Please refer to the 'Pre Demolition Audit' by JAW Sustainability for further details.

3.6 Nature Conservation and Biodiversity

A Preliminary Ecological Appraisal was conducted by Bradley Murphy Design Ltd (BMD) which demonstrated that the existing site is of low ecological value. In conjunction with the PEA, a Bat Survey was undertaken by BMD. The survey concluded that the site is of negligible value and that there was no record of protected bat species.

A Biodiversity Net Gain Plan was produced by BMD which concluded a positive habitat biodiversity unit change of 0.30 Units or 1483% based on current creation proposals associated with a green roof area, introduced shrub and urban trees.

The proposed development will create the following habitats:

- A green roof space that will be planted with grasses and shrubbery
- A small area of amenity grassland will be planted within the courtyard area
- Introduced shrub will be planted within planters and climbers
- 9 small pleached trees
- Small length native hedgerow

3.7 Climate Change Adaptation

3.7.1 Tackling Increased Temperature and Drought

A separate overheating assessment has been conducted by CGP MEP, demonstrating the resilience of the development to overheating. This has been explored in further depth under point 3.1 and 3.1.2. Windows will incorporate low emissivity coatings to reduce solar gain.

As described above in water consumption, measures have been put in place to reduce potable water use internally.

3.7.2 Flood Risk

A Flood Risk Assessment was conducted by Expedition as part of planning submission. The report identified that the development site is located within Flood Risk 1, with an annual fluvial (from surface water and sewers) flood risk probability of less than 1 in 1000.

The report concluded that that there is no significant risk of flooding from fluvial waters, surface water and sewers, tidal water, ground water and water infrastructure. Surface water drainage measures will be implemented as an additional mitigation strategy to avoid surface water flood risk. Please see below for additional information on drainage.

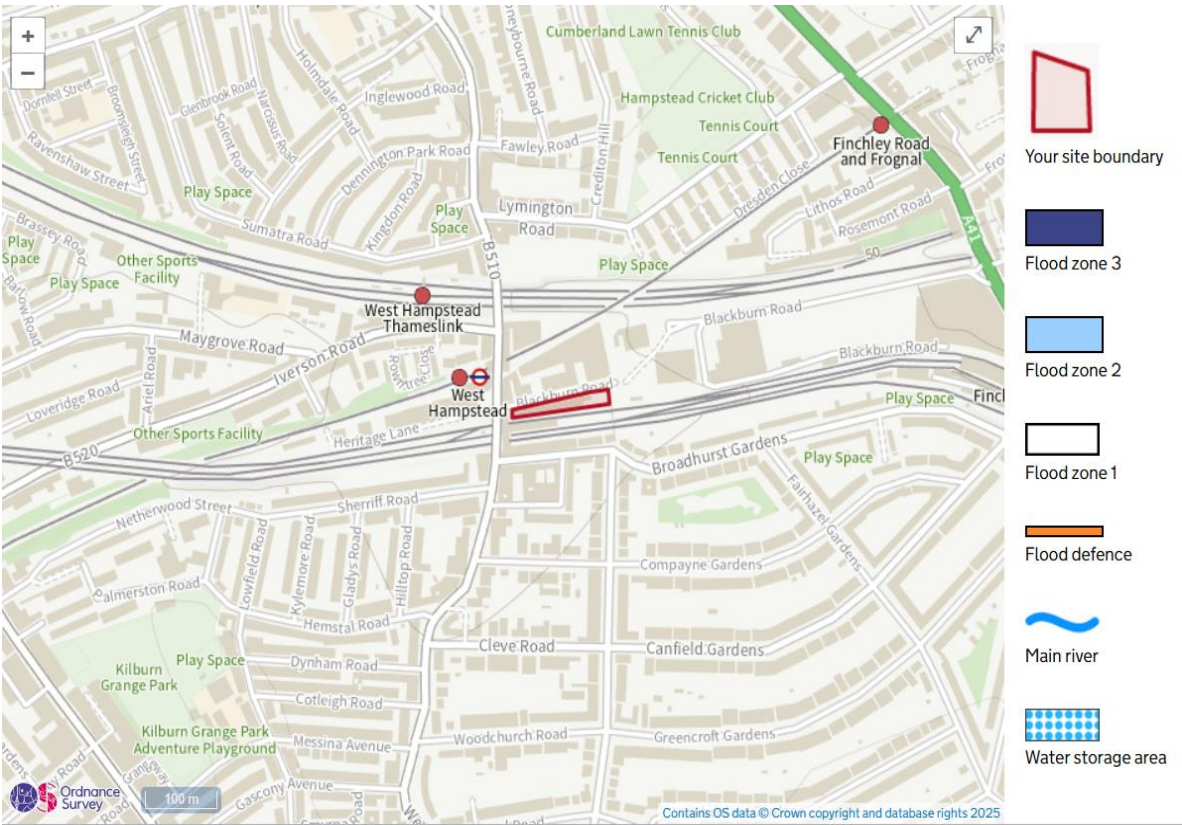


Figure 3.07 - Flood Risk Map for the development at Blackburn Road

3.7.3 Drainage

Inline with LBC Local Policy Plan CC3, the surface water drainage system at Blackburn Road will be designed to attenuate flows from within the ownership boundary to greenfield runoff rates for the 1 in 2 year event, the 1 in 30 event with 35% allowance for climate change, and for the 1 in 100 year event +40% climate change event.

The proposed development will include to contain all surface water drainage flows from all managed areas in ownership for all events up to 1:100 year +40% for climate change.

Please refer to the '14 Blackburn Road Flood Risk Assessment, Drainage Strategy and Foul Strategy' for additional information provided as part of planning submission.

3.7.4 Flexibility and Adaptability

The development has been designed to be flexible and adaptable in its layout. This is to accommodate for potential future changes in use or occupancy over time. The Mat 05 (Designing for Durability and Resilience), Wst 05 (Adaptation to Climate Change) and Wst 06 (Design for Disassembly and Adaptability) BREEAM credits are being targeted. A Climate Change Adaptation Appraisal will be carried out at Stage 2 and 4, and a Functional Adaptability Strategy will be carried out at Stage 2 and 4. These reports will outline how the design has mitigated the effects of climate change on the building, and how different design scenarios have been explored to allow an ease of disassembly and functional adaptation. This is in line with the BREEAM 2018 criteria.

3.8 Pollution Management

3.8.1 Air Quality

During construction and when the development is in use, the site will be managed in such a way that the environmental impact is minimised. This includes following best practice policies for dust pollution by using dust sheets, covering skips and damping down where appropriate.

An Air Quality Assessment was undertaken by AQ Consultants which assessed and considered the impacts of the proposed development on local air quality in terms of dust and particulate matter emissions during construction, emissions from road traffic generated by the completed and occupied development, and emissions from the diesel generator for life-safety power provision. The report concluded that:

- Construction works have the potential to create dust and therefore it will be necessary to implement mitigation measures in section 9 'mitigation' under point 9.2 within the Air Quality Assessment report.
- Air quality will be at an acceptable level with annual PM_{2.5} concentrations measuring below the GLA target.
- The proposed development is consistent with paragraph 198 of the NPPF, being appropriate for its location in terms of its effects on the local air quality environment and the local air quality conditions for future residents.
- The proposed development is consistent with paragraph 199, as it does not affect compliance with the relevant limit values or national objectives.

The proposed development can be considered air quality neutral as the development is car free and does not have any on-site combustion plant.

Please refer to the '14 Blackburn Road Air Quality Assessment' undertaken by AQ Consultants for additional information provided as part of planning submission.

3.8.2 Plant and Machinery

All plant and equipment installed in the development will be appropriately sized and selected for efficiency to reduce greenhouse gas emissions. All equipment will be frequently maintained to ensure it continues to run efficiently and cleanly. Insulating materials and heating systems will be specified to keep pollutants to a minimum. Insulation will have a low Global Warming Potential (GWP).

3.8.3 Noise

The development will comply with Building Regulations Part E, providing a proficient level of sound insulation. All windows are to be specified as high efficiency glazing to minimise the transmission of noise between the property and surrounding area.

A Noise Impact Assessment (NIA) was undertaken by Quantum Acoustics to establish the existing noise levels. The Stage 1 assessment concluded that the southern boundary of the site would have a 'high' noise risk (without mitigation) with noise levels reducing in a northerly direction.

A stage 2 assessment was undertaken to mitigate high risk noise factors. These assessment demonstrates:

- The scheme follows a good acoustic design process to mitigate noise levels.
- The proposed development can be designed to deliver appropriate internal noise levels
- The proposed development embeds appropriate design strategies for providing access to good quality external amenity space for future residents
- The required mitigation strategies should not create any unintended adverse consequences for future residents the proposed development is therefore considered to comply fully with relevant national and local planning policy; and

- The proposed development does not raise any agent of change concerns in relation to existing neighbouring business or community use facilities.

After the stage 2 assessment, the proposed development complied fully with noise related national, city wide policies.

Please refer to the '14 Blackburn Road Environmental Noise and Vibration Impact Assessment Report' undertaken by Quantum Acoustics for additional information details provided as part of planning submission.

3.8.4 Light Pollution

The proposed development is in an urbanised location, and therefore will not significantly contribute to increasing the effects of light pollution. The lighting strategy will balance the safety and accessibility of the public realm without contributing to light pollution. This is achieved through downlights, appropriate lux levels and will be integrated into the building design to avoid light spill on local wildlife.

3.9 Transport and Accessibility

A travel plan has been developed by Royal HaskoningDHV for 14 Blackburn Road. The site is located in a highly sustainable location with connections to a dense network of public transport due to the site's central location within the city. The site has a PTAL rating of 6A and 6B. There are good transport links through West Hampstead Overground, which supports the Mildmay Line and West Hampstead Underground station, supporting the Jubilee Line and West Hampstead Thames Link. The site is also served by several bus routes served by day and night buses.

It is anticipated that well connected cycle routes will be established on the northern side of the site between West End Lane and Finchley Road to encourage sustainable transportation methods for residents and commuters.

The proposed development scheme will be a 'car free development' and proposes on-site servicing facilities, incorporating two loading bays. No disabled parking is proposed at Blackburn Road, in line with the 02 Masterplan. However, a contribution can be made toward the provision of one on street blue badge space.

The development will provide x173 extended stay cycle spaces for PBSA, x80 for residential (C3) and x6 for commercial (x2 will be provided for the café). There will be x38 short stay cycle parking available for all uses in publicly accessible locations.

The proposed redevelopment widens the pavement to a maximum width of 4.1m, averaging a 3.5m width across the pavement.

The travel plan developed by Royal HaskoningDHV also concluded that the objectives of any future travel plans would be to:

- Promote access to / from the Site via walking and cycling as the most sustainable modes of travel
- Instil and uphold the 'car-free' nature of the development
- Actively identify and highlight opportunities for sustainable travel within the context of local walking, cycling and public transport infrastructure
- Promote a healthy lifestyle to regular users at the Site through encouraging active travel.

Please refer to the '14 Blackburn Road Travel Plan' undertaken by Royal HaskoningDHV for additional information provided as part of planning submission.

4 BREEAM

The development is being assessed under BREEAM 2018 New Construction. A pre-assessment has been produced for the commercial space on the ground floor and the purpose-built student accommodation (PBSA) to demonstrate how the development will achieve the desired score of Excellent.

The client has voluntarily set a target of BREEAM Excellent for both the PBSA and commercial development demonstrating a proactive approach to environmental performance beyond legal obligations. The BREEAM assessments will ensure both developments will be designed and constructed to ensure building performance is at the forefront of design, encompassing a range of environmental features including energy consumption, indoor air quality, occupant thermal comfort, lighting and acoustics. Both developments will be constructed using sustainably procured materials e.g., FSC/PEFC certified timber and integrate sustainable practises during construction.

Along with the integration of sustainable construction practises the development plans to reduce its ecological and carbon footprint through measures listed above, promoting long-term sustainability.

4.1 BREEAM 2018 New Construction Assessment (PBSA)

The development will carry out a BREEAM 2018 New Construction assessment on PBSA units and achieve a score of Excellent. A pre-assessment has been conducted by JAW Sustainability which shows that the development has the potential to achieve the required Excellent rating with a target score of 74.17%.

4.2 BREEAM 2018 New Construction (Commercial)

The development will carry out a BREEAM 2018 New Construction assessment on the commercial unit on the ground floor and achieve a score of Excellent. A pre-assessment has been conducted by JAW Sustainability which shows that the development has the potential to achieve the required Excellent rating with a target score of 75.87%

5 Conclusion

The development will follow the energy hierarchy, incorporating energy efficient design measures and equipment. The development will employ an efficient building fabric, including efficient insulation and highly efficient glazing, efficient heating strategy and renewable systems. Measures are also incorporated to minimise pollution, reduce the embodied carbon footprint of the development and reduce water use.

The development has addressed sustainability through several reports, including the energy strategy, overheating assessment, life cycle assessment, circular economy statement, pre-demolition audit, air quality assessment, preliminary ecological appraisal, flood risk assessment and transport assessment. Please refer to these documents for comprehensive details of how the development has addressed the policies relating to energy and sustainability.

This sustainability statement has demonstrated how the proposed development at Blackburn Road intends to incorporate sustainability measures and meet the sustainability policy of the London Borough of Camden. The development is targeting BREEAM 2018 New Construction Excellent for both commercial and PBSA aspects of the development. A pre-assessment has been conducted to show that the development is on track to achieve the target score.

The development complies with sustainability policy of the London Borough of Camden and the London Plan, for major developments.