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Planning Report
Sustainability Statement
34A-36 Kilburn High Road

Document information

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Executive summary

This proposed development is for the construction of a fifth floor above the existing building located at 34A-36 Kilburn High Road. The project will deliver five new residential units.
The development is situated in the London Borough of Camden.

This Sustainability Statement will be provided as evidence to the London Borough of Camden to demonstrate the development's holistic approach to sustainable design and construction. It summarises the contribution that the design will make to creating a more sustainable development, drawing on information provided by specialist consultants and design reports, and identifying key features intrinsic to achieving low carbon developments.

Key sustainability features within the development will include:

- The development will reduce carbon emissions by 6.0% from the fabric energy efficiency measures, and will reduce total carbon emissions by 37.7% over Building Regulations with the inclusion of low and zero carbon technologies.
- A water consumption target of 105 litres/person/day through implementation of water efficiency measures.
- A sustainable materials procurement policy and an efficient waste strategy on site including at least 85% of waste to be diverted from landfill.
- The inclusion of sustainable transport options such as safe cycle storage.
- Protection of ecology on site and the appropriate actions to ensure long-term biodiversity.
- The implementation of health and wellbeing measures through design and operational procedures, including daylight, optimum indoor air quality and thermal comfort.
- Adoption of strategies to future proof for anticipated climate change, including design to allow for functional adaptability and incorporation of flood resilience measures.

Key Sustainability Measures

In summary, the key measures incorporated to meet planning requirements and to achieve a low carbon development address the following key areas of sustainable design and construction:

- Energy and CO_2
- Adaptation to climate change
- Waste
- Water Efficiency
- Transport and connectivity
- Materials
- Health and wellbeing

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Introduction
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Sustainability introduction	The design team has significant experience in delivering schemes that are considered highly sustainable, either through application of formal green building rating systems, such as BREEAM as well as applying benchmarks from standards such as Passivhaus Design, and adopting precedents from industry exemplar sustainable developments. In addition, to reflect the holistic nature of the scheme and to demonstrate the commitment of sustainable development to the London Borough of Camden, the scheme will target a stringent goal to exceed the Greater London Authority (GLA)'s Sustainable Design and Construction SPG benchmark to achieve a 35% reduction over Part L 2013 Building Regulations. The scheme will also demonstrate its commitment to sustainable development in the following areas:
Economic	Provision of additional housing in an area of need, and the use of local labour to boost employment.
Social	Community engagement during development design to ensure the building matches the needs of the local populous. Alleviating fuel poverty in the region as well as the shortfall in new, quality build households is also addressed.
Ecological	Ecological value of site will be maintained and a commitment made to help protect biodiversity and enhance it through measures such as native planting where feasible.
Description of development	This proposed development is for the construction of a fifth floor above the existing building located at 34A-36 Kilburn High Road. The project will deliver five new residential units. The aspiration for the scheme is to significantly improve the existing site and its immediate environment by providing an efficient and inclusive development, which meets the policy recommendations of the London Borough of Camden.

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Policy Context
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National context: The 2008 Climate Change Act

The UK Government is committed to reducing the UK's carbon emissions by 80% over 1990 levels through the Climate Change Act 2008. Achieving truly sustainable design and construction and forwarding the green agenda within the construction industry across the UK is inherent to meeting these emission targets. This development aims to do both of these.

To help monitor carbon reductions and to plot progress being made for future plans and investments in the UK's low-carbon economy, intermediary targets have been established to ensure that the UK remains on course for meeting the 80% reduction by 2050.

Concurrent with reducing CO_2 emissions by 80% by 2050 is the European Climate Change Policy targets. It sets the objective of ensuring 20% of energy consumption is generated from renewable sources by 2020 whilst also reducing Europe's carbon footprint by 20%. Ensuring a fabric first approach with consideration to renewable energy production fits both the climate change act and the European Commission's 2020 targets for reducing greenhouse gas (GHG) emissions.

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Policy Context
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Local context: Camden Local Plan 2017

The Camden Local Plan, published in July 2017, sets out the Council's planning policies. It responds to the borough's unique characteristics and provides a comprehensive local policy framework to deliver Camden's future sustainable development. The Plan is supported by the supplementary planning document 'Camden Planning Guidance 3: Sustainability'.

The Camden Local Plan states a key strategic objective as 'investing in our communities to ensure sustainable neighbourhoods'. This is complimented by further objectives embedded in the Local Plan that define the sustainability vision of the council.

Chapter 8 'Sustainability and climate change' within the Camden Local Plan lists key sustainability objectives for the Borough. The following strategic objectives are relevant to this sustainability statement:

> 8.30 - Developments should reduce carbon dioxide emissions in line with the steps in the energy hierarchy. Developments should support this by ensuring the availability of sustainable transport options, optimising resource efficiency and encouraging sensitive energy use.
>
> 8.80 - All new residential development should demonstrate a 19% carbon dioxide reduction below Part L 2013 Building Regulations.
>
> 8.18 - All developments should optimise resource efficiency through waste and energy reduction, minimising materials required, opting for materials with low embodied carbon content and enabling low energy and water demands.
>
> 8.33 - All developments should adopt appropriate climate change adaptation measures such as green infrastructure and SuDS where feasible.
>
> 8.34 - New developments should apply the cooling hierarchy.
>
> 8.53 - Developments should incorporate water efficiency measures, consider the impact of development in areas prone to flooding and avoid harm to the water environment. Residential developments will be expected to meet the requirement of 110 litres per person per day.
>
> 8.84 - Construction should adopt sustainable design and construction methods including measures that minimise negative impacts on air quality.
>
> 8.90 - Developments should include facilities for the storage and collection of waste and recycling.

Further relevant sustainability objectives stated in the Camden Local Plan include the following:

> 4.84 - Developments should incorporate design principles that contribute to community safety and security.

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Policy Context

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Camden Planning Guidance 3 Sustainability	The Camden Planning Guidance (CPG) 3 Sustainability supports the policies in the Camden Local Plan and forms a supplementary planning document (SPD) for planning decisions. The CPG and additional guidance it provides on interpretation of the Local Plan sustainability policies is considered in this sustainability statement.

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Energy and CO_2 Sustainability Statement

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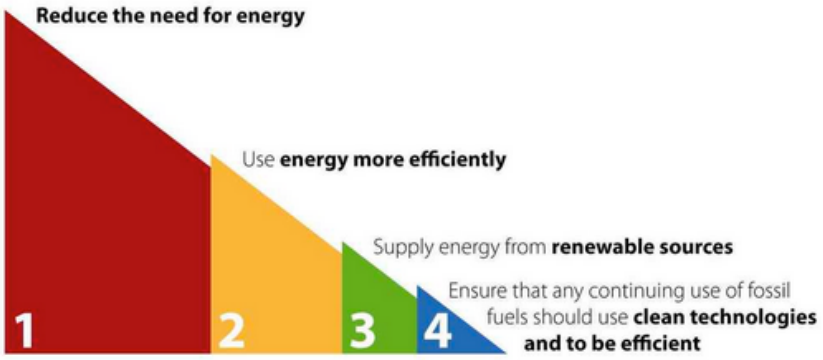
Energy strategy

The Energy Statement, issued in April 2018 by Eight Associates, summarises the energy strategy for 34A-36 Kilburn High Road. The development will reduce carbon emissions by 6.0% from the fabric energy efficiency measures, and will reduce total carbon emissions by 37.7% over Building Regulations with the inclusion of low and zero carbon technologies.

The following is a summary of the findings in accordance with the energy hierarchy and policy requirements.

The energy hierarchy

The proposed scheme has followed the energy hierarchy that is illustrated below:



This methodology widely used in accordance with meeting the Sustainable Design and Construction Supplementary Planning Guidance (SPG), has been adopted for the scheme using a 'Lean', 'Clean', and Green' approach in addressing [Local Planning Authority]'s policy. A summary of the savings in carbon emissions are shown below:

GLA's Energy Hierarchy – Regulated Carbon Emissions				
	Baseline:	Be Lean:	Be Clean:	Be Green:
CO_2 emissions (Tonnes CO_2/yr)	6.72	6.32	-	4.19
CO_2 emissions saving (Tonnes CO_2/yr)	-	0.40	-	2.13
% saving over the previous stage	-	6.0%	-	31.7%
Total CO_2 emissions saving (Tonnes CO_2/yr)	2.53			

37.7% of total carbon emissions savings over Part L of the Building Regulations 2013 achieved.

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Energy and CO_2 Sustainability Statement

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Energy efficiency strategies

Energy efficiency measures that will be applied to 34A-36 Kilburn High Road include:

- High insulation standards to reduce transfer of heat through the building fabric.
- Use of a gas boiler to provide heating for the development. Pipework will be fully insulated to minimise heat loss. The gas boiler will have a maximum efficiency of 89.5%.
- Enhanced thermal mass to dampen external temperature peaks.
- Envelope air tightness to reduce unnecessary air infiltration.
- Daylighting and well-planned floor layouts to reduce the need for artificial lighting.
- High efficacy lighting greater than 70lm/W.

In order to facilitate the monitoring of operational energy an energy metering system will be installed. This will enable the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems

Green energy

In line with Policy 5.7 of the London Plan, the feasibility of renewable energy technologies has been considered. Measures that will be implemented to ensure the development meets the 'Be Green' objectives include the installation to a photovoltaic panel system of 5.4kWp.

Thermal comfort and overheating risk

To minimise energy loss, the building fabric performance will be designed to achieve a balance between retaining heat during winter and allowing the building to dissipate it during summer months. Further measures to reduce overheating and the need for cooling include:

- Energy efficient design to minimise internal heat generation. Energy efficient appliances and lighting will be specified.
- Direct solar gains will be controlled through specifying appropriate location, size and type of windows. A g-value of 0.55 is specified.
- Shading that utilises light-coloured curtains and roller blinds.
- Reduced air permeability rate and maximised insulation levels.
- High thermal mass – exposed building fabric materials such as masonry or concrete have been utilised in the form of concrete floors and dense masonry external walls.
- The need for mechanical ventilation will be reduced through passive ventilation measures include openable windows and nighttime cooling.

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Adaptation to Climate Change

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Climate change mitigation

The proposed development will utilise a gas boiler heating system and use natural ventilation. Passive design measures, including openable windows and nighttime cooling, are integrated into the design of the development to reduce the need for mechanical cooling. A mixed-mode system for cooling will be utilised to compliment the passive cooling measures. Mechanical ventilation using fans will remove heat from the building during summer months.

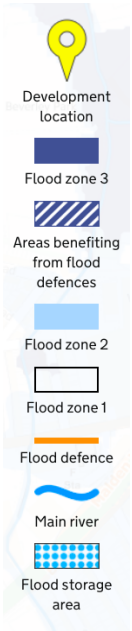
Green landscaping will be installed wherever possible to mitigate for urban heat island effect.

Flood risk and sustainable drainage

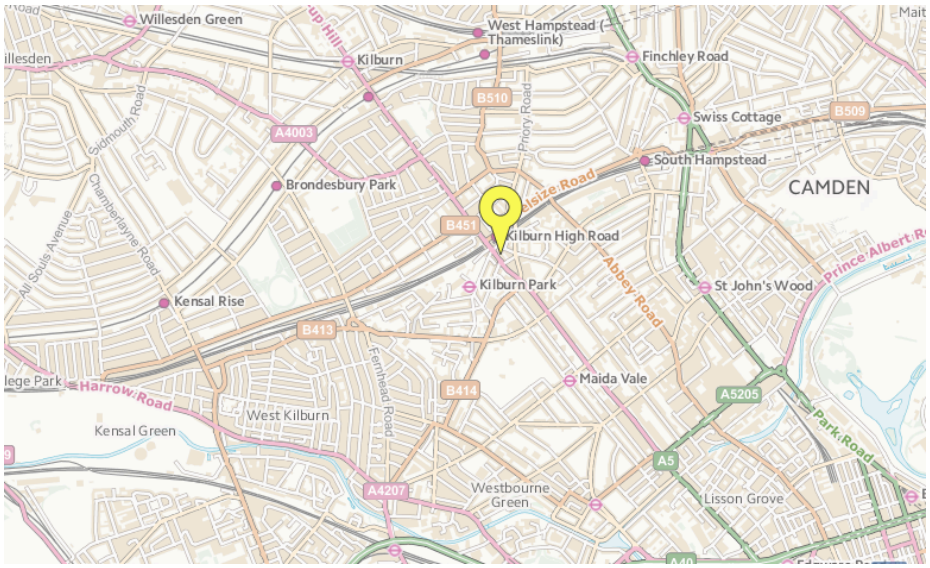
34A-36 Kilburn High Road is located within Flood Zone 1 of the Environment Agency's Flood Map for Planning. This is defined as an area that has a low probability of flooding.

A site-specific flood risk assessment will be undertaken to ensure there are no site-specific risks and that the risk of flooding from *all* sources (including sewers and drains) is low (zone 1).

Flood map



Flood map to show the location of the development within Flood Zone 1:



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Waste
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Construction waste management

Resource efficiency will be promoted through effective and appropriate management of demolition and construction site waste.

In line with the waste hierarchy, during the construction phase, the preferred approach should be:

- The use of reclaimed materials;
- The use of materials with higher levels of recycled content; and
- The use of new materials.

For any demolition, the following should be adopted:

- Prioritising the on site reuse of demolition materials;
- Recycle materials on site recycling, then off site recycling; and
- The least preferred option – disposal to landfill.

A site waste management plan will be developed which adopts target best practice benchmarks for resource efficiency, details procedures and commitments to minimise non-hazardous and hazardous waste at the design stage and monitors/measures waste production on site. The plan will apply to the location of the buildings, and evidence will also be received from factory locations in which offsite construction activities are to occur.

The site waste management plan will also include procedures and commitments to sort and divert waste from landfill through the following:

- Re-use on site;
- Salvage/reclaim for re-use off-site;
- Return to supplier via a 'take-back' scheme;
- Recovery and recycling using an approved waste management contractor; and
- Compost.

The project has committed to diverting at least 85% by volume (90% by weight) of non-hazardous non-demolition waste generated by the project to be diverted from landfill.

Operational waste

Dedicated internal and external waste storage and recycling facilities for end users are proposed to encourage recycling. The storage space will provide inclusive access and usability.

Camden Council offers a weekly food waste collection service.

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Construction Management Sustainability Statement 34A-36 Kilburn High Road

Construction environmental management

Environmental impacts of the construction works will be mitigated as far as possible. This will include the incorporation of the following:

- Contractor following environmental management system processes (under ISO14001), including the development of a construction environmental management plan (CEMP) specific to the sites.
- Training and site induction of all site operatives.
- Monitoring of energy, water and transport to and from site during construction.
- Management of waste on site.
- Following best practice pollution guidance from the Environment Agency.
- Ensuring all site timber is responsibly sourced in line with the UK Government's Timber Procurement Policy.
- Vehicle emissions would be minimised through the use of catalytic converters and the regular maintenance of vehicle engines.
- Damping down of brick walls during building demolition.
- Regularly inspecting and wet suppressing materials / soil stockpiles where necessary (including wind shielding or completely enclosing, storing away from site boundaries, and restricted height of stockpiles).
- Appropriate orientating of material stockpiles.
- Providing wheel washing and wet suppressing during the loading of wagons vehicles.
- Covering vehicles carrying dry soil and other wastes.
- Shielding of dust-generating construction activities.
- Providing suitable site hoarding.
- Restricting vehicle speeds on haul roads and other unsurfaced areas of the site.
- Inspecting unsurfaced haulage routes, and wet suppressing should this be necessary (in times of prolonged dry periods).

Considerate constructors

The scheme will adopt the principles of the Considerate Constructors Scheme (CCS). The CCS scheme aims to recognise and encourage construction sites that are managed in an environmentally and socially considerate, responsible and accountable manner.

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Water Efficiency
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Water conservation

The development will encourage sustainable water use in the operation of the building and its site. The design of the building will provide means of reducing potable water consumption over the lifetime of the building and minimise losses through leakage.

Water consumption will be reduced through the use of water efficient components for all specified water-consuming components (including low-flow showerheads and taps, dual flush toilets and low water consuming washing machines and dishwashers), water recycling systems where appropriate and flow control devices that regulate the supply of water to each facility according to demand. An indicative specification for the development is presented below.

- Shower of 9 litres/minute
- Bath sizes to be 140 litres to overflow
- Washbasin taps to be flow limited to 4 litres/minute
- Kitchen taps to be flow limited to 4 litres/minute
- Dual Flush WC 6/3 litre
- Low water consumption washing machine (e.g. 49 litres per cycle for a 7kg capacity machine = 7 litres/kg).
- Low-flow dishwasher (if specified) (e.g. 12 litres for 12 place settings = 1 litre/place setting).

Mains water usage shall be significantly reduced through water efficient products. The sanitary ware schedule will be designed to target water consumption of 105 litres per person per day. Appendix A presents the estimated water usage per apartment type, including external use. Apartments 1-4 will target a water consumption rate of 103.7 litres per person per day. Apartment 5 will target a water consumption rate of 87.6 litres per person per day.

Water monitoring

A water meter will be specified for the mains water supply to the development. Each meter has a pulsed or other open protocol communication output to enable connection to an appropriate utility monitoring and management system.

Each dwelling will contain a separate water meter. These sub-meters will be easily accessible to the building user.

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Transport and Connectivity Sustainability Statement 34A-36 Kilburn High Road

Public transport	34A-36 Kilburn High Road has a PTAL rating of 6a. The development is within 95m of a bus stop servicing six bus routes (16, 32, 316, 332, 98 and 206) and within 120m of a bus stop servicing 2 bus routes (31 and 328). The development is situated less than 65m from Kilburn High Road station. The site is well located and benefits from a range of sustainable travel options.
Cycling provision	Cycle storage is being provided within the development and will be designed to accommodate 6 cycles. Cycle racks and storage will also be provided. These will be secure and covered. The Cycle Superhighway route CS11 has been proposed and would service the London Borough of Camden.
Accessibility and security	Creating a secure but fully accessible development is a key part of the development. To ensure this is achieved, the design team will look to adopt where feasible, the key principles of "Secured by Design" within all elements of the scheme. An Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CPDA) will be consulted at an early design stage to incorporate the principles of 'Secured by Design (SBD)' within the development's design and layout.

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Materials
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Materials and waste introduction

Sustainable material sourcing and waste management will be considered throughout the life of the building to ensure the scheme's environmental footprint is minimised as far as possible. The scheme will also ensure low embodied carbon throughout the procurement, transport and construction of building materials, together with end of life emissions.

Materials selection and sourcing

The design team has confirmed that efforts will be made to reuse materials where feasible, and that where required, new materials will be responsibly sourced. New construction materials will be selected, where feasible, with a low environmental impact. In addition, the project will aim for new materials to come from a recycled or reused source, including a high-recycled content in steel. Minimum standards apply to new timber, which must be sourced in accordance with the UK Government's Timber Procurement Policy.

In addition, all timber will be FSC / PEFC certified, all concrete will be BES 6001 certified and any other material will be ISO 14001 certified for both key processes and supply chain / extraction processes where feasible to do so.

The Green Guide for Specification is a reference tool, providing guidance on the relative environmental impacts for a range of different building elemental specifications, based on Life Cycle Assessment and the Environmental Profile Methodology. The design team will reference the Green Guide to Specification to help specify materials with a low environmental impact, where feasible. The design will incorporate at least 5 build-up elements will be A-C rated on the Green Guide.

Insulation specifications will eliminate hydrochlorofluorocarbons (HCFCs) and ozone depleting materials, wherever possible. All insulation specified will have a Global Warming Potential (GWP) of less than 5, and be responsibly sourced to have a low embodied impact.

Embodied carbon analysis

The development considers a number of opportunities to cut embodied carbon, as follows:

- A materials efficiency strategy will be followed throughout the design, procurement and construction stages of development, to ensure the scheme produces less waste on site. For example, adjustment of some sizes will be made to minimise offcuts of materials, and some bespoke materials will be developed off-site.
- The development has been designed to be efficient in terms of the amount of materials used to construct the dwelling.
- Materials will be procured from the local area where possible, to reduce carbon through transportation.
- Materials and products with a higher recycled content will be procured where feasible, as these have a low embodied carbon.
- Consideration has been made to use timber as a low embodied carbon alternative to steel and concrete where possible.
- The design team has confirmed the Waste and Resources Action Programme (WRAP) guidance 'cutting embodied carbon in construction projects' will be followed.

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Health and Wellbeing Sustainability Statement 34A-36 Kilburn High Road

Occupant wellbeing	The development has been designed to ensure the wellbeing of occupants in terms of levels of fresh air, thermal comfort and reduction of overheating, access to natural light, and good lighting levels internally and externally. The building services strategy has been carefully considered in order to balance the need for energy-smart, low carbon technologies with the need for adequate and controllable ventilation, heating and cooling.
Internal air quality	The design team will specify only low volatile organic compounds (VOC) finishing products, including sealants and paints. All composite wood products will contain no added urea formaldehyde.
Daylight	The design has been developed to allow the use of daylight within the dwelling to be maximised as far as practical. Daylighting levels will meet the minimum average daylight factor of 2% within the kitchen and 1.5% for the living/dining rooms. Lighting strategies will be developed with daylight sensors to optimise the use of natural sunlight.
Inclusive design	The principles of Lifetime Homes will be incorporated to achieve an inclusive built environment that enables users to maximise their individual abilities and enjoy safe and independent participation.
Noise impact	The apartments will achieve airborne sound insulation values that are likely to be 5db higher and impact sound insulation values 5db lower than the performance standards set out in Approved Document E (2003 Edition, with 2004 amendments). A suitably qualified acoustician will be appointed in order to advise on achieving the above and a programme of pre-completion testing will be conducted.

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Land Use and Ecology
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Ecological status	The site is assumed to have a low ecological value. A suitably qualified ecologist will be appointed to undertake a Preliminary Ecological Appraisal of the proposed development.
Protection of biodiversity	The design team is committed to help protect biodiversity on site, through the following measures: - Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process. - Ensure that any affected trees and shrubs are cleared out of bird breeding season (March-August). Alternatively, a SQE should check for the presence of active nests prior to the commencement of works. - Implement bat and bird protection in line with best practice. - Implement working methods in line with best practice to manage dust and water run-off. - During the construction phase a Biodiversity Champion will be appointed to monitor and limit environmentally detrimental activities. They will also train the workforce on the project to raise their awareness of environmental impacts during construction.
Ecological enhancement	A suitably qualified ecologist (SQE) will be appointed and their recommendations for ecological enhancement (for example bird boxes) will be incorporated into the development. This will ensure that there is no negative change in ecological value on site following development. Furthermore, with the implementation of precautionary working methods, it is considered that the ecological receptors identified in the report will not be adversely affected by the development As there is no land available for planting, it is not considered possible to produce a positive change ecological value (measured in native plant species per hectare) on site following development.

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Conclusion
Sustainability Statement
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Conclusion

This Sustainability Statement has responded to the London Borough of Camden's local planning policy requirements.

In summary the scheme will adopt the following sustainable features:

- Reduced energy consumption by targeting improved u values, airtightness, and low energy lighting.
- Achieve a total carbon emissions reduction of 37.7% over Part L1 2013.
- Low embodied carbon through efficient design, procurement of materials from a local source, or with a high-recycled content.
- Be of high build quality, surpassing the minimum Building Regulations for water using fittings and source materials ethically and sustainability.
- Ensure all materials are responsibly sourced and of low environmental impact.
- Implement a site waste management plan.
- Create a scheme that is efficient and adaptable to future climatic scenarios.
- Ensure that there is no net loss of ecological value, protect and improve biodiversity where feasible.
- Utilise sustainable transport, including access to public transport and inclusion of cycle facilities.
- Follow best practice policies in terms of air, water and ground pollution and appoint a contractor who will register for the Considerate Constructors Scheme.
- Incorporate health and wellbeing measures through design and operational procedures, including daylight, optimum indoor air quality and thermal comfort.
- Anticipate the effects of climate change, by designing to allow for functional adaptability and incorporate of flood resilience measures.

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Appendix A
Sustainability Statement
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