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Sustainability Statement

June 2017

CUTTING THE COST OF CARBON

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1 Issue Register

Revision	Reason for Issue	Date of Issue	Issued By
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3 Introduction

3.1 Proposed Development

The Proposed Development comprises the refurbishment and extension of the existing commercial space at basement ground and first floor, with the conversion and extension of the existing building at first, second and third floors to create 3 new residential apartments, and the construction of 3 new build apartments at first, second and third floor.

The Proposed Development is located within the London Borough of Camden. This report demonstrates that the Proposed Development can be considered to be a sustainable development.

3.2 Sustainable Design and Construction Supplementary Planning Guidance

The Core Strategy sets out the key elements of the vision for the Borough of Camden, and is a central part of the Local Development Framework (LDF). Core Policy CS13 on 'tackling climate change through promoting higher environmental standards' states that:

'Reducing the effects of and adapting to climate change

The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

- a) ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;*
- b) promoting the efficient use of land and buildings;*
- c) minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:*
 - 1. ensuring developments use less energy,*
 - 2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralized energy networks;*
 - 3. generating renewable energy on-site; and*
- d) ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.*

The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions

Local energy generation

The Council will promote local energy generation and networks by:

- e) working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them, i.e. in the vicinity of:*
 - housing estates with community heating or the potential for community heating and other uses with large heating loads;*
 - the growth areas of King's Cross; Euston; Tottenham Court Road; West Hampstead Interchange and Holborn;*
 - schools to be redeveloped as part of Building Schools for the Future programme;*

– existing or approved combined heat and power/local energy networks (see Map 4); and other locations where land ownership would facilitate their implementation.

- f) protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road);

Water and surface water flooding

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

- g) protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir;
- h) making sure development incorporates efficient water and foul water infrastructure;
- i) requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and downstream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross (see Map 5).

Camden's carbon reduction measures

The Council will take a lead in tackling climate change by:

- j) taking measures to reduce its own carbon emissions;
- k) trialling new energy efficient technologies, where feasible; and
- l) raising awareness on mitigation and adaptation measures.'

Policy DP22 on 'promoting sustainable design and construction' states that:

"The Council will require development to incorporate sustainable design and construction measures. Schemes must:

- a) demonstrate how sustainable development principles, including the relevant measures set out in paragraph 22.5 below, have been incorporated into the design and proposed implementation; and
- b) incorporate green or brown roofs and green walls wherever suitable.

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

- c) expecting new build housing to meet Code for Sustainable Homes Level 3 by 2010 and Code Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.;
- d) expecting developments (except new build) of 500 sq m of residential floorspace or above or 5 or more dwellings to achieve "very good" in EcoHomes assessments prior to 2013 and encouraging "excellent" from 2013;
- e) expecting non-domestic developments of 500sqm of floorspace or above to achieve "very good" in BREEAM assessments and "excellent" from 2016 and encouraging zero carbon from 2019.

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- f) summer shading and planting;

- g) limiting run-off;*
- h) reducing water consumption;*
- i) reducing air pollution; and*
- j) not locating vulnerable uses in basements in flood-prone areas.'*

Following the Government's Ministerial Statement released on 25 March 2015 in response to the Housing Standards Review Consultation, a number of changes have been introduced to technical housing standards in England, including the withdrawal of the Code for Sustainable Homes as a national standard.

The Sustainable Design and Construction Supplementary Planning Guidance (SPG), published by the Greater London Authority (GLA), has also been referenced within this report.

4 Re-use of land and buildings

The GLA Sustainable Design and Construction Supplementary Planning Guidance (SPG) document identifies the following areas to be considered:

- Land, and
- Buildings.

4.1 Land

The development site has previously had an existing toilet core and store rooms at ground floor, and therefore meets the Essential Standards within the GLA SPG as 100% of the development is on previously developed land.

4.2 Buildings

The existing building on the site is not considered suitable for reuse, and therefore the demolition of the existing building section and the construction of new low energy facilities is considered to be compliant with policy.

5 Maximising the use of natural systems

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Local and urban design, and
- Adapting to climate change.

Camden's policy DP22 states that:

'The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- a) summer shading and planting;*
- b) limiting run-off;*
- c) reducing water consumption;*
- d) reducing air pollution; and*
- e) not locating vulnerable uses in basements in flood-prone areas.'*

5.1 Local and urban design

The Proposed Development has been designed to minimise the need for mechanical ventilation, heating and cooling systems. The dwellings have been designed to avoid the requirement for mechanical cooling systems.

All dwelling are dual aspect, thereby providing effective cross ventilation within each dwelling. Suitable security devices would need to be provided for the windows on the upper floors to be able to lock them slightly open to provide increased ventilation rates in summer months.

5.2 Adapting to climate change

The Proposed Development includes adequately-sized, safe, secure and convenient cycle storage for the dwellings at ground floor within the communal area, with 6 spaces to be provided. Cycle storage, and the Site's proximity to public transport nodes, would encourage non carbon based transport modes.

SAP 2012 contains a procedure to check whether solar gains for residential properties are excessive. Detailed SAP calculations have been undertaken for the proposed dwellings, and these have indicated that the dwellings would only have a 'slight' or 'insignificant' risk of high internal temperatures, and is significantly below the Building Regulations compliant 'medium risk' standard. Energy efficient design and 100% low energy lighting are proposed for the dwelling, and full details of this are provided in the accompanying Energy Strategy report.

6 Conserving energy, materials and water resources

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Energy;
- Materials; and
- Water.

Camden's policy DP22 states that:

'The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- a) summer shading and planting;*
- b) limiting run-off;*
- c) reducing water consumption;*
- d) reducing air pollution; and*
- e) not locating vulnerable uses in basements in flood-prone areas.'*

Camden's policy DP23 states that:

'The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

- a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;*
- b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;*
- c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;*
- d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and*
- e) encouraging the provision of attractive and efficient water features.'*

6.1 Energy

An Energy Strategy has been undertaken for the Proposed Development – the proposals for reducing energy are discussed in detail in the accompanying Energy Strategy report, but the key areas are summarized below.

6.1.1 Maximising energy efficiency

Improved insulation and air tightness standards are proposed for the scheme, in order to exceed the requirements of Part L1 of the Building Regulations. Low energy lighting is to be specified throughout the dwelling. Further details are provided within the accompanying Energy Strategy.

The proposed energy efficiency measures would reduce the annual carbon dioxide emissions of the site by 5,740 kgCO₂, which equates to a reduction of 17.4% against the baseline TER 2013.

6.1.2 Supplying energy efficiently

There are no installed district heating schemes in the immediate vicinity of the site, and therefore it is not considered feasible to connect the Proposed Development to a district heating scheme. Combined heat and power (CHP) has been assessed in terms of feasibility. There is no economic or sustainable justification for over-sizing the CHP plant, and therefore the CHP unit size needs to be carefully matched to the demands of the development. The smallest commercially available CHP unit is too large for the scheme due to the limited number of residential dwellings, and therefore CHP is not considered to be viable for the Proposed Development.

6.1.3 Renewable sources of energy

The accompanying Energy Strategy has demonstrated in detail (section 9) that the incorporation of biomass, biomass CHP, ground source heat systems, solar thermal and wind turbines are not technically or economically viable for the Proposed Development.

A feasibility study of the currently available low and zero carbon technologies has been undertaken, with photovoltaic panels proposed for the development at roof level, to generate electricity for the site. It has been estimated that the proposed photovoltaic systems would reduce the annual carbon dioxide emissions of the site by 4,063 kgCO₂, which equates to a reduction of 12.3% against the TER 2013.

6.2 Light Pollution

To improve energy efficiency, 100% of the lighting provided internally and externally to the dwellings and commercial space would be provided by dedicated low energy lighting.

Any external lighting for the entrances would be designed to reduce any unnecessary light spillage, and designed to meet the ILP Guidance Notes for the reduction of obtrusive light, 2011. Lighting would not spill into neighbouring residential properties or cause a hazard to drivers or other road users.

6.3 Materials

Wherever possible, the new materials used will be sustainably sourced to achieve an A or A+ rating under the Green Guide to Housing. Internal partitions for the dwellings would be made from lightweight stud partitions, which achieve an A+ rating under the Green Guide to Housing. Recycled materials, and materials with low embodied energy will be specified wherever possible.

Further details on materials and resource efficiency are provided in the BREEAM pre-assessment reports.

6.4 Water

To reduce the consumption of potable water in the home, the dwellings would be provided with flow restrictors on taps, efficient washing machines and dishwashers (where provided), and dual-flush systems for the WC.

The water consumption in the proposed dwellings would be less than 105 litres per person per day, in order to meet the now withdrawn Code Level 4 credit requirements within the Code for Sustainable Homes assessment.

A water meter would be provided for each dwelling, in order for each tenant to manage, and be charged for, their individual consumption.

Appropriate water efficiency measures and water leak detection would be provided for the commercial space, as detailed in the BREEAM pre-assessment reports.

7 Reducing the impacts of noise, pollution, flooding and microclimatic effect

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Noise,
- Air pollution,
- Water pollution and flooding, and
- Microclimate.

Camden's policy DP22 states that:

'The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

- a) summer shading and planting;*
- b) limiting run-off;*
- c) reducing water consumption;*
- d) reducing air pollution; and*
- e) not locating vulnerable uses in basements in flood-prone areas.'*

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- h) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;*
- i) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and*
- j) encouraging the provision of attractive and efficient water features.'*

7.1 Noise

The proposed separating walls between each dwelling would be designed to exceed the minimum requirements of Part E of the Building Regulations by 3dBA.

Construction work shall be carried out in accordance with the Council's Environmental Code of Construction Practice, in order to reduce the noise and vibration impact on neighbouring properties. The construction works will be carefully managed so as to reduce impact.

The plant strategy proposed for the scheme has also been specified in order to reduce noise produced by the development, with all noise emitting plant to be installed internally within the dwelling.

7.2 Air Pollution

Secure cycle storage is provided for the scheme, which will help reduce air pollution associated with transport.

The Contractor will be required to adopt best practice policies in respect of air (dust) pollution from site activities, and water (ground and surface) pollution on site.

The ventilation systems within the residential dwellings will meet the requirements of Part F of the Building Regulations. The domestic kitchens are not considered to be a nuisance for neighbouring occupiers. Suitable ventilation would be provided for the basement commercial kitchen, with extract points located to avoid causing a nuisance.

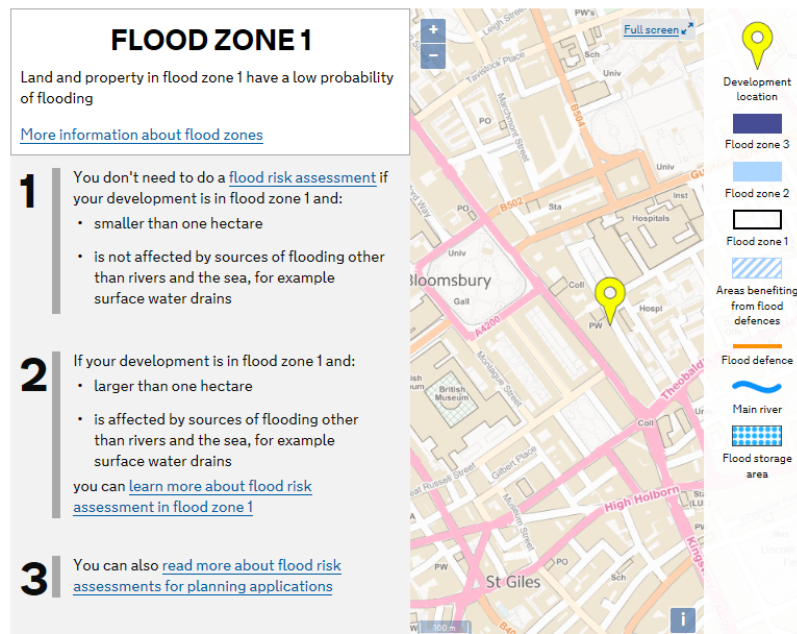
Finishings and paints with low VOC levels will be used wherever possible, to avoid releasing noxious chemicals or odours inside the buildings.

7.3 Water pollution and flooding

According to low detail, national-scale flood mapping created on behalf of the Environment Agency, the site would appear to lie within Flood Zone 1.

Flood probability

Your proposed development is in an area with a low probability of flooding



The peak rate of run-off into watercourses is to be no greater for the developed site than it is at the existing site. A green roof is proposed for the new rear extension to further reduce rainwater runoff.

During construction, any chemicals will be carefully stored to prevent spillages. The Contractor will be required to adopt best practice policies in respect of air (dust) pollution from site activities, and water (ground and surface) pollution on site).

The drainage systems for the Proposed Development shall meet the minimum requirements of Part H of the Building Regulations, and will meet Thames Water's design requirements for adoption.

There are no industrial units proposed on the site, and therefore there it is not expected that there will be long term storage of chemicals on the site.

7.4 Microclimate

The Proposed Development does not exceed the 10 storey threshold where a wind environmental assessment might be undertaken. Given the height of the Proposed Development, it is not considered that a wind tunnel effect would be created.

8 Ensuring developments are comfortable and secure

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Indoor comfort,
- Design inclusive environment, and
- Secure design.

8.1 Indoor comfort

The Contractor would be required to adopt best practice policies in respect of air (dust) pollution from site activities, and water (ground and surface) pollution on site.

Regular plant maintenance would be carried out on all plant and machinery in order to keep them operating efficiently. All plant and machinery is fully accessible for easy maintenance.

Finishings and paints with low VOC levels would be used wherever possible, to avoid releasing noxious chemicals or odours inside the buildings.

Home User Guides would be provided for the residential owners/occupiers to cover information relevant to the 'non-technical' tenant/owner on the operation and environmental performance of their home. This guide would include information related to the following issues:

- Environmental strategy/design and features;
- Energy;
- Water use;
- Recycling and waste;
- Sustainable DIY; and
- Emergency information.

8.2 Design inclusive environment

The requirement for Lifetime Homes Standards have been replaced with a requirement for 90% of new housing to meet Building Regulation requirement M4(2) 'accessible and adaptable dwellings', and this would be achieved for the proposed dwellings.

8.3 Secure design

The Proposed Development would incorporate the principles of "secured by design".

9 Conserving and enhancing the natural environment and biodiversity

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Open space,
- Natural environment and biodiversity.

9.1 Open space

The Proposed Development does not result in the removal of any open space features, such as green space.

9.2 Natural environment and biodiversity

The existing site comprises hard standing only. The proposed redevelopment of the existing site is not considered to have any negative impact on the ecological value of the site. It is proposed that a suitably qualified ecologist is appointed to provide recommendations for enhancing the ecological value of the site for the BREEAM assessments.

10 Promoting sustainable waste behaviour

The GLA Sustainable Design and Construction SPG identifies the following areas to be considered:

- Waste.

10.1 Waste

Space for refuse and recycling storage would be provided at basement level. This storage provides sufficient space to securely and safely store waste and recycling bins.

Appropriate internal storage for recyclable waste would be provided within the dwellings, with 3 number 10 litre recycling bins, enabling occupants to store recyclable waste before taking it to the central refuse stores.

Information on recycling would be contained within the Home User Guides, to be provided to the dwellings.

11 Conclusion

This report has responded to the issues raised within Camden's Core Strategy and the GLA Sustainable Design and Construction SPG, and has provided details of how the Proposed Development incorporates sustainable measures in its design, construction and operation.

The Code for Sustainable Homes assessment scheme was included as part of the recent Housing Standards Review, and the Ministerial Statement of the 25th March 2015 confirmed that the Code for Sustainable Homes scheme was withdrawn with immediate effect. Therefore the Proposed Development will not be required to achieve formal certification under the Code for Sustainable Homes assessment scheme.

The 3 new dwellings created by a material change of use have been assessed under the 2014 BREEAM Domestic Refurbishment assessment scheme. The current score shows a score of 68.98%, and meets the standard for a 'Very Good' rating in compliance with Planning policy requirements. Full details can be found in the separate BREEAM Domestic Refurbishment report.

The existing commercial space at basement and ground floors has been assessed under the 2014 BREEAM Refurbishment & Fit-out assessment scheme. The current score shows a score of 65.63%, and meets the standard for a 'Very Good' rating in compliance with Planning policy requirements.

The new build commercial space at basement, ground and mezzanine floors has been assessed under the 2014 BREEAM New Construction assessment scheme. The current score shows a score of 67.70%, and meets the standard for a 'Very Good' rating in compliance with Planning policy requirements.

The Proposed Development can therefore be considered to be sustainable, using the criteria within Camden's Core Strategy and the GLA Sustainable Design and Construction SPG.