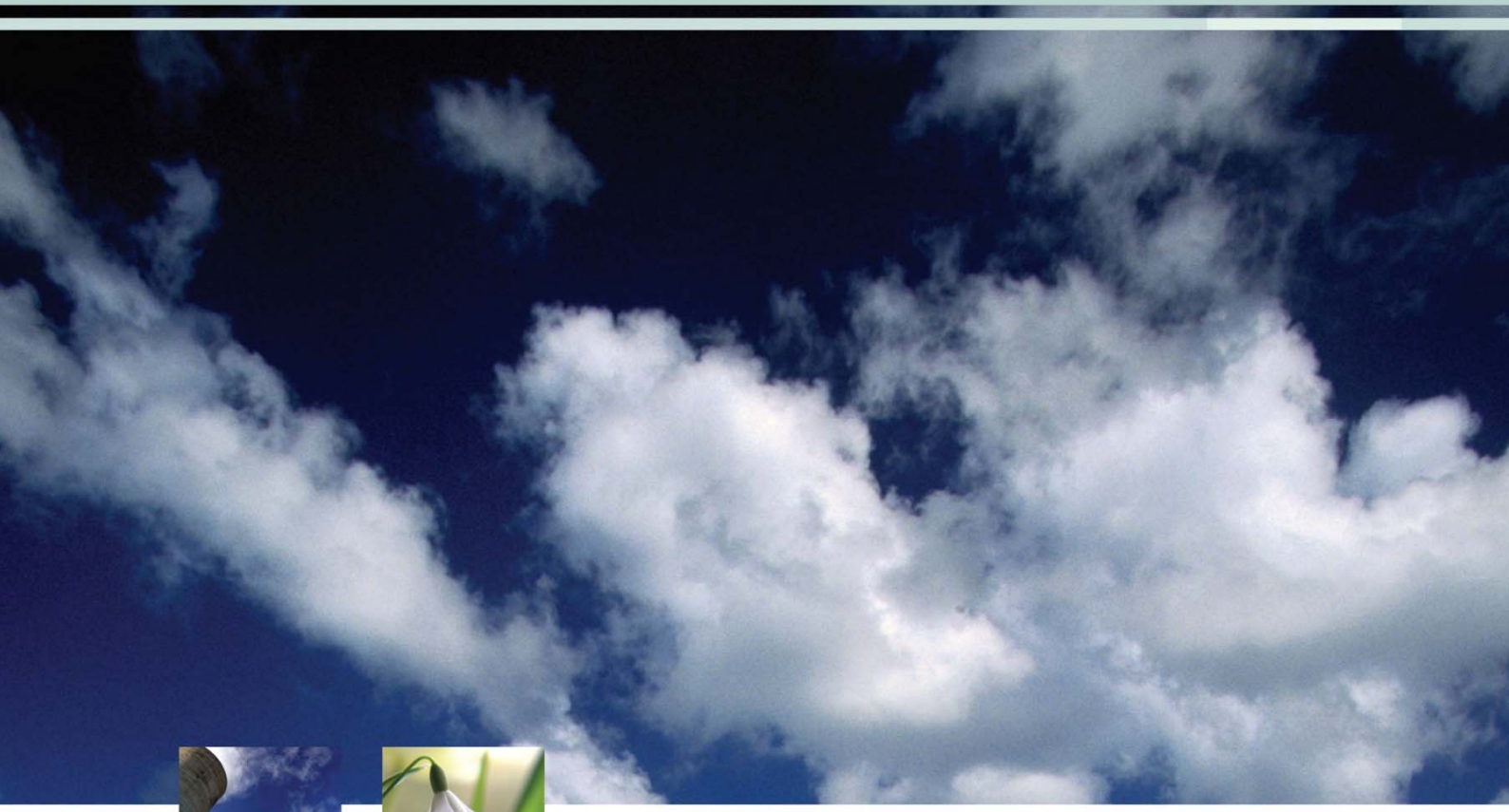

SUSTAINABILITY STATEMENT

Mixed Use development of

141 Dollis Road, Mill Hill East

LONDON

Prepared for:
PGMI (Finchley) Ltd

Date:
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Project Issue Number:
SOL1512ENT02

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REPORT CONTENTS

1. INTRODUCTION

1.1 Background

Sol Environment Ltd ('Sol' hereafter) were engaged by Entran Ltd on behalf of PGMI (Finchley) Ltd *('the applicant'* hereafter) to undertake a sustainability assessment and produce a Sustainability Statement for the proposed mixed use development at 141 Dollis Road, Mill Hill East.

This report has been prepared by Sol Environment Ltd in cooperation with the applicant and in accordance with the following policies and guidance published by Mayor of London and London Borough of Barnet Council;

- London Plan;
- Barnet's Local Plan Core Strategy;
- Barnet's Local Plan Development Management Policies; and
- Barnet's Local Plan SPD: Sustainable Design and Construction

This report has been prepared in association with a new planning application for the development.

1.2 Proposed Development

A new planning application will be made for the proposed mixed use development at 141 Dollis Road, Mill Hill East. The overall site will also include 4 no. new 'conversion' residential dwellings and 2 no. new 'conversion' commercial / retail units all within the existing buildings on the larger site.

A schedule of the overall site information use and associated gross internal areas is provided in Table 1.1 below.

Table 1.1: Proposed Gross Internal Areas

Dwelling / Unit Type	No. of Beds	Average Dwelling / Unit Area (m^2)	No. of Dwellings / Units	Total Area (m^2)
1 Bed Flat – New Build	1	50.3	12	604
2 Bed Flat – New Build	2	67.0	4	268
2 Bed Mews House – New Build	2	88.125	8	705
TOTAL – New Build			**24**	**1577**
Conversion dwellings *(not included in assessment)*		53.50	4	214
Conversion commercial / retail units *(not included in assessment)*		76.5	2	153

Fig 1.1: Proposed Site Plan prepared by Collado Collins Architects

In accordance with the Development Management Policies of Barnet's Local Plan (September 2012) and the London Plan this Sustainability Statement has been set out to show how the site addresses the relevant environmental and sustainability issues outlined in Barnet's Local Plan SPD: Sustainable Design and Construction (April 2013).

The development includes >10 new build residential units, therefore it is considered a *major development* and an Energy Statement is required to be submitted with the planning application. The energy strategy is included as an Appendix to this report, please refer to Appendix A – Energy Assessment (ref: *SOL1512ENT02-Dollis Road_Energy Assessment*)

2. PLANNING POLICY & LEGISLATIVE REVIEW

There are a number of international and national policy drivers for increased energy efficiency and reduced Carbon Dioxide (CO_2) emissions, which have been introduced to address the issue of global warming and the implications of climate change. On an international level this includes the Kyoto Protocol, to which the UK government has made a commitment and developed national policies such as the Energy White Paper and the NPPF.

At the local level, the current Local Plan in particular remains a material consideration. These policies and documents are described in further detail within the section below.

2.1 National Planning Policy

2.1.1 The Energy White Paper; Our Energy Future – Creating a Low Carbon Economy

The Energy White Paper was published in February 2003 and demonstrates a step change in energy policy in response to the increasing challenges faced by the UK, including climate change, decreasing domestic supplies of fossil fuel and escalating energy prices.

The Energy White Paper focuses on four key areas:

- Reduction in national carbon dioxide emissions, setting a target of 60% reduction by 2050 and notable progress (c. 20%) by 2020;
- Security of supply;
- A competitive market for the benefit of businesses, industries and households; and
- Alleviating fuel poverty.

2.1.2 *Meeting the Challenge* – A White Paper on Energy

Published in 2007, this White Paper establishes the Government's international and domestic energy strategy regarding response to changing circumstances, addressing long-term energy challenges and delivering on the four energy policy goals set in the Energy White Paper 2003.

2.1.3 Climate Change Act 2008

The Climate Change Act came into force on 26th November 2008, and was the world's first long-term legally binding framework to mitigate against climate change. Within this framework, the Act sets legally binding targets to increase greenhouse gas emission reductions through action in the UK and abroad from the 60% target to 80% by 2050. In addition, there is an interim target stating the carbon budget (i.e. the CO_2 emissions) must be at least 26% lower than the 1990 baseline.

2.1.4 National Planning Policy Framework (March 2012)

The National Planning Policy Framework ('NPPF') was implemented by Communities and Local Government ('CLG') on 27th March 2012 with immediate effect. The NPPF forms a key part of

the reforms within the planning system and supersedes many of the former Planning Policy Statements, including those pertaining to energy and climate change many of the former Planning Policy Statements, including those pertaining to energy and climate change (i.e. PPS 22 – Renewable Energy and; PPS: Planning and Climate Change Supplement to Planning Policy Statement 1).

The NPPF provides significant emphasis on the encouragement of decentralised and renewal energy provision. Section 10 of the NPPF states that;

- To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should have a positive strategy to promote energy from renewable and low carbon sources.
- When determining planning applications, local authorities should:
    i. not require applications for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and
    ii. approve the application if its impact are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

2.2 Local Planning Policy

The London Plan as well as Barnet's adopted Local Plan (Development Planning Policies) and associated Supplementary Planning Documents (Sustainable Design and Construction), all place significant emphasis on sustainable new developments in order to achieve wider sustainability targets (as detailed above).

2.2.1 Barnet's Local Plan (Development Management Policies) – September 2012

London Borough of Barnet Council most current relevant documentation is the Development Management Policies – September 2012. The following policies are relevant to the proposed energy and sustainability criteria of the development.

Policy DM04: Environmental considerations for development

a. All major development will be required to demonstrate through an Energy Statement compliance with the Mayor's targets for reductions in carbon dioxide emissions within the framework of the Mayor's energy hierarchy.
b. Where Decentralised Energy (DE) is feasible or planned, major development will either provide:
    i. suitable connection

ii. the ability to connect in future
iii. a feasibility study
iv. a financial contribution to a proposed feasibility study.

c.
i. Where there is a localised source of air pollution, buildings should be designed and sited to reduce exposure to air pollutants.
ii. Development proposals will ensure that development is not contributing to poor air quality and provide air quality assessments where appropriate.

d. Proposals to locate development that is likely to generate unacceptable noise levels close to noise sensitive uses will not normally be permitted. Proposals to locate noise sensitive development in areas with existing high levels of noise will not normally be permitted. Mitigation of noise impacts through design, layout, and insulation will be expected where appropriate.
e. Proposals on land which may be contaminated should be accompanied by an investigation to establish the level of contamination in the soil and/or groundwater/surface waters and identify appropriate mitigation. Development which could adversely affect the quality of groundwater will not be permitted.
f. Proposals for Notifiable Installations or developments near to existing Notifiable Installations will only be permitted provided that:
i. There is no unacceptable risk to an individual's health and safety; and
ii. There will be no significant threat to environmental quality.
g. Development should demonstrate compliance with the London Plan water hierarchy for run off especially in areas identified as prone to flooding from surface water run off. All new development in areas at risk from fluvial flooding must demonstrate application of the sequential approach set out in the NPPF (paras 100 to 104) and provide information on the known flood risk potential of the application site.
h. Development proposals will wherever possible be expected to naturalise a water course, ensure an adequate buffer zone is created and enable public accessibility. Where appropriate, contributions towards river restoration and de-culverting will be expected.

2.2.2 SPD (Sustainable Design and Construction) – April 2013

SPD expands on the policy approach set out in the Core Strategy and Development Management Policies (DMP) Development Plan Documents (DPD) and the London Plan. It focuses on Sustainable Design and Construction.

2.2.3 The London Plan – amended March 2015

Mayor of London's most current relevant documentation is *The London Plan (Update March 2015).* The following policies are relevant to the proposed energy and sustainability criteria of the development.

London Plan Policy 5.2: Minimising Carbon Dioxide Emissions

Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

1. Be lean: use less energy
2. Be clean: supply energy efficiently
3. Be green: use renewable energy

The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019.

Non-domestic buildings Improvement on 2010 Building Regulations

2010 – 2013 25 per cent
2013 – 2016 40 per cent
2016 – 2019 As per building regulations requirements
2019 - 2031 Zero Carbon

Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy. As a minimum, energy assessments should include the following details:

a. calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations (see paragraph 5.22) at each stage of the energy hierarchy
b. proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services
c. proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP)
d. proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies.

The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.

London Plan Policy 5.3: Sustainable Design and Construction
Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.

London Plan Policy 5.6: Decentralised Energy in Development
Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites.

Major development proposals should select energy systems in accordance with the following hierarchy:

Connection to existing heating or cooling networks;
Site wide CHP network;
Communal heating and cooling;

Potential opportunities to meet the first priority in this hierarchy are outlined in the London Heat Map tool. Where future network opportunities are identified, proposals should be designed to connect to these networks.

2.3 Legislation & Mandatory Standards

2.3.1 Building Regulations 2013

The Building Regulations 2013 (England & Wales) set out standards and requirements that individual aspects of building design and construction must achieve. The 'functional' requirements are also considered in a series of Approved Documents that provide general guidance in common building situations.

In total, there are 14 technical areas that each Approved Document provides practical guidance on, including fire safety, ventilation, hygiene, drainage and access. Approved Document Part L (Conservation of Fuel and Power) pertains to the energy efficiency requirements and is detailed within Section 2.3.1 below.

Approved Document Part L – The Conservation of Fuel and Power
Part L of the Building Regulations came into force on 1st April 2002, with a view to reducing heating costs, conserving fuel and protecting the environment from the effects of climate change. However, to ensure that Part L of the Building Regulations were in line with the commitments made in the Energy White Paper (2003) of reducing CO_2 emissions from

buildings, and to implement the Energy Performance of Buildings Directive (EPBD), amendments to the Approved Document were made in 2006.

The above amendments to Part L of the Building Regulations were implemented on 6th April 2006, introducing new energy efficiency requirements and other relevant changes, including:

- Introduction of a single calculation method (setting maximum CO_2 emissions for the whole building), replacing the three methods of demonstrating compliance;
- The CO_2 emissions standards for new buildings were raised by between 20 - 28% compared to 2002 standards (dependant on the type and size of building); and
- Standards for work on the existing buildings were generally higher than in 2002.

More recently, with the introduction of new planning policy and legislative drivers, identified above, a need to reconsider and revise the 2010 editions of the Approved Documents L was identified. The latest revision to the document, the 2013 version of Part L, has been adopted from October 2013.

Within the updated 2013 version of Part L, a number of changes have been made, including the following:

- The Target Emissions Rate (TER) is no longer based on a 2002 notional building and an improvement factor but will take an 'aggregate approach' for the non-dwellings sector. The TER will be based on a building of the same size and shape as the actual building, constructed to a concurrent specification, provided in the 2014 NCM modelling guide. This approach has been adopted, as the level of improvement that can be reasonably expected is considered to vary significantly across the building sector; a blanket improvement factor is therefore inequitable. Therefore, some buildings (e.g. those buildings that use a higher load of lighting versus, say, hot water) will be expected to exceed the 25% reductions target, while other buildings will be allowed to achieve less than 25%;
- In order to assist Building Control Officers to enforce regulations, design-stage submissions must be accompanied by a copy of the design specifications. This will also increase the emphasis on commissioning to ensure that systems perform as intended. This is also to enable the Building Controls Officer to be able to check that the relevant elements are in place. Should any changes be made to the building to the design stage list of specifications, a list of these changes must be provided to the Building Control Officers, as well as a certificate signed off by a suitably accredited energy assessor; and
- Accredited construction details that cover building elements, such as thermal bridging will no longer make assumptions. Under the 2030 Building Regulations, each of the junctions will need to be measured, multiplied by the appropriate PSI value (values supplied by the SAP 2012 document), and added up to produce an *'effective'* Y value.

In addition to the revisions that have been implemented from 2013, the Government has also announced further revisions to Part L that will be used as a catalyst of achieving the target for zero carbon dwellings by 2016 and zero carbon non-domestic buildings by 2019. It is anticipated that amendments to the Part L documents will expect a 44% improvement of the Target Emission Rate (TER) or the CO_2 emissions of a new building in the 2013 revision (relative to the 2006 requirements) for domestic buildings and an aggregated 44% improvement of the TER for non-domestic buildings.

2.4 Summary of Policy and Legislative Requirements

Box 2.1 provides an overview of Policy and Legislative Requirements and their applicability to the proposed development.

Box 2.1: Points of Focus – Overview of Policy / Legislative Requirements

- *Development Management Policy DM4* ensures all major developments will be required to demonstrate through an Energy Statement compliance with the Mayor's targets for reductions in carbon dioxide emissions
- *London Plan Policy 5.2* requires all major developments achieve a >40% reduction in CO_2 emissions compared to 2010 Building Regulations. Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy.
- *London Plan Policy 5.6* requires all major developments to evaluate the opportunities for CHP networks and communal heating

3. SUSTAINABILITY ASSESSMENT

This section comprises the Sustainability Statement for the proposed development. The Sustainability Statement outlines the measures proposed in order to ensure compliance with Barnet's Local Plan, with a particular focus on the following parameters;

- Lifetime Homes;
- Passive design and energy use;
- Water conservation and efficiency;
- Green infrastructure and transport;
- Biodiversity and habitat;
- Building materials;
- Waste minimisation & recycling;
- Pollution prevention and construction management; and
- Flood risk and resilience.

3.1 Lifetime Homes

In accordance with Table 2.6 of the SPD: Sustainable Design and Construction, all residential developments are required to comply with the Lifetime Homes Standard.

Lifetime Homes standards consist of a set of 16 design criteria which cover areas relating to how the home is approached and accessed, movement in and around the home, and the ability of a home to adapt to cater for the needs of an individual or family with a temporary or permanent disability.

3.2 Passive Design, Energy Use and Renewable Energy

In accordance with the London Plan Policy 5.2 the development is achieves a >40% reduction in CO_2 emissions compared to Building Regulations 2010 and in line with the energy hierarchy.

Refer to Appendix A: Energy Assessment (ref. *SOL1512ENT02-Dollis Road_Energy Assessment*) for the detailed energy strategy.

3.3 Water Conservation and Resource Efficiency

The conservation of water resources and maximising resource efficiency is a central theme within the Local Plan and Supplementary Planning Documentation, particularly Policy DM4.

The development will include low water consumption measures for sanitary ware and appliances where applicable. Some of which are detailed below.

Box 3.2: Water Conservation
Toilets will be dual flush and flow capacity; taps will have flow restrictors and / or dosage control or sensor control, as will urinals. Low water consumption appliances will be specified in kitchen areas where appliances are installed (such as dishwashers). All residential dwellings will be designed to achieve average water consumption targets of **105 litres per head per day**.

3.4 Green Infrastructure and Transport

The location of the site and proximity to local public transport facilities provides an opportunity for mitigation of carbon dioxide emissions through utilisation of sustainable transport measures.

Box 3.3: Green Infrastructure and Transport
The site lies on Mill Hill East high street, within the local shopping centre. There is also a bus stop on the northern site boundary which serves the town, and wider areas of Salisbury. Further to this, Mill Hill East tube station is on the Northern Line and located <500m north of the site, offering excellent transport links throughout London. Residents of the proposed development could therefore feasibly live without access to a car. Cycle storage has been provided

3.5 Biodiversity

The proposed development is located on a brownfield site that is currently 100% impermeable and no new landscaping is proposed. There is a site with substantial vegetation to the rear of the applicant's site. Box 3.3 details design measures that can be utilised to minimise the impact on surrounding biodiversity.

Box 3.4: Biodiversity
Ensuring that any building works are conscientious to the surrounding Environment, such as timing construction to mitigate any effects on breeding birds and bats. Where new landscaping is proposed, specifying of species rich plants and shrubs within the amenity space will enhance biodiversity within the local area.

3.6 Building Materials

All materials associated with the development shall be sourced with consideration for the embodied construction impacts. As such the site building shall comprise a sufficiently robust construction (as designed by a suitably qualified and contracted structural engineer) and utilise sustainable building materials.

Box 3.5: Building Materials

All primary building materials utilised for any new-build elements of the development shall be rated A+ to B in accordance with the BRE Green Guide.

The selection of materials appear to have:

- Preferentially selected those materials with a lesser environmental impact;
- Review alternative materials that have a lower environmental impact when developing material specification, including recycled materials; and
- Review the embodied energy within potential building materials and reduction of the embodied energy where feasible.

The design team will ensure that materials for key building elements are purchased in accordance with the following;

- All timber will be sourced from legally logged and sustainable sources (FSC / CSA / PEFC verified timber with a full chain of custody (CoC);
- Supplier environmental credentials form an essential element of the selection criteria (particularly certifications such as ISO 14001 / EMAS etc); and
- The developer will request and evaluate the environmental policies of its suppliers.

Based on the above, it is assumed that all materials utilised for the construction of the site building will be covered by certifications (such as ISO 14001 / EMAS) and achieve at least a 'Good' performance rating under British Standards BES 6001:2008.

3.7 Waste Minimisation, Pollution Prevention and Recycling

The development site will utilise sustainable design and construction to minimise the impact the building has on the environment. Good site practices will be employed during the construction phase in order to minimise potential impacts, such as noise and dust nuisances.

Box 3.6: Encourage the use of a recycled, recyclable and durable products

Any demolition and alteration works required to facilitate the works will include the separation of demolished materials and retention of the existing materials (where appropriate).

Materials for re-use will be stored on site. Materials for disposal will be segregated into recyclable streams and waste for landfill and removed by licensed waste handling contractors for recycling or disposal.

Box 3.7: Construction Site Waste Management Plan

During the construction works, adequate space will be provided for the separation, storage, collection and recycling of waste.

Effective site waste management will also be implemented through the use of a Site Waste Management Plan that has been designed to comply with the WRAP guidelines. The SWMP will meet all regulatory requirements and;

- set actions to prevent, reduce and recover waste;
- identify waste reductions at the design stage;
- forecast the waste arisings;
- record waste carriers and waste management facilities;
- prepare waste management actions;
- record actual waste movements; and
- benchmark against Standard, Good and Best Practice.

Box 3.8: Operational Waste and Recycling Management

A waste storage area has been provided at the ground floor of the development for the residents, which will incorporate waste segregation and recycling facilities.

Provision shall be made for the users of the development to separate out recyclable waste from non-recyclable, and to store a number of waste streams close to source and within easy reach of collection and disposal arrangements.

The development will utilise recycling facilities in line with best practice.

A minimum internal storage capacity of 60 litres per dwelling shall be provided which can accommodate containers for the temporary storage of materials to be recycled. Materials will then be transferred to external containers for collection.

3.8 Flood Mitigation and Resilience

According to Environment Agency flood maps, the development lies within Flood Zone 1 – an area with a 'low' risk of flooding, with an annual probability of flooding of between less than 1 in 100 (1%) but greater than or equal to 1 in 1,000 (0.1%).

4. STATEMENT SUMMARY

Barnett Council is committed to achieving sustainable development. As a result the current planning policies for this area emphasise the importance of sustainable growth with particular emphasis on the encouragement of energy efficiency and green energy and industry. It is important, therefore, that the proposed development site contributes to the Council's sustainability aims as well as meeting regional and national objectives for sustainable development. This sustainability statement demonstrates that the proposals satisfy a number of key objectives, responding to local needs and requirements and conforming to current good practice.

In addition, this strategy confirms that the development will meet the London Plan Policy 5.2 reduction in carbon dioxide requirement of >40% through utilising passive design measures, super insulated and air tight building fabric and high efficient gas fuelled heating system and the installation of photovoltaic panels for the provision of supplementary renewable energy generation

In summary, the sustainability statement has informed the design process by identifying opportunities and constraints for sustainable development, and the process has highlighted the proposals sustainability performance against national, regional and local planning policy.

Appendix 1 – Energy Assessment

(Ref: *SOL1512ENT02-Dollis Road_Energy Assessment* prepared by Sol Environment)