
Greengage

QA

Ferdinand Place, Sustainability Statement

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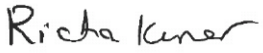
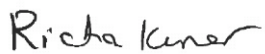
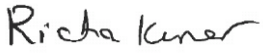
Signature:			
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1.0 EXECUTIVE SUMMARY

1.1 Greengage Environmental Ltd were commissioned by Clive Sall Architecture Ltd on behalf of Clive and Pippa Leverton (the 'applicant') to prepare this Sustainability Statement for the proposed development at Ferdinand Place (the 'site'), within the administrative boundary of the London Borough of Camden (LB Camden).

1.2 This report details the approach that the applicant and the design team have collectively taken towards achieving a high standard of sustainable development and environmental performance. This Statement outlines the features that have been incorporated into the design proposals and the measures that will be implemented during the construction and operation phases, which aim to reduce the environmental impact of the scheme and contribute positively to sustainable development.

1.3 The purpose of the Sustainability Statement is to provide an independent verification that the design of the proposed development is in accordance with the sustainability objectives of relevant planning policy at all levels and is an example of good practice in sustainable design. This Statement reports the performance of the proposed development using national, regional and local level guidance on sustainability indicators from both government and industry.

1.4 The Statement includes:

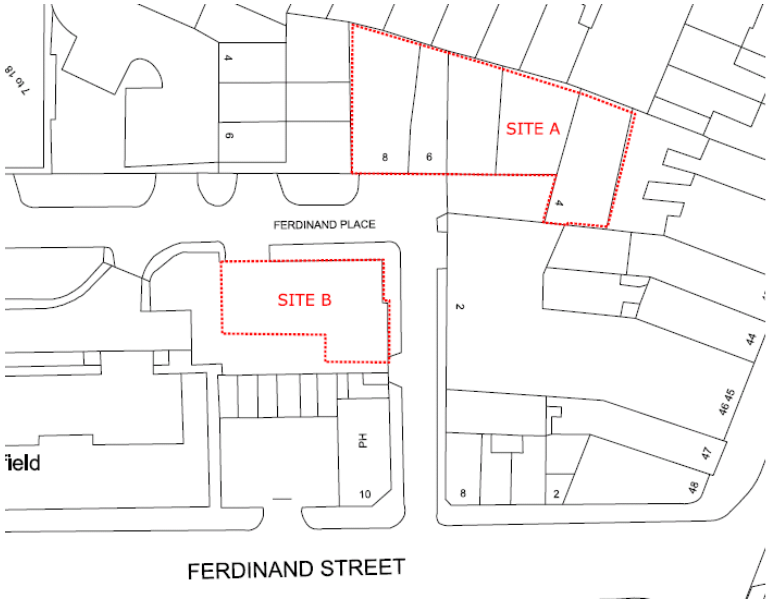
- A brief description of the proposed development;
- A summary of the relevant international, national and local sustainable development and energy policy drivers; and
- An examination of the performance of the scheme in accordance with other key sustainable policies at all levels, including the *London Plan*[1]; the policies contained within the LB Camden Local Development Framework (LDF) (LB Camden *Core Strategy*[2] and Development Policies[3]); and Camden's Planning Documents (SPD).

1.5 A review of the proposed development's sustainability against set planning objectives and best practice identifies the opportunities and constraints of both the application site and the proposals. By undertaking the sustainability appraisal at this stage in the design process, the potential to contribute positively to sustainable development is optimised. The Sustainability Statement therefore also provides a framework for the team to monitor the scheme's performance throughout its development.

2.0 THE PROPOSED DEVELOPMENT

2.1 The proposed development is located at Ferdinand Place within the administrative boundary of LB Camden. It will be located at a site of two existing properties which are to be demolished, to create 19 residential units in a 5 and 4 Storey development. The scheme will provide around 1590sqm of high quality residential space. The scheme will also include approximately 945 sqm of non-residential space which will be used as a Funeral Parlour. The proposed development is comprised of two sites at Ferdinand Place, Site A and Site B.

2.2 Location plan of proposed development



2.3 Site A is a 4 storey development with the following breakdown, where the residential dwellings are located from the first to third floor:

- Funeral Parlour on the lower ground and ground floor
- 1no. 1 bedroom flats;
- 4no. 2 bedroom flats; and
- 3no. 3 bedroom flats.

2.4 Site B is a 5 storey development with the following breakdown:

- 4no. 1 bedroom flats;
- 4no. 2 bedroom flats; and
- 3no. 3 bedroom flats.

2.5 The Funeral Parlour is located on the ground floor and basement of site A, which contains a vehicle unloading area, a new coffin store and coffin fit-out workshop and a mortuary with body store.

3.0 SUSTAINABLE DEVELOPMENT

What is it?

3.1 The past 20 years have seen a growing realisation that the current model of development is unsustainable. In other words, we are living beyond our means. From the loss of biodiversity due to the felling of rainforests or over-fishing, to the negative effect our consumption patterns are having on the environment and the climate, our way of life is placing an increasing burden on the planet.

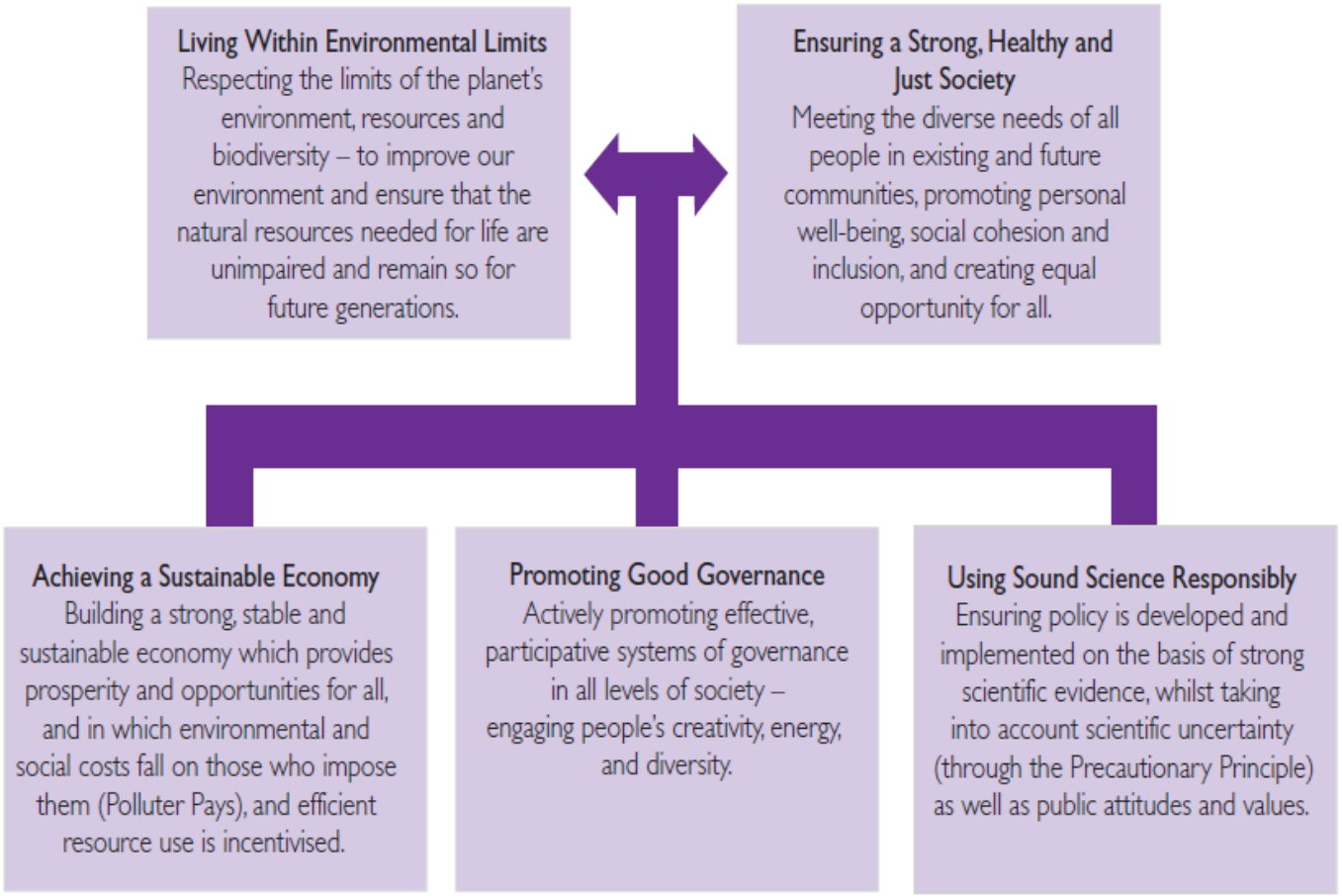
3.2 The goal of sustainable development, therefore, is to seek to simultaneously progress economic, social and environmental goals and policies in ways that develop and maintain a good quality of life for us all and enable future generations to do the same.

3.3 In the UK, the Government and devolved administrations have clearly set out what sustainable development means for them and the approach they will take to pursue their goal. They offer the following interpretation:

'Sustainable development is about positive growth-making economic, environmental and social progress for this and future generations'[4].

3.4 To provide a clearer picture of what they mean in practice, such definitions are often underpinned by key principles that serve to guide policy-making and decisions. The UK Government has outlined a shared set of guiding principles for sustainable development in the UK Framework for Sustainable Development, *'One future - different paths'*[5] - they are the 'Five Principles of Sustainable Development' (see Figure 3.1 below).

Figure 3.1 Five Principles of Sustainable Development



4.0 PLANNING POLICY & LEGISLATIVE CONTEXT

KEY SUSTAINABILITY DRIVERS

4.1 Strategies for sustainable development – broad, long-term plans of action aimed at achieving the goals of sustainable development – have been developed by national governments and a range of organisations throughout the world in order to set out a blueprint for action. There are also a number of international and national policy drivers for 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.

International Policy Drivers

Kyoto Protocol (1997)

4.2 The Kyoto Protocol was agreed at the 1997 UN Convention on Climate Change. The UK's target is to cut its emissions by 12.5% below 1990 levels by 2008-2012. The UK Government committed to a more challenging target to cut the UK's CO_2 emissions to 20% below 1990 levels by 2010.

4.3 A successor agreement to the Kyoto Protocol has been, and will be, subject to intense protracted negotiations between member countries of the UN. At the conference of the parties in Durban 2011, member countries agreed to adopt a new agreement by 2015 that will come into force by 2020.

National Policy Drivers

Energy White Paper

4.4 The *Energy White Paper: Our Energy Future – Creating a Low Carbon Economy*[6] is a change in direction for 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* sets four priorities:

- Cutting the UK's carbon dioxide emissions - the main contributor to global warming - by some 60% by about 2050, with real progress by 2020;
- Security of supply;
- A competitive market for the benefit of businesses, industries and households; and
- Affordable energy for the poor.

4.5 *Meeting the Challenge - A White Paper on Energy* published in 2007 sets out the Government's international and domestic energy strategy to respond to changing circumstances; address long-term energy challenges; and how to deliver on the four energy policy goals set in the *Energy White Paper*.

4.6 *Planning our Electric Future*[7] published in 2011 sets out the government's commitment to transform the UK's electricity system to ensure that future electricity supply is secure, low-carbon and affordable.

Climate Change Act 2008

4.7 On 26th November 2008, the UK Government published the Climate Change Act 2008[8], 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 that the carbon budget (i.e. the CO_2 emissions) must be at least 26% lower than the 1990 baseline.

National Planning Policy Framework

4.8 The *National Planning Policy Framework*[4] (NPPF) was adopted in March 2012, setting out a key part of the Government's reforms to make the planning system less complex and more accessible, whilst protecting the environment and promoting sustainable growth. The NPPF supersedes the previous national planning guidance, namely the Planning Policy Statements and Planning Policy Guidance Notes.

4.9 At the heart of the NPPF is a 'presumption in favor of sustainable development', which requires Local Authorities as part of any plan-making or decision-making, to provide clear guidance on how the presumption should be applied locally. In addition, the NPPF sets out twelve core

land-use planning principles that the Government has identified that underpin both plan-making and decision-making. Of these, the following have been identified as being relevant to sustainability:

'Proactively drive and support sustainable economic development to deliver the homes, business and industrial units, infrastructure and thriving local places that the country needs…'

'Support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy).'

REGIONAL PLANNING POLICY

The London Plan[1] (2015)

4.10 The London Plan is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the city's development over the next 20-25 years.

4.11 On its formal publication in 2011, the London Plan superseded the version published in March 2008. Subsequent Revised Early Minor Alteration and Draft Further Alterations were published in October 2013 and Further Alterations were incorporated into the London Plan and adopted in March 2015.

4.12 The policies within the London Plan form part of the development plan for Greater London, and should be taken into account in all relevant planning decisions, such as determining planning applications.

4.13 With regard to energy, Policy 5.2 relates to minimising carbon dioxide emissions, and states the following:

Policy 5.2 Minimising Carbon Dioxide Emissions

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

1. Be lean: use less energy;

2. Be clean: supply energy efficiently; and

3. Be green: use renewable energy

B – 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:

Residential buildings: 2013 – 2016: 40% improvement on 2010 Building Regulations'

4.14 Since the update to the Building Regulations in 2013, the London Plan now requires a 35% improvement over 2013 Building Regulations.

4.15 Also with regard to energy, Policy 5.6 relates to decentralised energy in development proposals and states the following:

'A – Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems.

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

1. *Connection to existing heating or cooling networks;*
2. *Site wide CHP network; and*
3. *Communal heating and cooling.'*

4.16 With regard to sustainable development, Policy 5.3 relates to sustainable design and construction, and states the following:

Policy 5.3 Sustainable Design and Construction

'A – The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime.

B - 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.

4.17 The proposed development consists of twenty residential dwellings. Following the guidance and definitions within the London Plan, the development falls into the category of a Major development, which consists of 10 dwellings or more (or an area greater than 0.5 ha) or other

developments where the floor space will be over 1,000 square meters. Therefore the application of policies referring to Major developments will be applicable to this development.

Greater London Authority (GLA) Energy Team Guidance on Planning Energy Assessments[9]

4.18 The GLA Energy team published a guidance note which provides further detail on addressing the London Plan's energy hierarchy through the provision of an Energy Assessment. In April 2014 describes the means by which development proposals can demonstrate that climate change mitigation and adaptation measures are integral to the context of the development.

4.19 The most recent version published was produced in April 2015, providing information regarding the effect of the Deregulation Act on the London Plan targets. The Mayor has considered the Government's intentions regarding the energy performance standards and its support for energy infrastructure and considers the energy targets to be in line with the current energy hierarchy approach, therefore the targets in the London Plan will continue to apply across both residential and non-domestic development.

4.20 The document has provided a guide to the structure and content of the energy assessment which has influenced the content of this Statement.

LOCAL POLICY DRIVERS

Camden Local Development Framework (LDF)

4.21 The LB Camden LDF is made up of the Core Strategy[10] and the Development Policies[11] document. The Core Strategy and Development Policies were adopted in November 2010.

4.22 The following policies have been identified as having particular relevance on how the sustainability objectives of the Council should be met in new developments:

LB Camden Core Strategy

4.23 The Camden Core Strategy has a presumption in favour of sustainable development at its heart, in line with the NPPF.

4.24 In relation to sustainable development and energy, the Local Plan sets out the following policies:

Core Strategy Policy CS13 – Tackling climate change through promoting higher environmental standards

'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 building;

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 decentralised energy networks;*
3. *Generating renewable energy on-site; and*

d) Ensuring buildings and spaces rare 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 reduction 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; and
- other locations where land ownerships 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 down-stream flooding, especially in areas up-hill form, and in, areas known to be at risk from surface water flooding, such as South and West Hampstead, Gospel Oak and King's Cross.

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.'

CS16 – Improving Camden's health and well-being

The Council will seek to improve health and well-being in Camden by:

- *Recognise the impact of poor air quality on health and implement Camden's Air Quality Action Plan which aims to reduce air pollution levels.*

CS17 – Making Camden a safer place

The Council will aim to make Camden a safer place. They will:

- *Encourage appropriate security and community safety measures in buildings spaces and the transport system;*
- *Require developments to demonstrate that they have incorporated design principles which contribute to community safety and security, particularly in areas with relatively high levels of crime, in particular Camden Town, King's Cross, Bloomsbury, Covent Garden and Kilburn;*
- *Ensure Camden's businesses and organisations take responsibility for reducing the opportunities for crime through effective management and design;*

CS18 – Dealing with our waste and encouraging recycling

The Council will seek to make Camden a low waste borough by:

- *Making sure that developments include facilities for the storage and collection of waste and recycling;*

LB Camden Development Policies

4.25 The LB Camden Development Policies document was adopted in November 2010. The following policies are deemed relevant:

Policy DP6: Lifetime homes and wheelchair housing

All housing development should meet lifetime homes standards. 10% of homes developed should either meet wheelchair housing standards, or be easily adapted to meet them.

Policy DP16 – The transport implications of development

The Council will seek to ensure that development is properly integrated with the transport network and is supported by adequate walking, cycling and public transport links. We will resist development that fails to assess and address any need for:

a) movements to, from and within the site, including links to existing transport networks. We will expect proposals to make appropriate connections to highways and street spaces, in accordance with Camden's road hierarchy, and to public transport networks;

b) additional transport capacity off-site (such as improved infrastructure and services) where existing or committed capacity cannot meet the additional need generated by the development. Where appropriate, the Council will expect proposals to provide information to indicate the likely impacts of the development and the steps that will be taken to mitigate those impacts, for example using transport assessments and travel plans;

c) safe pick-up, drop-off and waiting areas for taxis, private cars and coaches, where this activity is likely to be associated with the development.

Policy DP17 - Walking, cycling and public transport

The Council will promote walking, cycling and public transport use. Development should make suitable provision for pedestrians, cyclists and public transport and, where appropriate, will also be required to provide for interchanging between different modes of transport. Provision may include:

a) convenient, safe and well-signalled routes including footways and cycle ways designed to appropriate widths;

b) other features associated with pedestrian and cycling access to the development, where needed, for example seating for pedestrians, signage, high quality cycle parking, workplace showers and lockers;

c) safe road crossings where needed;

d) bus stops, shelters, passenger seating and waiting areas, signage and timetable information.

The Council will resist development that would be dependent on travel by private motor vehicles.

The Council will seek to secure travel interchange facilities in locations that maximise travel benefits and minimise environmental harm. Passenger transport interchanges should provide for the co-ordination of arrival and departure timetabling on different services as far as

possible. Interchanges catering for longer distance journeys should include toilets, baby changing facilities and facilities to provide refreshment for travellers.

Policy DP 18– Parking standards and limiting the availability of car parking

The Council will seek to ensure that developments provide the minimum necessary car parking provision. The Council will expect development to be car free in the Central London Area, the town centres of Camden Town, Finchley Road/Swiss Cottage, Kentish Town, Kilburn High Road and West Hampstead, and other areas within Controlled Parking Zones that are easily accessible by public transport.

Development should comply with the Council's parking standards, as set out in Appendix 2 to their DPD document. Where the Council accepts the need for car parking provision, development should not exceed the maximum standard for the area in which it is located (excluding spaces designated for disabled people). Developments in areas of on-street parking stress should be 'car capped'.

For car free and car capped developments, the Council will:

a) limit on-site car parking to:

– spaces designated for disabled people,

– any operational or servicing needs, and

– spaces designated for the occupiers of development specified as car capped;

b) not issue on-street parking permits; and

c) use a legal agreement to ensure that future occupants are aware they are not entitled to on-street parking permits.

Developments will also be expected to meet the Council's minimum standards for cycle parking set out in Appendix 2 of the DPD document.

The Council will:

d) strongly encourage contributions to car clubs and pool car schemes in place of private parking in new developments across the borough; and

e) seek the provision of electric charging points as part of any car parking provision.

Policy DP22 - Promoting sustainable design and construction

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

a) demonstrate how sustainable development principles, 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:

e) expecting non-domestic developments of 500sqm of floorspace or above to achieve "very good" in BREEAM assessments by 2015 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.

Policy DP23 - Water

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.

Policy DP24 - Securing high quality design

The Council will require all developments, including alterations and extensions to existing buildings, to be of the highest standard of design and will expect developments to consider:

a) character, setting, context and the form and scale of neighbouring buildings;

b) the character and proportions of the existing building, where alterations and extensions are proposed;

c) the quality of materials to be used;

d) the provision of visually interesting frontages at street level;

e) the appropriate location for building services equipment;

f) existing natural features, such as topography and trees;

g) the provision of appropriate hard and soft landscaping including boundary treatments;

h) the provision of appropriate amenity space; and

i) accessibility.

Policy DP26 - Managing the impact of development on occupiers and neighbours

The Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include:

a) visual privacy and overlooking;

b) overshadowing and outlook;

c) sunlight, daylight and artificial light levels;

d) noise and vibration levels;

e) odour, fumes and dust;

f) microclimate;

g) the inclusion of appropriate attenuation measures.

We will also require developments to provide:

h) an acceptable standard of accommodation in terms of internal arrangements, dwelling and room sizes and amenity space;

i) facilities for the storage, recycling and disposal of waste;

j) facilities for bicycle storage; and

k) outdoor space for private or communal amenity space, wherever practical.

Policy DP28 - Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed and will not grant planning permission for:

a) development likely to generate noise pollution; or

b) development sensitive to noise in locations with noise pollution, unless appropriate attenuation measures are provided.

Development that exceeds Camden's Noise and Vibration Thresholds will not be permitted.

The Council will only grant permission for plant or machinery if it can be operated without cause harm to amenity and does not exceed our noise thresholds.

The Council will seek to minimise the impact on local amenity from the demolition and construction phases of development. Where these phases are likely to cause harm, conditions and planning obligations may be used to minimise the impact.

Policy DP29 - Improving access

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

a) expect all buildings and places meet the highest practicable standards of access and inclusion;

b) require buildings and spaces that the public may use to be designed to be as accessible as possible;

c) expect facilities to be located in the most accessible parts of the borough;

d) expect spaces between buildings to be fully accessible;

e) encourage accessible public transport;

f) secure car parking for disabled people; and

g) secure accessible homes.

LB Camden Planning Guidance

4.26 The LB Camden have their own Supplementary Planning Guidance (SPG) documents which provide further guidance to support the policies included with LB Camden's LDF. The guidance is consistent with the Core Strategy and the Development Policies, and form a Supplementary Planning Document (SPD) which is an additional "material consideration" in planning decisions. The documents were originally adopted in April 2011 but has been updated in July 2015 due to recent changes in sustainability design standards and targets. The relevant SPG documents include Camden Planning Guidance (CPG) 1: Design, CPG 2: Housing, CPG 3: Sustainability, CPG 6: Amenity and CPG 7: Transport.

CPG1: Chapter 2 Design Excellence

Materials should form an integral part of the design process and should relate to the character and appearance of the area, particularly in conservation areas or within the setting of listed buildings. The durability of materials and understanding of how they will weather should be taken into consideration. The quality of a well-designed building can be easily reduced by the use of poor quality or an unsympathetic palette

of materials. We will encourage re-used and recycled materials, and further guidance is contained within CPG3 Sustainability (Sustainable use of materials).

CPG1: Chapter 6_Landscape design and trees

- Camden's trees and green spaces are integral to its character.
- Landscape design and green infrastructure should be fully integrated into the design of schemes from the outset.
- We require a survey of existing trees and vegetation to be carried out prior to the design of a scheme.

This guidance sets out how to protect trees and vegetation and design high quality landscapes in conjunction with development proposals to ensure an attractive, safe, accessible, sustainable and ecologically diverse environment.

Existing trees and vegetation are a key component in adapting to climate change and conserving biodiversity. CPG3 Sustainability chapters on Climate change adaptation and Biodiversity provide further guidance on importance of biodiversity within a development. Existing species can serve as an indicator of what might be successfully grown on the site when selecting additional plants. The retention of existing mature trees and vegetation also make an important contribution to the sustainability of a project.

CPG1: Chapter 9 Designing safer environments

- All impacts of the proposal on crime and safety should be demonstrated have been considered;
- Security features should be considered early in the design process.
- Designing out crime features should complement other design considerations.

Good design, where due consideration is given to community safety, can create safe and attractive places to live and work and also prevent the need for security measures which can be expensive, unattractive and reactive in nature.

The aim of this guidance is to ensure that development contributes towards breaking down the link between the built environment and crime and anti-social behaviour (ASB), wherever possible, by ensuring that all developments consider and address any impact on crime and the perceptions of crime that may arise.

This guidance relates to Core Strategy policy CS17 Making Camden a safer place, and Development Policy DP24 Securing high quality design.

CPG1: Chapter 10_ Waste and Recycling Storage

Planning for waste recycling and storage should ensure that developments accommodate:

- adequate space (designed) for the storage of waste and recyclables;
- safe location - accessible for all users and collectors and minimise nuisance to occupiers and neighbours (and their amenity space) e.g. noise, obstruction, odours, pests, etc;
- refuse collection for any waste contractor (and allow for reasonable changes to collection services in the future);
- containers should have designated storage areas; and
- sensitively designed/located, especially in conservation areas/or listed buildings.

This section seeks to ensure that appropriate storage for waste and recyclables is provided in all developments in Camden. Its key aim is to ensure that assists those involved in the design and management of buildings to best provide for the storage of waste and maximise the amount that can be sent for recycling.

This guidance relates to Core Strategy Policy – CS18 - Dealing with our waste and encouraging recycling and Development Plan Policies - DP26 – Managing the impact of development on occupiers and neighbours and DP22 – promoting sustainable design and construction.

CPG1: Chapter 11_ Building services equipment

Building services equipment should:

- be incorporated into development;
- have a minimal impact on the environment; and
- Should not harm occupant or neighbour amenity.

Plant and machinery, particularly where located on roofs, must not preclude the installation of required onsite renewable energy facilities in the proposal. Consideration must also be given to the possibility of future renewable energy installations.

CPG2: Chapter 4_Residential development standards

Development should provide high quality housing that provides secure, well-lit accommodation that has well-designed layouts and rooms.

This guidance relates to Camden Core Strategy policies CS5 – Managing the impact of growth and development, CS6 – Providing quality homes and CS14 – Promoting high quality places and conserving our heritage plus Camden Development Policy DP26 – Managing the impact of developers on occupiers and neighbours. In addition, homes of all tenures should meet lifetime homes standards in accordance with Development Policy DP6 and the CPG on Lifetime homes and wheelchair housing.

Daylight, sunlight and privacy

Residential developments should maximise sunlight and daylight, both within the new development and to neighbouring properties whilst minimising overshadowing or blocking of light to adjoining properties. Maximising sunlight and daylight also helps to make a building energy efficient by reducing the need for electric light and meeting some of the heating requirements through solar gain. The orientation of buildings can maximise passive solar gain to keep buildings warm in winter and cool in summer.

All habitable rooms should have access to natural daylight. Windows in rooms should be designed to take advantage of natural sunlight, safety and security, visual interest and ventilation. Developments should meet site layout requirements set out in the Building Research Establishment (BRE) Site Layout for Daylight and Sunlight – A Guide to Good Practice (1991). The minimum requirements included within this section of CPG 2 should be adhered to.

Noise and soundproofing

The layout and placement of rooms within the building should be carefully considered at an early stage in the design process to limit the impact of external noise on bedrooms and living rooms. The impact of noise should also be considered in the placement of private external spaces. Detailed guidance is provided in the 'Noise and vibration' section of CPG6 Amenity and the following requirements must be met.

- Internal layouts of dwellings should be designed to reduce the problem of noise disturbance between adjoining properties by using 'vertical stacking', i.e. placing living room above living room and bedrooms above bedrooms etc.
- Bedrooms should not be placed above, below or next to potentially noisy rooms, circulation areas of adjacent dwellings or noisy equipment, such as lifts.
- Windows should be located away from busy roads and railway lines/tracks to minimise noise and pollution and vibration.
- The layout of adjacent dwellings and the location of lifts, plant rooms and circulation spaces should seek to limit the transmission of noise to sound sensitive rooms within dwellings.
- Party walls and floors of flats created by conversion must be adequately soundproofed.
- All housing should be built with acoustic insulation and tested to current Building Regulations standards, but acoustic insulation should not be relied upon as the only means of limiting noise.

Outdoor amenity space

Outdoor residential amenity space can be provided in the form of private garden space, balconies, terraces, roof gardens or as communal amenity space. Where practical, all new dwellings should provide access to some form of private outdoor amenity space. The minimum requirements included within this section of CPG 2 should be adhered to, where feasible.

CPG2: Chapter 5_Lifetime Homes and Wheelchair Housing

- All residential development should meet the 16 criteria that form the Lifetime Homes standards.
- The standards will be applied flexibly to existing buildings, but applicants should justify failure to meet any of the criteria.
- 10% of market housing development should meet wheelchair housing standards, or should meet the 13 key Habinteg wheelchair housing criteria so that they can be easily adapted to meet wheelchair housing standards.
- 10% of affordable housing development should be designed, built and fitted out to meet Wheelchair Housing standards in full.

CPG3: Chapter 2 The energy hierarchy

- All developments are to be design to reduce carbon dioxide emissions
- Developments involving 5 or more dwellings and/or 500sq m (gross internal) floorspace or more are required to submit an energy statement which demonstrates how carbon dioxide emissions will be reduced in line with the energy hierarchy
- Energy strategies are to be designed following the steps set out by the energy hierarchy

CPG3: Chapter 3_Energy efficiency: new buildings

- All new developments are to be designed to minimise carbon dioxide emissions
- The most cost-effective ways to minimise energy demand are through good design and high levels of insulation and air tightness.

CPG3: Chapter 5_ Decentralised energy networks and combined heat and power

- Where feasible and viable the development will be required to connect to a decentralised energy network or include CHP.

CPG3: Chapter 6_Renewable energy

- There are a variety of renewable energy technologies that can be installed to supplement a development's energy needs.

Developments are to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.

CPG3: Chapter 7_Water Efficiency

- At least 50% of water consumed in homes and workplaces does not need to be of drinkable quality re-using water
- All developments are to be water efficient
- The Council will require buildings with gardens or landscaped areas that require regular maintenance to be fitted with water butts.
- Developments over 10 units or 1000sq m should include grey water recycling, where feasible.

CPG3: Chapter 8_Sustainable Use of Materials

- Reduce waste by firstly re-using your building, where this is not possible you should implement the waste hierarchy. The waste hierarchy prioritises the reduction, re-use and recycling of materials Source your materials responsibly and ensure they are safe to health.
- This guidance relates to Core Strategy policy CS13 - Tackling climate change through promoting higher environmental standards in design and construction. It encourages developments to be sustainable: through the choice of appropriate materials which will assist in minimising energy needs both during construction and occupation periods and by making efficient use of resources.
- It also relates to Development Policy DP22 - Promoting sustainable design and construction which encourages developments to conserve energy and resources through the use of recycled and renewable buildings materials.
- This guidance shows how you can minimise the use of resources through your choice of materials to limit the environmental impact of developments. You can achieve this by focusing on the sustainable (re)use of existing materials as far as possible before considering introducing new materials. There are 5 key measures:

1. Managing existing resources;
2. Specifying materials using the Building Research Establishment's Green Guide to Specification;
3. Ensuring that materials are responsibly sourced;
4. Minimising the harmful effects of some materials on human health; and
5. Ensuring that specified materials are robust and sensitive to the building type and age.

- The Council recommends the use of environmentally sensitive building (non-toxic) materials and avoiding the use of materials or products that produce VOC (volatile organic compounds and formaldehyde) which can affect human health. The use of 'healthy' material options can contribute towards attaining the BREEAM credits but a clear audit trail will need to be provided to gain these credits.

CPG3: Chapter 9_Sustainability Assessment tools

The Code for Sustainable Homes has now been withdrawn and the Ministerial Statement dated 25 March 2015 sets out the Government's national policy on the setting of technical standards for new dwellings. The Council will continue to require new residential development to submit a sustainability statement demonstrating how the development mitigates against the causes of climate change and adapts to climate change, in line with existing policies contained in Camden's Core Strategy CS13 Tackling climate change through promoting higher environmental standards and Development Policies document DP22 Sustainable design and construction.

Proposals should demonstrate how sustainable design and construction principles, including the relevant measures noted in the table on page 104 of the Development Policies Document have been incorporated into the design and proposed implementation. Acceptable new residential schemes will be required to ensure that the measures stated in the Sustainability Statement are secured and implemented.

New residential development will be required to demonstrate that the development is capable of achieving a maximum internal water use of 105 litres per person/day, with an additional 5 litres person/day for external water use.

The Code Level 4 equivalent in carbon dioxide emissions reduction below part L Building Regulations 2013 of 20% is still required to be demonstrated for new residential dwellings.

New build developments with 500sq m or more of non-residential floorspace will need to be designed in line with the BREEAM methodology. Currently, a minimum BREEAM 'Very Good' rating is required. Additionally 60% of the un-weighted credits in the BREEAM Energy section, 60% of the un-weighted credits in the BREEAM Water section and 40% of the un-weighted credits in the BREEAM Materials credits are strongly encouraged.

CPG3: Chapter 10_Brown roofs, green roofs and green walls

- All developments should incorporate green and brown roofs
- The appropriate roof or wall will depend on the development, the location and other specific factors
- Specific information needs to be submitted with applications for green/brown roofs and walls

CPG3: Chapter 11_Flooding

- All developments are required to prevent or mitigate against flooding

- All developments are expected to manage drainage and surface water on-site or as close to the site as possible, using Sustainable Drainage Systems (SUDS) and the hierarchy set out within this section of CPG 3.
- The Council will expect developments to achieve a greenfield surface water run-off rate once SUDS have been installed. As a minimum, surface water run-off rates should be reduced by 50% across the development.

CPG3: Chapter 12 Adapting to climate change

- All development is expected to consider the impact of climate change and be designed to cope with the anticipated conditions.

CPG3: Chapter 13_ Biodiversity

Proposals should demonstrate:

- how biodiversity considerations have been incorporated into the development;
- if any mitigation measures will be included; and
- what positive measures for enhancing biodiversity are planned.

Development can harm biodiversity directly by destroying or fragmenting habitat, or indirectly by altering local conditions for species. Conversely, sensitively designed developments can increase connectivity between urban habitat patches, and contribute to landscape scale conservation and enhancement of biodiversity.

Biodiversity is integral to the planning process and we will expect it to be fully incorporated into the design and construction stages. In principle, all development activity should have minimal impacts on biodiversity and enhance it wherever possible.

It is essential that the development process, from demolition to construction, is undertaken in an appropriate manner to avoid harm to biodiversity. This guidance sets out:

- What species are protected;
- What are our priority species and habitats;
- How to protect biodiversity in the development process;
- Habitat provision, enhancement, creation and restoration; and

- Management and monitoring.

CPG6: Chapter_3 Contaminated land

- Contaminated land can pose a serious risk to health.
- The Council will expect developers to identify and assess potentially contaminated land at an early stage.
-

CPG6: Chapter 4_Noise and vibration

The Council will ensure that noise and vibration is controlled and managed to:

- Limit the impact of existing noise and vibration sources on new development; and
- Limit noise and vibration emissions from new development.

CPG6: Chapter 6_Daylight and sunlight

- The Council will expect all buildings to receive adequate daylight and sunlight.
- Daylight and sunlight reports will be required where there is potential to reduce existing levels of daylight and sunlight.
- The Average Daylight Factor and Vertical Sky Component will be considered.
- New developments should be designed to provide at least one window to a habitable space facing within 90 degrees of south, where practical. This window should receive at least 25% of Annual Probable Sunlight Hours, including at least 5% of Annual Probable Sunlight Hours between 21 September and 21 March, where possible

CPG6: Chapter 8_Construction Management Plans

- Construction management plans are required for developments that are on constrained sites or are near vulnerable buildings or structures. They are usually required for larger schemes (i.e. over 10 residential units).

CPG6: Chapter 9_Access for all

- Well designed, accessible buildings and spaces ensure that local services and facilities are accessible to everyone and increase equality of opportunity and social inclusion. LB Camden will seek to ensure the highest standards of access and inclusion in Camden's built environment and public realm.
- The Council expect all development of buildings and places, including changes of use and alterations to or refurbishment of existing buildings where practical and reasonable, to be designed to be accessible and useable by all to promote equality of opportunity.
- Access should be considered at the beginning of the design process.

CPG7: Chapter 9 Cycling facilities

- Numerical standards for cycle parking spaces are introduced by policy DP18 of the Camden Development Policies, and set out in detail in Development Policies Appendix 2. These standards are applied at a threshold of 500 sq m in most cases.

The Camden Biodiversity Action Plan

4.27 The Camden Biodiversity Action Plan (BAP) provides a framework for improving biodiversity. There are species and habitats identified as priorities in national, regional or borough Biodiversity Action Plans that although may not have legal protection, are still a material consideration in planning, and we will take into account in the planning process.

The Code for Sustainable Homes Deregulation Act

4.28 On 25th March 2015 Eric Pickles, Department for Communities and Local Government, published a Written Ministerial Statement[12] outlining the steps taken by the Government to streamline the planning system. This confirmed the Central Government's intention to withdraw the Code for Sustainable Homes (CSH), in England, upon the passing of the Deregulation Act 2015, which was received through Royal Assent on 26th March 2015.

4.29 The Written Ministerial Statement has given planning policy guidance from Central Government to Local Authorities that CSH should no longer be required as a planning condition for new consents. However, it remains a matter for Local Authorities (LAs) to implement the guidance accordingly and it is therefore possible, although unlikely, for LAs to act contrary to the planning guidance.

4.30 Until 30th September 2015, if there is a local policy requiring CSH compliance this can be used to impose the energy and water standards that currently equate to the CSH mandatory requirements for "Level 4" in sections Ene1 and Wat1. New national technical standards will take the place of these CSH standards from 1st October 2015 and where LAs have requirements for energy and water performance they may impose conditions for a form of evidence that these standards have been met, in the form similar to a post construction certificate.

4.31 In the absence of the CSH, LB Camden policy is to meet the London Plan and therefore requires an energy assessment to show how the proposal will meet the 35% carbon reduction target beyond Part L of the 2013 Building Regulations. This statement will show this as well as how the equivalent CSH level 4 water standards will be met.

4.32 Furthermore Section 9 of Camden's CPG3, summarised above, and provides further details on the relevant policies that are still required to be demonstrated for new residential development.

5.0 INTERGRATING SUSTAINABILITY INTO THE PROPOSED DESIGN

5.1 With respect to sustainable development at Ferdinand Place, a number of key policy objectives have been identified at national, regional and local level. This Sustainability Statement will therefore assess the performance of the proposed development against these key sustainability policies, including those from the London Plan, and the policies of the LB Camden's Core Strategy, and the relevant CPG's.

5.2 Key to the implementation of environmental and sustainability initiatives, is the ability to monitor progress through design development. Furthermore, it is essential that the subsequent success, or otherwise of such initiatives is examined. Monitoring the progress and success of environmental performance and sustainable development will be undertaken for the Ferdinand Place proposals through the use of benchmarking tools including BREEAM. As such, a Pre-certification assessment has been undertaken for the proposed development and the subsequent design stage certified assessment process will provide a framework to guide design development and monitor progress throughout the design phases.

5.3 In addition, there are a number of other industry drivers that promote the delivery of sustainable built environments and these will also be considered for the proposed development in order to ensure that a holistic approach is taken towards design development, which considers all aspects of environmental and sustainability performance.

5.4 This statement should demonstrate that the proposed development will meet the highest standards of sustainable design and construction throughout all stages of the development, including demolition, construction and long-term management.

THE BREEAM PERFORMANCE

LB Camden Policy DP22 require new non-residential development over 500 sqm to target a BREEAM 'Very Good' rating. Additionally 60% of the un-weighted credits in the BREEAM Energy section, 60% of the un-weighted credits in the BREEAM Water section and 40% of the un-weighted credits in the BREEAM Materials credits are strongly encouraged.

5.5 Pursuant to this, a pre-assessment was undertaken for the Funeral Parlour, the only non-residential space over 500 sqm within the proposed development, with the design team The aim of this pre-assessment was to identify the opportunities and constraints of the application site and the proposals, and to maximise the opportunities to enhance the environmental performance of the design.

5.6 From this, the credits considered achievable for the target rating have been identified. The pre-assessment BREEAM score that is considered feasibly targeted is 63.8%, which is equivalent to a BREEAM 'Very Good' rating.

5.7 Furthermore in line with Section 9 of LB Camden's CPG 3, 66.7% of the un-weighted BREEAM Water credits have been targeted, exceeding LB Camden's requirement of pursuing 60% of the un-weighted BREEAM Water credits. 57.1% of the un-weighted BREEAM Materials credits have been targeted which go beyond LB Camden's requirement to target 40% of the un-weighted BREEAM Materials credits.

5.8 The pre-assessment BREEAM score that is likely to be achieved for the proposed development of the Funeral Parlour at Ferdinand Place is 63.2%, which is equivalent to a BREEAM rating of 'Very Good'.

5.9 However, based on the latest area schedule by CSA, '160324_Area Schedule_rev18', the majority of the 945 sqm Funeral Parlour will be unheated, with circa 613 sqm of the space used as unheated coffin storage and vehicle unloading areas, leaving 332 sqm of operational heated space.

5.10 A strategy has been proposed within this BREEAM Pre-Assessment report, to target the required BREEAM 'Very Good' rating, however due to the relatively small heated space within the proposed development, it is considered impractical and not cost-effective to implement this strategy and seek formal BREEAM certification. However, the project team will endeavour to design and construct the development in line with best practice and strive to include sustainable design and construction measures where feasible.

5.11 Furthermore in line with Section 9 of LB Camden's CPG 3, 66.7% of the un-weighted BREEAM Water credits have been targeted, exceeding LB Camden's requirement of pursuing 60% of the un-weighted BREEAM Water credits. 57.1% of the un-weighted BREEAM Materials credits have been targeted which go beyond LB Camden's requirement to target 40% of the un-weighted BREEAM Materials credits.

5.12 Currently, 56% of the un-weighted Energy credits are comfortably targeted. To target the 60% un-weighted credits in the Energy section, one further credit is required to be pursued, where the most likely credit would be the ENE 4- 'Free Cooling' credit. The project team is striving to incorporate a free-cooling strategy, however this is difficult due to the non-typical and complex nature of this building, which contains a number of specialist spaces including a vehicle storage garage, a new coffin store and coffin fit-out workshop, a mortuary with body store and a 'lying in state' room. Due to the extensive energy and cooling needs for the mortuary and storage areas and the early stage of design the project is in, it cannot be confirmed whether this can feasibly be specified throughout the development. The project team however endeavour to incorporate a free cooling strategy where possible.

5.13 As Table 2.2 confirms that the percentage score required for a BREEAM 'Very Good' rating is 55%. We would always recommend that a score of at least 4-5 percent above this minimum score is aimed for during the design stages and achieved at the final certification stage. This is to

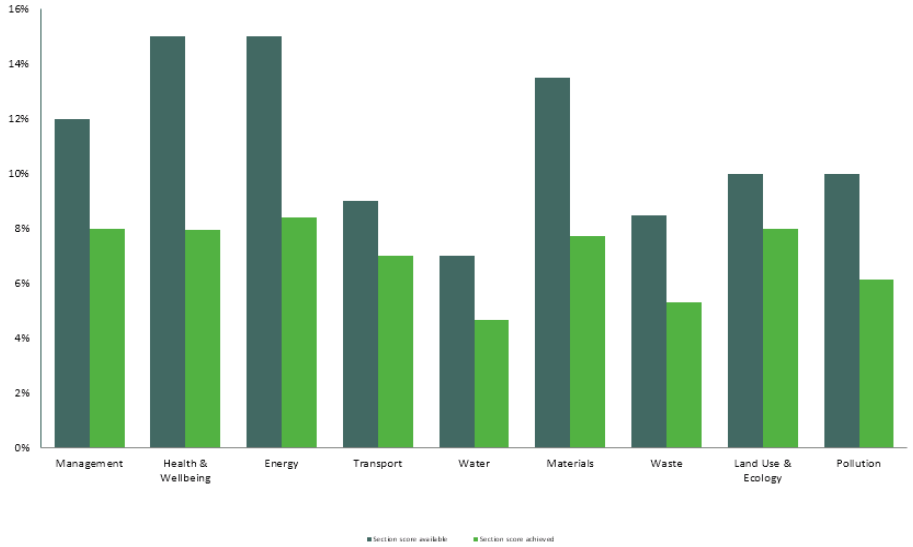
ensure that during the BRE third party review of the certified final report, in the event that a credit was disputed and revoked, the target rating would still be likely to be achieved.

5.14 The credit framework identified for achieving the target rating is based on a number of assumptions that will need to be substantiated by team members during the detailed design stage, prior to final confirmation of their feasibility.

5.15 The credit framework identified for achieving the target rating is based on a number of assumptions that will need to be substantiated by team members during the detailed design stage, prior to final confirmation of their feasibility.

5.16 The current pre-assessment BREEAM score is shown in Chart 5.1.

Chart 5.1 Pre-assessment BREEAM Score



6.0 ENERGY

Sustainability Objective:

To address the causes of climate change by reducing emissions of greenhouse gases, in particular carbon dioxide (CO_2). To reduce the local and global impact of pollution on the environment, by improving the energy efficiency of properties and generating energy from low or zero carbon technologies.

Relevant Policy: London Plan Policy 5.2, CS13, DP22, CPG 3

Context

6.1 With increased pressure to meet growing energy demands and concerns over the impacts of greenhouse gases on climate change, governments around the world are putting in place commitments and targets to mitigate these impacts. In the UK, the Government has set targets of reducing overall CO_2 emissions by 80% by 2050 (compared with 1990 levels).

6.2 To help meet these targets, the focus is not only on expanding the use of renewable sources to generate energy, but also on energy conservation and, more particularly, on ensuring the energy efficiency of housing in the UK is dramatically improved. This last focus is unsurprising considering that housing accounts, directly and indirectly, for 26% of the UK's carbon emissions. The Government has long signalled its intention to move to zero carbon buildings, starting with homes in 2016 and finishing with all other buildings from 2019.

6.3 Many developments within Greater London are now required to address the London Plan, which sets planning policy standards for energy efficiency and the use of renewable technologies through the Energy Hierarchy:

- Be Lean - Reduce energy loads to a minimum through energy efficient heating and lighting systems, and efficient appliances;
- Be Clean - Cut transmission losses through local generation of energy (decentralised energy generation), use combined heat and power and community heating; and
- Be Green - Meet the remaining demand with clean fuels, such as renewable technologies.

6.4 Section 5.2 of the London Plan requires major developments to obtain a 40% improvement on 2010 Building Regulations. Since the update to the Building Regulations in 2013, the London Plan now requires a 35% improvement over 2013 Building Regulations. Section 4.17 of this report confirms that the application of policies referring to Major developments will be applicable to this development.

6.5 LB Camden's Core strategy CS13 and Section 3 of CPG 3 requires, where feasible, developments to achieve a reduction in carbon dioxide emissions of 20% from on-site renewable energy generation (which can include sources of site-related decentralised renewable energy).

6.6 Additionally new residential development is required to achieve a minimum 25% reduction in total (regulated) CO2 emissions in line with CSH energy standards.

Delivery

Building Energy Performance Assessment- Methodology

6.7 A detailed assessment of the energy performance of the proposed development is presented in a standalone Energy Statement submitted for the planning application. The key energy and sustainability measures and results described in the Energy Statement are summarised in this section.

6.8 The following key passive energy efficient design measures to improve upon the TER have been included for the residential dwellings within the proposed development, based on discussions between the design team, as follows:

- U values of:
  - Ground floor: 0.10 W/m^{2}K;
  - Roof: 0.10 W/m^{2}K;
  - External walls: 0.14 W/m^{2}K;
  - Glazing: 1.2 W/m^{2}K;
  - Sliding Doors: 1.0 W/m^{2}K;
  - External doors: 2.0 W/m^{2}K;

- Linear thermal transmittance (psi): 0.5 W/mK;
- 100% of all internal lighting to have dedicated low energy fittings;
- Air permeability of 4m^3/m^2hr @ 50Pa;
- Dual façade opening for controllable natural ventilation; and
- Heat, cooling and electricity meters to the Funeral Parlour as well as smart utility display energy meters in all dwellings.

6.9 The residential element of the proposed development will be designed to address the risk of overheating using passive design measures by the combination of window opening sizes, from doors, to smaller, horizontal, centre hung sashes. This will further enable the removal of trapped heat as the window design includes the ability to provide additional ventilation without cold draughts and purge ventilation to quickly remove pollutants.

6.10 All apartments have dual aspect external walls with windows to provide natural ventilation, which will help the dwellings ventilate in summer using the natural pressure differences between the façades. The window design will include a trickle vent which contributes towards balanced natural ventilation in winter and control room temperatures. Large sliding doors onto balconies and back doors on secure walk ways will allow residents to purge ventilate the dwellings, should this be required.

6.11 Windows will be designed to maximize the quality of daylight into the dwellings, and solar gain in winter months. BFRC window energy ratings will be considered during window procurement, which takes into account the thermal performance of glass, air tightness and solar control.

6.12 Living green/ brown biodiverse roofs have been specified on Site A within the proposed development, which will help regulate internal temperatures and promote natural cooling within the proposed development.

6.13 To meet the 'Be Lean' stage of the energy hierarchy, the following energy efficient building services are proposed for the Ferdinand Place development:

- Heating and domestic hot water– provided by high efficiency "A" rated gas condensing combination boilers with enhanced heating controls for both the non-residential and residential element. Underfloor heating will be provided for the Funeral Parlour;
- Cooling – dwellings will be naturally ventilated;

- Ventilation – mechanical ventilation for the Funeral Parlour and natural ventilation for the residential dwellings at Ferdinand Place; and
- Lighting- high levels natural daylight, and complimentary low energy lighting to provide a safe and secure space.

6.14 The main occupied rooms (Living Room and Bedroom) have large windows with good average day light factors. The living rooms typically achieve average daylight factors of 1.5%.

6.15 Passive design measures have been maximised within the proposed development. Passive design uses layout, fabric and form to reduce or remove mechanical cooling, heating, ventilation and lighting demand. The following passive design measures have been incorporated within the design of non-residential element of the proposed development, including the selection of the location of the occupied spaces to reduce the extent of mechanical ventilation, no cooling is proposed except in embalming room where process dictates this for a cooler environment and the use of low temperature hot water under floor heating system.

6.16 To meet the 'Be Clean' stage of the energy hierarchy, high efficiency "A" rated gas condensing combination boilers with enhanced heating controls have been proposed as they are generally more efficient than central larger communal boilers for developments with less than fifty dwellings, such as this development.

6.17 CHP or the use of a communal heating network has not been proposed as the installation of the CHP is not deemed cost-effective and is not feasible due to the space constraints the development of this size as additional plant room space would be required as well as the creation of an underground linking connection between the two buildings. Furthermore, the local area's air quality may be worsened as CHP systems have high level of NOx in the flue gasses.

6.18 A number of technologies have been investigated for the 'Be Green' stage of the energy hierarchy. 252m^2 of communal solar photovoltaics (PV) with 25.2 kW output are deemed the most appropriate technology and are proposed for the roof of the Proposed Development. The specification of PVs enables a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies in line with LB Camden's Core strategy CS13 and Section 3 of CPG 3.

6.19 The residential element of the proposed development at Ferdinand Place achieves approximately a 30% improvement over Building Regulations 2013 and therefore meets LB Camden's requirement for new residential development to attain a minimum 25% reduction in total (regulated) CO2 emissions in line with CSH energy standards.

6.20 Overall, the proposed development achieves 30% improvements to CO_2 as a result of low U-values, energy efficient lighting, and on-site renewable energy generation. Therefore, the 35% improvement in CO_2 over Building Regulations 2013 is not met for the development. The baseline Building Regulations 2013 CO_2 emissions has been calculated as 57 tonnes CO_2 for the proposed development site. To meet the 35% improvement target in CO_2 emissions, a saving of 19.95 tonnes CO_2 is required. After the implementation of the energy hierarchy, 17 tonnes of CO_2 emissions savings were determined. This equates to a shortfall of 2.95 tonnes CO_2.

6.21 LB Camden's CPG 3 Sustainability, states that where the London Plan carbon reduction target cannot be met on-site, Camden may accept the provision of measures elsewhere in the borough or a financial contribution which will be used to secure the delivery of carbon reduction measures elsewhere in the borough.

6.22 Camden as inner London Borough has set Carbon Levy at £90 per tonne which equates to £2,700 per tonne of carbon (30 years).

6.23 The carbon offset payment for the proposed development has been estimated to be £7,965.00.

7.0 TRANSPORT

Sustainability Objective:

To reduce road congestion and pollution levels by enabling walking, cycling and use of public transport, and reducing the need for travel by private car.

Relevant Policy: CS11, CP16, DP16, DP17, DP18, CPG 7

Context

7.1 Transport currently accounts for a quarter of the UK's carbon emissions. In order to meet the UK's ambitious target of an overall 80% cut in emissions by 2050, extensive decarbonisation of the transport sector will be essential. Ninety percent of all transport emissions are generated from road transport and whilst a considerable proportion of road transport emissions will be addressed through technical developments in car engines and greater use of biofuels, a significant move to greener consumer behaviour is also required.

7.2 Walking, cycling, and public transport, including buses and rail, are all alternative green travel options. Persuading and enabling people to use these alternative forms of transport is key in tackling the UK's transport issues; intrinsic to this is ensuring that new developments and key services are accessible.

7.3 The London Plan contains policies on Cycling (6.9) and Parking (6.13). These policies require that developments should: 'provide secure, integrated and accessible cycle parking facilities in line with minimum standards, provide on-site changing facilities and showers for cyclists and facilitate the use of London's Cycle Super Highways and cycle hire scheme'.

7.4 LB Camden Development Policy DP18 states that the council will seek development to comply with the Council's car parking and cycle parking standards, as set out in Appendix 2 of the Development Policies Document.

Delivery

Construction phase

7.5 Construction traffic and activities associated with the development will be carefully managed to mitigate impacts on the local road network. A Construction Method Statement / Plan for construction would be expected to include measures to deal with contractor vehicles, especially to avoid construction vehicles parking or waiting on the public highway; this is particularly important as the Site sits on a relatively narrow road surrounded by residential properties. Construction routes would be expected to be clearly designated and contractors instructed to use these routes.

7.6 The Site is located in an area with excellent accessibility to public transport. As a result it is anticipated that the majority of construction workers will travel to the Site by public transport and will be given detailed information on travel options.

Operational phase

7.7 Transport Planning Associates (hereinafter referred to as TPA) have been commissioned by the Client to prepare a Transport Statement (TS), analysing the proposals at Ferdinand Place, Camden, London.

7.8 The residential element of the proposed development has provision for no car parking as part of the car free concept for this development in line with LB Camden Development policy DP 18. This is supported by the very high accessibility to public transport facilities in the area, including Chalk Farm Underground Station and several bus routes on Chalk Farm Road. The Funeral Parlour on Site A will include a garage on the ground floor with a provision for 11 car parking spaces, which are required for its operational purposes. This is a reduction of car parking spaces in use for the existing Funeral Parlour at the site, where the garage capacity on site is of around eight vehicles and where six further vehicles park in the alleyway located at the south eastern corner of Ferdinand Place between the Funeral Parlour and its neighbouring unit to the west, in a gated parking area within the site, parked in two rows of three cars each, in tandem. The proposed development has removed the need for the tandem off street parking.

7.9 The residential element will incorporate a total of 26 cycle parking spaces. With 16 cycle parking spaces within the eastern block ground floor and 10 cycle parking spaces are proposed within the basement of the western block. This is accessible by lift. This exceeds LB Camden's cycle parking requirements for residential developments, where 1 cycle storage space is required per unit plus 1 visitor space for every ten dwellings,

for developments consisting of 20 dwellings or more. Non-residential element will be specified with a minimum four cycle spaces in line with BREEAM requirements.

7.10 The proposed development benefits from its close proximity to Chalk Farm underground station (Northern Line), which provides routes to the majority of the London area. The Ferdinand Place area is also well served for access to buses with six bus routes stopping at the Ferdinand Street bus stop, located within 150m from the site. Given the availability of transport links, the proposed development site scores an 'excellent' Public Transport Accessibility Level (PTAL) rating of 6a.

7.11 Servicing of the funeral parlours will happen wholly on site, and although it might be possible to enter and exit the garage in forward gear, this might not always be possible, depending on the number of vehicles within the garage. The change to the current highway capacity is negligible, with no additional traffic to the undertakers are being generated, and negligible vehicle traffic expected in association with the residential element.

8.0 MATERIALS

Sustainability Objective:

To reduce the global, social and environmental impact of the consumption of resources by using sustainably produced and local products.

Relevant Policy: DP22, CS13, CPG3

Context

8.1 The embodied energy of a building material can be taken as the total primary energy consumed (the amount of carbon released over its life cycle). Building materials have a vast environmental impact in terms of energy and resources in their production, use and disposal. Therefore, if environmentally responsive building materials are chosen, a significant amount of CO_2 can be saved during construction as well as during operation.

8.2 Section 8 of LB Camden's CPG3 gives guidance on the sustainability aspects of materials, stating the following:

'All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources.'

'Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.'

'In new-build and development projects with either 500sq m of any floorspace or more or 5 dwellings or more - should seek to achieve an area weighted average of A+ to B for the major building elements (roof, external walls, floor finishes, internal partitions and windows).'

Furthermore Section 9 of CPG 3 requires at least 40% of the un-weighted BREEAM credits in the BREEAM Materials section to be targeted.

Delivery

8.3 The proposed development will aim to meet the principles of sustainable material use as set out in planning policy and sustainable design criteria. Therefore, as appropriate, the materials specification and products considered for the proposed development will have the following characteristics, in line with LB Camden's Policy CS 13 and CPG 3:

- Low embodied energy;
- High recycled content;
- Locally extracted and manufactured materials;
- Accredited to a recognised environmental standard such as FSC;
- Refrigerants and insulants with a Global Warming Potential (GWP) of less than 5; and
- Paints and sealants with low or zero Volatile Organic Compounds (VOCs).

8.4 To ensure good practice, materials choice will be informed by The Green Guide to Materials Specification[13] (GGMS) which provides guidance regarding low embodied energy and other lifecycle environmental impacts during extraction or manufacturing. The GGMS is utilised throughout the detailed design and materials procurement stages to ensure that, where feasible, materials will be selected with an A+ to B Green Guide rating to comply with the guidance given in LB Camden's CPG3 guidance.

8.5 Over 57% of the un-weighted credits in the Materials section of the BREEAM assessment for the Funeral Parlour have been preliminarily targeted, exceeding the requirement within Section 9 of CPG 3 that at least 40% of the un-weighted BREEAM credits in the BREEAM Materials section to be targeted. This encourages developments to be sustainable through the choice of appropriate materials which will assist in minimising energy needs both during construction and occupation periods and by making efficient use of resources.

9.0 WASTE & SITE MANAGEMENT

Sustainability Objective:

To reduce waste generation and disposal through the facilitation of recycling and to use sustainable methods of construction.

Relevant Policy: CS13, CPG 3

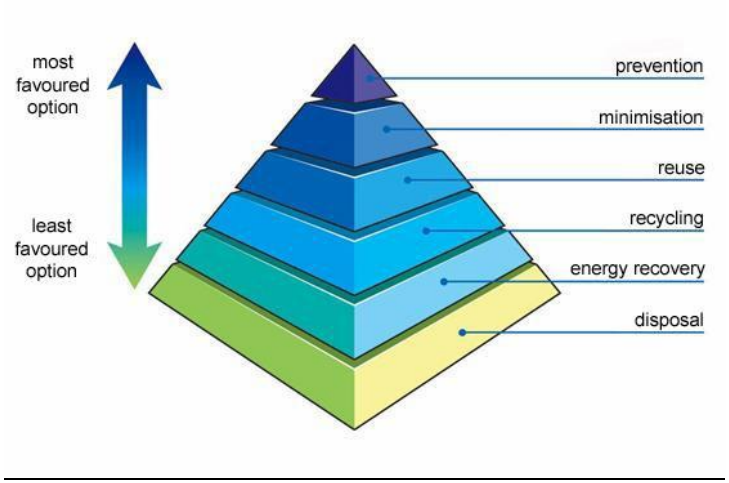
Context

9.1 All building activity is environmentally damaging. The key to sustainable design and construction is to minimise the impact the building has on the environment; good construction site practices are essential to minimise waste.

9.2 The UK faces major challenges to sustainable waste management - each year, it is estimated that we generate about 30 million tonnes of waste from households which equates to 9% of all waste. Of this, 81% is sent to landfill, 11% is recycled/composted and 8% is incinerated. About 30% of solid waste produced in the UK is construction waste, and 96% of all waste produced goes direct to landfill, creating risks of contamination from leaching of toxic materials and missing the opportunity to recover latent embodied energy and valuable materials for recycling.

9.3 The minimisation of waste and the increased use of recycled materials therefore form an intrinsic key to resource protection. The Waste Hierarchy, which is a framework for sustainable waste management setting out the preferential treatment of waste, is shown in Figure 9.1.

Figure 9.1 The Waste Hierarchy[14]



9.4 LB Camden requires that all major developments reduce waste by re-suing direct waste, and where this is not possible the waste hierarchy should be implemented. All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources. Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.

Delivery

Design and construction phase

9.5 The proposed development will aim to 'design out' waste through the consideration of materials specification and construction techniques (e.g. prefabricated elements, standard component specifications) in order to prevent and minimise waste generation, and make the construction stage more time efficient and cost effective.

9.6 The Principal Contractor will be required to adopt site waste management practices throughout the construction phase, including the development of a resource management plan, procedures for monitoring waste volumes, and identification of good practice waste management measures to maximise diversion of waste from landfill.

9.7 In addition, disposal sites and routes will be identified by the contractors and presented in a Site Waste Management Plan (SWMP) that will apply the principles of the Waste Hierarchy.

9.8 The SWMP will be produced to ensure procedures and commitments are put in place for the following:

- Monitoring of waste generated on-site;
- Setting of targets for minimising the amount of waste generated on-site; and
- Sorting, reuse and recycling of construction waste, either on-site or off-site through a licensed external contractor.

9.9 The Principal Contractor will be responsible for implementing the SWMP and priority will be given to the re-use of waste on-site or to ensure materials taken off-site are re-used elsewhere or recycled.

Operational phase

9.10 To encourage minimisation of waste, in accordance with good practice guidance, the proposed development will provide dedicated waste storage facilities for the management of recyclable and non-recyclable waste. Bins will be stored in dedicated waste storage areas at ground level and will accommodate all the required waste streams prescribed by the borough for collection for example, recyclable general waste, food waste, garden waste etc. This is then collected by the Local Authority.

10.0 WATER

Sustainability Objective:

To conserve water by promoting water efficiency, water recycling and Sustainable Drainage Systems (SuDS).

Relevant Policy: CS13, DP22, DP23, CPG 3

Context

10.1 Although England and Wales are considered to have a wet climate, high population density means that some parts of the country have less water available per person than Mediterranean countries; climate change will only add to these pressures. To ensure a sustainable water supply for the future, it is therefore vital that water is used more efficiently and methods of harnessing and reusing water are developed and implemented.

10.2 Furthermore, just as climate change seems likely to mean less water on average, it is also likely to mean more extreme weather events; therefore the issue of 'surface water' flooding is becoming more and more important. Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not proving to be sustainable. Use of Sustainable Drainage Systems (SuDS) is a cost effective solution to harnessing and reusing water with a low environmental impact which can easily be incorporated into developments; they drain away surface water run-off through collection, storage and cleaning before allowing it to be released slowly back into the environment.

10.3 London Plan Policy 5.15 (Water use and supplies) states that developments should aim to minimise the use of mains water by incorporating water saving measures and equipment.

10.4 LB Camden's DP23 requires developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site. Water efficient measures or sustainable urban drainage systems shoed be used to limit the amount and rate of run-off and waste water entering the combined storm water and sewer network.

10.5 LB Camden's CPG 3 stipulates that new residential development achieves a maximum internal water use of 105 litres per person/day, with an additional 5 litres person/day for external water use for water consumption.

10.6 CPG 3 requires that at least 60% of the un-weighted credits in the Water section for the BREEAM assessment are targeted, which is relevant to the Funeral Parlour at the proposed development.

Delivery

Water efficiency

10.7 In accordance with the LB Camden targets, the proposed development will seek to incorporate a water efficient design measure to achieve the water consumption benchmark of 105 litres per person, per day. The water efficiency measures considered for incorporation are expected to include water efficient sanitary ware and white goods, such as:

- WC: low capacity dual-flush toilets;
- Taps: low flow rate or aerating taps;
- Shower: low flow rate shower;
- Bath: low capacity bath; and
- White goods: water efficient washing machine/ dishwashers (where specified).

10.8 66.7% of the un-weighted BREEAM Water credits have been targeted for the Funeral Parlour, exceeding LB Camden's requirement of pursuing 60% of the un-weighted BREEAM Water credits.

Sustainable drainage

10.9 A Geotechnical Assessment has been undertaken for the site which confirms that the hard-standing impermeable areas of the development will not increase as a result of the proposed development on site. Therefore there is no change to the surface water flow rate as a result of the proposed development.

10.10 The surface water drainage strategy for the proposed development will include surface water attenuation/ Sustainable Urban Drainage (SuDS) measures such as green/brown roofs.

10.11 A preliminary assessment shows that the site has a low risk of flooding from all sources apart from surface water.

10.12 A Drainage Strategy Report, which covers flood risk from relevant sources, has been prepared by Stilwell Partnership.

10.13 It has been determined that the site is in Flood Zone Area 1, where this zone comprises of land assessed as having a 1 in 1000 or greater annual probability of river flooding. The Solid and Drift deposit geology of the local area suggests that the risk of groundwater flooding should typically be relatively low. However, groundwater flooding risks are often highly localised, and dependent upon geological interfaces between permeable and impermeable sub soils. Therefore, sustainable construction techniques for surfacing will minimise any potential groundwater risk. Flooding from sewers can occur because of different reasons; if sewers are blocked during the heavy rainfalls, or if sewer cannot provide adequate capacity, then flooding can cause a large amount of damage. There is no evidence of historic sewer flooding on the site. The Environment Agency provides mapping for risk of flooding from reservoirs which indicates the site is at no risk from a potential reservoir flood or breach.

10.14 A small level of risk from surface water flooding on site has been determined within the Drainage Strategy. The depth and extent of the flooding is minimal and can be mitigated with good sustainable drainage design.

10.15 Stilwell's assessment demonstrates that the proposed drainage measures ensure that no property will be at risk of flooding if the development proceeds.

10.16 The above flow rates demonstrate that the water infrastructure for both sites within Ferdinand Place has been designed to cope with a 1 in 100 year storm event in order to limit the flooding of, and damage to, property, including a consideration for increase in rainfall as a result of climate change.

10.17 The SUDS hierarchy has been used to ensure that surface water is managed as close as possible to its source. The Drainage report confirms that there is no potential for infiltration for the proposed development. The geotechnical information provided in the Drainage Report indicates that standard infiltration methods will not be suitable due to the site lying on London Clay and they recommend that any form of soakage into the ground should not be used.

10.18 As the proposed development is a new development with similar uses as the pre-development site, surface water drainage at the site will re-use existing drainage connections for rainwater pipe, subject to a site survey and maintenance of the drainage system. Therefore there is no requirement to restrict the surface water flows and no requirement for surface water attenuation. Furthermore, there is no increase in impermeable area as a result of the proposed development.

10.19 Furthermore, green/ brown biodiverse roofs have been proposed, which will support in reducing the pressure on drainage systems during heavy rainfall.

Construction phase

10.20 In the construction phase, the Principal Contractor will be required to monitor, report and set targets against water consumption during the construction. Targets will be identified by the Principal Contractor, and informed by the Constructing Excellence Key Performance Indicators.

11.0 POLLUTION

Sustainability Objective:

To reduce inequalities in the health of the population by improving air quality, and preventing noise and light pollution.

Policy: CS16, CPG 2, CPG 3, CPG 6

Context

11.1 There are many forms of environmental pollution arising from building operation, including noise, odours, air, light, and vibration. A significant proportion of pollution is airborne and is the direct result of: fumes, combustion of materials, chemicals used in industrial processes, or polluted air from ventilation systems and air conditioning plants. Some pollutants can also escape to soil and groundwater courses. Internal noise and disturbance to neighbours are also important considerations; and light spill from external lighting can sometimes be an annoyance and aggravation to neighbours.

11.2 To reduce the depletion of the earth's ozone layer, chlorofluorocarbons (CFCs) are banned under the international 'Montreal Protocol' and hydrochlorofluorocarbons (HCFCs) are being phased out. However, these have often been replaced with hydrofluorocarbons (HFCs), which have an Ozone Depleting Potential (ODP) of zero but have a high potential to contribute to global warming and the greenhouse effect. The measure of a substance's Global Warming Potential (GWP) is relative to 1 unit of CO_2. Some HFCs have a GWP in excess of 4,000.

11.3 Many substances used in the built environment also contain Volatile Organic Compounds (VOCs). Methane VOCs contain greenhouse gases that contribute towards climate change and non-methane VOCs also have an environmental impact principally related to the formation of ground level ozone or 'smog' that can lead to respiratory problems. In addition, some aromatic compounds (non-methane VOCs) are toxic to human health, considered carcinogens, and are thought to be associated with 'sick building syndrome'.

Delivery

11.4 The proposed development has committed to ensuring any potential forms of pollution associated with materials specification are minimised, in particular, including minimising the environmental impacts associated with the release of air pollutants. This commitment is likely to include ensuring all insulation used within the development will have a low GWP.

11.5 The project will aim to use of environmentally sensitive building non-toxic) materials and avoiding the use of materials or products that produce VOC (volatile organic compounds and formaldehyde) which can affect human health.

11.6 To reduce night time light pollution and energy usage, all external space lighting and security light fittings will have energy efficient bulbs/lamps and control systems which will enable them to be altered as appropriate.

11.7 Air quality of the site has been assessed within the Energy Statement. The annual mean nitrogen dioxide levels for the site has been determined to be below 40 µg/m3 which is below the nitrogen dioxide thresholds set within 2010 Air Quality Regulations.

11.8 However the annual mean PM10 level is above the 20 µg/m3 threshold set within the Air Quality Regulations 2010, the design should therefore consider a whole house mechanical ventilation system with a suitable G4 filter to enable cleaner air be provided for the residential dwellings at the proposed development. As previous stated the recommended domestic combination boilers are designed to have extremely low NOx emissions due to the latest premix burner technology which combine the gas and air in the correct ratio for a clean burn.

Construction

11.9 The proposed development will implement best practice construction management methods in executing the construction works so as to avoid or reduce impacts associated with waste, poor air and water quality, as well as noise and vibration, as far as practicable. In addition, the Principal Contractor will likely be required to achieve a score significantly beyond best practice under the Considerate Constructor's Scheme (CCS) to ensure considerate management of the construction site and good waste management practices are integral to the process.

11.10 A Noise Impact Assessment has been undertaken for the site to establish the existing noise level around the buildings and to assess the noise level that exist against the recommended external noise levels within Planning Policy document PPG24 and local planning requirements. Limiting noise levels for any proposed new mechanical plant that is to be installed have also been set.

11.11 LB Camden require new plant to be design to be 5dBA below the minimum existing background noise level during the relevant operational period. It is proposed that this requirement will be met. The plant including external air cooled condensers and ventilation equipment is proposed to be located on the roof of the proposed development and these items may need attenuation to achieve the recommended design rating noise level.

12.0 ECOLOGY & BIODIVERSITY

Sustainability Objective:

To conserve and enhance the biodiversity of the region by conserving and enhancing areas valued for their diversity of wildlife, habitats, and landscape value.

Policy: DP22, CPG3

Context

12.1 Biodiversity is the variability among living organisms within an ecosystem; a highly diverse ecosystem is an indicator of a healthy and thriving natural environment. Since we rely so heavily upon the natural environment it is in our best interest, and in the interest of future generations, to protect and enhance the biodiversity that surrounds us.

12.2 The UK has seen a dramatic loss in biodiversity and ecosystem integrity especially through the latter half of the twentieth century, therefore, the protection and enhancement of biodiversity is a key component throughout the development process.

12.3 The London Plan sets out through *Policy 7.19 'Biodiversity and Access to Nature'* that development proposals should wherever possible, make a positive contribution to the protection, promotion and management of biodiversity and prioritise assisting in achieving targets in the Mayor's Biodiversity Strategy. Further policies include:

- Policy 5.10 Urban greening - Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm, including elements such as tree planting, green roofs and walls, and soft landscaping;
- Policy 5.11 Green roofs and development site environs - Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible; and
- Policy 7.21 Trees and woodlands - Existing trees should be retained wherever possible and any loss as the result of development should be replaced following the principle of 'right place, right tree'.

12.4 LB Camden's DP22 states that all proposals should incorporate brown roofs, green roofs and green walls unless this is not feasible.

Delivery

12.5 Greengage have carried out a Preliminary Ecological Appraisal of the application site. The ecologist has confirmed that the site consists of no existing habitats and thus the site is considered to be of low ecological value.

12.6 The potential for all protected species to be on-site was considered negligible or low and roosting bats were confirmed to be absent from the site. There are therefore no ecological constraints over development other than a requirement to avoid impacting nesting birds during clearance on site.

12.7 Green/brown living biodiverse roofs are proposed to be incorporated within the development at Ferdinand Place, specifically at Site A. The ecologist recommends extensive green/brown roofs are utilised for the development as they are drought tolerant and only require a shallow substrate. Additionally, sedums provide habitat for a number of invertebrates including spider and beetle species of national importance.

12.8 Furthermore, bat boxes are recommended to be incorporated into the development to increase roosting opportunities for bats in the area. Bat boxes should be positioned in sunny locations mainly to the south or west façade.

Construction

12.9 In the construction phase mitigation measures shall be implemented through a construction environmental management plan to ensure appropriate measures are implemented as necessary, to avoid adverse impact on any flora and fauna within the construction zone.

13.0 WELLBEING

Sustainability Objective:

To create and sustain vibrant communities, addressing a deficiency in the provision of services to the local community and recognising the needs of everyone.

Policy: CS16, CPG2, CPG3, CPG6

Context

13.1 Wellbeing differentiates itself from considerations such as standard of living by not focussing solely on economic factors; rather, it is closer in definition to quality-of-life and so takes a more holistic approach. As such, promoting well-being focuses on enabling communities and individuals to live healthy, happy lives. This includes ensuring that individuals have good access to housing, health care, education, open space and commercial opportunities but also that their pursuit of these is not at the detriment of the wellbeing of the wider community. In this sense, wellbeing embodies true sustainability in all its three facets: environmental, economic, and social.

13.2 LB Camden's policy CS16 states that the impact of poor air quality on health should be considered and implement Camden's Air Quality Action Plan which aims to reduce air pollution levels. The Council has declared the whole borough an Air Quality Management Area (AQMA) for failing to meet the government's health based air quality objectives for nitrogen dioxide and particulate matter.

13.3 CPG 2 stipulates that new proposals should provide high quality housing that provides secure, well-lit accommodation that has well-designed layouts and rooms.

13.4 Residential developments should maximise sunlight and daylight, both within the new development and to neighbouring properties whilst minimising overshadowing or blocking of light to adjoining properties. Maximising sunlight and daylight also helps to make a building energy efficient by reducing the need for electric light and meeting some of the heating requirements through solar gain. The orientation of buildings can maximise passive solar gain to keep buildings warm in winter and cool in summer.

13.5 All habitable rooms should have access to natural daylight. Windows in rooms should be designed to take advantage of natural sunlight, safety and security, visual interest and ventilation.

13.6 The layout and placement of rooms within the building should be carefully considered at an early stage in the design process to limit the impact of external noise on bedrooms and living rooms.

13.7 Where practical, all new dwellings should provide access to some form of private outdoor amenity space in line with CPG 2.

13.8 10% of market housing development should meet wheelchair housing standards, or should meet the 13 key Habinteg wheelchair housing criteria so that they can be easily adapted to meet wheelchair housing standards.

13.9 LB Camden requires that homes of all tenures should meet lifetime homes standards in accordance with Development Policy DP6 and the CPG on Lifetime homes and wheelchair housing.

13.10 Well designed, accessible buildings and spaces ensure that local services and facilities are accessible to everyone and increase equality of opportunity and social inclusion. LB Camden seek to ensure the highest standards of access and inclusion in Camden's built environment and public realm.

Delivery

13.11 The proposed development is considered to be consistent with the local area context which has a wide range of residential building styles.

Design

13.12 The proposed development has been designed in order to maximise the wellbeing benefits to occupants, without detriment to the surrounding buildings and users. The following features will be considered:

- Design to minimise the concentration and recirculation of pollutants in the building, including specifying use of no or low VOC content products; and
- Heating, cooling and ventilation systems/strategies designed for occupant control and comfort, specified in accordance with the outcomes from energy modelling which account for the potential for overheating.

13.13 Air quality of the site has been assessed within the Energy Statement. The annual mean nitrogen dioxide levels for the site has been determined to be below 40 µg/m3 which is below the nitrogen dioxide thresholds set within 2010 Air Quality Regulations.

13.14 However the annual mean PM10 level is above the 20 µg/m3 threshold set within the Air Quality Regulations 2010, the design should therefore consider a whole house mechanical ventilation system with a suitable G4 filter to enable cleaner air be provided for the residential dwellings at the proposed development. As previous stated the recommended domestic combination boilers are designed to have extremely low NOx emissions due to the latest premix burner technology which combine the gas and air in the correct ratio for a clean burn.

13.15 The Funeral Parlour at the proposed development will consider following Secured By Design[15] principles to ensure that measures are designed into the building for safety, security and mitigation of potential for crime and anti-social behaviour.

13.16 The lighting designers will consult with the 'secure by design' officer, to provide a variety of light levels during the night to avoid light pollution through bedroom windows.

13.17 The Design and Access Statement produced by CSA, the architects for this proposed development, confirms that 10% of new homes will be designed as wheelchair dwellings and all will be accessible and adaptable dwellings. In line with LB Camden's Development Policy DP6 all dwellings will meet lifetime homes standards. Furthermore, all new homes will benefit from the quiet and attractive streetscape and excellent connections and vibrant neighbourhood of Ferdinand Place.

13.18 GVA Schatunowski Brooks have prepared a Daylight and Sunlight assessment for this proposed development, which considers the potential effects to existing daylight and sunlight amenity enjoyed by neighbours adjacent to the proposed development, as well as provision of natural light amenity within the proposed habitable rooms.

13.19 The resultant sunlight and daylight levels that can be obtained at neighbouring properties is considered overall acceptable.

13.20 A preliminary daylight impact assessment was undertaken for the proposed development at Ferdinand Place for a sample of dwellings. These indicated the proposed Living Kitchen Dining (LKD) rooms would generally achieve the standard recommendations set out in the BRE guidance in respect of the target of 1.5% average daylight factor (ADF) for living areas. Several would achieve the higher recommendation of at least 2%ADF for kitchen use. These rooms would achieve an adequate no sky line coverage for an urban environment, ranging between 42.05% and 96.57% of the LKD room areas. Furthermore, the vast majority of south facing LKDs are deemed to have good sunlight amenity for an urban environment, achieving the BRE recommendations.

13.21 They confirm that the proposed development is considered to be compliant with London Borough of Camden planning policy on Daylight and Sunlight given it is consistent with the BRE guidance and having regard for immediate context.

13.22 The development of Ferdinand Place has been designed to improve the urban morphology, visual amenity and security of the immediate neighbourhood. Through extensive considered design and enhanced streetscape an enhanced and higher quality of urban architectural design has been established.

Construction phase

13.23 As highlighted within the Pollution chapter, the proposed development is likely to commit to achieving Considerate Constructors Scheme certification meaning the site will be following best practice measures in regards to appearance, community engagement, environmental consideration, safety measures and workforce wellbeing throughout the construction phase.

14.0 ADAPTING TO CLIMATE CHANGE

Sustainability Objective:

To create developments to be adaptable to future weather conditions.

Policy: CS13, DP22, CPG3

Context

14.1 The changing climate is likely to mean we will experience warmer, wetter winters with more intense rainfall and local flooding events. It will also bring about hotter drier summers which will also increase the demand for our open space, water and the use of electricity for mechanical cooling e.g. air conditioning. Adaptation recognises both risks and opportunities arising from climate change and the need to plan for them now.

14.2 Policy CS13 expects developments to be designed to consider the anticipated changes to the climate, especially developments vulnerable to heat and in those locations susceptible to surface water flooding.

14.3 Policy DP22 requires development to be resilient to climate change by ensuring schemes include appropriate adaptation measures.

Delivery

14.4 A preliminary daylight impact assessment was undertaken for the proposed development at Ferdinand Place for a sample of dwellings. These indicated the proposed Living Kitchen Dining (LKD) rooms would generally achieve at least the standard recommendations set out in the BRE guidance in respect of the target of 1.5% average daylight factor (ADF) for living areas. Therefore it is felt that adequate levels of glazing have been incorporated into the proposed development to facilitate natural daylighting but prevent excessive overheating.

14.5 The massing has been developed in conjunction with daylight analysis to establish an envelope which is not detrimental to surrounding properties, to strive to reduce excessive solar gain and facilitate natural ventilation and support the development is adapting to warmer temperatures.

14.6 The residential element of the proposed development has been designed to use a natural ventilation strategy, providing fresh air to residents and minimising the effect of plant equipment that both consumes energy and expels hot air increasing the local outdoor air temperature.

14.7 The non-residential element is endeavouring to use the thermal mass of the new development, where possible, as a 'free cooling' system to absorb heat during hot periods and dissipate it in cooler periods.

14.8 Building fabric with low 'u' values where possible have been considered for the proposed development. Section 6 of this report details the passive and fabric energy efficiency measures that have been incorporated within the design to prevent penetration of heat.

14.9 Dual facade opening for controllable natural ventilation has been proposed for the residential development at Ferdinand Place. This prevents the use of plant equipment which expels hot air and can lead to increasing the outdoor air temperature.

14.10 Green/ brown biodiverse roofs have been proposed, which will reduce the pressure on drainage systems during heavy rainfall.

14.11 The design team will aim to select drought resistant or low water use plants within the biodiverse roofs, to encourage the reduction of water demands associated with landscape.

14.12 In accordance with the LB Camden targets, the proposed development will seek to incorporate a water efficient design measure to achieve the water consumption benchmark of 105 litres per person, per day. The water efficiency measures considered for incorporation are expected to include water efficient sanitary ware and white goods, such as:

- WC: low capacity dual-flush toilets;
- Taps: low flow rate or aerating taps;
- Shower: low flow rate shower;
- Bath: low capacity bath; and
- White goods: water efficient washing machine/ dishwashers (where specified).

14.13 66.7% of the un-weighted BREEAM Water credits have been targeted for the Funeral Parlour, exceeding LB Camden's requirement of pursuing 60% of the un-weighted BREEAM Water credits.

15.0 SUMMARY

15.1 This Sustainability Statement shows that the development proposals are meeting key policy objectives, responding to local needs and requirements, and conforming to best practice sustainability criteria applicable to this development.

15.2 The proposed development satisfies policy objectives by optimising sustainability through the incorporation of best practice design, construction and operation measures. Some of key features highlighted in this sustainability statement include:

- Commitment to building design in accordance with the principles of the energy hierarchy and best practice in sustainable design;
- Meeting target of 20% on site reductions in CO2 as a result of specification of renewable technologies (PVs);
- Incorporation of sustainable transport measures, such as cycle storage facilities to ensure residents and staff can make use of the existing transport network;
- The application of materials efficiency, waste hierarchy, life cycle environmental impact and responsible sourcing principles in the design, specification and construction process for the proposed development;
- Incorporation of water efficiency measures in design to meet the target of reducing consumption to 105 litres per person, per day;
- Achieving good sunlight amenity for an urban environment minimising the impacts of daylight/sunlight on neighbours as a result of the proposed development;
- Commitment to ensuring all forms of pollution are minimised in design and construction; and
- Commitment to positively enhancing the site biodiversity through the incorporation ecological enhancement measures, such as green/ brown biodiverse roofs and bat boxes.

END

16.0 REFERENCES

[1] Greater London Authority, (2011 & alterations), The London Plan.

[2] London Borough of Camden, (2010), Core Strategy

[3] London Borough of Camden, (2010), Development Policies

[4] DCLG, (2012); National Planning Policy Framework. DCLG.

[5] Department for Environment, Food and Rural Affairs (DEFRA), (2005); One future – different paths. DEFRA Publications

[6] Department for Trade and Industry, (2007); Meeting the Challenge - A White Paper on Energy. TSO.

[7] Department of Energy & Climate Change, (2011); Planning our electric future. TSO

[8] Great Britain. Climate Change Act 2008: Elizabeth II. (2008) London, The Stationery Office

[9] GLA, (2014); Energy Planning – GLA Guidance on preparing energy assessments (April 2014). GLA.

[10] Camden Council, (2010), Core Strategy

[11] Camden Council, (2010), Camden Development Policies 2010-2025, Local Development Framework

[12] https://www.gov.uk/government/speeches/planning-update-march-2015

[13] BRE, (2008); The Green Guide to Materials Specification. BRE. http://www.thegreenguide.org.uk/login.jsp

[14] IGD, (2007), Energy Recovery and Disposal. Available (online): http://www.igd.com/Research/Sustainability/Packaging-waste/3517/Energy-Recovery-and-Disposal/ [Accessed: 06/05/2015]

[15] http://www.securedbydesign.com/