HODKINSON

Sustainability Statement

Designated Contractors Ltd

17, 25 & 27 Ferdinand Street

Final

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ABOUT HODKINSON CONSULTANCY

Our team of technical specialists offer advanced levels of expertise and experience to our clients. We have a wide experience of the construction and development industry and tailor teams to suit each individual project.

We are able to advise at all stages of projects from planning applications to handover.

Our emphasis is to provide innovative and cost effective solutions that respond to increasing demands for quality and construction efficiency.

Executive Summary

The purpose of this Sustainability Statement is to demonstrate that the proposed development at 17, 25 & 27 Ferdinand Street by Designated Contractors Ltd in the London Borough of Camden is considered sustainable, as measured against relevant local, regional and national planning policies.

The proposed development comprises the erection of additional 4th and 5th floors, 5 storey extension to courtyard (west) elevation, single storey extension to east elevation at 17 and 27 Ferdinand Street and redevelopment of 25 Ferdinand Street to create a 5 storey building to provide 10 additional residential units (19 units in total including 9 in situ) and 103m^2 Class B1a office floorspace.

The key sustainability features outlined in this Sustainability Statement are listed below:

- **BREEAM:** All proposed new dwellings in the converted parts of the existing building will be designed and built to achieve a BREEAM 'Excellent' rating under the Domestic Refurbishment 2014 scheme.
- **Energy efficiency:** The development will target a 49.5% reduction in Regulated CO_2 emissions compared to the existing building's CO_2 baseline through energy efficiency measures.
- **Water efficiency:** Flow control devices and water efficient fixtures and fittings will be installed in all dwellings to target a maximum internal daily water consumption of 105 litres/person/day.
- **Waste and recycling:** Adequate facilities will be provided for domestic and construction related waste, including segregated bins for refuse and recycling.
- **Materials:** Where practical, new building materials will be sourced locally to reduce transportation pollution and support the local economy. New materials will be selected based on their environmental impact and responsible suppliers will be used where possible.
- **Pollution:** Noise, vibration, air quality and dust impacts arising from the demolition and construction processes will be monitored and mitigated.
- **Flood Risk and SUDs:** The proposed development site lies in a low flood risk zone and will benefit from a green roof.
- **Security:** Consultation with a Security Specialist will take place to ensure the development is safe and secure for its residents.
- **Sound insulation:** The dwellings are to target an improvement on Building Regulations Part E through party walls and floors.
- **Inclusive access:** 90% of the new dwellings will be designed to meet Building Regulations Approved Document M4(2) and 10% will meet Part M4(3).

- **Sustainable transport:** The site will benefit from a good existing public transport network and sustainable modes will be encouraged through the provision of 17no. cycle storage spaces.
- **Biodiversity and ecology:** Enhancements will be implemented through the provision of a green roof.
- **Sustainable construction:** The site will aim to achieve a 'Beyond Best Practice' score with the Considerate Constructors Scheme and will closely monitor construction site impacts.
- **Home/Building Information and Aftercare:** Home User Guides will be provided to the residents and will include information on energy and water efficiency, public transport and local amenities.

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1. INTRODUCTION

1.1 This Sustainability Statement has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development, appointed by Designated Contractors Ltd.

1.2 This Statement sets out the sustainable design and construction measures included in the planning application for the proposed development at 17, 25 & 27 Ferdinand in the London Borough of Camden.

Sustainability Statement Structure and Methodology

1.3 The formulation of the Sustainability Strategy for the proposed development has taken into account several important objectives, including:

> To achieve a viable reduction in CO_2 emissions with an affordable, deliverable and technically appropriate strategy;

> To address all national, regional and local planning policies and requirements;

> To provide a high quality development that is adaptable to future changes in climate;

> To minimise the negative impact of the proposed development on both the local and wider climate and environment;

> To achieve the highest viable levels of sustainable design and construction;

> To minimise emissions of pollutants such as oxides of nitrogen and particulate matter; and

> To create a pleasant, safe and friendly working and living environment that will be flexible to its occupants' needs.

1.4 This Sustainability Statement does not duplicate the work of the technical reports prepared in support of the application but presents the findings in the overall context of sustainability.

1.5 **Chapter 2** provides an introduction to the site and the proposed development.

1.6 **Chapter 3** sets out the relevant national, regional and local policy documents which have been used to guide and inform the sustainability strategy for the proposed development.

1.7 **Chapters 4 to 15** outline the sustainability strategy of the proposed development in relation to the policy documents listed in Chapter 3.

1.8 **Chapter 16** provides a summary of the key sustainability features associated with the proposed development.

2. DEVELOPMENT OVERVIEW

Site Location

2.1 The development site at 17, 25 & 27 Ferdinand Street in the London Borough of Camden is located between Chalk Farm Road, Ferdinand Street, and Mead Close, as shown in Figure 1 below. The current building is used for a range of commercial units and 9 existing dwellings. The proposed scheme comprises the erection of additional 4th and 5th floors, 5 storey extension to courtyard (west) elevation, single storey extension to east elevation at 17 and 27 Ferdinand Street and redevelopment of 25 Ferdinand Street to create a 5 storey building to provide 10 additional residential units (19 units in total including 9 in situ) and 103m^2 Class B1a office floorspace.

Figure 1: Site Location – Map data © 2018 Google

Proposed Development

2.2 The Proposed Development is described as follows:

"Variation of condition 2 (approved plans) of planning permission 2015/0925/P dated 27/11/2015 for the 'Erection of additional 4th and 5th floors, 5 storey extension to courtyard (west) elevation, single storey extension to east elevation all at 17 and 27 Ferdinand Street and redevelopment of 25 Ferdinand Street to create 5 storey building to provide 10 additional residential units (9 units already in situ) and Class B1a office floorspace', namely to extend the approved single storey east elevation extension to 5 storeys."

2.3 The Proposed Second Floor Plan is shown in Figure 2 below.

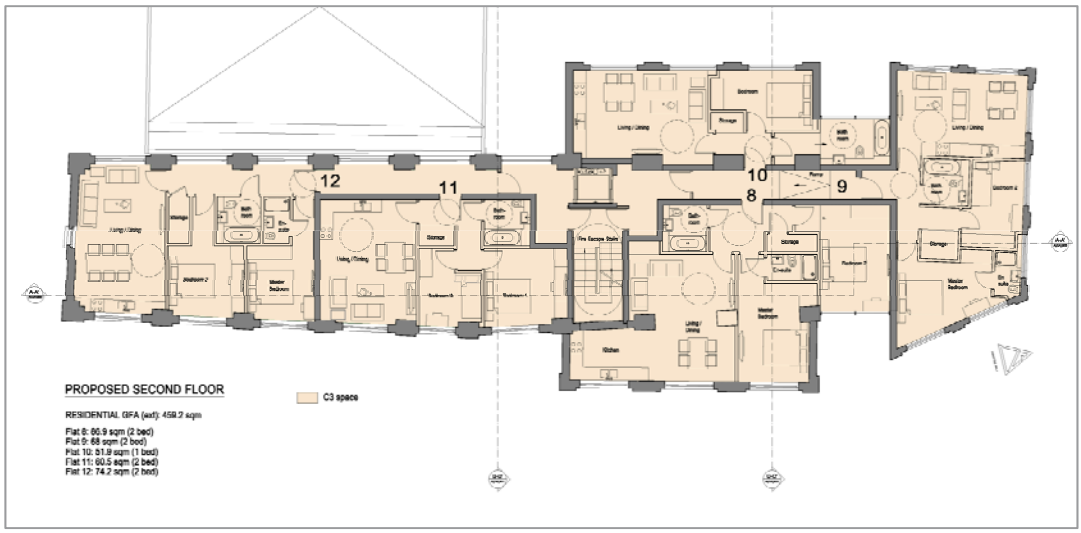

Figure 2: Proposed Second Floor - 2019 (Contemporary Design Solutions)

3. RELEVANT PLANNING POLICY

3.1 The following planning policies and requirements have informed the sustainable design of the proposed development.

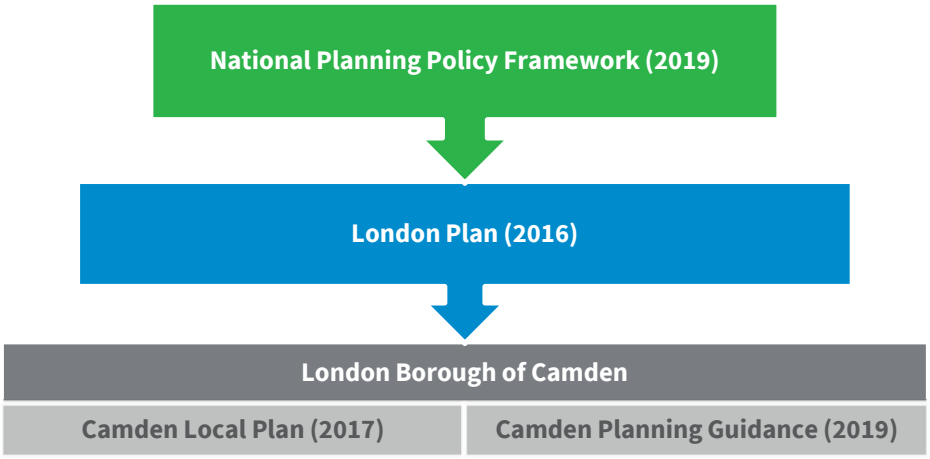

Figure 3: Relevant Planning Policy Documents

National Policy: NPPF

3.2 The revised National Planning Policy Framework (NPPF) was published on the 19th February 2019 and sets out the Government's planning policies for England.

3.3 The NPPF provides a framework for achieving sustainable development, which has been summarised as "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*" (Resolution 42/187 of the United National General Assembly). At the heart of the framework is a **presumption in favour of sustainable development**.

3.4 The document states that the planning system has three overarching objectives which are interdependent and need to be pursued in mutually supportive ways:

a) **An economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

b) **A social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with

accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

c) **An environmental objective** – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Regional Policy: The London Plan

3.5 The draft London Plan showing Minor Suggested Changes (published on 13th August 2018) has recently been considered by a formal Examination in Public. It is now with the Panel of Inspectors to report the findings and provide any recommendations, with the final published New London Plan expected in early 2020. Once adopted, it will inform decisions on London's development between 2019 and 2041.

3.6 The existing London Plan sets out an integrated economic, environmental, transport and social framework for the development of London. The following policies are considered relevant to the proposed development and this Statement:

3.7 **Policy 5.3 – Sustainable Design and Construction** states that 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.

3.8 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.

3.9 Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in the London Plan and the following sustainable design principles:

a) Minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)

b) Avoiding internal overheating and contributing to the urban heat island effect

c) Efficient use of natural resources (including water), including making the most of natural systems both within and around buildings

d) Minimising pollution (including noise, air and urban runoff)

e) Minimising the generation of waste and maximising reuse or recycling

f) Avoiding impacts from natural hazards (including flooding)

g) Ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions

h) Securing sustainable procurement of materials, using local supplies where feasible, and

i) Promoting and protecting biodiversity and green infrastructure.

3.10 **Policy 5.11 – Green Roofs and Development Site Environs** requires major development proposals to include roof, wall and site planting, especially green roofs and walls where feasible.

3.11 **Policy 5.15 – Water Use and Supplies** requires that development should minimise the use of mains water by incorporating water saving measures and equipment and that residential development is designed so that mains water consumption meets a target of 105 litres/person/day or less.

Local Policy: London Borough of Camden

Camden Local Plan 2016-2031

3.12 The London Borough of Camden's Local Plan document was adopted in 2017. The following policies are considered relevant to this Statement:

3.13 **Policy CC1: Climate Change Mitigation** – Promotes Zero Carbon though use of the Energy Hierarchy and encourages the highest financially feasible environmental standards (during construction and occupation). The energy strategy should first optimise resource efficiency, then assess decentralised energy networks, and monitor any low carbon generation.

3.14 **Policy CC2: Adapting to Climate Change** – Requires incorporation of green infrastructure and bio-diverse roofs, and measures to reduce the impact of urban and dwelling overheating including application of the cooling hierarchy which aims to reduce the need for active cooling. Conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings should achieve an 'Excellent' rating under the BREEAM Domestic Refurbishment scheme.

3.15 **Policy CC3: Water and Flooding** – Requires new development to incorporate water efficiency measures and ensure that vulnerable development is not located in flood-prone areas.

3.16 **Policy CC5: Waste –** Requires development to include facilities for the storage and collection of waste and recycling.

3.17 **Policy T1: Prioritising Walking, Cycling and Public Transport –** Promotes sustainable transport by prioritising walking, cycling and public transport.

Camden Planning Guidance: Energy Efficiency and Adaptation (2019)

3.18 The guidance was adopted 15th March 2019 and provides key messages (not policy) that should be considered. These include:

> Developers should consider the environmental impact of the materials used within development;

> All developments of 500 sqm or more should address sustainable design and construction measures;

> All developments should seek opportunities to make a positive contribution to green space provision or greening.

4. BREEAM SUMMARY

4.1 In accordance with Policy CC2 of Camden's Local Plan, all proposed new dwellings in the converted parts of the existing building will be assessed under the BREEAM Domestic Refurbishment 2014 assessment with a target of achieving the required 'Excellent' rating.

4.2 A full BREEAM Pre-Assessment has been presented in **Appendix A** and provides an illustrative route to achieving the 'Excellent' rating. The predicted score at this stage is 72.14%, where a 'Very Good' score is ≥55% and an 'Excellent' score is ≥70%. This represents a high level of sustainable design and construction.

4.3 Whilst this has been determined as the most appropriate route to certification, the actual route to certification may vary as the detailed design progresses.

4.4 The principles and requirements of many of the individual credits feature throughout this Sustainability Statement, where appropriate, however the mandatory credits for BREEAM 'Excellent' are listed as follows:

> **Ene 02: Energy Efficiency Rating Post Refurbishment –** A minimum of 2.5 credits to be achieved, requiring an improvement in energy efficiency as a result of the refurbishment.

> **Wat 01: Internal Water Use –** Two credits to be achieved, as a result of water efficiency measures reducing internal water use to less than 118 litres/person/day.

> **Hea 05: Ventilation –** One credit is to be achieved, to bring the dwellings up to minimum ventilation requirements.

> **Pol 03: Flooding –** A flood risk assessment is to be carried out to demonstrate that the dwellings have a low annual probability of flooding.

> **Mat 01: Environmental Impact of Materials –** Any new materials must be assessed against the BRE's Green Guide to Specification.

5. ENERGY AND CO_2 REDUCTION

Energy Strategy

5.1 An Energy Statement has been prepared by Hodkinson Consultancy and is submitted as part of this planning application. A summary of this statement has been outlined as follows however this document should be referred to for greater detail.

5.2 The energy strategy has been formulated following The London Plan Energy Hierarchy: ***Be Lean***, ***Be Clean*** and ***Be Green***. The overriding objective in the formulation of the strategy is to maximise the reductions in Regulated CO_2 emissions through the application of this Hierarchy with a cost-effective, viable and technically appropriate approach.

5.3 The development will be registered to Approved Document (AD) Part L1B (dwellings) and AD Part L2B (office). Conversions (and change of use) require special attention to ensure a holistic approach to energy reductions includes other considerations such as moisture management, ventilation, and traditional look. However, significant CO_2 reduction can be achieved with through-through performance uplifts benefiting the development.

5.4 A range of advanced ***Be Lean*** energy efficiency measures are proposed including upgrading all thermal elements in the conversion and for the new builds; low U-values psi-values (and thermal bridge).

5.5 The ***Be Lean*** measures enable the development to meet the energy efficiency requirements of AD Part L1B and L2B (2013). Improving existing thermal elements in the conversion, reducing air leakiness, and selective high performing materials for new thermal elements all assist in the conversions to exceed the original buildings CO_2 baseline by **49.5%**.

5.6 Target Emissions Rate (TER) and Target Fabric Energy Efficiency (TFEE) have been taken from energy assessments based on the pre-developed building specification. In this manner we can state the improvement upon the existing building in terms of Regulated CO_2 emissions end fabric energy efficiency.

5.7 This represents a good level of sustainable design and construction and indicates the Applicant's commitment to reducing energy demands across the site.

Ventilation

5.8 Natural ventilation with intermittent extract fans (system 1) is proposed allowing simple solution to ventilate the dwelling and remove stale or humid air from the kitchen and wet rooms.

5.9 All homes will have openable windows and therefore the ability to increase ventilation should the occupant desire. This will facilitate convective ventilation and night purging of heat, as illustrated in Figure 4.

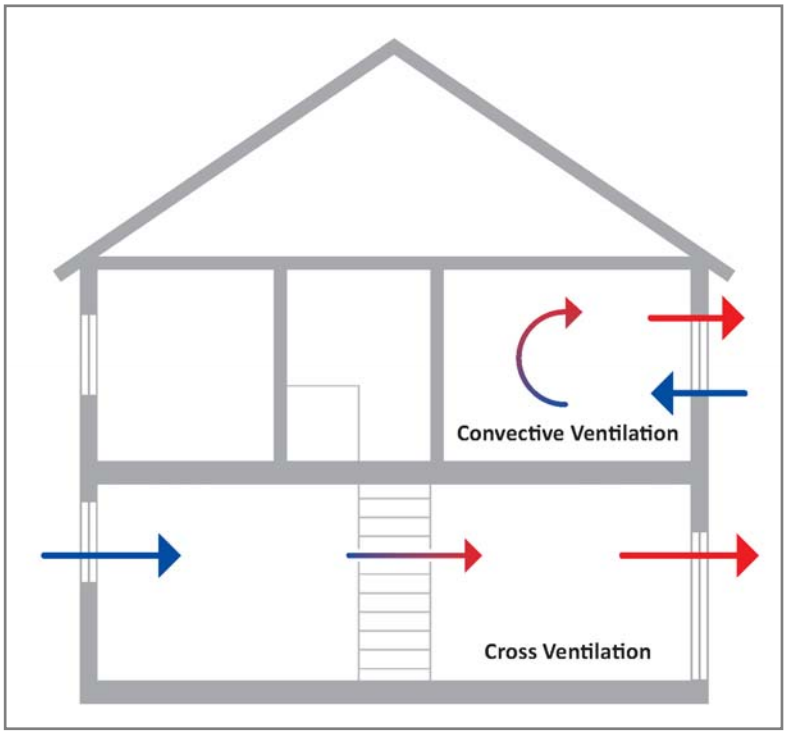

Figure 4: Natural Ventilation

5.10 In order to minimise ventilate heat losses, uncontrolled ventilation will be reduced through targeting a low air permeability (building leakage) figure of 6m3/hr/m2. This has been used in the Energy Statement calculations.

5.11 Consideration to air tightness membranes, detailing, and suitable construction skills will be required to ensure the target air permeability will be achieved when air tested upon completion.

Lighting

5.12 All external lighting, and any security lighting, will be energy efficient and adequately controlled using PIR sensors, daylight cut-off sensors or time switches where possible. This will ensure the conservation of energy when the lighting is not in use.

Appliances

5.13 The EU Labelling Scheme shows how appliances are rated according to their energy consumption. Due to improved energy efficiency in many new products, more appliances achieve A+, A++ and A+++. In January 2019, it was announced that A+ to A+++ will be phased-out over the coming years and the new grading system will revert back to A to G ratings. This should make it easier for consumers to understand how appliances compare against each other.

5.14 The choice of energy efficient appliances and the effective use of them will not only reduce unregulated CO_2 emissions but will save occupants money. Where provided, white goods will aim to be energy efficient with at least a B rating.

5.15 The purchasing of energy efficient white goods will also be promoted through the provision of information on the EU Labelling Scheme contained within the Home Information Manual.

Energy Monitoring

5.16 Energy display devices, which can monitor electricity and primary heating fuel consumption, will be provided to each of the dwellings. This can empower the occupants to be more aware of their usage and therefore make energy and cost savings, where possible.

6. WATER REDUCTION

Internal Water Efficiency

6.1 Increased frequency of drought across Europe lines up with climate change projections and water companies in the UK capture much less rain for our use than people assume. As of February 2019, 12 out of the 23 water companies operating in areas of England were classified as being under 'serious' stress (Energy Saving Trust, 2019).

6.2 Each individual in the UK currently uses on average 140 litres/person/day and total UK demand for water in the 2080s is projected to increase by between 4-18% (CCRA2, 2015).

6.3 Reducing water consumption will not only help to preserve our water sources but will also save energy. Approximately 15% of a typical gas-heated household's heating bill is from heating water for showers, baths and taps and the energy used to heat water for devices and appliances emits an average of 875 kg of CO_2 per household per year. This is equivalent to the CO_2 emissions from driving more than 1,700 miles in an average family car (Energy Saving Trust, 2013). As such, internal water consumption will be significantly reduced through the use of practical and hygienic water saving measures.

Residential Water Use

6.4 All new dwellings will target a minimum water efficiency standard of **105 litres/person/day** in accordance with Policy CC3 and the optional tighter Building Regulations Approved Document G requirement (110 litres/person/day). An evaluation of the proposed fixtures and fittings will be undertaken during the detailed design however an illustrative strategy to achieve this water target is set out in Table 2 below and the Water Efficiency Calculator in **Appendix B.**

Table 1: Indicative Sanitaryware Specification

Installation Type	Water Capacity/Flow Rate
WC	6/4 litres dual flush
Bath	160 litres capacity to overflow
Shower	8 litres/minute flow rate
Kitchen tap	5 litres/minute flow rate
Basin tap	4 litres/minute flow rate
Washing machine	8.17 litres/kg
Dishwasher	1.25 litres/place setting

Leak Detection and Prevention

6.5 Another method of reducing water consumption is to ensure that water leaks do not go undetected. As such a leak detection system may be installed which will be capable of detecting a major water

leak on the mains water supply within the building and between the building and the utilities water meter.

Water Metering

6.6 A water meter with a pulsed output will also be installed on the mains supply. This will allow the water consumption of the development to be monitored and managed and therefore encourage reductions.

7. WASTE MANAGEMENT

7.1 Waste reduction and recycling is another key challenge of sustainable development and something which is strongly encouraged in the London Plan (Policy 5.17). The waste hierarchy, illustrated in Figure 5 below, prioritises those waste management options which are best for the environment.

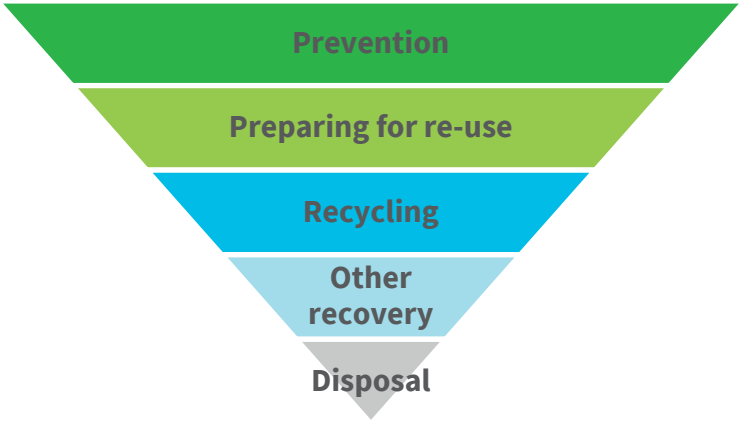

Figure 5: Waste Hierarchy

7.2 The waste hierarchy establishes waste management options according to what is best for the environment. It places great importance on preventing waste in the first place. When waste is created it prioritises preparing if for re-use, then recycling, recovery and lastly disposal (e.g. landfill).

Construction Waste

7.3 The reduction of construction waste not only minimises environmental impacts through ensuring the responsible use of resources and waste disposal but can also significantly reduce construction costs for the developer.

7.4 Prior to construction, Designated Contractors Ltd will develop a Site Waste Management Plan which will establish ways of minimising waste at source, assess the use, reuse and recycling of materials on and off-site and prevent illegal waste activities. This plan will then be disseminated to all relevant personnel on and off-site.

7.5 The following waste minimisation actions will be considered:

> Consider opportunities for zero cut and fill to avoid waste from excavation or groundworks;

> Design for standardisation of components and the use of fewer materials;

> Design for off-site or modular build;

> Return packaging for reuse;

> Consider community reuse of surplus materials or offcuts; and

> Engage with supply chains and include waste minimisation initiatives and targets in tenders and contracts.

7.6 As part of their commitment to divert construction waste from landfill, Designated Contractors Ltd will regularly monitor and record the site's waste reduction performance. This will be compared against a target benchmark where at least 85% (by volume) of non-hazardous waste is to be diverted from landfill.

Household Waste

7.7 Designated Contractors Ltd is committed to following the above waste hierarchy and reducing waste sent to landfill. As such, adequate storage is to be provided at ground floor level, where both recyclable and non-recyclable waste can be stored in accordance with the London Borough of Camden's waste collection service.

7.8 In addition, space will be provided for segregated recycling waste bins within the kitchen areas. This will involve the installation of recycling bins, where waste can be segregated into paper, glass, cans, plastic and cardboard, if necessary.

8. MATERIALS

Environmental Impact

8.1 New building materials will be selected, where possible, to ensure that they minimise environmental impact and have low embodied energy – from manufacture, transportation and operational stages, through to eventual demolition and disposal.

8.2 All insulation materials will have an Ozone Depleting Potential (ODP) of zero and a Global Warming Potential (GWP) of less than 5. In addition, all decorative paints and varnishes will meet the relevant standards in order to reduce the emission levels of volatile organic compounds (VOCs).

Local and Responsible Sourcing

8.3 In accordance with London Plan Policy 5.3, preference will be given to the use of locally sourced materials and local suppliers, where viable. This will benefit the local economy as well as having environmental benefits through reduced transportation.

8.4 The main building materials will be responsibly and legally sourced from manufacturers with environmental management systems and/or responsible sourcing credentials, such as BES 6001.

8.5 Timber used on site, including timber used in the construction phase, such as hoarding, fencing and scaffolding, will be sourced from sustainable forestry sources (e.g. PEFC and FSC) where possible.

Recycled Materials

8.6 Where feasible, Designated Contractors Ltd will commit to using materials that have been recycled. The use of recycled materials (e.g. crushed concrete from waste, used for hard-standing) has less embodied energy impact, other than that expended in their processing or transport.

9. POLLUTION

Noise Pollution

9.1 Designated Contractors Ltd are committed to reducing noise disturbance to internal and external areas of dwellings to improve the health and wellbeing of the occupants and to help protect community cohesion.

9.2 A demolition and construction noise and vibration assessment has been undertaken by 24 Acoustics in support of the planning application. This provides recommendations and mitigation measures to monitor and regulate noise and vibration occurring from the construction process.

9.3 Careful selection of plant, construction methods and programming of site works will be necessary to minimise the impacts of noise and vibration for the surrounding neighbours.

Air Quality

9.4 Poor air quality is the greatest environmental risk to public health in the UK and is known to exacerbate the impact of pre-existing health conditions. It is not only a major risk to human health, but it also has significant damaging impacts on both plants and animals.

9.5 Between 1990 and 2017, the UK's estimated emissions of nitrogen oxides reduced by 70%, and the estimated emissions of PM_{10} particulate matter reduced by 55% (DEFRA, 2018). This must continue to fall in future years. Designated Contractors Ltd are committed to reducing the proposed development's negative impact on air quality during construction and operation.

9.6 An Air Quality and Dust Management Plan has been prepared by Air Quality Assessments in support of the planning application. This sets out specific actions for the control of dust and emissions during construction and demolition.

10. FLOOD RISK & SURFACE WATER RUN-OFF

Flood Risk

10.1 Developments in low flood risk areas are promoted to, not only protect homes and local communities and reduce the cost implications if flooding occurs, but to protect the environment from the transfer of pollutants during flooding events.

10.2 According to the Environment Agency's Flood Map shown in Figure 6 below, the proposed development lies in a low risk flood zone (Flood Zone 1), indicating that the probability of flooding is 0.1% (1 in 1000 years).

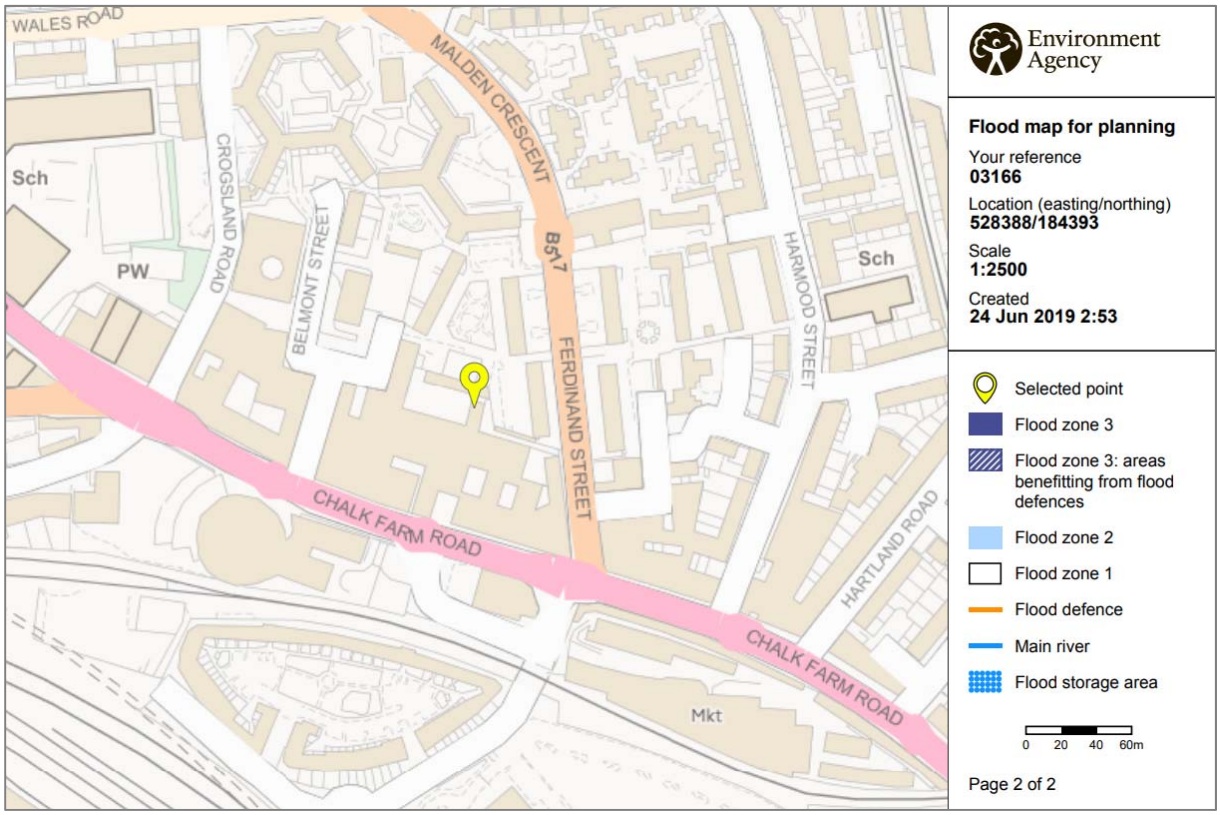

Figure 6: Environment Agency Flood Map – https://flood-map-for-planning.service.gov.uk

Sustainable Drainage Systems

10.3 Sustainable drainage systems (SuDS) can deliver multiple benefits which broadly fit into four categories: water quantity, water quality, amenity and biodiversity, shown in Figure 7 below. The overarching principle of SuDS design is that surface water runoff should be managed for maximum benefit.

10.4 Long term environmental and social factors must be included in decisions regarding sustainable drainage. Sustainable drainage takes account of the quantity and quality of runoff, and the amenity and aesthetic value of surface water in the urban environment.

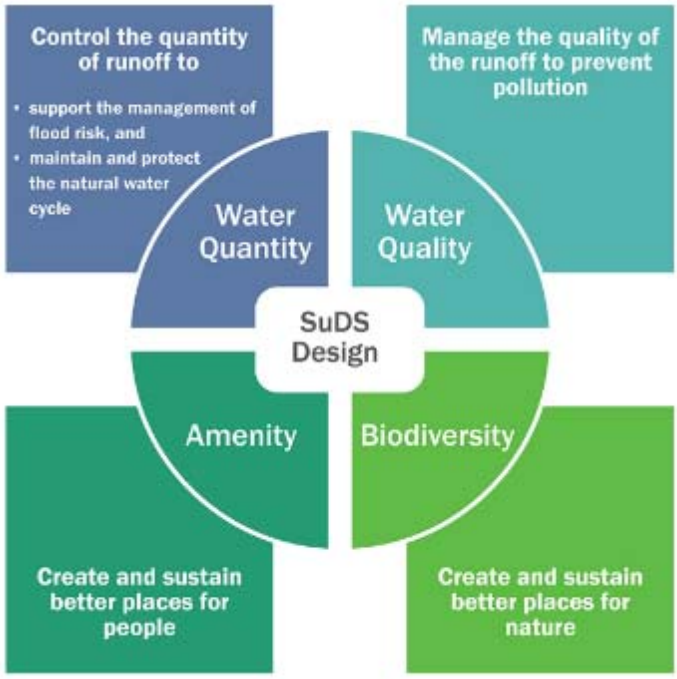

Figure 7: The four 'pillars' of SuDS – CIRIA SuDS Manual (2015)

10.5 The following listed SuDS are proposed. These will not only help to attenuate surface water but will provide the necessary water treatment.

> **Living roofs** will help to intercept and retain precipitation, reducing the volume of runoff and attenuating peak flows.

11. BUILDING QUALITY

Security

11.1 Designated Contractors Ltd are committed to ensuring the development is safe and secure for the occupants; reduce the risks and costs associated with crime; and improve occupiers' quality of life by reducing the fear of crime.

11.2 As such, the proposed development will be aiming to incorporate the principles of Secured by Design where appropriate. This may involve consultation with a Security Consultant during the detailed design stage.

Sound Insulation

11.3 In order to reduce the likelihood of noise complaints and to ensure a high quality development is created, the development will be aiming to achieve airborne sound insulation values that will improve upon the performance standards outlined within the Building Regulations for England and Wales, Approved Document E.

Inclusive Design

11.4 Designated Contractors Ltd.'s commitment to inclusivity will ensure that the proposed development is scaled appropriately so as to respond to the needs of all its users. They will endeavour to incorporate the requirements of the Equality Act (2010) into their design, making reasonable adjustments to enable disabled access, regularly reviewing whether the buildings are accessible and effective, and providing necessary design adjustments where it is practical to do so.

11.5 In addition, 90% of the new dwellings will be designed and built to Building Regulations Approved Document M4(2) standards, with 10% to Part M4(3) in accordance with London Plan Policy 3.8. These standards will ensure accessible and adaptable accommodation for everyone; young families, older people, individuals with a temporary or permanent physical impairment, and allow residents to stay in their home despite developing disabilities. They also enable flexibility, visitability (facilitating ease of visiting access to the homes by everyone, regardless of mobility or disability) and future-proofing i.e. the accommodation will be adaptable and able to respond to changing technological and environmental conditions.

12. TRANSPORT AND LOCAL AMENITIES

Sustainable Transport and Local Amenities

12.1 The proposed development has access to the following key amenities in the local area which will help to reduce dependency on private transport:

> Administrative services (e.g. post office, banks and cash points);

> Health services (e.g. GP practices, health centres and pharmacies);

> Small/large scale retail services (e.g. shops and restaurants);

> Recreation and leisure facilities (e.g. sports centres and cinemas); and

> Education and community facilities (e.g. nurseries, schools and community centres).

Public Transport

12.2 The site is well located within close proximity to a number of transport links, such as:

> **Chalk Farm Underground Station** which provides trains to Edgware, Golders Green, Kennington and Morden approximately every 3 minutes; and

> **Local bus services** within the immediate vicinity of the site, providing frequent trips in all directions.

12.3 The Transport for London Public Transport Accessibility Level (PTAL) map for the site is presented in Figure 8. The site's PTAL rating of 6a represents an excellent of transport accessibility.

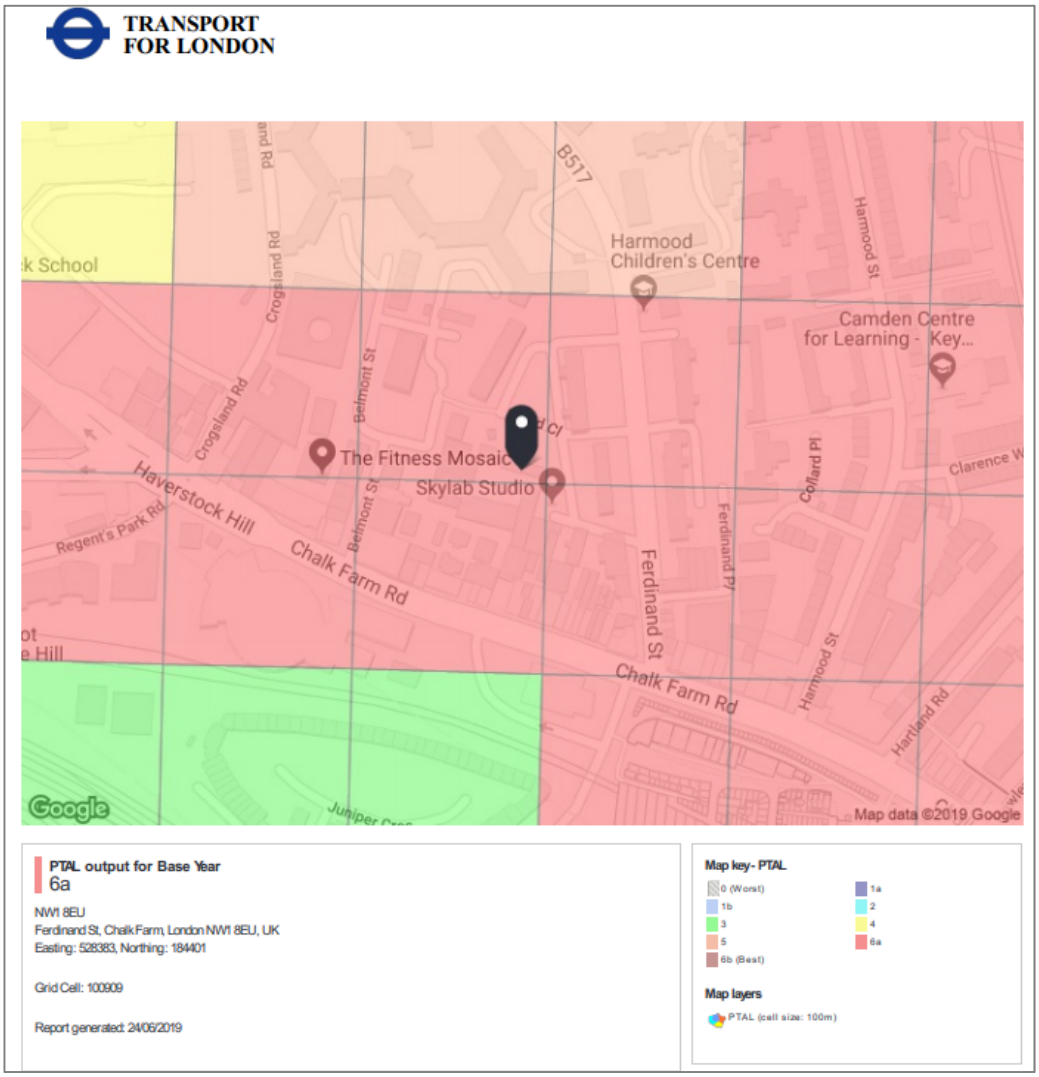

Figure 8: PTAL Map – www.tfl.gov.uk

Sustainable Transport

12.4 Sustainable transport links are central to the sustainability debate. They provide a positive contribution to environmental, societal and economic sustainability of the places they serve.

12.5 The provision of alternative sustainable transport options and associated facilities reduces dependency on traditionally fuelled cars and has the following benefits:

> Encourages active travel and helps improve people's health and wellbeing;

> Reduces congestion and encourages clean travel which helps to improve the air quality of the local area; and

> Provides cost savings compared with maintaining and running traditionally fuelled cars.

Cycle Parking

12.6 Encouraging cycling not only makes a positive contribution to health and well-being, but also reduces pressure on existing transport systems in accordance with Policy 6.9 of the London Plan.

12.7 All of the dwellings will have access to secure cycle stores, located in the external courtyard. A total of 17 spaces will be provided.

Car Parking/Car Free Development

12.8 The proposed development will be car free which will prioritise walking, cycling and public transport in accordance with Camden Local Plan Policy T1.

Travel Plan

12.9 During the feasibility and design stage, a site specific Travel Plan will be developed.

12.10 Transport for London define a Travel Plan as a '*long term management strategy for an organisation or site that seeks to deliver sustainable transport objectives through action and is articulated in a document that is regularly reviewed*'.

12.11 This will begin with an assessment of the existing travel patterns, current local environment for walkers and cyclists, disabled access arrangements and local public transport links. Then a package of measures will be proposed to promote sustainable modes of transport, such as walking and cycling. These measures are used to meet the specific targets of the Travel Plan, often relating to a specific increase in cycling rates or to minimise the need to travel to and from the site, especially by private car, taken from a baseline situation. It also includes a monitoring regime, whereby surveys will be done to assess progress towards these targets.

Working from Home

12.12 The concept of working from home will be promoted by the provision of internal services and infrastructure, enabling a home office to be established in each dwelling. This will contribute to the vibrancy of the scheme, whilst offering additional environmental benefits in terms of potentially reducing the demand for transportation.

12.13 The home office space will likely comprise the provision of two double electric sockets, a broadband connection, good ventilation and adequate internal daylight levels.

13. BIODIVERSITY AND ECOLOGY

Brownfield Site

13.1 The site has been previously used for development which is predominantly covered in hard standing and is therefore considered 'brownfield'. Redeveloping and revitalising vacant and under-used sites is supported by the NPPF.

Protection of Ecological Value

13.2 To protect existing biodiversity, a series of measures will be implemented to reduce any impact on local wildlife. These include the following:

> All site operatives to be made aware of current legislation, including the protection of certain species;

> Site clearance works to be timed to avoid the main bird nesting season. If this is not possible, a check should be carried out prior to the works to determine the presence of any active nests;

> Suitable fencing should be erected to reduce the possibility of any damage to established vegetation; and

> Native species, or species of known wildlife value, should be used for the proposed new planting.

Enhancement of Ecological Value

13.3 Enhancing a site's ecological value not only helps to reduce a development's environmental impact but improves the health and wellbeing of the occupants through their interaction with the natural environment.

13.4 The proposed landscaping strategy includes a green roof in accordance with Policy 5.11.

13.5 Green roofs have demonstrable sustainability benefits, including:

> Reduction in urban heat island effect (localised cooling through increased evaporation);

> Provision of ecological habitats for fauna and flora, particularly where these roofs can replicate pre-existing ecological conditions; and

> Reduction in surface water run-off.

13.6 The strategy for the new planting will include the following where possible:

> Promote local ecology through the use of native seed and fruit bearing species;

> Attract pollinators such as bees and butterflies through the use of flowering, nectar rich species;

> Combine natural and ornamental species to enrich the planting mix and promote local biodiversity;

> Create new habitats to attract local fauna; and

> Interconnect existing and proposed habitats of the site and its surroundings where possible.

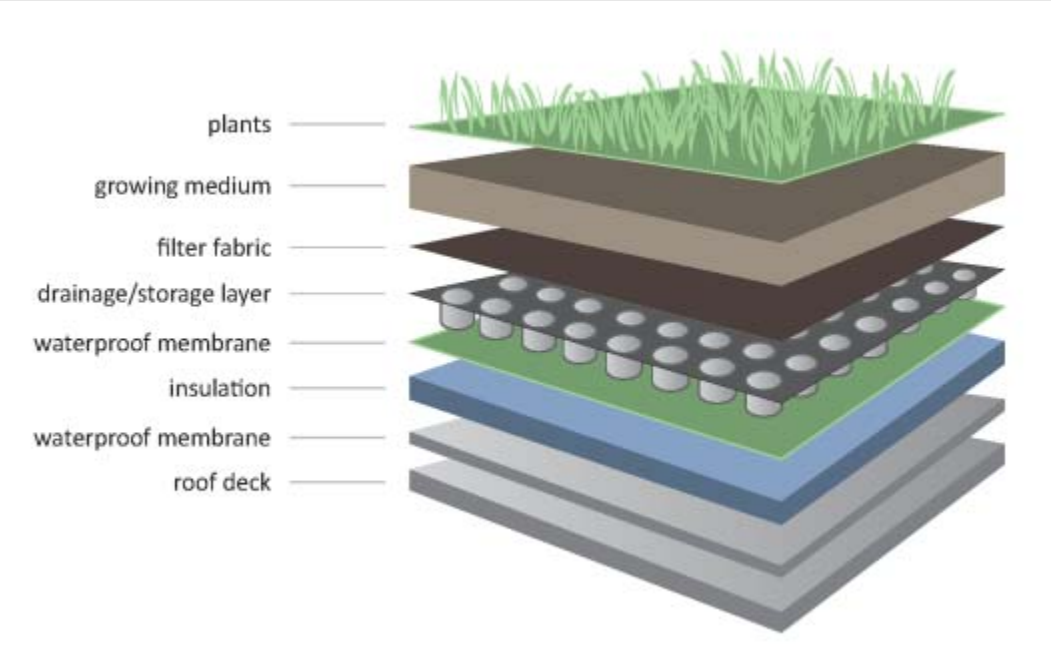

Figure 9: Indicative Build-up of Green Roof

14. SUSTAINABLE CONSTRUCTION

14.1 Sustainable construction involves the prudent use of existing and new resources and the efficient management of the construction process. This includes the following measures:

> Reducing waste during construction and demolition and sorting waste on site where practical;

> Reducing the risk of statutory nuisance to neighbouring properties as much as possible through effective site management;

> Controlling dust and emissions from demolition and construction; and

> Complying with protected species legislation.

Considerate Constructors Scheme

14.2 The development site will be registered with the Considerate Constructors Scheme. This is designed to encourage environmentally and socially considerate ways of working, to reduce any adverse impacts arising from the construction process. As commonly known, the Considerate Constructors Scheme aims are as follows:

> Enhancing the appearance;

> Respecting the community;

> Protecting the environment;

> Securing everyone's safety;

> Caring for the workforce.

14.3 The site will target *'Beyond Best Practice'* certification, achieving a score of at least 35 out of 50, with all of the five sections scoring at least seven points.

Monitoring Construction Site Impacts

14.4 During the construction processes, control procedures will be put in place to minimise noise and dust pollution and roads will be kept clean. The management systems will generally comprise procedures and working methods that are approved by the development team together with commercial arrangements to ensure compliance.

14.5 Further to the above, additional measures will be adopted to minimise the impact on the local area during construction. This will include the limiting of air and water pollution in accordance with best practice principles, as well as the recording, monitoring and displaying of energy and water use from site activities during construction.

14.6 In terms of construction traffic, this will be minimised by restricting deliveries and arrival times in order to manage potential impacts on existing and future occupants. Work will be limited to appropriate hours to be agreed with the Council, and suppressors will be used to reduce noise from machinery.

14.7 A Construction Management Plan (CMP) will be implemented in order to minimise construction impacts. A copy of the CMP has been provided in support of the planning application.

15.HOME INFORMATION

Home Information

15.1 All dwellings will be provided with a Home Information Manual, providing advice and information on how to best operate the services within their home. This method can be one of the most effective means to reduce energy and water use, both in the short and long term.

15.2 The Home Information Manual will likely include the following information:

> About BREEAM Domestic Refurbishment;

> Recommendations report;

> Energy efficiency;

> Water use;

> Transport facilities;

> Materials and waste;

> Emergency information; and

> Local amenities.

Smart Energy Monitors

15.3 As previously mentioned, energy display devices, which monitor consumption data for electricity and primary heating fuel, will be provided to all dwellings.

16.CONCLUSION

16.1 The issue of sustainable development has been considered throughout the design of the proposed development at 17, 25 & 27 Ferdinand Street by Designated Contractors Ltd in the London Borough of Camden. In particular, the incorporation of sustainable design and construction methods, energy and water saving measures, waste reduction techniques as well as measures to enhance the ecological value of the site, a good quality and sustainable development is proposed.

16.2 The key sustainability features outlined in this Sustainability Statement are listed below:

> **BREEAM:** All proposed new dwellings in the converted parts of the existing building will be designed and built to achieve a BREEAM 'Excellent' rating under the Domestic Refurbishment 2014 scheme.

> **Energy efficiency:** The development will target a 49.5% reduction in Regulated CO2 emissions compared to the existing building's CO2 baseline through energy efficiency measures.

> **Water efficiency:** Flow control devices and water efficient fixtures and fittings will be installed in all dwellings to target a maximum internal daily water consumption of 105 litres/person/day.

> **Waste and recycling:** Adequate facilities will be provided for domestic and construction related waste, including segregated bins for refuse and recycling.

> **Materials:** Where practical, new building materials will be sourced locally to reduce transportation pollution and support the local economy. New materials will be selected based on their environmental impact and responsible suppliers will be used where possible.

> **Pollution:** Noise, vibration, air quality and dust impacts arising from the demolition and construction processes will be monitored and mitigated.

> **Flood Risk and SUDs:** The proposed development site lies in a low flood risk zone and will benefit from a green roof.

- **Security:** Consultation with a Security Specialist will take place to ensure the development is safe and secure for its residents.
- **Sound insulation:** The dwellings are to target an improvement on Building Regulations Part E through party walls and floors.
- **Inclusive access:** 90% of the new dwellings will be designed to meet Building Regulations Approved Document M4(2) and 10% will meet Part M4(3).
- **Sustainable transport:** The site will benefit from a good existing public transport network and sustainable modes will be encouraged through the provision of 17no. cycle storage spaces.
- **Biodiversity and ecology:** Enhancements will be implemented through the provision of a green roof.
- **Sustainable construction:** The site will aim to achieve a 'Beyond Best Practice' score with the Considerate Constructors Scheme and will closely monitor construction site impacts.
- **Home/Building Information and Aftercare:** Home User Guides will be provided to the residents and will include information on energy and water efficiency, public transport and local amenities.

HODKINSON

APPENDICES

Appendix A

BREEAM Domestic Refurbishment 2014 ‘Excellent’ Pre-Assessment

Appendix B

Water Efficiency Calculator

Appendix A

BREEAM Domestic Refurbishment 2014 ‘Excellent’ Pre-Assessment

BREEAM Domestic Refurbishment Planning Pre-Assessment - 17, 25 & 27 Ferdinand Street

BREEAM®

72.14	Total Predicted Score	Development Description	Completed by
Pass Good Very Good **Excellent** Outstanding	30 Points 45 Points 55 Points 70 Points 85 Points	Conversion of the existing building into residential apartments and the addition of a fourth floor to provide 19 new dwellings.	K Paxton

	Issue	Credits Available	Credits Predicted	Design Assumptions Made
Management	**MAN 1** Home User Guide (HUG)	3	3	Three credits - provision of a Home Users Guide – containing the information listed in the User Guide Contents List User Guide Contents List: The list below indicates the type of information that should be included About BREEAM Domestic Refurbishment Recommendations Report Energy Efficiency Water Use Transport Facilities Materials and Waste Emergency Information Local Amenities Provision of Information in Alternative Formats Links and references
	MAN 2 Responsible Construction Practices (+ 1 Innovation Credit)	2	2	Considerate Constructors Scheme (CCS) score of between 35-39 with a score of 7 in each section.
	MAN 3 Construction Site Impacts	1	1	Construction site impacts are assessed against BREEAM Domestic Refurbishment Checklists. The checklists consider issues such as CO_2 production, water consumption and the sourcing of construction materials.
	MAN 4 Security	2	2	First Credit - achieving best practice security requirements for external doors and windows and minimum security requirements for retained doors and windows. Second Credit - implementing the principles and guidance for Secured by Design - Section 2
	MAN 5 Protection and Enhancement of Ecological Features (+ 1 Innovation Credit)	1	1	Enhancement expected through implementation of green roof. One exemplary performance credit also achieved.
	MAN 6 Project Management (+ 2 Innovation Credit)	2	2	First Credit - assigning Project Roles and Responsibility Second Credit - arranging a handover meeting and implementing a minimum of 2 methods of aftercare Two Innovation credits are available for exemplary performance
Total Management Category Predicted Score		**11**	**11**	**Credit Weighting - 1.09**
Health & Wellbeing	**HEA 1** Daylighting	2	1	First Credit - maintaining good daylighting levels Second Credit - achieving the minimum daylighting standards
	HEA 2 Sound Insulation	4	4	Credits are awarded for bringing the home up to and beyond national regulations. An improvement of 5db over Building Regulations is anticipated.
	HEA 3 Volatile Organic Compounds	1	0	Credit not sought at this stage.
	HEA 4 Inclusive Design	2	2	Dwellings to meet all applicable Lifetime Homes requirements.
	HEA 5 Ventilation **Minimum Standard**	2	2	First Credit—achieving minimum ventilation requirements for background, extract and purge ventilation. Second Credit—achieving advanced ventilation requirements in line with Building regulations Part F
	HEA 6 Safety **Minimum Standard**	1	1	One Credit—implementation of appropriate fire and carbon monoxide detection and alarm systems.
Total Health & Wellbeing Category Predicted Score		**12**	**10**	**Credit Weighting - 1.41**
rbon Dioxide Emissions	**ENE 1** Improvement in Energy Efficiency Rating	6	3	Up to 6 credits for the improvement to the dwellings Energy Efficiency Rating. This issue is assessed using the Energy calculator and SAP or RdSAP - credit allocation is based on exceeding EER improvement benchmarks, from the baseline EER.
	ENE 2 Energy Efficiency Rating Post Refurbishment **Minimum Standard**	4	3	Up to 4 credits available for the Energy Efficiency Rating post refurbishment. Two exemplary credits are available. Minimum Standards BREEAM Excellent level requires a minimum EER of 70
	ENE 3 Primary Energy Demand	7	4	Up to 7 credits available for the primary energy demand. Credit allocation is based on exceeding refurbishment benchmarks.
	ENE 4 Renewable Technologies	2	0	Credits not sought at this stage.
	ENE 5 Energy Labelled White Goods	2	1	First credit - provision of fridges, freezers and fridge freezers with the appropriate label/information Second credit – provision of washing machines, dishwashers and washer dryers with the appropriate label/information

	Issue	Credits Available	Credits Predicted	Design Assumptions Made
Energy & Ca	**ENE 6** Drying Space	1	1	An adequate, secure internal or external space with posts and footings, or fixings holding: a. 1-2 bedrooms: 4m+ of drying line b. 3+ bedrooms: 6m+ of drying line
	ENE 7 Lighting	2	2	First credit – energy efficient external space and security lighting. Second credit – internal lighting that does not exceed the maximum average wattage across the total floor area - 9 watts/m^2
	ENE 8 Energy Display Devices	2	1	One credit – energy display device displays either electricity consumption data or heating fuel consumption data Two credits – energy display device displays both electricity and primary heating fuel consumption data An exemplary credit is available
	ENE 9 Cycle Storage	2	2	Two credits available for providing compliant cycle spaces, with the number of spaces required depending on the number of bedrooms in the dwelling.
	ENE 10 Home Office	1	1	One credit - provision of a compliant home office space.
Total Energy & CO2 Category Predicted Score		**29**	**18**	**Credit Weighting - 1.48**
	WAT 1 Indoor Water Use (+ 1 Innovation Credit) **Minimum Standard**	3	3	Credit allocation based on the water consumption of terminal fittings Water consumption targets required for the following BREEAM ratings: BREEAM Very Good level requires consumption to be 129-139 litres per person per day London Plan requires consumption to be no more than 105 litres per person per day
	WAT 2 External Water Use	1	1	Credit achieved where dwellings have no individual or communal garden space or where a compliant rainwater collection system has been provided.
	WAT 3 Water Meter	1	0	Credit not sought at this stage.
Total Water Category Predicted Score		**5**	**4**	**Credit Weighting - 2.75**
Materials	**MAT 1** Environmental Impact of Materials	25	12	Up to 25 credits available for the embodied impact and the thermal performance of; roofs, external walls, internal walls, windows and upper and ground floors. Depending on the Green Guide rating of new materials and the impact of those materials on improving the thermal performance of the materials that make up these elements.
	MAT 2 Responsible Sourcing of Materials - Basic Building Elements **Minimum Standard**	12	6	Up to 12 credits are available depending on the responsible sourcing tier levels of the applicable new materials. Minimum standards - that all new timber is legally sourced.
	MAT3 Insulation	8	8	Any new insulation in external walls, ground floors, roofs and building services is assessed as a minimum requirement. First four credits – embodied impact of new insulation –assessed using the Mat3 calculator based on the insulation index. Second four credits – responsible sourcing of a minimum of 80% of insulation OR where no new insulation is specified and the dwelling achieves a minimum of 2.5 credits in issue Ene 02.
Total Materials Category Predicted Score		**45**	**26**	**Credit Weighting - 0.17**
Waste	**WAS 1** Household Waste	2	1	First credit – provision of recycling storage facilities Second credit – provision of composting facilities
	WAS 2 Refurbishment Site Waste Management (+ 1 Innovation Credit)	3	1	Credits are awarded for the implementation of a SWMP. The requirements of the SWMP differ depending on the value of the project. Innovation credits are available
Total Waste Category Predicted Score		**5**	**2**	**Credit Weighting - 0.6**
Pollution	**POL 1** NOx Emissions	3	3	Credit allocation is tiered and awarded based on the amount of NOx emissions arising from the operation of space heating and hot water systems.
	POL 2 Surface Water Run off	3	1	No change in the size of the building footprint or hard standing as a result of the refurbishment.
	POL 3 Flooding **Minimum Standard**	2	2	Site located in Flood Zone 1. FRA to confirm low risk of flooding.
Total Pollution Category Predicted Score		**8**	**6**	**Credit Weighting - 0.75**
Innovation	**INN 1** Innovation	10	2	Exemplary credits likely to be achieved for MAN5 and MAN6.
Total Innovation Category Predicted Score		**10**	**2**	

Appendix B

Water Efficiency Calculator

Water Efficiency Calculator
Ferdinand Street

	Internal Water Consumption			
Installation Type	**Unit of Measure**	**Capacity / Flow Rate**	**Litres/person/day**	**Notes**
WC	Full Flush Volume (Litres)	**6**	8.76	Low flush WCs will be installed to reduce the volume of water consumed during flushing. All WCs will have dual flush cisterns which will provide both part (4L) and full (6L) flushes.
	Part Flush Volume (Litres)	**4**	11.84	
Basin Tap	Flow Rate (Litres/minute)	**4**	7.90	All taps (excluding kitchen taps) will be reduced to 4 litres/minute using flow restrictors. Where multiple taps are to be provided the average flow rate will be used.
Bath	Capacity (Litres to overflow)	**160**	17.60	All baths will have reduced capacities of 160 litres (excluding displacement). The bath taps are not included in this calculation as they are already incorporated into the use factor for the baths.
Shower	Flow Rate (Litres/minute)	**8**	34.96	Shower flow rates will be reduced to a maximum of 8 litres/minute using flow restrictors fixed to the shower heads. These contain precision-made holes or filters to restrict water flow and reduce the outlet flow and pressure.
Kitchen Tap	Flow Rate (Litres/minute)	**5**	12.56	Kitchen taps will be reduced to 5 litres/minute using flow restrictors which will be fitted within the console of the tap or in the pipework.
Washing Machine	Water Consumption (Litres/kg)	**8.17**	17.16	Water efficient washing machines or washer-dryers will be specified. The make and model numbers of the appliances are unknown at this stage therefore a default figure of 8.17 litres/kg has been assumed.
Dishwasher	Water Consumption (Litres/place setting)	**1.25**	4.50	All dishwashers will be water efficient. The make and models numbers are unknown therefore a default figure of 1.25 litres/place setting has been assumed at this stage.
		Net Internal Water Consumption (Litres/person/day)	**115.3**	
		Normalisation Factor	**0.91**	
		Total Internal Water Consumption (Litres/person/day)	**104.9**	The total *internal* water consumption target of ≤105 litres/person/day will be achieved in accordance with Regulation 36 para (2)b optional requirement Approved Document G.
		Allowance for External Water Consumption (Litres/person/day)	**5**	
		Total Water Consumption (Litres/person/day)	**109.9**	The *total* water consumption target of ≤110 litres/person/day will be achieved in accordance with Regulation 36 para (2)b optional requirement of Approved Document G.