17 & 19 FERDINAND STREET, LONDON, NW1 8EU
Sustainability Statement

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17 & 19 Ferdinand Street, London
Sustainability Statement – Revision A

17 & 19 FERDINAND STREET, LONDON, NW1 8EU

Sustainability Statement

Contents

Registration of Amendments

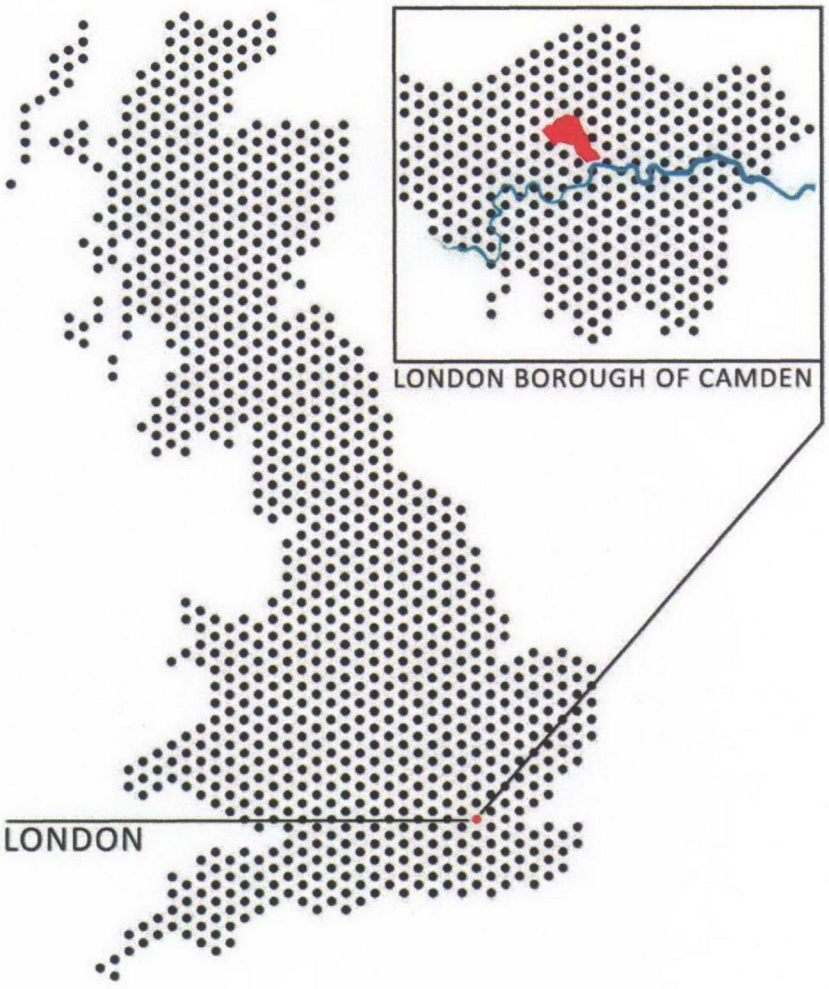
Revision and Date	Amendment Details	Revision Prepared By	Revision Approved By
A. 20.04.12	Changes made to number of material credits within the CfSH pre-assessment estimator and paragraph 6.2.	FK	PS

1.0 INTRODUCTION

1.1 Create Consulting Engineers has been commissioned by S. Aspris & Son Ltd to prepared a Sustainability Statement in support of their planning application for change of use of the existing warehouse located at 17 & 19 Ferdinand Street within the London Borough of Camden.

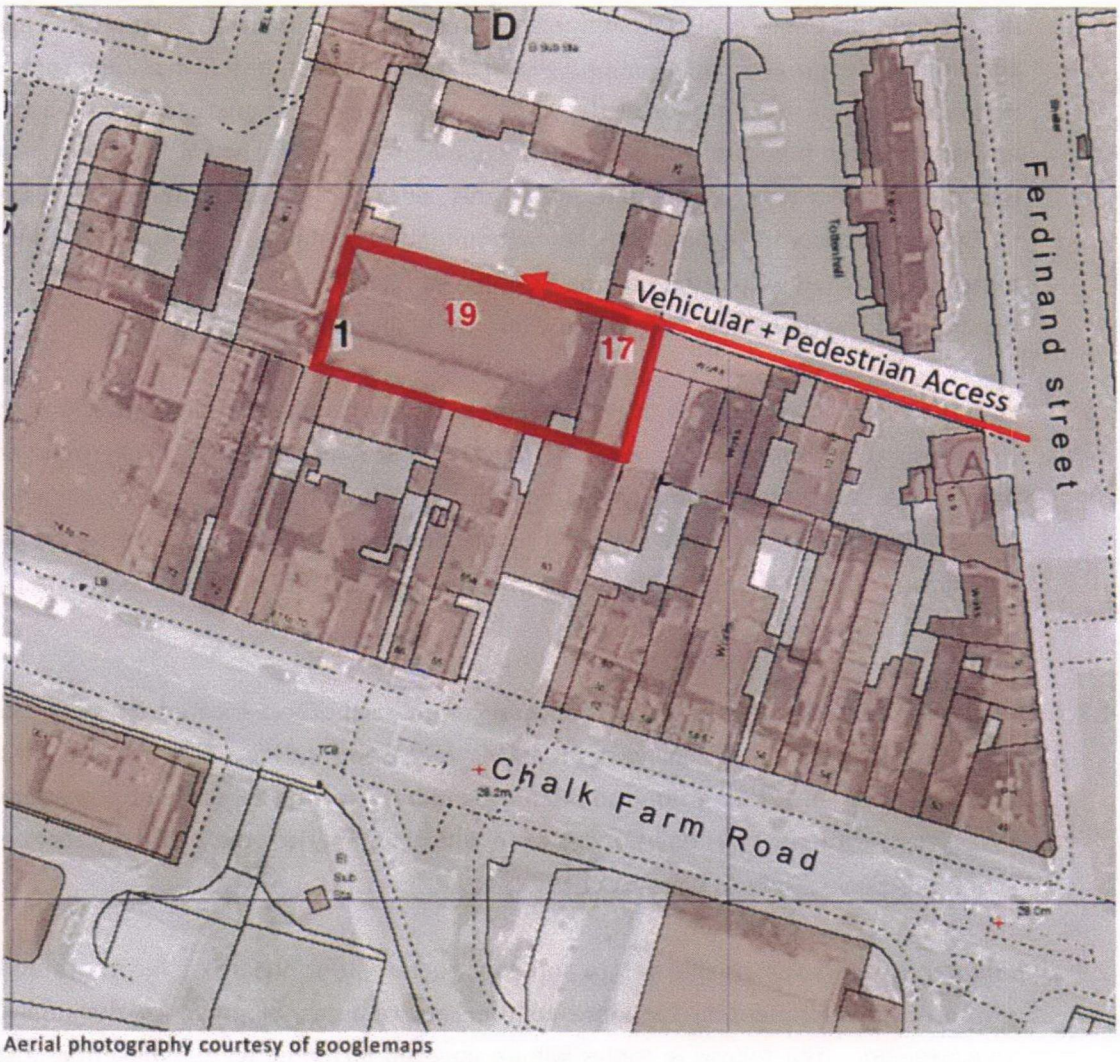
1.2 This report has been prepared on behalf of S. Aspris & Son Ltd to demonstrate how the development proposals for 17 & 19 Ferdinand Street will meet and exceed the sustainability standards set by the London Borough of Camden in their Supplementary Planning Document: CPG 3 Sustainability. This report is structured to respond to the Council's requirements and guidelines detailed within their Local Development Framework (LDF) policies: CS13 – *Tackling climate change through promoting higher environmental standards*, DP22 – *Promoting sustainable design and construction* and DP23 – *Water.*

Figure 1: Camden Borough, Location map



Current Site Use

1.3 The proposed mix use development is located at 17 & 19 Ferdinand Street, London NW1 8EU. The site currently comprises an existing two storey warehouse, the second floor of which has not been used for some time. The warehouse is located between the former piano factory at 10 Belmont Street and number 17 Ferdinand Street. The front elevations of the existing warehouse face onto a large courtyard surrounded by existing commercial and residential properties. The site is accessed via a small alley way off Ferdinand Street. Figure 2 indicates the exact location of the site.



Aerial photography courtesy of googlemaps

Figure 2: Site Location Plan, 17 & 19 Ferdinand Street, London NW1 8EU

Proposed Development

1.4 The proposal includes the demolition of the existing warehouse and its replacement with a mixed use four storey building of a similar size. The planning application is for six commercial ground floor offices and 16 residential apartments, comprising 14 two bedroom apartments and 2 one bedroom apartments, spread over the upper three stories. The ground floor of

number 17 is to be used for refuse and cycle storage. The proposed development is north/south facing in orientation with the main access to the building on the north side within the large courtyard.

1.5 The assessment has been based on drawings prepared by GLA Architecture. Please refer to the layout drawings found within the back of this report.

Report Structure

1.6 The report has been structured to respond to the Council's requirements and guidelines detailed within their Local Development Framework (LDF) policies, relating to energy and sustainable design and construction. A separate Energy Statement has been produced to demonstrate how the proposed development has been designed to cut carbon dioxide emissions within the framework of the energy hierarchy. Reference to the energy statement has been made where appropriate within this report. This report demonstrates how the design proposals will respond to the recommended sustainable design and construction principles outlined within the London Borough of Camden's Local Development Framework documents. The report has been divided into three distinct chapters as follows;

1.7 *Chapter 1* demonstrates how the residential apartments will meet Code level 3 of the Code for Sustainable Homes. This chapter outlines the assessment process, background and basis for the assessment procedure. A full description of how the development will achieve the assessment criteria for each section has also been provided within the pre-assessment estimator. The pre-assessment estimator summarises the proposed design strategy to achieve Code level 3.

1.8 *Chapter 2* demonstrates how the proposed commercial offices located on the ground floor of the development will achieve a BREEAM 'Very Good' rating. This chapter outlines the assessment process, background to BREEAM and basis for the assessment procedure. A pre-assessment estimator has been undertaken which summarises the design strategy and final score to achieve BREEAM 'Very Good'.

1.9 *Chapter 3* covers sustainable design and construction principles to be incorporated into the proposed development in response to the requirements of guidance document CPG 3 *Sustainability*. The following topics will be covered including water efficiency, sustainable use of building materials, green roofs, flooding, climate change adaptation and biodiversity and local food growing.

Objectives

1.10 *The objectives of this report are to:*

- Identify areas for consideration at the early stages of the project to facilitate the incorporation of BREEAM, Code for Sustainable Homes and the principles of sustainable design and construction into the design of the mixed use development.
- Provide a detailed account of which BREEAM and Code credits are likely to be attained by the development, communicated by pre-assessment estimators to accompany the planning application.
- Provide a document that can be issued to future parties to enable commitments to be made to the credits which are likely to be achieved at detailed design stage.
- The results of the pre-assessment estimators are likely to form the basis of the planning condition or Section 106 planning obligation for the final development.

2.0 PLANNING POLICIES AND PROJECT REQUIREMENTS

Local Policy – London Borough of Camden

2.1 Camden Core Strategy 2010 – 2025 sets out the key elements of the Council's planning vision and strategy for the borough. The strategy forms the central part of the Local Development Framework, a group of documents setting out their planning strategies and policies. The Core Strategy is supported by a number of development policy documents and supplementary planning documents, which provide detailed guidance on how the council's planning strategy and policies will be implemented.

2.2 Camden Core Strategy Policy CS13 - *Tackling climate change through promoting higher environmental standards* refers to Camden Development Policy DP22 *Promoting Sustainable Design and Construction*, which requires development proposals to incorporate sustainable design and construction measures through specifying that all residential developments achieve Code for Sustainable Homes level 3 by 2010, and non domestic developments of 500 sqm of floor space achieve a BREEAM 'Very Good' rating.

2.3 Policy DP22 also encourages the incorporation of green or brown roofs and green walls wherever suitable, and for the design of the development to be resilient to climate change by ensuring that the development includes appropriate climate change adaptation measures.

2.4 The requirements of Policies CS13 and DP22 are supported by Camden Supplementary Planning Document CPG 3 *Sustainability*. Guidance document CPG 3 details the specific targets and policy requirements relating to the energy performance and sustainable design and construction of new and existing buildings. CPG 3 has been used to inform the contents of this report.

2.5 This report should be read in conjunction with the Energy Statement, Ref PS/CS/P11-282/01 Rev A, which outlines how the proposed development will meet the energy requirements within the framework of the energy hierarchy.

CHAPTER 1:

3.0 CODE FOR SUSTAINABLE HOMES

3.1 Camden Supplementary Planning Document CPG 3 *Sustainability* states that in accordance with Development Policy DP22 – *Promoting Sustainable Design and Construction* all new build residential developments are expected to achieve Code for Sustainable Home level 3 as a minimum standard, and are strongly encouraged to achieve a minimum of 50% of the un-weighted energy, water and material credits.

3.2 The proposed residential apartments at 17 & 19 Ferdinand Street will be designed and constructed to achieve Code level 3 of the Code for Sustainable Homes, with at least 16 of the un-weighted energy credits, 5 of the un-weighted water credits and 12 of the un-weighted material credits.

Background to the Code for Sustainable Homes

3.3 The Code for Sustainable Homes is a nationally recognised standard for the design and construction of new dwellings. The Code provides a flexible framework and benchmark for the construction of high performance homes based on an objective criteria and verification method. It is graded on a 'Star Rating' which reflects the building's environmental performance ranging from one star homes to six stars which represents a zero carbon development.

3.4 In March 2008, the government announced a mandatory requirement for all new homes to be rated against the Code for Sustainable Homes from May 2008. All new homes must either have a Code assessment certificate (Code level 1-6) or a nil-rated certificate (where an assessment has not taken place).

3.5 The Code for Sustainable Homes assesses and awards credits based on the environmental features of the individual dwellings. Dwellings which have identical code scoring features are defined as "Code Dwelling Types". The Code carries out its assessments in two stages. The first part of the assessment is carried out at the design stage, referred to as the Design Stage Assessment based on the design specification for individual dwellings, to determine the interim rating from which an interim Code certificate is awarded. Following the construction of the different Code dwelling types a Post-Construction Stage assessment is carried out to confirm that the dwellings have been built to the Design Stage specification. Each dwelling will be awarded a final Code certificate indicating the level achieved.

3.6 The Code for Sustainable Homes includes mandatory minimum performance standards in the following areas which must be met irrespective of the Code level sought. Credits are not awarded for achieving the minimum performance standards.

- Energy efficiency (Dwelling Emission Rate over Target Emission Rate)
- Internal potable water efficiency
- Environmental impact of materials
- Management of surface water runoff from development
- Storage of non-recyclable waste and recyclable household waste
- Construction site waste management

3.7 The Code level can only be achieved if the above mandatory issues achieve the minimum standards as set out within the Code Technical Guidance. All other credits are tradable (i.e. they are voluntary and a developer/designer can make choices on the most appropriate standards/credits for a given site). It is these tradable credits that provide the flexibility within the Code. Once all mandatory credits are achieved the developer is then free to make up the credits required for the target rating from the tradable credits, to give an overall score.

Code for Sustainable Homes – Pre-assessment Estimator

3.8 If planning permission is granted for the proposed development at 17 & 19 Ferdinand Street, it is the intention to register and certify the scheme against the November 2010 version of the Code for Sustainable Homes. A pre-assessment scoring strategy has been carried out according to this version.

3.9 The apartments will be assessed on an individual basis. For the purpose of this report the pre-assessment estimator outlines the proposed strategy for achieving Code level 3 based on a worst case scenario. Please note that the strategy could change at detailed design stage according to unforeseen constraints. In such instances there is sufficient flexibility within the Code strategy to accommodate these changes and still achieve Code level 3.

3.10 The number of credits to be achieved at detailed design stage has been estimated based on the plans and drawings provided by GLA Architecture and Design Ltd. The pre-assessment estimator provides a brief narrative on the assessment criteria, the credits to be achieved and an overall credit score and rating. The pre-assessment estimator will inform the detailed design stage assessment. A copy of the pre-assessment estimator can be found within Appendix A.

3.11 The Code for Sustainable Homes pre-assessment estimator has been completed by Fiona Keysell, a Stroma licensed Code assessor, license number STRO006378.

3.12 If planning permission is granted for the proposed development at 17 & 19 Ferdinand Street a copy of the detailed design stage assessment report and interim Design Stage certificate will be submitted to the London Borough of Camden prior to the commencement of on-site construction works, for the purpose of discharging any relevant conditions or Section 106 planning obligations. Following the construction of the development a copy of the final Post

Construction Stage assessment report and certificate will be submitted to the London Borough of Camden.

CHAPTER 2:

4.0 BREEAM 2011 NEW CONSTRUCTION

4.1 Camden Supplementary Planning Document CPG 3 *Sustainability* states that in accordance with Development Policy DP22 – *Promoting Sustainable Design and Construction* all new build non residential buildings are expected to achieve a BREEAM 'Very Good' rating, and are strongly encouraged to achieve a minimum of 60% of the un-weighted energy and water credits, and 40% of the un-weighted material credits. This equates to a minimum of 16 credits to be achieved within the energy category, 5 credits for water and 6 credits for materials.

4.2 The proposed commercial offices at 17 & 19 Ferdinand Street will be designed and constructed to achieve a BREEAM 'Very Good' rating.

The BREEAM Standard

4.3 BREEAM (Building Research Establishment's Environmental Assessment Method) is a world recognised and widely used environmental assessment method for buildings. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance.

4.4 Aims of a BREEAM assessment:

- To mitigate the life cycle impacts of buildings on the environment
- To enable buildings to be recognised according to their environmental benefits
- To provide a credible, environmental label for buildings
- To stimulate demand for sustainable buildings

4.5 There are a number of elements that determine the overall performance of a new building assessed using BREEAM 2011, these are outlined below:

- **BREEAM Rating Benchmarks:** A percentage score of 55 is required in order to achieve a BREEAM 'Very Good' rating.

- **Minimum BREEAM Standards:** Minimum standards of performance in key areas are set. To achieve a BREEAM 'Very Good' rating the minimum standards must be achieved in addition to the overall percentage score of 55. For the purpose of this assessment the minimum BREEAM standards will be met along with the minimum standards encouraged by the London Borough of Camden in accordance with Development Policy DP22 - Promoting Sustainable Design and Construction.

- **Environmental Section Weightings:** BREEAM uses a weighting system which determines the relative value of the environmental sections and their contribution to the overall score.

- **The BREEAM Assessment Issues and Credits:** BREEAM New Construction comprises forty nine individual assessment issues within nine environmental categories, plus a tenth category 'innovation'. Each issue addresses a specific building related environmental impact; the number of credits available for an individual assessment issue varies depending on the importance of the issue.

4.6 As with the Code for Sustainable Homes, BREEAM carries out its assessments in two stages. The Design Stage assessment and interim certified BREEAM rating confirms the buildings performance at design stage. The assessment and certification of the building ideally occurs prior to the commencement of on-site construction works. Following the construction of the building a post-construction stage assessment and BREEAM rating is awarded to confirm the final 'as-built' performance of the building. The final post construction stage assessment is completed and certified after practical completion of the building.

4.7 The BREEAM assessment process involves the evaluation of the buildings performance against the scheme and its criteria using an independent third party auditor – BREEAM Assessor. The BREEAM certificate provides formal verification that the Assessor has completed an assessment of the building in accordance with the requirements of the scheme and its quality standards and procedures. A BREEAM certificate verifies that a buildings BREEAM rating, at the time of certification, accurately reflected its performance against the BREEAM standards.

4.8 The office buildings at 17 & 19 Ferdinand Street will be assessed against BREEAM 2011 New Construction, standard scheme, Commercial offices. BREEAM offices pre-assessment estimator has been undertaken by Paul Sutton, a BRE licensed assessor, license number CCEL-PS30.

4.9 Like the Code for Sustainable Homes assessment for the apartments a copy of the detailed design stage assessment report and interim Design Stage certificate will be submitted to the London Borough of Camden prior to the commencement of on-site construction works, for the purpose of discharging any relevant conditions or Section 106 planning obligations. Following the construction of the development a copy of the final Post Construction Stage assessment report and certificate will be submitted to the London Borough of Camden.

BREEAM 2011 Pre-assessment Estimator

4.10 This report details information gathered from consultation with the design team and architectural drawings prepared by GLA Architecture and Design Ltd. The credits have been identified at this early stage for incorporation into the detailed design.

4.11 A BREEAM pre-assessment estimator has been prepared to communicate the proposed strategy to achieve a BREEAM 'Very Good' rating for the proposed offices at 17 & 19 Ferdinand Street. The pre-assessment estimator communicates the number of credits to be awarded against the assessment criteria of each issue within the nine categories. A final BREEAM score is provided within the heading of the pre-assessment estimator.

4.12 If the requirements of the credits detailed within the pre-assessment estimator are met in accordance with the BREEAM 2011 technical guidance, it is anticipated that a score of 60.76% would be achieved, which exceeds the requirements for a BREEAM 'Very Good' rating.

4.13 The information presented within the pre-assessment estimator demonstrates a path that may be used in the future by different parties to achieve a 'Very Good' BREEAM rating. Create Consulting Engineers cannot accept any responsibility for ensuring that the development actually achieves this rating, unless appointed under a separate contract.

4.14 Please note that the BREEAM strategy could change at detailed design stage according to unforeseen constraints. The offices have been assessed with this in mind, and a sufficient number of credits have been included above the required rating to compensate if changes were to occur at the detailed design stage to ensure that a BREEAM 'Very Good' rating is maintained.

4.15 A copy of the pre-assessment estimator can be found within Appendix B. Please note the pre-assessment estimator should be read in conjunction with the BREEAM New Construction 2011 Technical Guidance.

CHAPTER 3:
OTHER SUSTAINABILITY CONSIDERATIONS

5.0 WATER EFFICIENCY

5.1 Camden Development Policy 23 – Water, expects all developments to be designed to be water efficient and to minimise the need for further water infrastructure. In accordance with Development Policy DP22 – *Promoting Sustainable Design and Construction* all residential developments are expected to achieve Code for Sustainable Homes level 3, and non domestic developments are expected to achieve a BREEAM 'Very Good' rating. Both BREEAM and Code for Sustainable Homes set their own minimum performance standards for water consumption.

Water Use – Residential Units

5.2 The Code for Sustainable Homes sets a minimum mandatory target for water consumption of 105 litres/person/day for Code levels 3 and 4. The proposed development at 17 & 19 Ferdinand Street will exceed the mandatory minimum requirements and achieve a water consumption of less than 90 litres/person/day.

5.3 The calculated water use from conventional taps, sanitary appliances and white goods used in a typical dwelling is approximately 150 litres/person/day. It is possible to reduce this figure by over 60 litres to less than 90 litres/person/day solely through the use of highly water-efficient fittings.

5.4 The water consumption of the apartments has been calculated using the Government's national calculation methodology for assessing water efficiency in new dwellings published by Communities and Local Government, September 2009. The document outlines the calculation methodology for assessing the whole house potable water consumption used, and to assess compliance against the water performance targets of the Building Regulations and Code for Sustainable Homes.

5.5 The following water fittings and appliances have been used to inform the total water consumption of each dwelling measured in litres per person per day.

- **WC's:** Dual flush WC with a full flush volume of 4 litres and part flush volume of 2.6 litres.

- **Basin Taps:** The flow rate of the taps, at full flow rate in litres per minute measured at a dynamic pressure of 0.3±0.2 MPa for high pressure taps has been calculated. The apartments will be provided with a single tap providing both hot and cold water. The flow rate of the mixer tap at a dynamic pressure of 0.3Mpa is 4 litres. The taps

on the baths are not included within the calculation as the water consumption from bath taps is taken account of in the use factor for baths.

- **Kitchen Taps:** The flow rate of the kitchen tap in litres per minute measured at a dynamic pressure of 0.3Mpa is 5 litres.

- **Bath:** The apartments will be provided with low capacity baths with a total capacity of 118 litres to the overflow.

- **Showers:** The flow rate of the showers at the outlet using cold water in litres per minute measured at a dynamic pressure of 0.3±0.02Mpa is 6 litres.

- **Washing Machine and Dishwasher:** The use of washing machines and dishwashers must always be assumed under the standard methodology. The calculation methodology assumes that the consumption figures of the washing machine and dishwasher are unknown. In this instance the water consumption calculator tool assumes a figure of 1.25 litres per place setting and 8.17 litres per kilogram for the dishwasher and washing machine respectively.

5.6 The use of water softeners, bidets and waste disposal units has not been specified within the development proposals.

5.7 In addition to reducing the water consumption of the apartments to less than 90 litres/person/day, occupants of the apartments will be encouraged to adopt a more responsible attitude to water use. In accordance with the Code for Sustainable Homes Issue Man 1 a non technical 'Home User Guide' will be provided to the occupants of the apartments. The guide will provide information on the operation and performance of the building, including details on the water efficient fittings, recommendations for their most efficient usage, and details on external water use.

5.8 Where feasible the water meters within the apartments will be located for easy reading to encourage occupants of the apartments to monitor their water usage over time.

5.9 The above specified systems provide the highest level of efficiency and will significantly reduce the average household water consumption from 150 litres/person/day to 86.3 litres/person/day without additional sustainable water infrastructure. The water consumption calculator tool for the proposed apartments at 17 & 19 Ferdinand Street can be found within Appendix C.

Water Use – Commercial Office Use

5.10 Camden Supplementary Planning Document CPG 3 *Sustainability* states that in accordance with Development Policy DP22 – *Promoting Sustainable Design and Construction* all new

build non residential buildings are expected to achieve a BREEAM 'Very Good' rating, and are strongly encouraged to achieve a minimum of 60% of the un-weighted water credits.

5.11 Washroom facilities are provided within the individual office units for use by the office staff. The water fittings within the washrooms will be limited to WC's and basin taps. The WC's will have an effective flush volume of less than 4.5 litres with a delayed action inlet valve. Guidance will also be displayed within the toilet cubicles instructing the users on the appropriate operation of the flushing device. The wash basin taps will be specified with a maximum flow rate of 4.5 litres/min for a water pressure of 0.3MPa. The taps will be timed automatic shut off taps such as push taps.

5.12 In addition to the washroom facilities each of the offices has also been provided with individual tea rooms. The taps within the kitchenettes will achieve a flow rate of 5 litres/min.

5.13 The office units will have a net water consumption of less than 22.89 litres/person/day, which achieves 3 credits under BREEAM Offices Wat 01 'Water Consumption'. The BREEAM water consumption calculator tool for the proposed office units at 17 & 19 Ferdinand Street can be found within Appendix D.

Greywater Recycling

5.14 Camden Guidance Document CPG 3 *Sustainability* states that the 'Council require developments of 10 units or 1000 sq m and/or intense water use developments, such as hotels, hostels and student housing etc to include a grey water harvesting system, unless the applicant demonstrates to the Council's satisfaction that this is not feasible'.

5.15 Greywater recycling is the reuse of mildly contaminated waste water originally supplied as potable mains water that has already been used for bathing, laundry, washing etc. However, greywater systems are often limited to the reuse of bathing water, due to the ease at which it can be collected and treated for use in toilet flushing only, due to the poor quality of the water collected.

5.16 If a greywater recycling system were to be installed at this development the water would be recycled from the hand wash basins and baths of the apartments, for use in toilet flushing. This would be transported to the communal treatment and storage tank via conventional low-pressure pipe work. Reclaimed water is pumped from the storage tank either directly to the point of use (pressurised system) or to a high level gravity fed storage tank near to the point of use. At times when there is insufficient treated grey water for non-potable purposes, the deficit would automatically be made up using mains water.

5.17 Grey water from bathing may contain particulate matter, hair and other debris, and would therefore need to be screened to exclude any large debris or floating material. The

materials extracted during screening would be periodically flushed through to the foul drain. Biological treatment is also employed whereby harmless bacteria are introduced, which compete for any available nutrients and reduce the potential for harmful bacteria growth.

5.18 There are a number of costs associated with greywater recycling systems: the technical complexity is increased by the need for bacterial disinfection and operating costs are high due to the energy associated with the pumps and the requirement for regular maintenance. Greywater recycling requires an appropriately sized storage tank located on the ground floor with connection to the foul sewer for discharge of the overflow. It will not be feasible to appropriately locate the greywater storage tank within the constraints of the proposed development, without compromising the layout and/or provision of cycle and recycling bin storage.

5.19 Greywater recycling is also more carbon intensive than the supply of mains water. The operation of a greywater recycling system will increase the carbon dioxide emissions from the proposed development, which will need to be accounted for within the calculated carbon dioxide emission for the site. We would also have concerns regarding the sensitivity of the office tenants and occupants of the apartment to using communal waste water for the purpose of toilet flushing.

5.20 The incorporation of highly water efficient fittings as detailed above will significantly reduce the average household water consumption to 86.3 litres/person/day. The incorporation greywater recycling will reduce mains water use, but will not reduce the total water use beyond the savings achieved through the incorporation of water saving measures.

5.21 These factors, when weighed against its limited application, make greywater recycling unviable for achieving useful water savings at this development.

Rainwater Harvesting

5.22 There are no gardens or landscaped areas associated with the development that would utilise the water collected from a rainwater harvesting system. Therefore rainwater harvesting is deemed unsuitable for the proposed development.

6.0 SUSTAINABLE USE OF MATERIALS

6.1 Core Strategy Policy CS13 – *Tackling Climate Change through promoting higher environmental standards in design and construction* encourages developments to be sustainable through the choice of appropriate materials which will reduce energy needs during construction and operation and through the efficient use of resources.

6.2 Camden Supplementary Planning Document CPG 3 *Sustainability* states that in accordance with Development Policy DP22 – *Promoting Sustainable Design and Construction* all new

residential buildings are expected to achieve Code for Sustainable Homes level 3 and are strongly encouraged to achieve a minimum of 50% of the un-weighted material credits. The Code for Sustainable Homes pre-assessment estimator indicates a score of 12 credits against Mat 1 'Environmental Impact of Materials' achieving 50% of the overall material credits. To achieve 12 credits the building materials will be selected and assessed against the BRE Green Guide to Specification, with 2 of the 5 building elements achieving an A+ rating and the remaining building elements achieving an A rating.

6.3 New build non residential buildings are expected to achieve a BREEAM 'Very Good' rating, and are strongly encouraged to achieve a minimum of 40% of the un-weighted material credits. Guidance Document CPG 3 encourages the re-use of existing materials in accordance with the waste hierarchy before considering introducing new materials.

Reduce

6.4 The development will follow the principles of the Demolition Protocol (2008) as far as feasibly possible. The Demolition Protocol provides a framework which enables the waste hierarchy of reduce, re-use, recycle, energy recovery and disposal to landfill to inform approaches to managing buildings which are unable to be retained for future use. The Demolition Protocol Checklist will provide a reference for compliance.

6.5 Camden Planning Guidance CPG 3 states that all major developments should aim for a minimum of 15% of the total value of the materials used within the construction of the proposed development to be derived from recycled and reused sources, in accordance with the Waste and Resources Action Programme (WRAP) Quick Wins assessment or equivalent. WRAP 'Good Practice Guidance on Waste Minimisation and Management' will be consulted prior to and during the demolition of the exiting warehouse and WRAP Quick Wins Assessment integrated into the Site Waste Management Plan (SWMP).

6.6 Construction waste of the proposed site is required to be managed according to the Site Waste Management Plans Regulations 2008. The regulations are mandatory for all construction sites with an estimated cost of over £300k. By implementing the measures outlined in the SWMP, waste associated with the construction phase will be minimised and materials, disposal and labour costs reduced.

6.7 A key aim of SWMPs is to promote resource efficiency. In order to meet best practice, the SWMP will address this objective through commitments to both initially minimise construction waste and divert residual waste from landfill. In meeting best practice, targets will be set to reduce waste generated on site in accordance with the DEFRA guidance on SWMPs. Procurement of materials will be carefully planned and procedures to minimise waste, relating to each relevant waste group, will be outlined in the SWMP and implemented.

6.8 By adhering to the SWMPs regulations the proposed development will successfully improve material resource efficiency through economic use of construction materials and methods. On-site waste will be minimised, and the waste that is produced will be re-used, recycled or recovered in other ways, where feasible before disposal.

6.9 At least 85% (by weight or volume) of the non-hazardous construction waste generated on site will be diverted from landfill; as much as possible will be returned to suppliers via 'take back' schemes, salvaged for re-use or recycled using an approved waste management contractor. Where feasible the demolition waste from the existing buildings will be re-used as aggregate in the new development.

Re-use

6.10 Any materials which cannot be re-used on site as part of the new development will be made available for use by others by donating them to a waste recovery business such as Waste Alert North London's Waste Exchange Service.

Recycling

6.11 Where it is not possible to reduce or re-use the materials from the demolition of the existing warehouse, opportunities to recycle the materials off-site will be explored where feasible. To avoid the disposal of waste to landfill, materials and material packaging will be returned to suppliers via take back schemes where available.

BRE Green Guide to Specification and Responsible Sourcing

6.12 The BRE Green Guide contains more than 1500 material specifications, each corresponding to one of the main building elements: roof, floors, external walls, internal walls and windows. The impacts of the materials are assessed against 11 lifecycle categories over each stage of the material's life-cycle. Impacts under each category are graded from 'A+' to 'E' and an overall summary rating assigned for use in the environmental assessment of new developments.

6.13 Dwellings certified under The Code for Sustainable Homes must incorporate materials of minimum Green Guide 'D' rating for three of the five main building elements. Commercial premises certified against BREEAM can achieve a maximum of 5 credits against the Green Guide specification. The building materials used within the construction of 17 & 19 Ferdinand Street will be selected to exceed the Code for Sustainable Homes minimum mandatory standards and score well against BREEAM by selecting an area weighted average of A+ to B for the majority of building elements. Please refer to the pre-assessment estimator tools for the number of credits achieved.

6.14 Where feasible the building materials will be sourced from suppliers that participate in responsible sourcing schemes equivalent to BRE BES 6001:2008 Responsible Sourcing Standard. Any timber used within the proposed development will be sustainably and responsibly sourced through the Forest Stewardship Certification (FSC) Chain of Custody Certification scheme. The use of FSC timber will ensure that the timber is sourced from a well managed woodland forest.

7.0 BROWN ROOFS, GREEN ROOFS AND GREEN WALLS

7.1 Camden's Development Policy DP22 – *Promoting Sustainable Design and Construction* requires developments to incorporate brown roofs, green roofs and green walls unless it can be demonstrated that this is not possible or appropriate.

Brown/Green Roofs

7.2 The roof structure for the proposed development is a flat roof. The roof area will incorporate an extensive Photovoltaic tile array of approximately 125m^2. The remainder of the roof areas could be used for the integration of a semi intensive green roof. The use of a semi intensive green roof will allow a certain degree of access to the PV panel array, whilst providing the potential for the creation of ecological habitats. An assessment of the suitability for incorporating a green roof will need to be undertaken by a landscape architect. A structural engineer will also need to be consulted to determine whether the current design is capable of accommodating the structural loadings posed by the green roof.

7.3 The roof areas are not accessible to building occupants and so would not provide amenity space.

Green Walls

7.4 The incorporation of green walls is unlikely to be feasible. The north and west walls will be subjected to considerable over shading making the incorporation of green walls problematic. The east side of the proposed development connects to the existing building at 17 Ferdinand Street, and would therefore be unavailable. Only the south elevation is likely to have access to sufficient levels of daylight. However the south elevation is heavily glazed, with South facing windows and doors. While small areas of green wall could conceivably be fitted to the south elevations, the patch work nature of this integration would be visually distracting, may potentially affect the levels of daylight received and would impose a maintenance burden out of proportion to the perceived benefits.

7.5 In the event a green roof offers a viable solution, attenuation of rain water will be reduced. The existing site consists of pre existing development and hard standing. The proposed new development will not alter this.

8.0 FLOODING

8.1 The development is less than 1 hectare in size, and therefore a formal flood risk assessment is not required for planning applications in accordance with the National Planning Policy Framework, March 2012. A formal flood risk assessment will be required at detailed design stage as a requirement of the Code for Sustainable Homes and BREEAM assessments.

8.2 The proposed development is located with Flood Zone 1; an area where the chance of both river and sea flooding each year is <0.1% (1 in 1000) or less. Figure 3 Environment Agency Flood Risk Maps indicates the development is located outside of the nearest floodplain.

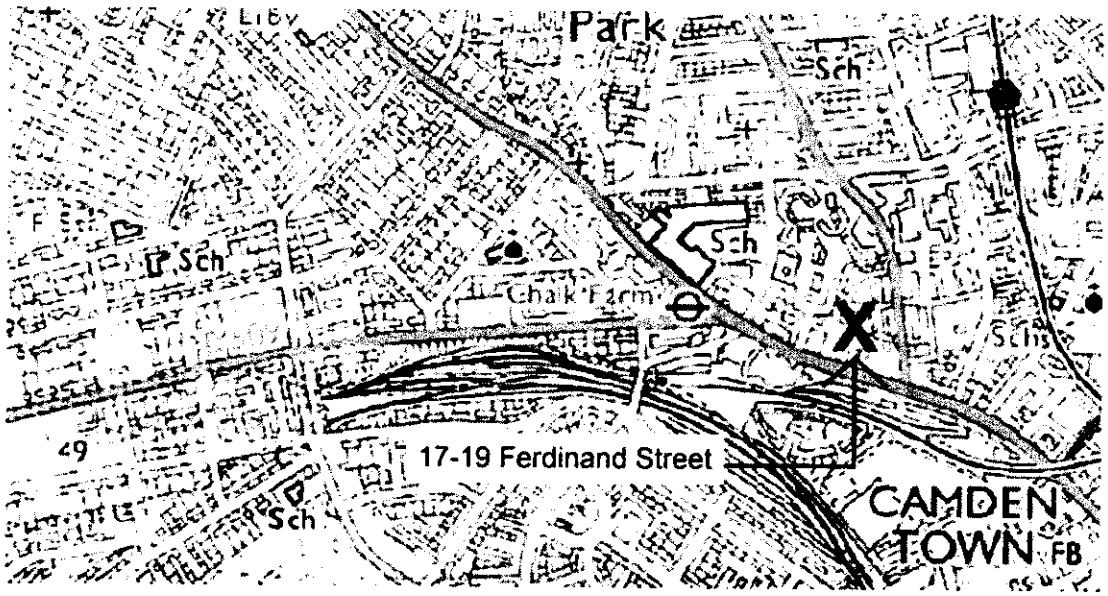


Figure 3: Environment Agency Flood Risk Maps

8.3 There will be no change in the amount of impermeable surfaces as a result of the change of use of the site. Rainwater from the development will be discharged to a surface water sewer/drain.

8.4 In accordance with the Code for Sustainable Homes minimum mandatory requirements and BREEAM requirements for the management of surface water runoff, the peak rate of runoff over the developments lifetime, allowing for climate change, will be no greater for the developed site than it was for pre-development rate of run-off. The volume of runoff arising from the building footprint and impermeable areas will be managed in accordance with the assessment requirements. The system will also be designed to prevent the risk of flooding in the event of failure caused by either extreme rainfall or lack of maintenance.

9.0 ADAPTING TO CLIMATE CHANGE

9.1 Camden Core Strategy Policy CS 13 *Tackling climate change through promoting higher environmental standards* requires developments to consider the impact of climate change and be designed to cope with the anticipated conditions.

Adaptation to warmer temperatures

9.2 The development will incorporate a high standard of build fabric. The insulation, air permeability and thermal bridging of the development will all be superior to the requirements of the 2010 Building Regulations. The risk of excessive overheating to the residential units through the glazing will be reduced through the specification of openable windows. The glazed areas on the ground floor of the development will be mostly shaded during periods of the day when overheating will be most problematic.

9.3 The development will utilise a natural ventilation and cooling strategy. The design level of air permeability will aid in achieving sufficient levels of natural ventilation. The layout of the development will also facilitate natural ventilation and cooling. The north south orientation of the development and the internal layout of both the ground floor commercial units and the upper floor residential spaces would allow for cross ventilation on all floors. Additionally the three stair cores distributed throughout the centre of the building will allow a natural stack effect for cooling.

9.4 Thermal mass is the ability of the fabric of the building to absorb excess heat. If effectively utilised, it can reduce heating and cooling loads and, in some cases, remove the requirement to provide air conditioning. Buildings with a high thermal mass and high level of insulation generally make better use of solar gains in the day by absorbing the heat and radiating the warmth later on as the level of solar radiation drops. The proposed development does contain a significant area of south facing elevation and could potentially take advantage of passive solar gain and thermally massive building materials; however the interaction of passive solar gain, building thermal mass and the risk of overheating is a complex one beyond the scope of an initial assessment. At this stage it can only be determined that the development is potentially suitable; a precise determination will be reliant on more comprehensive dynamic thermal simulation of the development undertaken at the detailed design stage.

9.5 The orientation of the building mirrors the orientation of the existing building. The building is orientated within a south north direction.

Adaptation to heavier rainfall

9.6 The peak rate of runoff over the developments lifetime, allowing for climate change, will be no greater for the developed site than it was for pre-development rate of run-off. The

volume of runoff arising from the building footprint and impermeable areas will be managed in accordance with the requirements outlined within the Code for Sustainable Homes and BREEAM assessment criteria. The system will also be designed to prevent the risk of flooding in the event of failure caused by either extreme rainfall or lack of maintenance.

Adaptation to drier summers

9.7 The proposed development at 17 & 19 Ferdinand Street will significantly reduce its demands on mains water supply through the use of water efficient fittings.

10.0 BIODIVERSITY AND LOCAL FOOD GROWING

10.1 The site currently comprises an existing two storey warehouse located between the former piano factory at 10 Belmont Street and number 17 Ferdinand Street. The front elevations of the existing building face onto a large courtyard surrounded by existing commercial and residential properties.

10.2 The proposed mix use development is of a similar size to the existing building footprint, and will continue to remain within close proximity to the surrounding buildings. The proximity of the surrounding buildings prevents the incorporation of a communal amenity area. The original scheme included individual balconies for the apartments; however these have been removed based on feedback from the Planning Officer. The offices have been provided with small patios at the rear of the offices. The rear patio's can only be accessed via the offices.

10.3 The site is accessed via a small alley way which opens up into a communal courtyard at the north elevation of the building. The courtyard comprises hard standing for use by the surrounding commercial and residential buildings for car parking.

10.4 Within the constraints of the site there are limited opportunities for improving the biodiversity of the site. The potential inclusion of a semi-intensive green roof will help create a living habitat for small wildlife and a wide variety of plant species. It will also be more aesthetically pleasing than a traditional flat roof for the surrounding buildings. The inclusion of a green roof will provide a minor enhancement in the ecological value of the site between the existing site use and proposed development.

10.5 There is insufficient external space associated with the development for the provision of land to encourage occupants of the development to grow their own food.

11.0 SUMMARY AND CONCLUSION

11.1 The Sustainability Assessment demonstrates that all feasible measures have been incorporated into the proposed development at 17 & 19 Ferdinand Street to ensure that the building is sustainable in its design and construction in accordance with the London Borough of Camden Local Development Framework policies: CS13 – *Tackling climate change through promoting higher environmental standards*, DP22 – *Promoting sustainable design and construction* and DP23 – *Water.*

11.2 A Code for Sustainable Homes and BREEAM pre-assessment has also been undertaken to demonstrate that the proposed development at 17 & 19 Ferdinand Street will achieve a high level of environmental performance through nationally recognised sustainable building standards. The Code for Sustainable Homes pre-assessment estimator demonstrates an overall credit score and rating of 62.97% Code level 3, with 50% of the un-weighted energy water and material credits achieved. The BREEAM pre-assessment estimator demonstrates an overall score of 60.76%, BREEAM 'Very Good' rating, with 60% of the un-weighted energy and water credits, and 40% of the un-weighted material credits.

APPENDICES

APPENDIX A

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Results

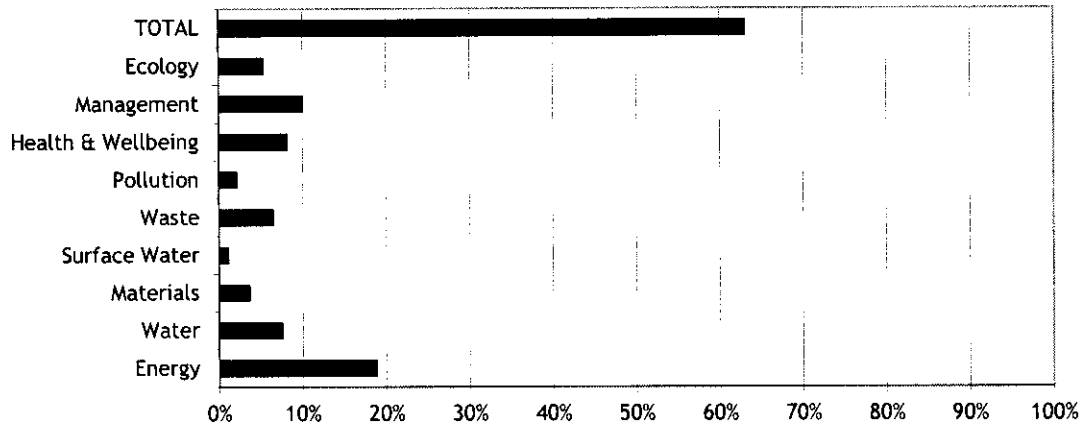
Development Name:	17 & 19 Ferdinand Street, London
Dwelling Description:	16 apartments, comprising x14 2 bed apartments and x2 1 bed apartments
Name of Company:	Create Consulting Engineers
Code Assessor's Name:	Fiona Keysell
Company Address:	15 Princes Street, Norwich, NR3 1AF
Notes/Comments:	Code for Sustainable Homes level 3 in accordance with Development Policy DP22 - Promoting Sustainable Design and Construction. A minimum of 50% of the un-weighted energy, water and material credits are to be achieved.

PREDICTED RATING - CODE LEVEL: 3

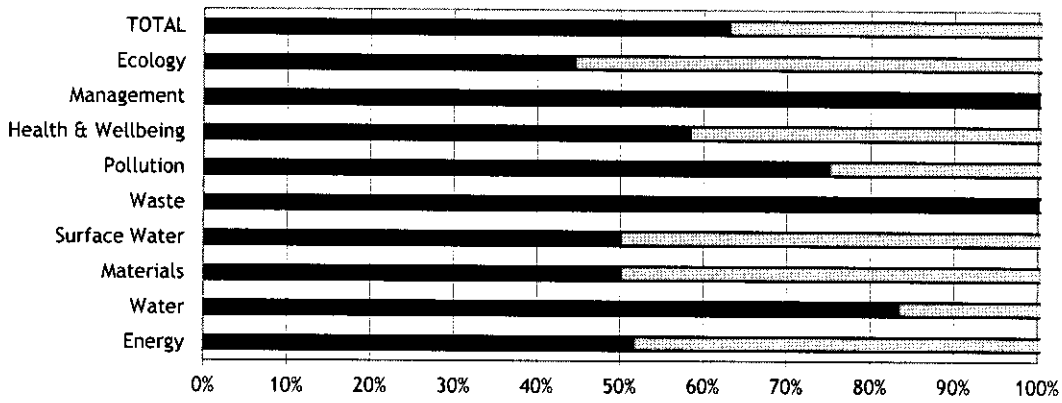
Mandatory Requirements: All Levels

% Points:	62.97%	- Code Level: 3
Breakdown:	Energy	- Code Level: 4
	Water	- Code Level: 4

Graph 1: Predicted contribution of individual sections to the total score and percentage of total achievable score



Graph 2: Predicted percentage of credits achievable: Total and by Category



NOTE: The rating obtained by using this Pre Assessment Estimator is for guidance only. Predicted ratings may differ from those obtained through a formal assessment, which must be carried out by a licensed Code assessor.

CATEGORY 1 ENERGY	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 51.61		Credits	Level		
Contribution to Overall % Score: 18.78 points		16.0 of 31 Credits	Level 4		
Ene 1 Dwelling Emission Rate	Credits are awarded based on the percentage improvement of the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) as calculated using SAP 2009. Minimum standards for each Code level apply. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score What is the predicted number of credits? 3.0 OR Are zero net CO_2 emissions achieved? ☐	3.0 of 10 Credits	Level 4	At Code level 3 the minimum mandatory requirement is in accordance with the 2010 Building Regulations. The development at Ferdinand Street will exceed the minimum requirements and achieve a 25% improvement in the 2010 Dwelling Emission Rate (DER) compared to the Target Emission Rate (TER) in accordance with the London Plan Policy 5.2 'Minimising Carbon Dioxide Emissions'.	
Ene 2 Fabric Energy Efficiency	Credits are awarded based on the Fabric Energy Efficiency ($kWh/m^2/yr$) of the dwelling. Minimum standards apply at Code levels 5 and 6. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score Apartments, Mid-terrace ◉ OR End terrace, Semi and Detached ○ OR Staggered Mid terrace ○ What is the predicted number of credits? 5.0	5.0 of 9 Credits	Level 4	The apartments will have an improved Fabric Energy Efficiency (FEE), future proofing reductions in the amount of carbon dioxide emitted from the apartments. The apartments will exceed the minimum requirements of the 2010 Building Regulations and achieve an average FEE performance of less than 43kWh/m2/year.	
Ene 3 Energy Display Devices	Credits are awarded where a correctly specified Energy Display Device is installed monitoring electricity and/or primary heating fuel consumption. Select whether the EDD monitors electricity and/or fuel None Specified ○ Primary Heating only ○ OR Electricity only ○ OR Electricity and primary heating fuel ◉	2 of 2 Credits	-	Electricity and gas will be displayed to occupants by correctly specified energy display devices.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Ene 4 Drying Space	One credit is awarded for the provision of either internal or external secure drying space with posts and footings or fixings capable of holding 4m+ of drying line for 1-2 bed dwellings and 6m+ for dwellings with 3 bedrooms or greater. Will drying space meeting the criteria be provided? Yes ◉ OR No ○	1 of 1 Credits	-	All 16 units will be provided with retractable drying lines located over the bath with a minimum line length of 4m. The bathrooms will have adequate ventilation with a minimum extract rate of 30 l/s and be controlled according to the requirements for intermittent extract ventilation defined by the Building Regulations for England and Wales Approved Document F1.	
Ene 5 Energy Labelled White Goods	Credits are awarded where each dwelling is provided with either information about the EU Energy Labelling Scheme, White Goods with ratings ranging from A+ to B or a combination of the previous according to the technical guide. Select the appropriate option below EU Energy labelling information only ☑ A+ rated appliances ☐ A+, A and B rated appliances ☐ Combination of compliant rated white goods with EU Energy Labelling Scheme ☐	1 of 2 Credits	-	A Home User Guide will be produced to provide occupants with information relating to the efficient operation of their home and the surrounding area. This guide will also include information on the EU Energy Efficiency Labelling Scheme in order to encourage the purchase of energy-efficient appliances.	
Ene 6 External Lighting	Credits are awarded based on the provision of space lighting* with dedicated energy efficient fittings and security lighting fittings with appropriate control gear.. Space Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting ◉ Security Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting and controls ◉ Dual lamp luminaires Compliant with both above criteria ☑ * Statutory safety lighting is not covered by this requirement	2 of 2 Credits	-	All external space lighting and lighting within the communal areas of the apartment blocks will be dedicated energy-efficient fittings that only accept lamps with a luminous efficacy greater than 40 lumens per circuit watt. The lighting controls of the external and communal lighting will be such that they will not operate during daylight hours or when the space is unoccupied. Where specified burglar security lighting will include energy efficient fittings with a maximum wattage of 150 W controlled by movement detecting control devices such as passive infra red (PIR) and daylight cut off sensors. All other security lighting will have dedicated energy efficient fittings controlled by daylight cut-off sensors or time switches.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Ene 7 *Low or Zero Carbon Technologies*	Credits are awarded where there is a 10% or 15% reduction in CO_2 emissions resulting from the use of low or zero carbon technologies. Select % contribution made by low or zero carbon technologies Less than 10% of demand ◉ OR 10% of demand or greater ○ OR 15% of demand or greater ○	0 of 2 Credits	-	We have assumed a worst case scenario, not all dwellings will meet the minimum 10% requirement, and therefore no credits have been awarded.	
Ene 8 Cycle Storage	Credits are awarded where adequate, safe, secure and weather proof cycle storage is provided according to the Code requirements. Fill in the development details below Number of bedrooms: 2 Number of cycles stored per dwelling* 2.0 * if you have storage for 1 cycle per two dwellings insert 0.5 in number of cycles stored per dwelling	2 of 2 Credits	-	*Communal cycle storage has been provided on* the ground floor of the building with direct access to the public right of way. Sufficient cycle racks have been provided to allocate one cycle storage space for the one bedroom apartments and two cycle storage spaces for the two bedroom apartments. The cycle stores will have a secure entrance lock and secure fixings which will comply with clause 35 of the Secure by Design New Homes 2010 criteria.	
Ene 9 Home Office	A credit is awarded for the provision of a home office. The location, space and services provided must meet the Code requirements. Will there be provision for a Home Office? Yes ○ OR No ◉	0 of 1 Credits	-	Credit not sought at this stage. This credit may be included at the detailed design stage where an assessment of the daylight factor of the rooms confirms that there is sufficient daylight to award the credit.	

CATEGORY 2 WATER	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 83.33		Credits	Level		
Contribution to Overall Score: 7.50 points		5 of 6 Credits	Level 4		
Wat 1 Indoor Water Use	Credits are awarded based on the predicted average household water consumption, calculated using the Code Water Calculator Tool. Minimum standards for each code level apply. Select the predicted water use / Mandatory Requirement greater than 120 litres/ person/ day ○ OR ≤ less than 120 litres/ person/ day ○ OR ≤ less than 110 litres/ person/ day ○ OR ≤ less than 105 litres/ person/ day ○ OR ≤ less than 90 litres/ person/ day ◉ OR ≤ less than 80 litres/ person/ day ○	4 of 5 Credits	Level 3 AND Level 4	The Code for Sustainable Homes sets a minimum mandatory standard for internal potable water consumption of less than 105 litres/person/day for Code levels 3 and 4. The apartments will exceed the minimum mandatory standard and achieve a water consumption of less than 90 litres/person/day, through the use of water efficient fittings.The water consumption of the dwellings has been calculated using the Government's national calculation methodology for assessing water efficiency in new dwellings published by Communities and Local Government, September 2009.	
Wat 2 External Water Use	A credit is awarded where a compliant system is specified for collecting rainwater for external irrigation purposes. Where no outdoor space is provided the credit can be achieved by default. Select the scenario that applies No internal or communal outdoor space ◉ OR Outdoor space with collection system ○ OR Outdoor space without collection system ○	1 of 1 Credits	-	In the absence of individual and communal gardens the credit can be awarded by default.	

CATEGORY 3 MATERIALS	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 50.00		Credits	Level		
Contribution to Overall Score: 3.60 points		12 of 24 Credits	All Levels		
Mat 1 Environmental Impact of Materials	Mandatory Requirement: At least three of the five key building elements must achieve a Green Guide 2008 Rating of A+ to D. Tradable Credits: Points are awarded on a scale based on the Green Guide Rating of the specifications. The Code Materials Calculator can be used to predict a potential score. Mandatory Requirement — Will the mandatory requirement be met? ☑ Enter the predicted score — What is the predicted number of credits? 12	12 of 15 Credits	All Levels	The building materials will be assessed against the BRE Green Guide to Specification; an environmental rating scheme based on life cycle assessments (LCA), using BRE's Environmental Profiles Methodology 2008. The building will achieve 12 out of the available 15 credits. This exceeds the mandatory requirements of the Materials category of the Code and will provide some of the additional tradable credits necessary to achieve Code level 3. The 12 credits also demonstrates that 50% of the unweighted material credits have been achieved.	
Mat 2 Responsible Sourcing of Materials - Basic Building Elements	Credits are awarded where materials used in the basic building elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score — What is the predicted number of credits? ☐	0 of 6 Credits	-	Credits not sought at this stage.	
Mat 3 Responsible Sourcing of Materials - Finishing Elements	Credits are awarded where materials used in the finishing elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score — What is the predicted number of credits? ☐	0 of 3 Credits	-	Credits not sought at this stage.	

CATEGORY 4 SURFACE WATER RUN-OFF	Overall Level: 3	Overall Score 62.97		Assumptions Made	Evidence Required
% of Section Credits Predicted: 50.00%		Credits	Level		
Contribution to Overall Score: 1.10 points		2 of 4 Credits	All Levels		
Sur 1 Management of Surface Water Run-off from developments	Mandatory Requirement: Peak rate of run-off into watercourses is no greater for the developed site than it was for the pre-development site and that the additional predicted volume of rainwater discharge caused by the new development is entirely reduced as far as possible in accordance with the assessment criteria. Desiging the drainage system to be able to cope with local drainage system failure. Tradable Credits: Where SUDS are used to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters. Mandatory Requirement Will the mandatory requirement be met? ☑ Select the appropriate option No SUDS ☐ No runoff into watercourses for the first 5 mm of rainfall ☐ Runoff from hard surfaces will receive an appropriate level of treatment ☐	0 of 2 Credits	All Levels	The mandatory requirements for the management of surface water runoff will be met. The peak rate of runoff post-development will be no greater than the pre-development rate of run-off. Additional volume of runoff arising from the increased building footprint and impermeable areas will be managed in accordance with Code requirements. The system will also be designed to prevent the risk of flooding in the event of failure caused by either extreme rainfall or lack of maintenance.	
Sur 2 Flood Risk	Credits are awarded where developments are located in areas of low flood risk or where in areas of medium or high flood risk appropriate measures are taken to prevent damage to the property and its contents in accordance with the Code criteria in the technical guide. Select the annual probability of flooding (from PPS25*) Zone 1 - Low ◉ OR Zone 2 - Medium ○ OR Zone 3 - High ○ Select the apropriate option(s) Low risk of flooding from FRA** ☑ All measures of protection are demonstrated in FRA ☐ Ground floor level and access routes are 600 mm above design flood level ☐ * Planning Policy Statement 25 - Planning and Flood Risk ** FRA - Flood Risk Assessment	2 of 2 Credits	-	The proposed development is located with Flood Zone 1; an area where the chance of both river and sea flooding each year is <0.1% (1 in 1000) or less.	

CATEGORY 5 WASTE	Overall Level: 3	Overall Score 62.97		Assumptions Made	Evidence Required
% of Section Credits Predicted: 100.00%		Credits	Level		
Contribution to Overall Score: 6.40 points		8 of 8 Credits	All Levels		
Was 1 Storage of non-recyclable waste and recyclable household waste	Mandatory Requirement: The space provided for waste storage should be sized to hold the larger of either all external containers provided by the Local Authority or the min capacity calculated from BS 5906. Tradable Credits are awarded for adequate internal and/ or external recycling facilities. **Mandatory Requirement** Will the minimum space be provided and be accessible to disabled people? ☑ **Internal Recyclable household waste storage** Where there is no external recyclable waste storage and no Local Authority collection scheme Internal storage (capacity 60 litres) ☐	*0 of 2 Credits*		Communal bin storage has been provided on the ground floor of the building to accomodate storage containers which meet the minimum volume requirements recommended by BS 5906. The container will need to be accessible by disabled people in acordance with checklist IDP, which includes a level threshold and 1500mm turning circle to enable wheelchair access. A *minimum of 30 litres of internal storage will need to be* provided within a dedicated position in a kitchen cupboard of each of the apartments. The London Borough of Camden provide a kerbside collection services for post collection sorting of recyclables.	
	Local Authority collection Scheme Post Collection sorting Internal storage (capacity 30 litres) ☑ Pre-collection sorting Internal storage (3 separate bins, capacity 30 litres) ☐	4 of 4 Credits	All Levels		
	External Storage, no Local Authority collection scheme 3 separate internal storage bins (capacity 30 litres) ☐ **AND** Houses External Storage(capacity 180 litres) ☐ Flats Private recycling operator ☐ 3 or greater types of waste collected ☐	0 of 4 Credits			

Issue		Credits	Level	Assumptions Made	Evidence Required
Was 2 Construction Site Waste Management	A credit is awarded where a compliant SWMP is provided with targets and procedures to minimise construction waste. Credits are available where the SWMP include procedures and commitments for diverting either 50% or 85% of waste generated from landfill. SWMP details Does the SWMP include: + No SWMP ○ + SWMP with targets and procedures to minimise waste? ○ + SWMP with procedures to divert 50% of waste ○ + SWMP with procedures to divert 85% of waste ◉	3 of 3 Credits		A Site Waste Management Plan will need to be produced in accordance with Code for Sustainable Homes Checklists Was 2A, B and C. These checklists summarise the relevant guidance set by the SWMP regulations and best practice guidance from DEFRA, BRE and WRAP. As part of this credit the SWMP will also need to include procedures and commitments to reduce waste generated on site and to sort and divert waste from landfill. A minimum of 85% by weight or volume of the non harzardous waste will need to be diverted from landfill.	
Was 3 Composting	A credit is awarded where individual home composting facilities are provided, or where a community/ communal composting service, either run by the Local Authority or overseen by a management plan is in operation. Select the facilities available No composting facilities ○ Individual composting facilities ○ OR Communal/ community composting*? ◉ Local Authority ☑ OR Private with management plan ☐ * including if an automated waste collection system is in place	1 of 1 Credit	-	The London Borough of Camden offer a kitchen waste collection service, and therefore the credit can be awarded.	

CATEGORY 6 POLLUTION	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 75.00%		Credits	Level		
Contribution to Overall Score: 2.10 points		3 of 4 Credits	All Levels		
Pol 1 Global Warming Potential (GWP) of Insulants	A credit is awarded where all insulating materials only use substances (in manufacture AND installation) that have a GWP of less than 5. Select the most appropriate option All insulants have a GWP less than 5 (◉) OR Some insulants have a GWP of less than 5 (○) OR No insulants have a GWP of less than 5 (○)	1 of 1 Credits	-	All insulating materials used within the roof, walls, floors, external doors, hot water cylinder and pipe insulation will only use substances with a Global Warming Potential of less than five, and an Ozone Depleting Potential of zero. Any foamed insulating materials will use blowing agents which conform to these requirements.	
Pol 2 NOx Emissions	Credits are awarded on the basis of NOx emissions arising from the operation of the space and water heating system within the dwelling. Select the most appropriate option Greater than 100 mg/kWh (○) OR Less than 1 0 mg/kWh (○) OR Less than 70 mg/kWh (◉) OR Less than 40 mg/kWh (○) OR Class 4 boiler (○) OR Class 5 boiler (○) OR All space and hot water energy requirements are met by systems who do not produce NOx emissions (○)	2 of 3 Credits	-	Individual gas boilers will be the primary source of heating and hot water for the dwellings. 'Class 5' boilers are defined under BS EN 297: 1994 as those with a dry NOx emission level of 70mg/kWh at 0% excess oxygen levels and represents the lowest NOx Class. The apartments will incorporate energy efficient condensing boilers with a dry NOx emission level of less than 40mg/kWh.	

CATEGORY 7 HEALTH & WELLBEING	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 58.00%		Credits	Level		
Contribution to Overall Score: 8.16 points		7 of 12 Credits	No level		
Hea 1 Daylighting	Credits are awarded for ensuring key rooms in the dwelling have high daylight factors (DF) and a view of the sky. Select the compliant areas Room Kitchen: Avg DF of at least 2% ☐ Living Room*: Avg DF of at least 1.5% ☐ Dining Room*: Avg DF of at least 1.5% ☐ Study*: Avg DF of at least 1.5% ☐ 80% of working plane in all above rooms receive direct light from the sky? ☐ Any room used for Ene 9 Home Office must also achieve a min DF of 1.5%.	0 of 3 Credits	-	Credit not sought at this stage. These credits may be included at the detailed design stage where an assessment of the daylight factor of the rooms confirms that there is sufficient daylight to award the credits.	
Hea 2 Sound Insulation	Credits are awarded where performance standards exceed those required in Building Regulations Part E. This can be demonstrated by carrying out pre-completion testing or through the use of Robust Details Limited. Select a type of property Detached Property ○ Attached Properties: - Separating walls and floors only exist between non habitable spaces ○ - Separating walls and floors exist between habitable spaces ◉ Select a performance standard Performance standard not sought ○ Airborne: 3db higher; Impact: 3dB lower ○ OR Airborne: 5db higher; Impact: 5dB lower ◉ OR Airborne: 8db higher; Impact: 8dB lower ○	3 of 4 Credits	-	The apartments will be constructed to ensure that the party walls and separating floors between habitable rooms exceed the standards of the Building Regulations Approved Document E. The separating walls and floors will achieve airborne sound insulation values that are at least 5dB higher, and impact sound insulation values that are at least 5dB lower than the performance standards set out in the Building Regulations for England and Wales Approved Document E. A programme of pre-completion testing based on the Normal programme of testing described in Approved Document E, will be undertaken for every group or sub-group of apartments to demonstrate that the sounds insulation values have been met.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Hea 3 Private Space	A credit is awarded for the provision of an outdoor space that is at least partially private. The space must allow easy access to all occupants. Will a private/ semi-private space be provided? Yes, private/semi-private space will be provided ○ OR No private/semi-private space ◉	0 of 1 Credits	-	No private space has been provided for the residential apartments.	
Hea 4 Lifetime Homes	Mandatory Requirement: Lifetime Homes is mandatory when a dwelling is to achieve Code Level 6. Tradable credits: Credits are awarded where the developer has implemented all of the principles of the Lifetime Homes scheme. Mandatory Requirement Dwelling to achieve Code Level 6? ☐ Lifetime Homes Compliance All Lifetime Homes criteria will be met ◉ OR Exemption from LTH criteria 2/3 applied ○ Credit not sought ○	4 of 4 Credits	No level	These credits are not currently being sought.	

CATEGORY 8 MANAGEMENT	Overall Level: 3	Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 100.00%		Credits	Level		
Contribution to Overall Score: 10.00 points		9 of 9 Credits	All Levels		
Man 1 Home User Guide	Credits are awarded where a simple guide is provided to each dwelling covering information relevant to the 'non-technical' home occupier, in accordance with the Code requirements. Tick the topics covered by the Home User Guide Operational Issues? ☑ Site and Surroundings? ☑ Is available in alternative formats? ☑	3 of 3 Credits	-	A Home User Guide will be provided to occupants to help them understand how to operate their home as efficiently as possible and make the best use of facilities within the local area. The guide will be relevant to the non technical home owner and will be available in an alternative format upon request.	
Man 2 Considerate Constructors Scheme	Credits are awarded where there is a commitment to comply with best practice site management principles using either the Considerate Constructors Scheme or an alternative locally/ nationally recognised scheme. Select the appropriate scheme and score No scheme used ○ Considerate Constructors OR Best Practice: Score between 24 and 31.5 ○ OR Best Practice+: Score between 32 and 40 ◉ Alternative Scheme* OR Mandatory + 50% optional requirements ○ OR Mandatory + 80% optional requirements ○ * In the first instance, contact a Code Service Provider if you are considering to use an alternative scheme.	2 of 2 Credits	-	The construction phase of the development will be registered with the Considerate Constructors Scheme to help manage the construction site in an environmentally and socially considerate and accountable manner. The construction of the proposed development will be managed beyond best practice and achieve a score of at least 32 against the Considerate Constructors Scheme's Code of Considerate Practice.	
Man 3 Construction Site Impacts	Credits are awarded where there is a commitment and strategy to operate site management procedures on site as following: Tick the impacts that will be addressed Monitor, report and set targets, where applicable, for: - CO_2/ energy use from site activities ☑ - CO_2/ energy use from site related transport ☐ - water consumption from site activities ☑ Adopt best practice policies in respect of: - air (dust) pollution from site activities ☑ - water (ground and surface) pollution on site ☑ 80% of site timber is reclaimed, re-used or responsibly sourced ☐	2 of 2 Credits	-	Best practice policies will be adopted throughout the construction of the development with respect to air pollution arising from site activities, measures taken will include skip covers, dust sheets and damping down the site in dry weather. Best practice policies will also be adopted with regards to water pollution occurring on site in accordance with guidelines in Environment Agency documents. Carbon emissions arising from site activities and water use during the construction phases will be monitored, recorded and displayed on site. Appropriate targets will be set and actual consumption over the project duration monitored against the targets.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Man 4 Security	Credits are awarded for complying with Section 2 - Physical Security from Secured by Design - New Homes. An Architectural Liaison Officer (ALO), or alternative, needs to be appointed early in the design process and their recommendations incorporated. Secured by Design Compliance Credit not sought ○ OR Secured by Design Section 2 Compliance ◉	2 of 2 Credits	-	Security measures have been taken into consideration within the site layout, and physical security measures incorporated into the development proposals. An Architectural Liaison Officer or Crime Prevention Design Advisor will be consulted at design stage to make further recommendations pertaining to the physical security of each dwelling to comply with Section 2 Physical Security from Secured by Design - New Homes.	

CATEGORY 9 ECOLOGY — Overall Level: 3		Overall Score	62.97	Assumptions Made	Evidence Required
% of Section Credits Predicted: 44.00%		Credits	Level		
Contribution to Overall Score: 5.33 points		4 of 9 Credits	All Levels		
Eco 1 Ecological Value of Site	One credit is awarded for developing land of inherently low value. Select the appropriate option Credit not sought ○ OR Land has ecological value ○ OR Land has low/ insignificant ecological value* ◉ * Low ecological value is determined either a) by using Checklist Eco 1 across the whole development site; or b) where an suitably qualified ecologist is appointed and can confirm or c) produces an independent ecological report of the site, that the construction zone is of low/ insignificant value; AND the rest of the development site will remain undisturbed by the works.	1 of 1 Credits	-	The proposed mix use development is of a similar size to the existing building footprint, and will continue to *remain within close proximity to the surrounding* buildings. The proximity of the surrounding buildings prevents the incorporation of a communal amenity area. The pre-development land comprises an existing warehouse and hard standing. There are no features of ecological value. The credit covering Ecological Value is awarded by default.	
Eco 2 Ecological Enhancement	A credit is awarded where there is a commitment to enhance the ecological value of the development site. Tick the appropriate boxes Will a *Suitably Qualified Ecologist* be appointed to recommend appropriate ecological features? ☐ AND Will all key recommendations be adopted? ☐ AND 30% of other recommendations be adopted? ☐	0 of 1 Credits	-	Within the constraints of the site there are limited opportunities for improving the ecological value of the site. There will be a minor change in the ecological value of the site between the existing site use and proposed development, but not sufficient to award this credit.	
Eco 3 Protection of Ecological Features	A credit is awarded where there is a commitment to maintain and adequately protect features of ecological value. Type and protection of existing features Site with features of ecological value? ○ OR Site of low ecological value (as Eco 1)? ◉ AND All* existing features potentially affected by site works are maintained and adequately protected? ☐ *If a suitably qualified ecologist has confirmed that a feature can be removed due to insignificant ecological value or poor health conditions, as long all the rest have been protected, then this box can be ticked.	1 of 1 Credits	-	This credit is awarded by default as the land is of low ecological value.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Eco 4 Change of Ecological Value of Site	Credits are awarded where the change in ecological value has been calculated in accordance with the Code requirements and is calculated to be: Change in Ecological Value Major negative change: fewer than -9 ○ Minor negative change: between -9 and -3 ◉ OR Neutral: between -3 and +3 ○ Minor enhancement: between +3 and +9 ○ Major enhancement: greater than 9 ○	1 of 4 Credits	-	There will be a minor negative change in the ecological value of the site between the existing site use and proposed development.	
Eco 5 Building Footprint	Credits are awarded where the ratio of combined floor area of all dwellings on the site to their footprint is: Ratio of Net Internal Floor Area: Net Internal Ground Floor Area Credit Not Sought ○ OR Houses: 2.5:1 OR Flats: 3:1 ◉ OR Houses: 3:1 OR Flats: 4:1 ○ OR Houses & Flats Weighted (2.5:1 & 3:1) ○ OR Houses & Flats Weighted (3:1 & 4:1) ○	1 of 2 Credits		The ratio of the combined floor area of the apartments to the total building footprint is greater than 3:1 *awarding one credit.*	

APPENDIX B