



Sustainability Statement

61-65 Charlotte Street, W1T 4PG
London Borough of Camden

On behalf of
Merchant Land Investments Ltd

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EXECUTIVE SUMMARY

- I. This Sustainability Statement has been prepared by Metropolis Green on behalf of Merchant Land Investments Ltd in support of the full planning application for the proposed development at 61 – 65 Charlotte Street.
- II. The proposal includes refurbishment, redevelopment and extension of a dilapidated mixed use 4 storey building. It includes retention of the existing front façade, replacement of the existing rear extension and internal refurbishment to optimize office use on the site totalling 835m². The proposal also includes refurbishment of the existing retail spaces totalling 85.8m² at ground floor, and a change of use of the upper four floors to provide 7 residential units.
- III. This Sustainability Statement details how the design team has considered the site's potential environmental impacts and how those impacts can be managed and mitigated in line with the prevailing spatial planning policies in the London Borough of Camden and the BREEAM environmental assessment schemes.
- IV. London Borough of Camden Policy DP22, adopted in November 2010, requires the residential elements of the development to achieve an Excellent rating under BREEAM Domestic Refurbishment (BDR). The non-residential elements of the scheme are required to achieve a BREEAM 'Very Good' rating under DP22. This report demonstrates how compliance with this policy can be achieved for this development.
- V. London Borough of Camden Planning Guidance document CPG3, adopted in September 2013, sets an aspiration for non-residential developments to achieve BREEAM 'Excellent' from 2013. As a refurbishment project and due to site constraints in terms of location within a conservation area, it is not feasible to achieve BREEAM 'Excellent' for the non-residential element of this scheme, however as outlined above the scheme is compliant with the adopted Policy DP22.
- VI. BREEAM Non-Domestic Refurbishment and Fit Out 2014 (BNDR) was released by BRE in December 2014 and is applicable to existing non-domestic dwellings undergoing refurbishment. As the most applicable BREEAM scheme for this development, compliance with DP22 has been demonstrated through the application of this scheme to the office areas of this development. Given the recent release of this scheme, the practicalities of achieving certification under this scheme are unknown, however with our experience of previous BREEAM schemes we have deemed the achievement of BREEAM 'Very Good' is achievable under BNDR for the proposed office scheme at 61-65 Charlotte Street.

- VII. The proposed redevelopment has targeted sustainability throughout the lifetime of the building. In particular, energy and water efficiency measures will be integral to the building's design and specification. The building has been designed to prevent overheating and avoid excessive requirements for heating and cooling, along with measures to reduce the overall impact of the construction phase and to ensure the ecological value of the site is enhanced. The proposed redevelopment satisfies the high standards of sustainability as prescribed by the London Borough of Camden planning policy.
- VIII. BDR and BNDR Pre-assessments have been undertaken for the development and the residential dwellings achieve an 'Excellent' rating with a score of 71.05% under BDR and the office areas achieve a 'Very Good' rating with a score of 64.38% under BNDR.

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1.0 INTRODUCTION

- 1.0.1 This Sustainability Statement has been prepared by Metropolis Green, to accompany the planning application, submitted to the London Borough of Camden by Merchant Land Investments Ltd, for the proposed development at 61-65 Charlotte Street.
- 1.0.2 This report addresses relevant planning policy the applicable standards and issues contained within the BDR and BNDR environmental assessment methodologies.
- 1.0.3 London Borough of Camden Policy DP22, adopted in November 2010, requires the residential elements of this development to achieve an 'Excellent' rating under BDR. The non-residential elements of the scheme are required to achieve BREEAM 'Very Good' under DP22. This report demonstrates how compliance with this policy can be achieved for this development.
- 1.0.4 London Borough of Camden Planning Guidance document CPG3, adopted in September 2013, sets an aspiration for non-residential developments to achieve BREEAM 'Excellent' from 2013. As a refurbishment project and due to site constraints in terms of location within a conservation area, it is not feasible to achieve BREEAM Excellent for the non-residential element of this scheme, however the mandatory requirements have been achieved and justification has been provided within the pre-assessment at Appendix C where credits have not been pursued. As outlined above the scheme is compliant with the adopted Policy DP22.
- 1.0.5 Due to the small size of the two retail spaces (82sqm) within the proposals and the limited scope of works, it is not appropriate to implement a BREEAM assessment for this space. A separate BREEAM assessment would be required for these small units and the cost of implementation would be disproportionate to the cost of the units and would make them economically unviable for lease as the cost would need to be recouped from the rent. Furthermore these spaces will inherently benefit from the site-wide benefits of the implementation of the other environmental assessment methods, in areas such as drainage, materials efficiency, site management, ecology and energy reduction.
- 1.0.6 This report highlights where a sustainability standard can be met and how this will be achieved. This report assumes a basic understanding of the BREEAM assessment process. For further information please refer to the BDR and the BNDR scheme Technical Manuals, available from BRE Global Ltd. Pre-Assessment summaries for both schemes

have been prepared by Metropolis Green and can be found in Appendix B & C.

- 1.0.7 This report should also be read alongside other supplemental reports prepared by the design team for the planning application, including the Energy Strategy prepared by Metropolis Green and the Design and Access Statement prepared by Harper Downie Architects.

2.0 SITE AND PROPOSED DEVELOPMENT

2.1 Site and Surrounding Area

- 2.1.1 61-65 Charlotte Street is formed of three terraced town houses located in Fitzrovia, central London and site is administrated by the London Borough of Camden. The sites location provides good access to transport nodes, local amenities and open green space.

2.2 Proposed Development

- 2.2.1 The proposals work to enable the building to be brought back to life from its current vacant and derelict condition. Introducing much-needed housing, whilst replacing and relocating the former office space with new high quality flexible space to suit the requirements of two new long-term pre-let SME business tenants.
- 2.2.2 It is proposed that the existing office use (Use Class B1) to the upper floors of Nos 61 & 63 will be converted to residential use (Use Class C3) to accommodate 7 new residential units across a diverse mix, ranging from studios to three bed family units. This includes retaining the existing residential use of No 65 at third floor as well as providing an additional floor of residential use to all three properties.
- 2.2.3 The existing office use and area to the upper floors of Nos 61& 63 will therefore be relocated and upgraded. This will be achieved by means of re-development and extension of the existing rear extension office and ground floor office of No.61 Charlotte Street. The existing use of the ground floor at No.63 will be retained as retail (Use Class A1). The Class A3 cafe use at No.65 ground floor is proposed to be changed to A1 retail in order to improve the character and activity of this length of Charlotte Street, No.61 ground floor will be retained as office use.
- 2.2.1 Below are the latest drawings of the proposed development produced by Harper Downie.

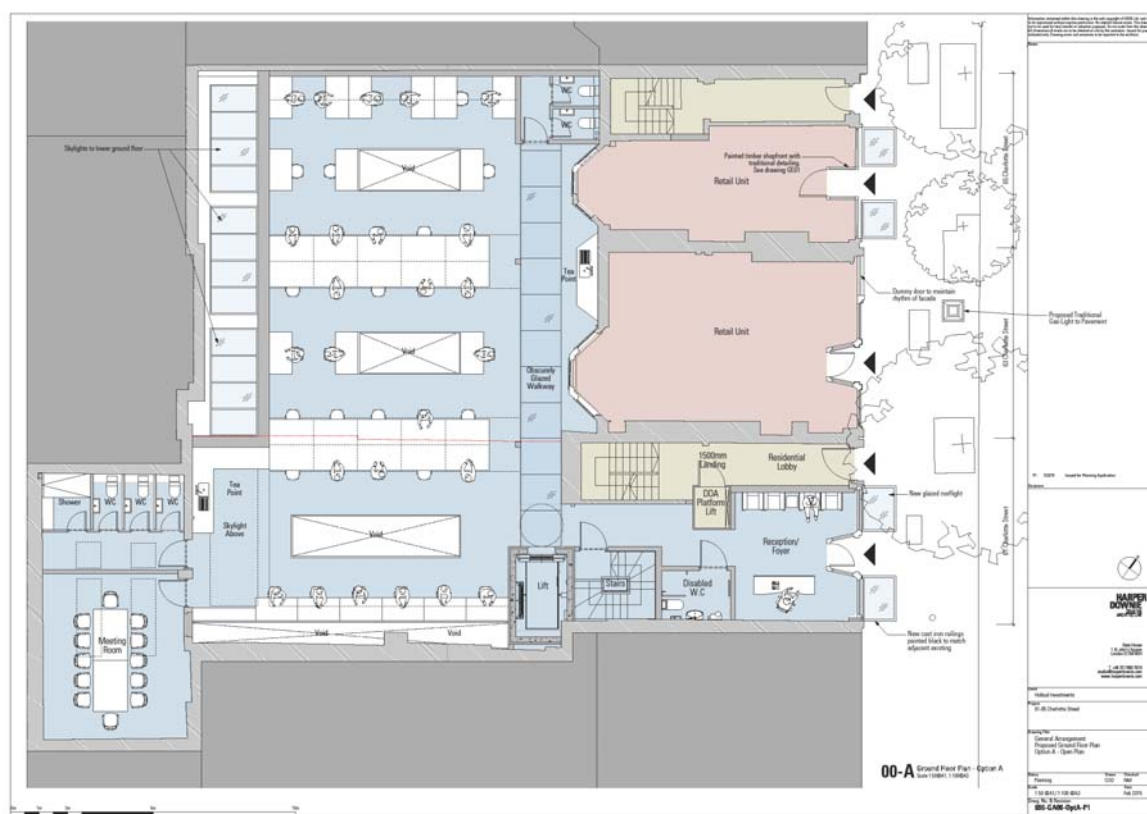
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Figure 3 – First Floor Level

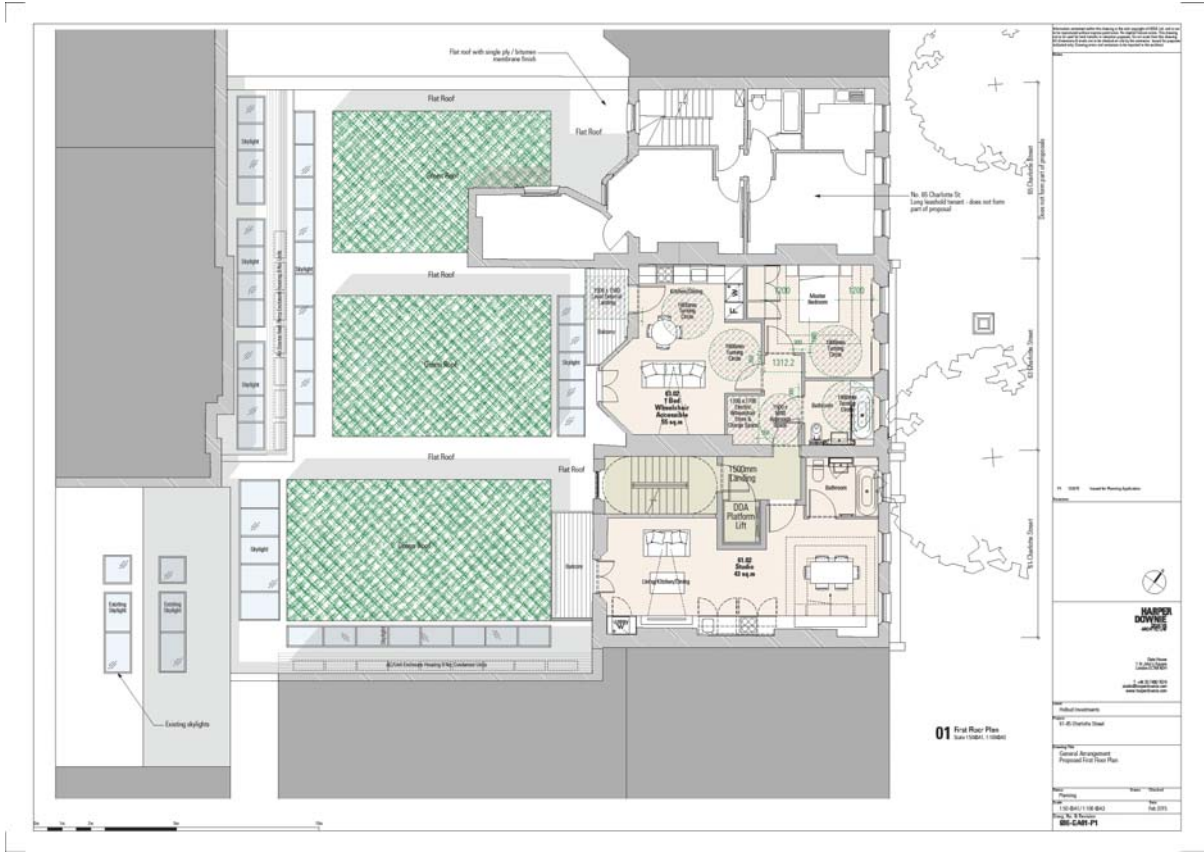


Figure 4 – Second Floor Level

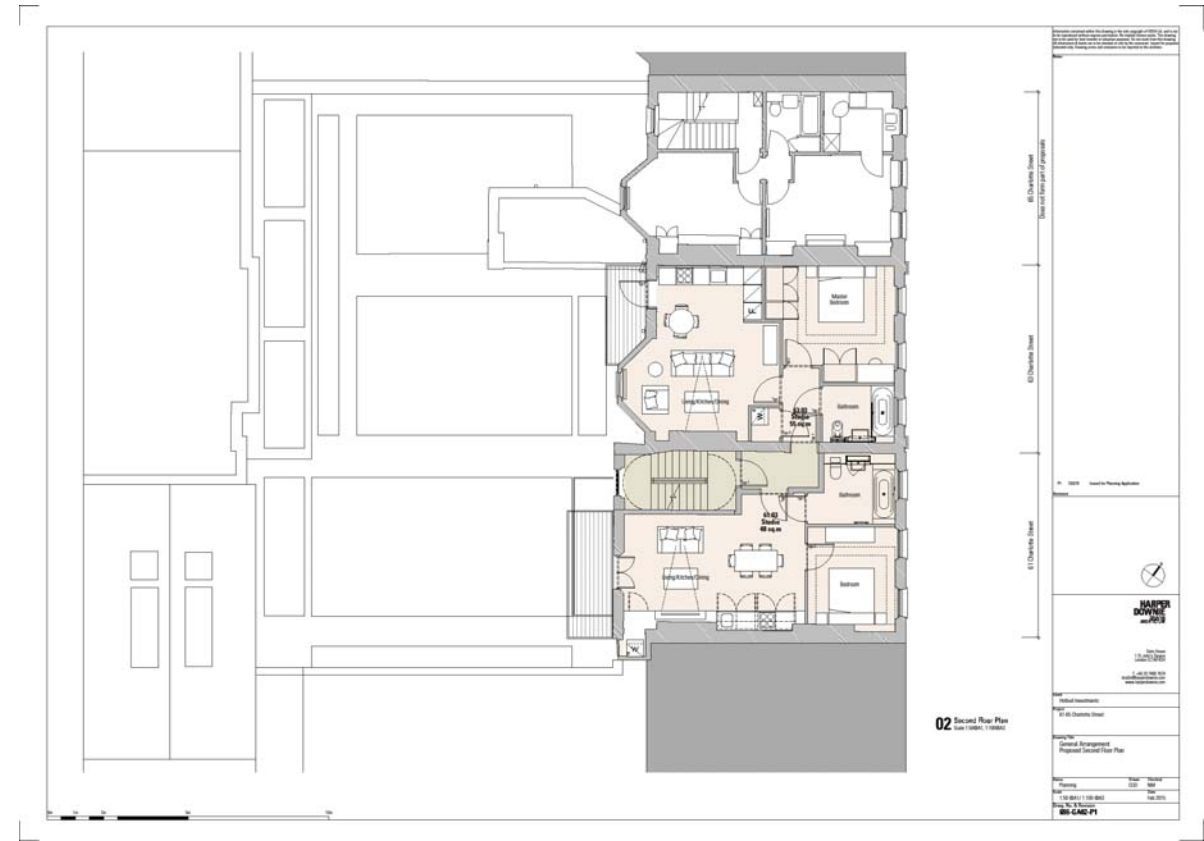


Figure 5 – Third and Fourth Floor Levels



3.0 BRIEF POLICY CONTEXT

3.0.1 Sustainable development is the “golden thread” principle underpinning planning and planning has a key role to play in the creation of sustainable communities. A summary of the planning policy context for the site and proposed development is provided below. For a detailed breakdown of the full sustainability policy context, please refer to Appendix A.

3.1 National Policy

National Planning Policy Framework, March 2012

3.1.1 The National Planning Policy Framework (NPPF) was published in March 2012. It sets out the Government’s planning policies for England and how these policies are expected to be applied. The policies in the document, taken as a whole, constitute the Government’s view of what sustainable development in England means in practice for the planning system. Regional and Local policy is informed by the content and structure of the NPPF.

3.2 Regional Policy

The London Plan: Spatial Development Strategy for Greater London, July 2011

3.2.1 The London Plan was published in July 2011 and is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London to 2031. The policies relevant to this report are found in Chapter 5 (and to a lesser extent in Chapter 7) of the London Plan. This scheme is classified as a minor development under London Plan definition and therefore this Regional Policy is not applicable for this report.

3.3 Local Policy

London Borough of Camden Core Strategy 2010-2025

3.3.1 The London Borough of Camden’s Core Strategy sets out the key elements of the Council’s planning vision and strategy for the borough. It is the central part of Local Development Framework (LDF) and was adopted in November 2010. The LDF is a group of documents setting out the borough’s planning strategy and policies.

CS13 – Tackling climate change through promoting higher environmental standards

- 3.3.2 The Core Strategy Policy CS13 sets out the approach that developers should take when considering energy and carbon reductions for developments.

London Borough of Camden Development Policies 2010-2025

- 3.3.3 The Core strategy has informed the Council's Development Policies. Section 3 of this particular document sets out a number of policies to promote sustainability and tackle climate change.

Policy DP22 - Promoting sustainable design and construction

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

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

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

- d) expecting developments (except new build) of 500sqm of residential floorspace or above or 5 or more dwellings to achieve 'excellent' in EcoHomes assessments from 2013 and at least 'very good' prior to 2013;
- e) expecting non-domestic developments of 500sqm of floorspace or above to achieve 'very good' in BREEAM assessments, with the aim of increasing the target to a rating of at least 'excellent' in 2016, if feasible, and zero carbon from 2019, in line with the government's ambitions.

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

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

Policy DP23 - Water

- 3.3.4 The objectives of Section 3 are enforced through policy DP22 Promoting sustainable design and construction and DP23 Water.

London Borough of Camden Planning Guidance Sustainability (CPG3)

- 3.3.5 CPG3 contains advice and guidance for developers on ways to achieve carbon reductions and more sustainable developments. It also highlights the Council's requirements and guidelines which support the relevant Local LDF policies, including DP22 as noted above.
- 3.3.6 The following aspirational targets are outlined in CPG3, which developers are strongly encouraged to target::

Time period	Minimum rating (BDR/BREEAM)	Minimum standard for categories - % of un-weighted credits – (EcoHomes/Code)
2010-2012	Very Good	Energy -60%
2013+	Excellent	Water – 60% Materials – 40%

3.4 BREEAM Domestic Refurbishment

- 3.4.1 The BDR assessment scheme is an environmental performance standard against which residential refurbishment projects in the UK can be assessed, rated and certified. It is not applicable to new build development, where the Code for Sustainable Homes would apply.
- 3.4.2 BDR covers seven categories of sustainability (plus an additional eighth category for Innovation) including: Management; Health and Wellbeing; Energy; Water; Materials; Pollution; and Waste.
- 3.4.3 Credits are awarded in the various categories according to performance. These credits are then added together to produce a single overall score on a scale of Pass, Good, Very Good, Excellent and Outstanding.
- 3.4.4 Each category consists of a number of issues and each issue addresses a specific building-related environmental impact and has a number of credits assigned to it. BREEAM credits are awarded where a building demonstrates that it meets the best practice performance levels defined for that issue i.e. it has mitigated an impact or addressed a specific building occupant-related issue.

- 3.4.5 The number of credits available for an individual assessment issue will vary and generally the higher the number there are for a given issue, the more important that issue is in terms of mitigating its impact. In most cases, where there are multiple credits available, the number awarded is based on a sliding scale or benchmark, where progressively higher standards of building performance are rewarded with a higher number of credits.
- 3.4.6 Most BDR issues are tradable, meaning that a design team or developer can choose the issues they wish to comply with, in order to build up their overall performance score. However, there are some minimum standards (also known as mandatory requirements) which need to be met in various issues in order to achieve the aspired BDR rating.
- 3.4.7 A scheme can be assessed at the Design Stage (DS), leading to an Interim BREEAM certified rating, and/or the Post Refurbishment Stage (PRS), leading to a Final BREEAM certified rating.

3.5 BREEAM Non Domestic Refurbishment 2014

- 3.5.1 The Building Research Establishment Environmental Assessment Method (BREEAM) is the world's leading and most widely used environmental assessment method for buildings. It sets the standard for best practice in sustainable design and is used to describe a building's designed environmental performance.
- 3.5.2 BNDR is a performance based assessment method and certification scheme for the refurbishment of non-residential buildings. The primary aim of BNDR is to mitigate the life cycle impacts of refurbished non-residential buildings on the environment, in a robust and cost effective manner.
- 3.5.3 BNDR is the first scheme released by BRE to specifically address refurbishment projects. The scheme was launched in December 2014 so is a very new process for the BRE, Assessors and Developers alike.
- 3.5.4 BREEAM credits are also awarded in 9 categories (plus an additional Innovation category) of sustainable design according to performance. These credits are then added together to produce a single overall score on a scale of Pass, Good, Very Good, Excellent and Outstanding, dependent on the total score received from achieving credits across the various categories. There are minimum standards that must be achieved in order to meet the higher rating levels under BREEAM. For more detail, please refer to the BNDR Technical Manual¹.

¹ <http://www.breeam.org/ndrefurb2014manual/>

- 3.5.5 The BNDR scheme can be used to assess the environmental life cycle impacts of existing non-domestic buildings at the refurbishment and fit-out stages. The definition of 'refurbishment' encompasses a wide range of works to improve the performance, function and overall condition of an existing building. 'Fit-out' also encompasses a wide range of works, however it is more associated with internal works to the building including the first fit-out of a newly constructed building or re-fitting an existing building.
- 3.5.6 The BNDR scheme provides a modular set of criteria that are applied depending upon the scope of works for a particular project type including:
- Part 1: Fabric and Structure
 - Part 2: Core Services
 - Part 3: Local Services
 - Part 4: Interior Design
- 3.5.7 The scheme is split into these assessment parts to allow the scheme to reflect the aspects of a building that are tenant or landlord responsibilities, as well as the varied life cycle stages that each component or element is upgraded. For example, interior finishes are typically replaced on a 5-10 year cycle compared to the fabric and structure of a building that may be upgraded after 60+ years. For commercial buildings, parts 1 and 2 typically reflect the aspects of a building that are landlord responsibilities, with parts 3 and 4 typically being aspects of the building that are tenant responsibilities although this will vary between specific projects.
- 3.5.8 The proposals for the office space at 61-65 Charlotte Street can be considered to be a 'Major refurbishment'. Therefore as outlined in the BNDR Technical Guide² the scheme will be assessed against all 4 of the Parts outlined above.
- 3.5.9 As mentioned above, a BNDR pre-assessment has not been prepared for the retail space due to its small size (82 sqm), the constraints of the site, the location of the site within a Conservation Area and the minor works occurring.
- 3.5.10 The Retail elements of the development will be designed and constructed in a sustainable manner and will benefit from the site-wide sustainability initiatives implemented as part of this strategy and the BDR and BNDR assessments implemented. The site-wide issues incorporate ecological enhancement, sustainable drainage systems,

² <http://www.breeam.org/ndrefurb2014manual/>

low and zero carbon technologies, secure design and sustainable construction practices.

3.5.11 The approach to BDR and BNDR assessments are detailed in the following section of this report.

4.0 BREEAM DOMESTIC REFURBISHMENT SUMMARY

- 4.0.1 This section of the report describes how credits can be achieved in each of the BDR categories, for the residential spaces. It is important to note that as the project progresses some of these scores may change. The current score is very close to the boundary for Excellent, with a score of 71.05%. Credits have been maximised wherever possible within the assessment and few opportunities remain to improve this score should credits be dropped during the construction phase.
- 4.0.2 The minimum category percentage, as set out in CPG3, have been achieved in the Energy (60%), Water (60%) and Materials (40%) categories.

4.1 Management

- 4.1.1 The Management category targets both the construction stage and the way dwellings are managed during occupation.
- 4.1.2 A Home User Guide will be produced which will include information regarding: energy efficiency; water use; sustainable improvement recommendations, local transport facilities; materials; waste; emergency information; and local amenities. This provision has been allocated 3 credits under issue Man 01 – Home Users Guide.
- 4.1.3 It is anticipated that the main contractor for the project will achieve beyond the good practice standards of the Considerate Constructors Scheme's Code of Considerate Practice and will obtain a score between 25 and 34. Accordingly, 1 credit has been allocated under issue Man 02 – Responsible Construction Practices.
- 4.1.4 Additionally, a commitment has been made to meeting the requirements of issue Man 03 – Construction Site Impacts. All site timber will be sourced in line with the UK Government's Timber Procurement Policy and Chain of Custody certificates will be obtained. The proposed development is classified as a Large Scale Project under this issue and, as such, 4 or more of the following actions will be undertaken, allowing for the allocation of 1 credit under Man 03.
 - a. monitor, report and set targets for CO₂ production of energy use arising from site activities;
 - b. monitor, report and set targets for water consumption arising from site activities;
 - c. a main contractor with an environmental materials policy;

- d. a main contractor that operates an Environmental Management System; and/or
 - e. 80% of site timber is reclaimed, re-used or responsibly sourced
- 4.1.1 The development will ensure all external doors and accessible windows meet minimum standards and appropriately certified and a Police Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CDPA) will also be consulted at the applicable stage. Therefore, 2 credits have been allocated for Man 04 – Security.
- 4.1.2 A site survey will be carried out by a Suitably Qualified Ecologist to determine the presence of any ecological features, prior to commencement of any refurbishment works, and recommendations made within the Ecologist's report will be implemented.
- 4.1.3 The project is expected to have a construction value of more than £100,000 and is therefore defined as a Large Scale Project under issue Man 06 - Project Management. Once planning approval is obtained the project manager will assign individual and shared responsibilities at the appropriate stages.
- 4.1.4 In addition as part of the handover to the occupant, a meeting will be arranged and 2 of the following actions will be committed to:
 - a. A site inspection within 3 months of occupation
 - b. Conduct post occupancy interviews with building occupants or a survey via phone or posted information within 3 months of occupation
 - c. Longer term after care e.g. a helpline, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation

Therefore, 2 credits have been allocated for issue Man 06 – Project Management.

- 4.1.5 Overall 10 of the available 11 credits have been allocated in this category, which as a result of weighting, contributes 10.91% to the total score.

4.2 Health and Wellbeing

- 4.2.1 The Health and Wellbeing category covers factors that can contribute to the overall comfort and welfare of the occupants.
- 4.2.2 The seven converted dwellings are expected to result in a neutral impact upon the daylighting levels of the existing spaces. Additionally, it is anticipated that the new build apartment extension on the 4th floor

will achieve a minimum daylight level of 1.5% for the study, dining and living room. Full daylighting calculations will be prepared at the detailed design stage to determine the average daylight factor and view of sky for the relevant rooms in order to allocate credits. Therefore, 1 credit has been allocated for Hea 01 – Daylighting at this stage.

- 4.2.3 It is proposed that upon post completion testing the separating floors and wall of the seven converted dwellings, will meet the Building Regulations Part E standards in full. As such 2 credits have been allocated Hea 02 – Sound Insulation.
- 4.2.4 An Access Statement will be prepared and the relevant BRE checklist will be addressed by an access expert or suitably qualified member of the design team.
- 4.2.5 Sufficient ventilation will be provided for the dwellings so that they meet the minimum levels of background ventilation for all habitable rooms, kitchens, utility rooms and bathrooms compliant with Section 5 of Building Regulations Part F in full. As such 2 credits have been allocated under Hea 05 – Ventilation.
- 4.2.6 The design team will ensure that compliant fire and carbon monoxide (CO) detection and alarm systems are specified in line with the requirements of Hea 06 - Safety and 1 credit has been allocated for this issue.
- 4.2.7 Overall 8 of the available 12 credits have been allocated in this category, which as a result of weighting, contributes 11.33% to the total score.

4.3 Energy

- 4.3.1 The reduction of CO₂ emissions from the building is assessed through BDR issues Ene 01-04. An Energy Strategy has been produced by Metropolis Green which sets out the proposed energy efficiency, low and zero carbon solutions proposed for this site.
- 4.3.2 High standards of fabric energy efficiency will be achieved through high quality construction standards, energy efficient plant and equipment and high levels of insulation. High efficiency gas boilers will supply space and water heating for the dwellings.
- 4.3.3 Results of calculations completed for the energy demand statement indicate that the seven converted dwellings Energy Efficiency Rating (EER) will be improved in line with the BDR scheme requirements which will ensure that at least 1 credits can be allocated at this stage under issue Ene 01 – Improvement in Energy Efficiency Rating. Due to the development being a change of use the existing building performs

relatively well and therefore the improvement is not significant, despite the dwelling having high levels of energy efficiency.

- 4.3.4 Calculations confirm that the dwellings can achieve an Energy Efficiency Rating above the minimum standard required for an Outstanding rating, and 3.5 credits have been allocated at this stage for issue Ene 02 – Energy Efficiency Rating Post Refurbishment.
- 4.3.5 SAP calculations show that the dwellings will achieve a low Primary Energy Demand, and 6 credits have been allocated at this stage for issue Ene 03 – Primary Energy Demand.
- 4.3.6 Energy efficient white goods will be specified for the dwellings in accordance with the EU Energy Efficiency Labelling Scheme and as such 2 credits have been awarded under Ene 05 – Energy Labelled White Goods.
- 4.3.7 An adequate and secure drying line for clothes will be provided; therefore 1 credit has been allocated under issue Ene 06 – Drying Space. This should reduce the need for energy intensive tumble drying.
- 4.3.8 The existing external and internal lighting will be replaced with energy efficient lighting and new energy efficient lighting will be installed within the 4th floor extension. The maximum average wattage across the total floor area of the dwelling will be 9 watts/m². Therefore, 2 credits have been allocated under Ene 07 – Lighting.
- 4.3.9 Accessible energy display devices capable of displaying electricity and heating fuel usage will be specified for all dwellings, and as such 2 credits have been allocated under issue Ene 08 – Display Energy Devices.
- 4.3.10 A study containing sufficient space and services for the provision of a compliant home office area will be provided. One credit has been allocated accordingly for Ene 10 – Home Office.
- 4.3.11 Overall 19.5 of the 29 available credits have been allocated in this category, which as a result of weighting, contributes 28.91% to the total score.
- 4.3.12 The BDR Pre-Assessment indicates that there is potential for this site to achieve at least 67% of the credits in the Energy category under BDR. Therefore exceeding the requirements of London Borough of Camden Policy DP22 to achieve 60% of the available credits in this category under BREEAM.

4.4 Water

- 4.4.1 The Water category targets the reduction of water consumption and ensures monitoring of water use in the development.
- 4.4.2 The design team will target a water consumption of 107-118 litres/person/day for the dwellings and will achieve the mandatory requirements for 'Excellent'. At the time of the full assessment the design team will ensure that the dwelling achieves the required calculated water consumption and 2 credits have been allocated under issue Wat 01 – Internal Water Use.
- 4.4.3 The development will only contain balconies for the dwellings and no other external space, therefore, the 1 available credit for the issue Wat 02 – External Water Use is awarded by default.
- 4.4.4 A compliant water meter on the mains supply will be specified and as such, 1 credit has been allocated under issue Wat 03 – Water Meter.
- 4.4.5 Overall 4 of the available 5 credits have been allocated in this category, which as a result of weighting, contributes 8.80% to the total score.
- 4.4.6 The BDR Pre-Assessment indicates that there is potential for this site to achieve at least 80.00% of the credits in the Water category. Therefore exceeding the requirements of Policy DP22 to achieve 60% of the available credits in this category.

4.5 Materials

- 4.5.1 BREEAM awards credits on the basis of the specification and use of materials with lower environmental impacts (in accordance with the BRE Green Guide to Specification) over their lifecycle and the optimisation of thermal performance of key building elements.
- 4.5.2 The building elements to be assessed for the development include the roof, external walls, internal walls, upper and ground floors, and windows. Detailed information regarding the new materials to be specified in the building is required in order to complete the BREEAM Mat 01 calculator tool, to determine the final credits that can be awarded. It should be noted that the use of existing materials is rewarded by the Green Guide. At this stage 15 credits have been allocated based on the information available to the assessor. This issue will be reviewed at the detailed design stage when more detailed information will be available.
- 4.5.3 The design team will specify insulation with low embodied environmental impact to the extent feasible. Detailed information

regarding the insulation to be specified in the building is required in order to complete the BREEAM Mat 03 - Insulation calculator tool and to determine the final credits that can be awarded under issue Mat 03 - Insulation. Therefore, 4 credits have been allocated for this issue at this stage, but there is potential for the allocation of further credits in this area once the insulation products have been specified.

- 4.5.4 Overall 25 of the available 45 credits have been allocated in this category, which as a result of weighting, contributes 4.44% to the total score.
- 4.5.5 The BDR Pre-Assessment indicates that there is potential for this site to achieve 56% of the credits in the Materials category. Therefore exceeding the requirements of Policy DP22 to achieve 40% of the available credits in this category under BREEAM.

4.6 Waste

- 4.6.1 The Waste category deals with waste and recycling issues for both the construction stage and the occupation stage of the development
- 4.6.2 The London Borough of Camden provides a recycling collection scheme compliant with BDR requirements, however there is no space for provision of external storage. Therefore, the first credit under issue Was 01 – Household Waste cannot be allocated. However the second credit under the Was 01 issue for BREEAM has been allocated, as the Local Authority operates a compliant composting facility and internal kitchen composting containers will be provided to the dwelling.
- 4.6.3 At the construction stage, a compliant Site Waste Management Plan (SWMP) will be prepared in line with the requirements to achieve 2 credits under issue Was 02 – Refurbishment Site Waste Management. This will involve undertaking a pre-refurbishment audit, including demolition materials.
- 4.6.4 The scheme will also need to achieve a resource efficiency level, where the amount of waste generated per £100,000 of project value is <26.52m³ or <16.90 tonnes.
- 4.6.5 Overall, 4 of the available 5 credits have been allocated in this category, which as a result of weighting, contributes 2.4% to the total score.

4.7 Pollution

- 4.7.1 The Pollution category aims to reduce the amount of air pollutants and nitrogen oxides (NOx) that are released into the atmosphere through the heating plant and to reduce the impact of the development on surface water runoff from the site.
- 4.7.2 Space heating and hot water for the proposed dwellings will be provided via Air Source Heat Pumps, which use grid electricity and therefore exceed the maximum NOx emissions to award any credits under Pol 01 – NOx Emissions.
- 4.7.3 With respect to surface water runoff, the construction of the proposed development will take place within the existing envelope of the building and therefore, will not lead to an increase of impermeable surfaces and will have a neutral impact upon surface water runoff. Therefore, 1 credit has been allocated for Pol 01 – Surface Water Runoff under BREEAM Domestic Refurbishment.
- 4.7.4 A review of Environment Agency information for the site shows it is located in a zone defined as having a low annual probability of flooding. A site-specific Flood Risk Assessment (FRA) will be completed at the appropriate stage and 2 credits have been allocated under issue Pol 03 – Flooding.
- 4.7.5 Overall 3 of the available 8 credits have been allocated in this category, which as a result of weighting, contributes 2.25% to the total score.

5.0 BREEAM NON DOMESTIC REFURBISHMENT SUMMARY

- 5.0.1 This section of the report describes how credits can be achieved in each of the BNDR categories, for the office spaces. It is important to note that as the project progresses some of these scores may change; however, the design team will ensure that at all times the proposed development will remain above the threshold for a rating of 'Very Good'.
- 5.0.2 It is also noted that whilst the scheme cannot achieved BREEAM 'Excellent', an aspiration set out in CPG3, the mandatory credits for an 'Excellent' score have been achieved for this pre-assessment.
- 5.0.3 The minimum category percentage, as set out in CPG3, have been achieved in the Energy (60%), Water (60%) and materials (40%) categories.

5.1 Management

- 5.1.1 This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, and handover and aftercare activities to ensure that robust sustainability objectives are set and followed through into the operation of the building. Issues in this section focus on embedding sustainability actions through the key stages of design, procurement and initial occupation from the initial project brief stage to the appropriate provision of aftercare.
- 5.1.2 To recognise and encourage an integrated design process that optimises building performance, the project delivery stakeholders will meet prior to the completion of the Concept Design. The meeting will identify roles, responsibilities and contributions for each of the key phases of project delivery. As such 1 credit has been awarded for Man 01 Project brief and design: Stakeholder Consultation (Project Delivery).
- 5.1.3 Prior to completion of the Concept Design stage, all relevant third party stakeholders will be consulted by the design team, and the team will demonstrate how the stakeholder contributions and outcomes of the consultation exercise have influenced or changed the Initial Project Brief and Concept Design. Consultation feedback will also be given to all relevant parties As such 1 credit has been awarded for Man 01 Project brief and design: Stakeholder Consultation (Third Party).
- 5.1.4 The principal contractor will be encouraged to produce or operate a Sustainable Procurement Plan, operate an ISO 14001:2004

Environmental Management System (EMS), and implement Best Practice Pollution Prevention.

- 5.1.5 It is anticipated that the main contractor for the project will achieve beyond the good practice standards of the Considerate Constructors Scheme's (CCS) Code of Considerate Practice and will obtain a CCS score between 25 and 34.
- 5.1.6 In order to further promote sustainable and responsible construction practices, responsibility will be assigned to an individual(s) for monitoring, recording and reporting energy use (kWh), water consumption (m3).
- 5.1.7 Accordingly, 3 credits have been allocated under issue Man 03 – Responsible Construction Practices.
- 5.1.8 To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants, the design team has committed to a Commissioning and Testing Schedule. Where an appropriate project team member will have responsibility for monitoring and programming a budgeted commissioning schedule. Further a specialist commissioning manager will be appointed for all complex building services, for simple building services, this role can be carried out by an appropriate project team member.
- 5.1.9 To further ensure the easy and efficient operation of the buildings facilities and services, a non-technical Building User Guide (BUG) will be developed prior to handover for distribution to the building occupiers and premises managers. As a result of these measures 3 credits can be awarded for Man 04 - Commissioning and Handover.
- 5.1.10 There will be a commitment by the development team to provide aftercare support to the building occupiers. Including introduction to the aftercare team or individual to the aftercare support available, present key information about features of the refurbished building including the design intent and how to use the building and on-site facilities management training. The initial aftercare support will be supplemented by longer term aftercare support provision for occupants for at least the first 12 months from occupation.
- 5.1.11 The design team have also committed to Seasonal Commissioning of the building systems for at least 12 months after occupation. This will include commissioning of all complex systems and building services by a Specialist Commissioning Manager.
- 5.1.12 The client or building occupier will commit to carry out a post occupancy evaluation (POE) exercise one year after initial building occupation. This is done to gain in-use performance feedback from building users to inform operational processes, including re-commissioning activities, and maintain or improve productivity, health, safety and comfort. The

POE is carried out by an independent party. Subsequently the scheme will receive 3 credits under Man 05 - Aftercare

5.1.13 Overall 11 of the available 20 credits have been allocated in this category, which as a result of weighting, contributes 6.94% to the total score.

5.2 Health and Wellbeing

- 5.2.1 This category encourages the increased comfort, health and safety of building occupants, visitors and others within the vicinity. The aim is to enhance the quality of life in buildings by recognising issues that encourage a healthy and safe environment for occupants.
- 5.2.2 The design team has committed to reducing potential for disabling glare through the provision of blinds and roof overhangs to all relevant building areas. It is proposed that daylighting provision, averaged over all relevant spaces, will be improved after refurbishment or fit-out by 30% or more. Internal and external lighting systems will be designed to avoid flicker and provide appropriate illuminance (lux) levels. Internal lighting will also be zoned to allow for occupant control. Together these commitments will deliver 3 credits under Hea 01 Visual comfort.
- 5.2.3 The re-development will minimise sources of air pollution through the implementation of an Indoor Air Quality (IAQ) plan. With the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation. The building will also include measures to minimise the concentration and recirculation of pollutants, and will meet best practice ventilation levels. Subsequently the scheme will receive 2 credits under Hea 02 Indoor air quality.
- 5.2.4 To ensure that appropriate thermal comfort levels are achieved, a full Dynamic Simulation Model (DSM) analysis will be undertaken, to ensure summer and winter temperature criteria are adhered to. In addition this modelling will include; Adaptability - for a projected climate change scenario, to ensure the building is resilient to potential future climate. The DSM analysis will also inform the design of thermal zoning and controls and contribute to the temperature control strategy, to ensure energy efficient and thermally comfortable operation. As such the scheme is eligible for all 3 credits under Hea 04 - Thermal comfort.
- 5.2.5 It is proposed that a Suitably Qualified Acoustician (SQA) provides recommendations for the specification appropriate acoustic performance standards and testing for the acoustic principles of; Sound insulation, Indoor ambient noise level and Reverberation times, with a target for achieving 2 of these standards. As such 2 credits have been allocated for Hea 02 – Sound Insulation.

- 5.2.6 A Suitably Qualified Security Specialist (SQSS) will be appointed to conduct an evidence based Security Needs Assessment (SNA) during or prior to Concept Design. A set of recommendations or solutions will be suggested to ensure that the design of the building address the issues identified in the preceding SNA. Further the Design team will commit to adopting these measures where applicable. Therefore 1 credit can be awarded for Hea 06 Safety and security.
- 5.2.7 Overall 11 of the available 19 credits have been allocated in this category, which as a result of weighting, contributes 9.62% to the total score.

5.3 Energy

- 5.3.1 This category encourages the specification and design of energy efficient building solutions, systems and equipment that support the sustainable use of energy in the building and sustainable management in the building's operation. Issues in this section assess measures to improve the inherent energy efficiency of the building, encourage the reduction of carbon emissions and support efficient management throughout the operational phase of the building's life.
- 5.3.2 Metropolis Green have produced an Energy Strategy for the development. The modelled Energy Performance Ratio for Non Domestic Refurbishment (EPR_{NDR}) is • 0.549. Consequently 9 credits have been allocated for Ene 01 Reduction of energy use and carbon emissions.
- 5.3.3 The scheme will feature energy sub-metering of all major energy consuming systems that account for ≥10% of total energy consumption. These systems could include the following; Space heating, Domestic hot water heating, Humidification Cooling, Ventilation, i.e. fans (major), Pumps, Lighting, Small power, Renewable or low carbon systems (separately), Controls or other major energy-consuming systems/plant, where appropriate.
- 5.3.4 An accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed output will be provided, covering a significant majority of the energy supply to appropriate functions of the tenanted areas. These measures result in 2 credits for Ene 02 - Energy monitoring being awarded.
- 5.3.5 All external lighting will be specified to be energy efficient, with a minimum efficacy of 60 lumens/Watt. The lighting specification will also feature automatic controls to ensure operation only during hours of darkness. Alternatively, where the building does not have external lighting, one credit can be awarded by default. Therefore the scheme will achieve 1 credit for Ene 03 - External lighting.

- 5.3.6 A feasibility has been carried out to establish the most appropriate recognised local (on-site or near-site) low or zero carbon (LZC) energy sources for the building. In the event that no suitable technologies are identified this credit can still be awarded for Ene 04 - Low carbon design.
- 5.3.7 To recognise and encourage a reduction in the building's unregulated energy load, energy efficient equipment to ensure optimum performance and energy savings in operation will be specified. Therefore following equipment will have been awarded an Energy Star rating or has been procured in accordance with the Government Buying Standards:
- a. Office equipment
 - b. Other small powered equipment
 - c. Supplementary electric heating.

As such the scheme has targeted 2 credits for Ene 08 - Energy efficient equipment

- 5.3.8 Overall 17 of the available 25 credits have been allocated in this category, which as a result of weighting, contributes 13.74% to the total score.

5.4 Transport

- 5.4.1 This category encourages better access to sustainable means of transport for building users. Issues in this section focus on the accessibility of public transport and other alternative transport solutions (cyclist facilities, provision of amenities local to a building) that support reductions in car journeys and, therefore, congestion and CO₂ emissions over the life of the building.
- 5.4.2 The proposed new office space at 61-65 Charlotte Street benefits from good public transport links, with central London and the wider area. The Public Transport Accessibility with the public transport Accessibility Index (AI) of 62.32. Therefore the scheme is eligible for 3 credits under Tra 01 - Public Transport Accessibility. For further information on local public transport please refer to the Design and Access statement prepared by Harper Downie.
- 5.4.3 The site has been determined to have close proximity to an exemplary level of local amenities, relevant for offices (Type 1). This credit aims encourage and reward a building location that facilitates easy access to local services and so reduces the environmental, social and economic impacts resulting from multiple or extended building user journeys,

including transport-related emissions and traffic congestion. As such 1 credit has been awarded for Tra 02 - Proximity to Amenities.

- 5.4.4 It is proposed that the building will have compliant cycle spaces with cyclist facilities, in the form of at least 2 of the following; Showers, Changing facilities, Lockers, Drying spaces. Therefore two credits can still be awarded for Tra 03 - Cyclist facilities.
- 5.4.5 The design team have committed to producing a Travel Plan that will involve consideration of a range of travel options for building users, thereby encouraging the reduction of reliance on forms of travel that have the highest environmental impact. Subsequently 1 credit under Tra 05 - Travel plan can be awarded.
- 5.4.6 Overall 7 of the available 7 credits have been allocated in this category, which as a result of weighting, contributes 6.89% to the total score.

5.5 Water

- 5.5.1 This category encourages sustainable water use in the operation of the building. Issues in this section focus on identifying means of reducing potable water consumption (internal and external) over the lifetime of the building and minimising losses through leakage.
- 5.5.2 The design team have committed to reduce the consumption of potable water for sanitary use through the use of highly water efficient components, fixtures and fittings. These measures will deliver at least a 40% improvement over baseline building water consumption. At the detailed design stage the buildings actual water consumption will be calculated using the BREEAM Water calculator tool. This will help minimise the developments impact on precious water resources and provide resilience to potential future climate change. As a result of this commitment the scheme is eligible for 3 credits under Wat 01 - Water consumption.
- 5.5.3 To ensure water consumption can be monitored and managed, water meters shall be installed. Further, water-consuming plant or building areas, consuming 10% or more of the building's total water demand, will either be fitted with easily accessible sub-meters or have water monitoring equipment integral to the plant or area. Therefore 1 credit can be awarded for Wat 02 - Water monitoring.
- 5.5.4 In order to minimise the impact of undetected water leaks on potable water consumption, the scheme will feature water leak detection systems. The system 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. The design will also feature flow control devices that regulate the supply of water to each WC area/facility according to

demand, and therefore minimise water leaks and wastage from sanitary fittings. As a result the scheme is eligible 2 credits for Wat 03 - Water leak detection.

- 5.5.5 Overall 6 of the available 8 credits have been allocated in this category, which as a result of weighting, contributes 4.45% to the total score.

5.6 Materials

- 5.6.1 This category encourages steps taken to reduce the impact of construction materials through design, construction, maintenance and repair. Issues in this section focus on the procurement of materials that are sourced in a responsible way and have a low embodied impact over their life including extraction, processing and manufacture and recycling.
- 5.6.2 The proposed development will specify high performance and low impact including embodied carbon, construction materials over the full life cycle of the building. The build-up of the main building elements, including; External walls, Windows, Roof, Upper floor slab, Internal walls, Floor finishes/coverings will be assessed on an elemental basis against the BRE Green Guide to Specification ³. With ratings from A+ to E, and areas (m²) inputted to the BREEAM Mat 01 calculator. The design team are targeting 'Very Good' performance and will develop the build-up at the detailed design stage, therefore 4 BREEAM credits are being targeted under Mat 01 - Environmental impact of materials.
- 5.6.3 The design team will ensure that the principal contractor sources materials for the project in accordance with a documented sustainable procurement plan. Further it is proposed that the contractor ensures a score of $\geq 36\%$ for Mat 03 Responsible sourcing of materials. In addition all timber and timber-based products used on the project will be legally harvested and traded timber. Therefore 2 credits are targeted for Mat 03 Responsible sourcing of materials, however this may be reviewed at the detailed design stage when more detailed information will be available.
- 5.6.4 The scheme will feature specification of insulation materials with a low embodied impact, this will involve assessment of all insulation for; External walls, Ground floors, Roofs and Building services against the BRE Green Guide to Specification. An Insulation Index will then be calculated using the BREEAM Mat 04 calculator, ensuring all insulation values are high performance, having a value of ≥ 2.5 . Subsequently 1 credit under Mat 04 Insulation can be awarded.

³ <http://www.thegreenguide.org.uk/>

- 5.6.5 Building maintenance and replacement of materials, can have a significant environmental impact over a buildings lifetime. Therefore the design will ensure adequate protection for vulnerable parts of the building from damage, also protecting exposed parts of the building from material degradation. Therefore minimising the frequency of replacement and maximising materials optimisation. As such 1 credit under Mat 05 - Designing for durability and resilience can be awarded.
- 5.6.6 The design team will identify opportunities to optimise the use of materials in building design, procurement, construction, maintenance and end of life. This may take the form of reports, drawings or building integrated model (BIM) calculations, meeting notes, construction program or responsibilities schedule, with the aim of encouraging material efficiency in order to minimise environmental impact of material use and waste. As a result of this commitment 1 credit under Mat 06 - Material efficiency can be targeted.
- 5.6.7 Overall 9 of the available 13 credits have been allocated in this category, which as a result of weighting, contributes 9.56% to the total score under BREEAM Non Domestic Refurbishment.

5.7 Waste

- 5.7.1 This category encourages the sustainable management (and reuse where feasible) of construction, operational waste and waste through future maintenance and repairs associated with the building structure. By encouraging good design and construction practices, issues in this section aim to reduce the waste arising from the construction and operation of the building, encouraging its diversion from landfill. It includes recognition of measures to reduce future waste as a result of the need to alter the building in the light of future changes to climate.
- 5.7.2 At the construction stage, a compliant Site Waste Management Plan (SWMP) will be prepared in line with the requirements of BREEAM. This will involve undertaking a pre-refurbishment audit, including demolition materials. The scheme will also target a resource efficiency level, where the amount of waste generated per 100m² (gross internal floor area) is <4.5m³ or <1.2 tonnes.
- 5.7.3 In addition the non-hazardous demolition waste generated by the dwellings refurbishment must meet or exceed the waste diversion from landfill benchmarks of 90% by volume or 95% by tonnage for Demolition and 85% by volume or 90% by tonnage for Refurbishment/fit-out. Subsequently the scheme will aim to achieve 5 credits under issue Was 01 - Construction waste management

- 5.7.4 Provision of adequate and accessible storage for operational waste has been designed into the scheme, allowing one credit to be awarded under Was03 – Operational waste.
- 5.7.5 In total, 6 of the available 12 credits have been allocated in this category, which as a result of weighting, contributes 5.51% to the total score.

5.8 Land use and Ecology

- 5.8.1 This category encourages sustainable land use, habitat protection and creation, and improvement of long term biodiversity for the building's site and surrounding land. Issues in this section relate to the reuse of brownfield sites or those of low ecological value, mitigation and enhancement of ecology and long term biodiversity management.
- 5.8.2 Given that the scheme involves largely the redevelopment of existing buildings, it is assumed that the land is of 'low ecological value'. Furthermore if any existing features of ecological value within and surrounding the construction zone and site boundary area are identified, these will be adequately protected from damage during clearance, site preparation and construction activities. Subsequently 1 credit for LE 02 - Protection of ecological features can be awarded.
- 5.8.3 As per the BDR assessment, the recommendations of the Ecologist's report will be implemented allowing one credit under Le04 – Ecological Enhancement to be awarded.
- 5.8.4 In total, 2 of the available 2 credits have been allocated in this category, which as a result of weighting, contributes 3.69% to the total score.

5.9 Pollution

- 5.9.1 This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use. Issues in this section aim to reduce the buildings impact on surrounding communities and environments arising from light-pollution, noise, flooding and emissions to air, land and water.
- 5.9.2 The development will feature cooling and heating areas in the form of Air Source Heat Pump (ASHP) units. To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from these building systems, the refrigerants specified will have Direct Effect Life Cycle CO₂ equivalent emissions (DELCO₂e) of ≤ 1000 kgCO₂e/kW cooling/heating capacity. In addition all systems will comply with the requirements of BS EN 378:2008. As a result 1 BREEAM credit can be awarded for Pol 01 - Impact of refrigerants.

- 5.9.3 A review of Environment Agency information for the site has determined that the development is located in a zone defined as having a low annual probability of flooding and 2 credits have been allocated under issue Pol 03 – Flood risk management and reducing surface water run-off.
- 5.9.4 With respect to surface water runoff, the construction of the proposed development will take place within the existing envelope of the building and therefore, will not lead to an increase of impermeable surfaces and will have a neutral impact upon surface water runoff – allowing the first surface water run off credit being awarded under Pol 03 – Flood risk management and reducing surface water run-off.
- 5.9.5 To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, the design team will ensure that external lighting is specified in compliance ILP Guidance notes for the reduction of obtrusive light, 2011. Further all external lighting (except for safety and security lighting) will feature a daylight responsive sensor and automatically switching between 23:00 and 07:00, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties. As such 1 credit can be awarded for Pol 04 - Reduction of night time light pollution.
- 5.9.6 Overall 6 of the available 12 credits have been allocated in this category, which as a result of weighting, contributes 3.93% to the total score.

6.0 CONCLUSIONS

- 6.0.1 This report demonstrates that the proposed development at 61-65 Charlotte Street in the London Borough of Camden can achieve the required BREEAM ratings of 'Excellent' for the residential units and 'Very Good' for the Office space, implementing sustainability measures where appropriate and practical.
- 6.0.2 Given the constraints of the site, it has been shown that is not feasible to achieve BREEAM 'Excellent', for the office space, an aspiration set out in CPG3, however the applicant has demonstrated their commitment to sustainable development by targeting all mandatory requirements to achieve Excellent and maximising credits wherever possible.
- 6.0.3 The Sustainability Statement focuses on the implementation of sustainable systems for energy, water, waste management, pollution, and construction management. Much attention has been given to reducing the environmental impact throughout the lifetime of the building, during construction, refurbishment and occupation of the dwelling. Sustainability measures are proposed which go beyond the works necessary for the development.
- 6.0.4 Improvements in fabric energy efficiency, services efficiency and low carbon technologies will be specified to ensure carbon emissions are minimised and mandatory standards are met for both the BREEAM assessments. Energy Strategy calculations have been completed to set the performance standards for the dwellings and more detailed calculations will be performed at the detailed design stage in order to demonstrate this energy performance improvement.
- 6.0.5 Water consumption can be substantially reduced through the specification of water efficient fixtures and fittings, including low flow rate showers and taps and dual flush toilets, in order to achieve the minimum requirements under water for BREEAM 'Excellent'.
- 6.0.6 New environmentally friendly and responsibly sourced building and insulation materials will be specified to the greatest extent possible.
- 6.0.7 Waste and recycling facilities will be provided and the reuse and disposal of construction waste will be guided by a Site Waste Management Plan. In addition, the site will be registered with the Considerate Constructors Scheme and will monitor and report on construction site impacts.

- 6.0.8 The BREEAM Pre-Assessments attached as Appendix B and C demonstrate that a rating of Excellent can be achieved in the seven converted dwellings with a score of 71.05% under BDR; and Very Good can be achieved in the BNDR office areas with a score of 64.38% despite existing site constraints.
- 6.0.9 It should be noted that the credits allocated in the pre- assessments are subject to change at the detailed design stage and during the construction phase. The BDR assessment is close to the boundary for Excellent so there is very little flexibility in the score. The strategy also ensures the London Borough of Camden targets, as outlined in Appendix A, are met where feasible.
- 6.0.10 In conclusion, this report demonstrates compliance with London Borough of Camden Planning Policy DP22 and that the proposed development has carefully considered the site's potential environmental impacts and details how those impacts will be managed and mitigated.

APPENDIX A: POLICY SUMMARY

National Policy

National Planning Policy Framework, March 2012

The National Planning Policy Framework (NPPF) was published in March 2012. It sets out the Government's planning policies for England and how these policies are expected to be applied. The policies in the document, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system.

Paragraph 14 of the NPPF states that:

At the heart of the National Planning Policy Framework is a **presumption in favour of sustainable development**, which should be seen as a golden thread running through both plan-making and decision-taking.

For **decision-taking** this means:

- approving development proposals that accord with the development plan without delay

The NPPF outlines a set of core land-use planning principles that should underpin plan-making and decision-taking, three of which are particularly relevant to this report. Under paragraph 17, these principles are that planning should:

- support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);
- contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this Framework; and
- encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.

Design is addressed in section 7 of the NPPF, and paragraph 56 states:

The Government attaches great importance to the design of the built environment. Good design is a key aspect of sustainable

development, is indivisible from good planning, and should contribute positively to making places better for people.

Meeting the challenge of climate change is addressed in section 10 of the NPPF. In here, paragraph 93 notes that planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.

Further to the above, paragraphs 95 and 96 state:

To support the move to a low carbon future, local planning authorities should:

- plan for new development in locations and ways which reduce greenhouse gas emissions;
- actively support energy efficiency improvements to existing buildings; and
- when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards.

In determining planning applications, local planning authorities should expect new development to:

- comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Conserving and enhancing the natural environment is addressed in section 11 of the NPPF. In this section, and excerpts from paragraph 109 state that the planning system should contribute to and enhance the natural and local environment by:

- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and

- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 118 notes that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by encouraging opportunities to incorporate biodiversity in and around developments.

Noise is addressed under paragraph 123 which notes that planning policies and decisions should aim to:

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development; and
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions.

Additionally, paragraph 125 notes that by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity.

Regional Policy

The London Plan: Spatial Development Strategy for Greater London, July 2011

The London Plan was published in July 2011 and is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London until 2031. The policies relevant to this report are found in Chapter 5 (and to a lesser extent in Chapter 7) of the London Plan.

Policy 5.2: Minimising Carbon Dioxide Emissions

Policy 5.2 addresses carbon dioxide emission reductions and energy assessment requirements. The policy states:

Planning decisions

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

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

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

Residential buildings:

Year Improvement on 2010 Building Regulations

2010-2013	25 per cent (Code for Sustainable Homes level 4)
2013-2016	40 per cent
2016-2031	Zero carbon

Non-domestic buildings:

Year Improvement on 2010 Building Regulations

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

- C. Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy.
- D. As a minimum, energy assessments should include the following details:
- a. calculation of the energy demand and carbon dioxide emissions covered by the Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations at each stage of the energy hierarchy
 - b. proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services
 - c. proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP)
 - d. proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies.
- E. The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the

relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.

As outlined in the Sustainable Design and Construction Supplementary Planning Guidance (SPG) published in April 2014, from 6 April 2014, the Mayor will apply a 35 per cent carbon reduction target beyond Part L 2013 of the Building Regulations - this is deemed to be broadly equivalent to the 40 per cent target beyond Part L 2010 of the Building Regulations, as set out in London Plan Policy 5.2 for 2013-2016.

Policy 5.3: Sustainable Design and Construction

Policy 5.3 is the main policy within the London Plan which addresses sustainable design and construction and states:

Strategic

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

Planning decisions

- B. Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.
- C. 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 this 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 run-off)
 - 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.

The Mayor's supplementary planning guidance, referred to in part C. of Policy 5.3 above, is addressed further in this report below.

The London Plan contains a number of other policies relevant to this report, which are not outlined in full. These policies can be found in the list below, and reference should be made to the London Plan Chapter 5 (Climate Change) for further information:

- Policy 5.5: Decentralised Energy Networks
- Policy 5.6: Decentralised Energy in Development Proposals
- Policy 5.7: Renewable Energy
- Policy 5.8: Innovative Energy Technologies
- Policy 5.9: Overheating and Cooling
- Policy 5.10: Urban Greening
- Policy 5.11: Green Roofs and Development Site Environs
- Policy 5.12: Flood Risk Management
- Policy 5.13: Sustainable Drainage
- Policy 5.15: Water Use and Supplies

Sustainable Design and Construction Supplementary Planning Guidance, April 2014

The Mayor's Supplementary Planning Guidance (SPG) on Sustainable Design and Construction was published in May 2006, and later updated in April 2014, to provide additional information to support the implementation of the London Plan. Policy 5.3 of the current London Plan continues to refer to this SPG.

The SPG is based on three broad sustainable design and construction categories (Resource Management; Adapting to Climate Change and Greening the City; and Pollution Management - Land, Air, Noise, Light and Water) and contains both Mayor's Priority and Mayor's best practice standards for the proposed development within each section.

As encouraged in paragraph 1.4.11 of the SPG, this Sustainability Statement is structured around the sections of the SPG and notes how the proposed development addresses the Mayor's Priority and best practice standards.

Local Policy

The London Borough of Camden's Core Strategy sets out the key elements of the Council's planning vision and strategy for the borough. It is the central part of Local Development Framework (LDF) and was adopted in November 2010. The LDF is a group of documents setting out the borough's planning strategy and policies.

London Borough of Camden Core Strategy 2010-2025

The Core Strategy contributes to achieving the vision and objectives of Camden's Community Strategy and helps the Council's partners and other organisations deliver relevant parts of their programmes. It covers the physical aspects of location and land use but also addresses other factors that make places attractive, sustainable and successful, such as social and economic matters. It plays a key part in shaping the kind of place Camden will be in the future, balancing the needs of residents, businesses and future generations.

Within the Core Strategy there are specific policies relating to sustainability.

The Core Strategy sets out the Council's approach to managing Camden's growth so that it is sustainable, meets our needs for homes, jobs and services, and protects and enhances quality of life and the borough's many valued and high quality places. Section 3 focuses on delivering the key elements of Camden's strategy relating to:

- making Camden more sustainable and tackling climate change, in particular improving the environmental performance of buildings, providing decentralised energy and heating networks, and reducing and managing our water use;
- promoting a more attractive local environment through securing high quality places, conserving our heritage, providing parks and open spaces, and encouraging biodiversity;
- improving health and well-being;
- making Camden a safer place while retaining its vibrancy; and
- dealing with our waste and increasing recycling.

The implications of our actions on the environment are increasingly clear and action is needed at global, national and local levels. The Core Strategy has an important role in reducing Camden's environmental impact and achieving sustainable development – meeting our social, environmental and economic needs in ways that protect the environment and do not harm our ability to meet our needs in the future. A Sustainable Camden that adapts to a growing population is one of the elements in the vision in Camden's Community Strategy.

CS13 – Tackling climate change through promoting higher environmental standards

The Core Strategy Policy CS13 sets out the approach that developers should take when considering energy and carbon reductions for developments.

Reducing the effects of and adapting to climate change

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

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

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

Local energy generation

The Council will promote local energy generation and networks by:

- e) working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them,

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

Water and surface water flooding

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

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

Camden's carbon reduction measures

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

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

London Borough of Camden Development Policies 2010-2025

The Core strategy has informed the Council's Development Policies. Section 3 of this particular document sets out a number of policies to promote sustainability and tackle climate change.

The objectives of Section 3 are enforced through policy DP22 Promoting sustainable design and construction and DP23 Water.

Policy DP22 - Promoting sustainable design and construction

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

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

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

- c) expecting new build housing to meet Code for Sustainable Homes Level 3 by 2010 and Code Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.
- d) expecting developments (except new build) of 500sqm of residential floorspace or above or 5 or more dwellings to achieve 'excellent' in EcoHomes assessments from 2013 and at least 'very good' prior to 2013;
- e) expecting non-domestic developments of 500sqm of floorspace or above to achieve 'very good' in BREEAM assessments, with the aim of increasing the target to a rating of at least 'excellent' in 2016, if feasible, and zero carbon from 2019, in line with the government's ambitions.

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

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

Policy DP23 - Water

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

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

- e) encouraging the provision of attractive and efficient water features.

London Borough of Camden Planning Guidance Sustainability (CPG3)

The Core Strategy is supported by Supplementary Planning Documents (SPDs) which play an important role in planning decisions. SPDs provide detailed guidance on how planning strategy and policies will be implemented for specific topics, areas and sites.

CPG3 contains advice and guidance for developers on ways to achieve carbon reductions and more sustainable developments. It also highlights the Council's requirements and guidelines which support the relevant Local LDF policies, including DP22 as noted above.

Section 9 covers sustainability assessment tools, with BREEAM Domestic Refurbishment (formerly EcoHomes) and Code for Sustainable Homes being of particular relevance to this development (see section 3.4 below). The key message of the document is that new build dwellings will have to be designed in line with the Code for Sustainable Homes and the creation of 5 or more dwellings from an existing building will need to be designed in line with EcoHomes.

Developers are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - Promoting sustainable design and construction:

Time period	Minimum rating (BDR/BREEAM)	Minimum standard for categories - % of un-weighted credits - (BDR/BREEAM)
2010-2012	Very Good	Energy - 60%
2013-2015	Excellent	Water – 60% Materials – 40%

APPENDIX B: BREEAM DOMESTIC REFURBISHMENT PRE-ASSESSMENT

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a dwelling's potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.		Minimum Standards				
		Pass	Good	Very Good	Excellent	Outstanding
Building name		Ene 02	✓	✓	✓	✓
Indicative building score (%)		Wat 01	✓	✓	✓	✗
Indicative BREEAM rating		Hea 05	✓	✓	✓	✓
71.05%		Hea 06	✓	✓	✓	✓
BREEAM Excellent		Pol 03	✓	✓	✓	✓
		Mat 02	✓	✓	✓	✓
Management	Health & Wellbeing	Energy	Water	Materials	Waste	Pollution

INNOVATION		Section Weighting: 10%	Indicative Section Score: 2.00%
Comments			

MANAGEMENT		Section Weighting: 12%		Indicative Section Score: 10.91%	
Man 01 Home Users Guide					
No. of BREEAM credits available		3		Available contribution to overall score	
No. of BREEAM innovation credits		0		Minimum Standards applicable:	
Assessment Criteria				Indicative Credits	
Where a Home Users Guide be provided to all dwellings, covering all issues set out in the 'Users Guide Contents list', three credits may be awarded				3	
Comments					

Man 02 Responsible Construction Practices			
No. of BREEAM credits available	2	Available contribution to overall score:	2.18%
No. of BREEAM innovation credits	1		Minimum Standards applicable:
Assessment Criteria			Indicative Credits
Where a compliant considerate construction scheme will be used, credits are awarded depending the score achieved as outlined below:			1
Large Scale - project with more than 5 units			
	One Credit	Two Credits	
Considerate Constructors Scheme	Score of 25-34 with a score of 5 in each section	Score of 35-39 with a score of 7 in each section	
Alternative Compliant Scheme	Compliance	Beyond Compliance	
Small Scale - project with 5 units or fewer			
	One Credit	Two Credits	
Considerate Constructors Scheme	Score of 25-34 with a score of 5 in each section	Score of 35-39 with a score of 7 in each section	
Alternative Compliant Scheme	Compliance	Beyond Compliance	
Checklist A-3	50% of the optional items	80% of the optional items	
Exemplary Credit			
Considerate Constructors Scheme	Score of 40 or more with a score of 7 in each section	* Small Scale Project Only	Indicative Innovation Credits Achieved
Alternative Compliant Scheme	Exemplary Level Compliance		Please Select
Checklist A-3*	All Items (Optional & Mandatory)		

Comments			

Man 03 Construction Site Impacts			
No. of BREEAM credits available	1	Available contribution to overall score	1.09%
No. of BREEAM innovation credits	0		No
Assessment Criteria			Indicative Credits
Where evidence demonstrate that site impacts will be monitored, as detailed below:			1
One Credit			
Large Scale	Where there is evidence to demonstrate that 2 or more of the sections in Checklist A-4 are completed		
Small Scale	Where there is evidence to demonstrate that 2 or more of the sections in Checklist A-5 are completed		
Sections of Checklist			
Large Scale - Checklist A-4		Small Scale - Checklist A-5	
Monitor, report and set targets for CO2 production of energy use arising from site activities		Set objectives for reducing CO2 production from energy use arising from site activities	
Monitor, report and set targets for water consumption arising from site activities		Set objectives for reducing water use arising from site activities	
A main contractor with an environmental materials policy		Main contractor environmental materials statement	
A main contractor that operates an Environmental Management System		80% of site timber is reclaimed, re-used or responsibly sourced	
80% of site timber is reclaimed, re-used or responsibly sourced			
Same definition of small and large scale as in Man 02			
Comments			

Comments			

Man 04 Security				
No. of BREEAM credits available	2	Available contribution to overall score:	2.18%	
No. of BREEAM innovation credits	0	Minimum Standards applicable:	No	
Assessment Criteria				Indicative Credits
Where the following requirements will be met:				2
One Credit		External doors and accessible windows meet minimum standards and appropriately certified		
Secure windows and doors				
Two Credits		Principles and guidance of Secured by Design Section 2 are complied with		
		A suitably qualified security consultant is consulted at the design stage and their recommendations are incorporated into the refurbishment		
Secured by design				
Comments				
Man 05 Protection and Enhancement of Ecological Features				
No. of BREEAM credits available	1	Available contribution to overall score:	1.09%	
No. of BREEAM innovation credits	1	Minimum Standards applicable:	No	
Assessment Criteria				Indicative Credits
Where the following requirements will be met:				1
One Credit		Site survey carried out to determine presence of ecological features		
		Statutory Nature Conservation Organisation notified of protected species		
		Features of ecological value protected during refurbishment works		
Protecting Ecological Features				
Exemplary Credit		A suitably qualified ecologist recommends features to enhance ecology of the site		
		adopts all general ecological recommendations		
		adopts 30% of additional recommendations		
Ecological enhancement				
Comments				
Man 06 Project Management				
No. of BREEAM credits available	2	Available contribution to overall score	2.18%	
No. of BREEAM innovation credits	2	Minimum Standards applicable	No	
Assessment Criteria				Indicative Credits
Where the following requirements will be met:				2
One Credit		Where all of the project team are involved in the project decision making		
		Small Scale - the project manager assigns individual and shared responsibilities amongst the project team including all trades on site		
		Large Scale - the project manager assigns individual and shared responsibilities across the following key design and refurbishment stages: i. Planning and Building control notification ii. Design iii. Refurbishment iv. Commissioning and handover v. Occupation		
Project Roles and Responsibilities				
Small Scale projects: five units or fewer and less than £100k		Large Scale projects: more than five units and more than £100k		
One Credit		Handover meeting arranged		
		2 or more of the following committed to: - A site inspection within 3 months of occupation - Conduct post occupancy interviews with building occupants or a survey via phone or posted information within 3 months of occupation - Longer term after care e.g. a helpline, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation		
Handover and Aftercare				
Exemplary Credits				Indicative Innovation Credits Achieved
				Please Select
One Exemplary Credit		Where A BREEAM Accredited Professional has been appointed to oversee key stages within the project. OR Where a BREEAM Domestic Refurbishment Assessor has been appointed at an early stage of the project, prior to the production of a refurbishment specification		
Early Design Input				
One Exemplary Credit		Where Thermographic surveying and Airtightness testing have been carried out at both pre and post refurbishment stages		
		Where an improved air tightness target has been set at design stage and testing demonstrates that this has been achieved post refurbishment		
Thermographic Surveying and Airtightness Testing				
Comments				

HEALTH & WELLBEING		Section Weighting: 17%		Indicative Section Score 11.33%	
Hea 01 Daylighting					
No. of BREEAM credits available		2		Available contribution to overall score	
No. of BREEAM innovation credits		0		Minimum Standards applicable	
				2.83%	
				No	
Assessment Criteria				Indicative Credits	
Where the refurbishment results in a neutral impact on daylighting or where minimum daylighting standards are met, up to two credits may be awarded as follows:				1	
For Existing Dwellings and Change of Use Projects					
First Credit Maintaining Good Daylighting		The refurbishment results in a neutral impact on the dwellings daylighting levels in the kitchen, living room, dining room and study			
Where the property is being extended					
First Credit Maintaining Good Daylighting		New spaces achieve minimum daylighting levels			
		The extension does not significantly reduce daylighting levels in the kitchen, living room, dining room or study of neighbouring properties			
For All Properties					
Second Credit Minimum Daylighting		The dwelling achieves minimum daylighting levels in the kitchen, living room, dining room and study			
Comments					
Hea 02 Sound Insulation					
No. of BREEAM credits available		4		Available contribution to overall score	
No. of BREEAM innovation credits		0		Minimum Standards applicable	
				5.67%	
				No	
Assessment Criteria				Indicative Credits	
To ensure the provision of acceptable sound insulation standards and so minimise the likelihood of noise complaints.				3	
Properties where sound testing has been carried out:					
Up to Four Credits		Four credits awarded according to the improvement over building regulations. See table in additional information in Technical Manual			
Properties where sound testing is not feasible and not required by the appointed Building Control body					
Two Credits		Where existing separating walls and floors are designed to meet the requirements of Building Regulations with compliant construction details			
Up to Four Credits		Where a Suitably Qualified Acoustician (SQA) provides recommendations for the specification of all existing separating walls and floors			
		SQA confirms in their professional opinion that they have the potential to meet or exceed the sound insulation credit requirements			
		Where these recommendations are implemented			
		See table in additional information in Technical Manual			
Historic Buildings					
Up to Four Credits		Where the dwelling is a Historic Building and sound testing results demonstrate existing separating walls and floor meet the Historic Building credit requirements			
		See table in additional information in Technical Manual			
		Where sound testing is not feasible and not required by the appointed Building Control body meeting criteria 2 and 3 using Table 12			
		Properties where sound testing has been carried out, credits awarded according to the improvement over building regulations. See table in additional information in Technical Manual			
		Where the dwelling is a detached property			
		Where the dwelling is a propertywith separating walls or floors only between non habitable rooms OR Testing not required by building control body			
Detached Properties					
Four Credits		By Default			
Properties with separating walls or floors only between non habitable rooms OR Testing not required by building control body					
Four Credits		By Default			
Comments					
Hea 03 Volatile Organic Compounds					
No. of BREEAM credits available		1		Available contribution to overall score	
No. of BREEAM innovation credits		0		Minimum Standards applicable	
				1.42%	
				No	
Assessment Criteria				Indicative Credits	
Where the refurbishment avoids the use of VOCs with new products meeting the following requirements:				0	
One Credit Avoiding the use of VOCs		Where all decorative paints and varnishes used in the refurbishment have met the requirement listed in table 5.4 in the Technical Manual			
		Where at least five of the eight remaining product categories listed in table 5.4 have met the testing requirements and emission levels for Volatile Organic Compound (VOC) emissions against the relevant standards identified within table 5.4 in the Technical Manual			
		Where five or less products are specified within the refurbishment, all must meet the requirements in order to achieve this credit.			
Comments					

Hea 04 Inclusive Design				
No. of BREEAM credits available	2	Available contribution to overall score	2.83%	
No. of BREEAM innovation credits	1		Minimum Standards applicable	
Assessment Criteria				Indicative Credits
Where an access statement has been carried out using Checklist A-8 of the Technical Manual to optimise the accessibility of the home as follows:				1
		Checklist A-8 of the Technical Manual		
		Section 1	Section 2	
One Credit Minimum Accessibility	Completed with Evidence			
Two Credits Advanced Accessibility	Completed with Evidence		Completed with Evidence	
Exemplary Performance				Indicative Innovation Credits Achieved
One Credit	Where an access expert suitably qualified member of the design team has completed sections 1, 2 and 3 of Checklist A-8, access statement template with evidence provided of the measures implemented in the refurbishment			Please Select

Comments

Hea 05 Ventilation				
No. of BREEAM credits available	2	Available contribution to overall score	2.83%	
No. of BREEAM innovation credits	0		Minimum Standards applicable	
Assessment Criteria				Indicative Credits
Where the dwelling meets the following ventilation requirements:				2
One Credit Minimum Ventilation Requirements	A minimum level of background ventilation is provided (with trickle ventilators or other means of ventilation) for all habitable rooms, kitchens, utility rooms and bathrooms compliant with section 7, Building Regulations Approved Document Part F, 2010			
	A minimum level of extract ventilation is provided in all wet rooms (e.g. kitchen, utility and bath-rooms), compliant with section 5, Building Regulations Approved Document Part F 2010.			
	A minimum level of purge ventilation is provided in all habitable rooms and wet rooms, compliant with section 7, Building Regulations Approved Document Part F, 2010.			
	It is an historic building and meets historic building requirements in CN4 of the technical manual			
Two Credits Advanced Requirements	Ventilation is provided for the dwelling that meets the requirements of Section 5 of Building Regulations Part F in full			
	Where the building is a historic building and meets the requirements for Historic Buildings in compliance note 4 of the technical manual			

Comments

Hea 06 Safety				
No. of BREEAM credits available	1	Available contribution to overall score	1.42%	
No. of BREEAM innovation credits	0	Minimum Standards applicable	Yes	
Assessment Criteria				Indicative Credits
Where a fire and carbon monoxide (CO) detection and alarm system is specified as follows:				1
One Credit Fire and Carbon Monoxide (CO) Detection and Alarm Systems	Where a compliant fire detection and fire alarm system is provided			
	Carbon Monoxide detector installed if dwelling is supplied with mains gas or other fossil fuel			
	Mains supplied fire detection and alarm system if project involves re-wiring*			
	Battery operated fire detection and alarm system if no re-wiring* is to take place			
* see CN9 in Hea 06 for the definition of re-wiring				
Comments				
ENERGYSection Weighting: 43%Indicative Section Score 28.91%				
Ene 01 Improvement in Energy Efficiency Rating				
No. of BREEAM credits available	6	Available contribution to overall score	8.90%	
No. of BREEAM innovation credits	0	Minimum Standards applicable	No	
Assessment Criteria				Indicative Credits
Where the following targets are met for the improvement in Energy Efficiency Rating achieved as a result of refurbishment:				1
	Improvement in EER		Credits	
	≥ 5	0.5		
	≥ 9	1		
	≥ 13	1.5		
	≥ 17	2		
	≥ 21	2.5		
	≥ 26	3		
	≥ 31	3.5		
	≥ 36	4		
	≥ 42	4.5		
	≥ 48	5		
	≥ 54	5.5		
	≥ 60	6		
	Comments			
Ene 02 Energy Efficiency Rating Post Refurbishment				
No. of BREEAM credits available	4	Available contribution to overall score	5.93%	
No. of BREEAM innovation credits	2	Minimum Standards applicable	Yes	
Assessment Criteria				Indicative Credits
Where the following Energy Efficiency Rating benchmarks will be met as a result of refurbishment:				3.5
	EER post refurbishment	Credits	Minimum requirements	
	≥50	0.5	'Pass' level EER of 50	
	≥55	1	'Good' level EER of 58	
	≥60	1.5		
	≥65	2	'Very Good level' EER of 65	
	≥70	2.5	'Excellent' level EER of 70	
	≥75	3		
	≥80	3.5	'Outstanding' level EER of 81	
	≥85	4		
Exemplary		Credits	Indicative Innovation Credits Achieved	
≥90		1	Please Select	
≥100		2		
Comments				

Ene 03Primary energy demand

No. of BREEAM credits available7

No. of BREEAM innovation credits0

Available contribution to overall score10.38%

Minimum Standards applicableNo

Assessment Criteria

Where the following Primary Energy Demand benchmarks will be met as a result of refurbishment:

Primary Energy Demand Post Refurbishment (kWh/m²/year)

Credits

≤ 4000.5

≤ 3701

≤ 3401.5

≤ 3202

≤ 3002.5

≤ 2803

≤ 2603.5

≤ 2404

≤ 2204.5

≤ 2005

≤ 1805.5

≤ 1606

≤ 1406.5

≤ 1207

Indicative Credits6

Ene 04Renewable Technologies

No. of BREEAM credits available2

No. of BREEAM innovation credits0

Available contribution to overall score2.97%

Minimum Standards applicableNo

Assessment Criteria

Where the dwelling will meet the following % contribution from renewables and primary energy demand targets as a result of refurbishment

Dwelling Type

Primary Energy Demand

Percentage from Renewables

1 Credit

2 Credits

Detached

≤ 250 kWh/m²/year

≥10%

≥20%

Semi-Detached

≥10%

≥20%

Bungalow

≥10%

≥20%

End of Terrace

≥10%

≥20%

Mid Terrace

≤ 220 kWh/m²/year

≥10%

≥20%

Low Rise Flat

≥10%

≥20%

Mid Rise Flat

≥10%

≥15%

High Rise Flat

≥10%

≥15%

Indicative Credits1

Ene 05Energy Labelled White Goods

No. of BREEAM credits available2

No. of BREEAM innovation credits0

Available contribution to overall score2.97%

Minimum Standards applicableNo

Assessment Criteria

Where Energy Efficiency White goods are to be provided as follows:

First Credit

Appliance

Appliance provided

Appliance not to be provided

Fridges, Freezers and Fridge-Freezers

Energy Saving Trust Recommended appliances specified

EU Energy Efficiency Labelling Scheme
Information Leaflet provided to all dwellings

Second Credit

Appliance

Appliance provided

Appliance not to be provided

Washing Machines and Dishwashers

Energy Saving Trust Recommended appliances specified

Second credit not achieved

Washer-Dryers and Tumble Dryers

Appliances specified with B Rating under EU Energy
Efficiency Labelling Scheme

EU Energy Efficiency Labelling Scheme
Information Leaflet provided to all dwellings

Indicative Credits2

Ene 06Drying Space

No. of BREEAM credits available1

No. of BREEAM innovation credits0

Available contribution to overall score1.48%

Minimum Standards applicableNo

Assessment Criteria

Where adequate, secure internal or external space with posts and footings or fixings is provided with the following:

1 Credit

Number of bedrooms

Drying line required

1-2

4m+

3+

6m+

Indicative Credits1

Ene 07Lighting

No. of BREEAM credits available2

No. of BREEAM innovation credits0

Available contribution to overall score2.97%

Minimum Standards applicableNo

Assessment Criteria

Where energy efficient internal and external lighting is provided as follows:

External Lighting - 1 Credit

Energy Efficient Space Lighting of more than 45 lumens per circuit watt and Energy Efficient Security Lighting OR
Where Energy Efficient Space Lighting is provided ONLY

Internal Lighting - 1 Credit

Maximum average wattage across the total floor area of the dwelling of 9 watts/m2

Indicative Credits2

Ene 08

Display Energy Devices

No. of BREEAM credits available

2

No. of BREEAM innovation credits

1

Available contribution to overall score

2.97%

Minimum Standards applicable

No

Assessment Criteria

Where consumption data is displayed to occupants by a compliant energy display device

Indicative Credits

2

Electricity usage data displayed

Electricity

Other

Electricity usage data displayed

2 credits awarded

1 credit awarded

Primary Heating Fuel usage data displayed

N/A

1 credit awarded

Electricity & Primary Heating Fuel usage displayed

N/A

2 credits awarded

Exemplary Credits

One credit

Recording consumption data

Where the first two credits are achieved

Where any compliant Energy Display Device is capable of recording consumption data

Indicative Innovation Credits Achieved

1

Comments

Ene 09

Cycle Storage

No. of BREEAM credits available

2

No. of BREEAM innovation credits

0

Available contribution to overall score

2.97%

Minimum Standards applicable

No

Assessment Criteria

Where individual or communal compliant cycle storage is provided as follows:

Indicative Credits

0

Dwelling Size

One Credit

Two Credits

Studios/ 1 bedroom

1 per two dwellings

1 per dwelling

2-3 bedrooms

1 per dwelling

2 per dwelling

4 bedrooms

2 per dwelling

4 per dwelling

Comments

Ene 10

Home Office

No. of BREEAM credits available

1

No. of BREEAM innovation credits

0

Available contribution to overall score

1.48%

Minimum Standards applicable

No

Assessment Criteria

Where sufficient space and services will be provided to allow occupants to set up a home office in a suitable room with adequate ventilation

Indicative Credits

1

Comments

WATER

Section Weighting: 11%

Indicative Section Score 8.80%

Wat 01

Internal Water Use

No. of BREEAM credits available

3

No. of BREEAM innovation credits

1

Available contribution to overall score

6.60%

Minimum Standards applicable

Yes

Assessment Criteria

Where the dwellings water consumption meets the following consumption benchmarks, or where terminal fittings meet the following water consumption standards:

Indicative Credits

2

Calculated Water Consumption (litres/person/day)

Equivalent terminal fitting standards

Minimum Standard

Credits

>150

Typical baseline performance

N/A

0

from 140 to ≤ 150

All showers specified to ‘Good’ OR All taps and WC’s to ‘Good’ OR Kitchen fittings specified to ‘Excellent’

N/A

0.5

from 129 to < 140

All showers specified to ‘Excellent’ OR All showers and bathroom taps to ‘Good’

BREEAM Very Good

1

from 118 to < 129

All bathroom and WC room fittings specified to ‘Good’ OR All bathroom fittings specified to ‘Excellent’

N/A

1.5

from 107 to < 118

All Bathroom and WC room fittings specified to ‘Excellent’ OR All Bathroom fittings Specified to ‘Excellent’ and WC room fitting specified to ‘Good’ OR All Bathroom fittings, kitchen and utility sittings specified to ‘Good’

BREEAM Excellent

2

from 96 to < 107

All kitchen, bathroom, utility room and WC room fittings specified to ‘Good’ OR All bathrooms, kitchens and utility rooms specified to ‘Excellent’

N/A

2.5

< 96

All bathroom fittings specified to ‘Excellent’ and WC room, kitchen and utility room fittings specified to ‘Good’

BREEAM Outstanding

3

NOTE: 'Good' fittings are equivalent to good practice fittings with "Excellent" fittings equivalent to best practice fittings (see the technical manual for full details.

Exemplary Credit

If the water consumption is less than 80l/person/day

Indicative Innovation Credits Achieved

Please Select

Comments

Wat 02

External Water Use

No. of BREEAM credits available

1

No. of BREEAM innovation credits

0

Available contribution to overall score

2.20%

Minimum Standards applicable

No

Assessment Criteria

Where the following requirements will be met:

Indicative Credits

1

Requirements:

One Credit

Where a compliant rainwater collection system for external/internal irrigation use has been provided to dwellings.
OR
Where dwellings have no individual or communal garden space.

Comments

Wat 03

Water Meter

No. of BREEAM credits available

1

No. of BREEAM innovation credits

0

Available contribution to overall score

2.20%

Minimum Standards applicable

No

Assessment Criteria

Where an appropriate water meter for measuring usage of mains potable water meter has been provided to dwelling(s), one credit may be awarded

Indicative Credits

1

Comments

MATERIALS

Section Weighting: 8%

Indicative Section Score 4.44%

Mat 01 Environmental Impact of Materials

No. of BREEAM credits available25

No. of BREEAM innovation credits0

Available contribution to overall score4.44%

Minimum Standards applicableNo

Assessment Criteria

Up to 25 credits can be awarded, with credits calculated using the Mat 01 calculator tool. The table below shows the maximum number of credits available for each element:

Elements	Green Guide Rating credits available	Thermal performance credits available*
Roof	5	3
External walls	5	3.8
Internal walls (including separating walls)	5	-
Upper and Ground Floor	5	1.2
Windows	5	2

The full 25 credits represents all of the elements containing refurbished or existing materials that meet the Green Guide Rating of A+(6)

GG Rating	Points for existing / refurbished elements	Points for new elements
A+ (6)	5	
A+ (5)	4.6	
A+ (4)	4.2	
A+ (3)	3.8	
A+ (2)	3.4	
A+	3	3
A	2	2
B	1	1
C	0.5	0.5
D	0.25	0.25
E	0	0

Where the full 25 credits cannot be achieved the score can be 'topped up' with thermal performance credits. The full number of thermal performance credits for each element can be achieved when achieving the minimum U-values shown below.

Elements	Minimum U-Value (W/m2K)
Roof	0.11
External walls	0.15
Internal walls (including separating walls)	-
Upper and Ground Floor	0.15
Windows	1.4

Indicative Credits

15

Comments

Mat 02 Responsible Sourcing of Materials

No. of BREEAM credits available12

No. of BREEAM innovation credits0

Available contribution to overall score2.13%

Minimum Standards applicableYes

Assessment Criteria

Where new materials are responsibly sourced, up to 12 credits may be awarded where 80% of new materials for an element are responsibly sourced. The credits achieved are dependent on % of point achieved which is based upon the responsible sourcing tier level of each material sourced as detailed below:

Table 1

Tier level	Points
1	4
2	3.5
3	3
4	2.5
5	2
6	1.5
7	1
8	0

Table 2

BREEAM credits	% of available points achieved
12	≥54%
10	≥45%
8	≥36%
6	≥ 27%
4	≥ 18%
2	≥ 9%

Will all new timber used in the project be sourced in accordance with the UK Government's Timber Procurement

Yes

Indicative Credits

6

Comments

Mat 03 Insulation

No. of BREEAM credits available8

No. of BREEAM innovation credits0

Available contribution to overall score1.42%

Minimum Standards applicableNo

Assessment Criteria

Where any new insulation specified for use within external walls, ground floor, roof and buildings services meet the following requirements:

Requirements

4 Credits

Where the Insulation Index for new insulation used in the buildings is ≥2

Where Green Guide ratings are determined using the Green Guide to specification tool

Requirements

4 Credits

Where ≥ 80% of the new thermal insulation used in the building elements is responsibly sourced.

Indicative Credits

4

Comments

WASTE		Section Weighting: 3%		Indicative Section Score 2.40%	
Was 01 Household Waste					
No. of BREEAM credits available		2	Available contribution to overall score		1.20%
No. of BREEAM innovation credits		0	Minimum Standards applicable		No
Assessment Criteria					Indicative Credits
Where compliant recycling and composting facilities are provided, up to two credits may be awarded as follows					1
First Credit - Recycling Facilities					
Scenario		Internal recycling storage requirements			
Compliant collection scheme in place	3 internal recycling containers provided where recycling is not sorted post collection				
	1 internal recycling container provided where recycling is sorted post collection				
	Minimum 30 litre total capacity, no single container less than 7 litre capacity				
	Dedicated position in accordance with compliance note 1				
No compliant collection scheme in place No adequate external storage	3 internal recycling containers provided				
	Minimum 60 litre total capacity				
	Dedicated position in accordance with compliance note 1				
No compliant collection scheme in place Adequate external storage provided	3 internal recycling containers provided				
	Minimum 30 litre total capacity, no single container smaller than 7 litre capacity				
	Dedicated position in accordance with compliance note 1				
Second credit - Composting facilities					
With external space		Without external space			
Where a composting service or facility is provided for green/garden waste		Where a composting service or facility is provided for kitchen waste			
Where a composting service or facility is provided for kitchen waste		Where an interior container is provided for kitchen composting waste of at least 7 litres			
Where an interior container is provided for kitchen composting waste of at least 7 litres					
Comments					
Was 02 Refurbishment Site Waste Management					
No. of BREEAM credits available		3	Available contribution to overall score		1.80%
No. of BREEAM innovation credits		1	Minimum Standards applicable		No
Assessment Criteria					Indicative Credits
Up to three credits are available depending on the site waste management plan to be implemented as follows					3
Projects up to £100k					
Three Credits		Where waste generated through the refurbishment process is managed in accordance with Checklist A-9			
Exemplary Credit		Where a compliant Level 1; Site Waste Management Plan (SWMP) is in place			
Projects up to £300k					
Three Credits		Where a compliant Level 1; Site Waste Management Plan (SWMP) is in place			
Exemplary Credit	Where a compliant Level 2; Site Waste Management Plan (SWMP) is in place				
	Non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmark				
	The percentage of non-hazardous construction waste and demolition waste generated by the project has been diverted from landfill and meets or exceeds the refurbishment & demolition waste diversion benchmarks				
Projects over £300k					
First Credit Management Plan		Where a compliant Level 2; Site Waste Management Plan (SWMP) is in place			
Second Credit Good Practice Waste Benchmarks	First credit achieved				
	Non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the resource efficiency benchmark				
	Amount of waste generated against £100,000 of project value is recorded in the SWMP				
	Pre-refurbishment audit of the existing building is completed				
Third Credit Best Practice Waste Benchmarks	If demolition is included as part of the refurbishment programme, then the audit should also cover demolition materials				
	Where the first two credits have been achieved achieved				
Exemplary Credit	Where Non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the refurbishment & demolition waste diversion benchmarks				
	Where non-hazardous construction waste generated by the dwellings refurbishment meets or exceeds the <i>exemplary level resource efficiency benchmark</i>				
	Where Non-hazardous demolition waste generated by the dwellings refurbishment meets or exceeds the exemplary level diversion benchmarks				
Comments					
POLLUTION		Section Weighting: 6%		Indicative Section Score 2.25%	
Pol 01 NOx Emissions					
No. of BREEAM credits available		3	Available contribution to overall score		2.25%
No. of BREEAM innovation credits		0	Minimum Standards applicable		No
Assessment Criteria					Indicative Credits
Credits are awarded on the basis of NOx emissions arising from the operation of space heating and hot water systems for each refurbished dwelling as follows:					0
		One Credit		Dry NOx Emissions	
		Two Credits		≤100 mg/kWh (NOx class 4 boiler)	
		Three Credits		≤70 mg/kWh (NOx class 5 boiler)	
				≤40 mg/kWh	
Comments					

Pol 02Surface Water Runoff

No. of BREEAM credits available	3	Available contribution to overall score	2.25%	
No. of BREEAM innovation credits	1		Minimum Standards applicable	No

Assessment Criteria

Where impacts of the refurbishment on surface water runoff are neutralised or where runoff is reduced as a result of refurbishment, up to three credits can be awarded as follows:

Requirements

One Credit

Neutral Impact on Surface Water

New hard standing areas must be permeable

If building on to previously permeable area additional run-off must be managed on site

Calculations should be carried out by an appropriately qualified professional

Requirements

OR Second Credits

Reducing Run-Off From Site: Basic

Where the criteria needed for One Credit has been achieved

Where all run-off from the roof for rainfall depths up to 5 mm, have been managed on site using source control methods

Include runoff from all existing and new parts of the roof.

An appropriately qualified professional should be used to design an appropriate drainage strategy for the site

Requirements

OR Three Credits

Reducing Run-Off From Site: Advanced

Where run-off as a result of the refurbishment is managed on site using source control

An appropriately qualified professional should be used to design an appropriate drainage strategy for the site.

The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 75% from the existing site.

The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 75%.

An allowance for climate change must be included for all of the above calculations, in accordance with current best practice (PPS25, 2010).

Requirements

Exemplary Credit

Where all run-off from the developed site is managed on site using source control

The peak rate of run-off as a result of the refurbishment for the 1 in 1 year event is reduced to zero.

The peak rate of run-off as a result of the refurbishment for the 1 in 100 year event is reduced to zero.

There is no volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration.

An allowance for climate change must be included for all of the above calculations, in accordance with current best practice (PPS25, 2010).

Indicative Credits

1

Indicative Innovation Credits Achieved

Please Select

Comments

Pol 03Flooding

No. of BREEAM credits available	2	Available contribution to overall score	1.50%	
No. of BREEAM innovation credits	0		Minimum Standards applicable	Yes

Assessment Criteria

Where the dwelling is located in a low flood risk zone, or where in a medium to high flood risk zone and a flood resilience/resistance strategy has been implemented, up to two credits can be awarded as follows:

Minimum Standards

A minimum of two credits must be achieved for this issue at the Excellent and Outstanding levels

Option 1 - Low Flood Risk

Two Credits

Where a Flood Risk Assessment (FRA) has been carried out and the assessed dwellings are defined as having a low annual probability of flooding.

Option 2 - Medium / High Flood Risk

Two Credits

Where a Flood Risk Assessment (FRA) has been carried out and the assessed dwellings are defined as having a medium or high annual probability of flooding.

Two credits are awarded where as a result of the dwellings floor level or measures to keep water away the dwelling is defined as achieving avoidance from flooding by following Checklist A-10; Decision Strategy Flow Chart.

Where avoidance is not possible, two credits are achieved where a full flood resilience/resistance strategy is implemented for the dwellings in accordance with recommendations made by a Suitably Qualified Building Professional

Indicative Credits

2

Comments

BREEAM Domestic Refurbishment 2012 Pre-Assessment Estimator v0.6: Results Summary



Building name	
Indicative Building Score	71.05%
Indicative Building Rating	BREEAM Excellent

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a dwelling's potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.

	Issue	Credits Available	Indicative Credits Achieved	Weighting	Section Score
Management	Man 01	3	3	12%	10.91%
	Man 02	2	1		
	Man 03	1	1		
	Man 04	2	2		
	Man 05	1	1		
	Man 06	2	2		

Health and Wellbeing	Hea 01	2	1	17%	11.33%
	Hea 02	4	3		
	Hea 03	1	0		
	Hea 04	2	1		
	Hea 05	2	2		
	Hea 06	1	1		

Energy	Ene 01	6	1	43%	28.91%
	Ene 02	4	3.5		
	Ene 03	7	6		
	Ene 04	2	1		
	Ene 05	2	2		
	Ene 06	1	1		
	Ene 07	2	2		
	Ene 08	2	2		
	Ene 09	2	0		
	Ene 10	1	1		

Water	Wat 01	3	2	11%	8.80%
	Wat 02	1	1		
	Wat 03	1	1		

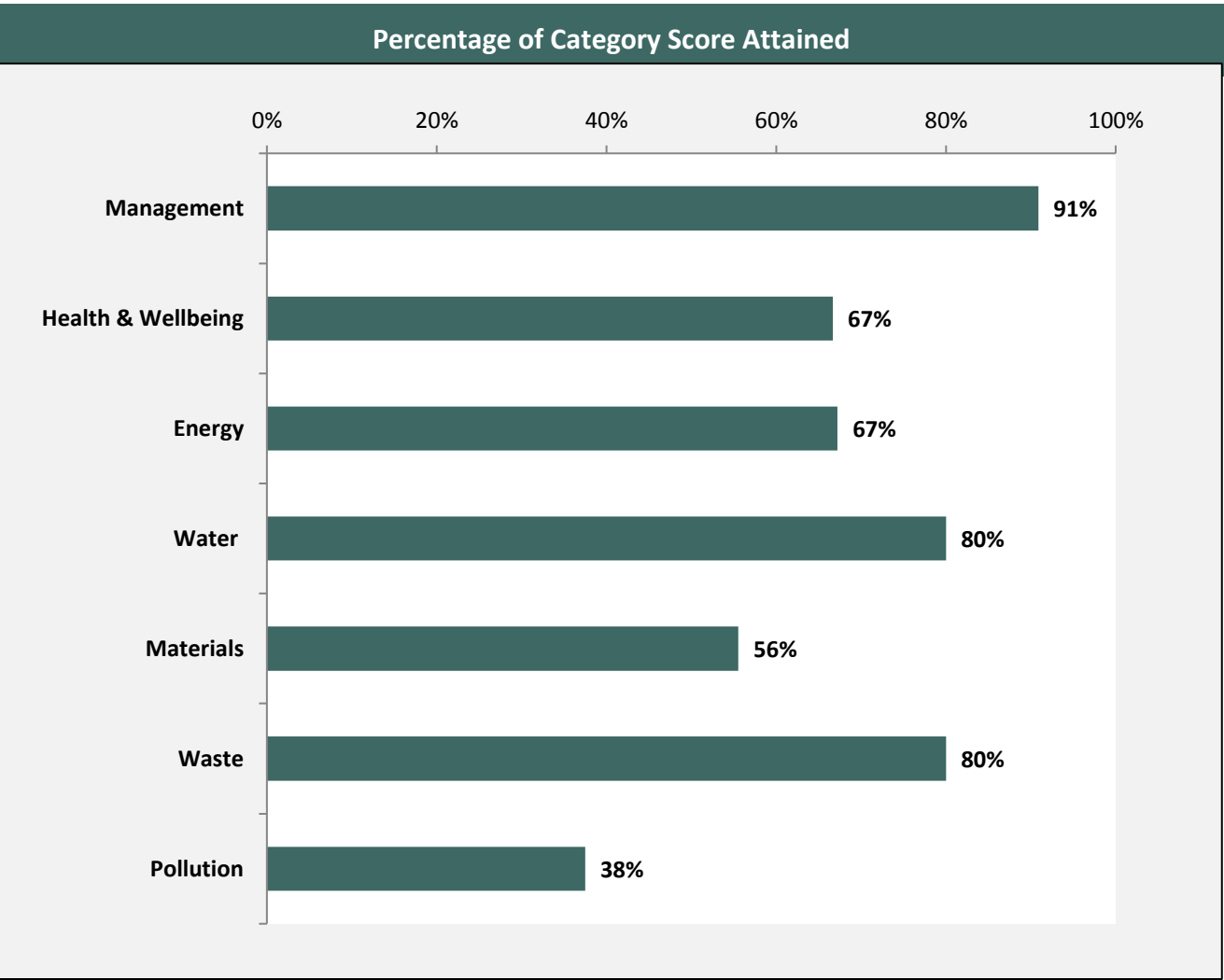
Materials	Mat 01	25	15	8%	4.44%
	Mat 02	12	6		
	Mat 03	8	4		

Waste	Was 01	2	1	3%	2.40%
	Was 02	3	3		

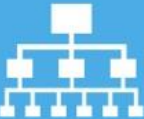
Pollution	Pol 01	3	0	6%	2.25%
	Pol 02	3	1		
	Pol 02	2	2		

Innovation	10	2	N/A		2.00%
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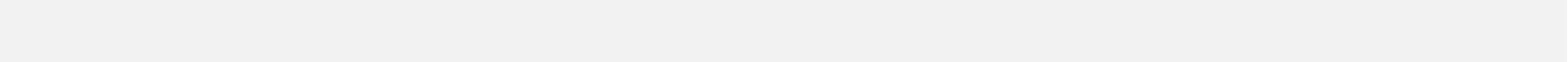
	Minimum Standards				
	Pass	Good	Very Good	Excellent	Outstanding
Ene 02	✓	✓	✓	✓	✓
Wat 01	✓	✓	✓	✓	✗
Hea 05	✓	✓	✓	✓	✓
Hea 06	✓	✓	✓	✓	✓
Pol 03	✓	✓	✓	✓	✓
Mat 02	✓	✓	✓	✓	✓



APPENDIX C: BREEAM NON DOMESTIC REFURBISHMENT PRE-ASSESSMENT

BREEAM Non-Domestic Refurbishment and Fit Out Pre-Assessment for 61-65 Charlotte Street						
		Management		Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Man 01	Project brief and design					
		Stakeholder consultation (project delivery)	Setting out roles and responsibilities for project delivery	1	1	
		Stakeholder consultation (third party)	Consulation with appropriate stakeholders e.g. existing building occupants	1	1	
		Sustainability champion (design)	Appointment of a sustainability champion to facilitate setting and acheivement of BREEAM targets up to concept design stage	1	0	Given the scale of this development it is felt that the appointment of a second BREEAM consultant is not necessary and that adequate advice can be sought from the appointed BREEAM assessor.
		Sustainability champion (monitoring progress)	Appointment of a sustainability champion to facilitate setting and acheivement of BREEAM targets throughout the desing process.	1	0	Given the scale of this development it is felt that the appointment of a second BREEAM consultant is not necessary and that adequate advice can be sought from the appointed BREEAM assessor.
Man 02	Lifecycle cost and service life planning					
		Elemental lifecycle cost	Conducting an elemental lifecycle costing study in accordance with PD 156865:2008.	1	0	This credit has been excluded due to the costly nature of achieving compliance and the minimal benefit when compared with other credits.
		Componnent level LCC plan	A component LCC plan for components within scope of works	1	0	
		Capital cost reporting	Reporting of capital cost)	1	0	
Man 03	Responsible construction practices					
		Environmental management	Use of contractors that have an environmental management policy and that implement best practice Pollution Prevention	1	1	
		Sustainability champion (construction)	Appointing a sustianability champion to facilitate achievement of BREEAM performance targets through construction and handover stages	1	0	Given the scale of this development it is felt that the appointment of a second BREEAM consultant is not necessary and that adequate advice can be sought from the appointed BREEAM assessor.
		Considerate construction	Achievement of compliance or beyond compliance with a compliant considerate construction scheme	2	1	One credit required for Excellent

		Monitoring of refurbishment or fit-out site impacts	Monitoring of energy, water and transport impacts during refurbishment or fit-out	2	1	
Man 04	Commissioning and handover					
		Commissioning and testing schedule and responsibilities	Having a commissioning and testing schedule and responsibilities agreed	1	1	
		Commissioning building services	Commissioning building services in line with best practice	1	1	
		Testing and inspecting building fabric	Quality assuring fabric (air tightness, continuity of insulation, thermal bridging) through visual inspection and testing (air leakage and thermographic surveys) to best practice standards	1	0	The building will be constructed to achieve Part L compliance and will use Robust Details, as such the risk of thermal bridging will be minimised wherever possible, as a result this credit has not been pursued at this stage.
		Handover	Provision of a building users guide and implementation of a training schedule for occupants at handover	1	1	Mandatory requirement for Excellent.
Man 05	Aftercare					
		Aftercare support	Ongoing aftercare support for first 12 months and the monitoring of energy and water use to identify any discrepancies in performance from design.	1	1	
		Seasonal commissioning	Conducting seasonal conditioning over first 12 months of operation	1	1	Mandatory requirement for Excellent.
		Post occupancy evaluation	Conducting a post occupancy evaluation during first 12 months of occupation to gain in-use performance feedback and appropriate dissemination of results	1	1	
Total Credits Available & Awarded				20	11	



 Health & Wellbeing				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Hea 01	Visual comfort					
		Glare control	Provision of glare control measures	1	1	
		Daylighting	Design of the space to optimise areas that benefit from good daylighting and improving daylighting levels through refurbishment measures.	3	1	
		View out	Design of the space to optimise desks with a view out in accordance with view out criteria	2	0	Due to the incorporation of a lower ground floor and the retention of existing walls this credit cannot be pursued.
		Internal and external lighting	Best practice internal and external lighting levels and zoning	1	1	
Hea 02	Indoor air quality					
		Indoor air quality plan	Developing an air quality plan to reduce impacts on air quality as a result of refurbishment or fit-out works	1	1	
		Ventilation	Meeting best practice ventilation levels	1	1	
		Volatile organic compounds	Use of products with low VOCs and appropriate testing	2	0	It is unclear at this stage as to whether the specification of the finishes will achieve the required VOC levels, therefore these credits have not been pursued at this stage.
		Potential for natural ventilation	Provision of fresh air through a natural ventilation strategy	1	0	The proposals do not include openable windows for security and aesthetic reasons, therefore this credit cannot be pursued.

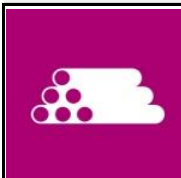
Hea 04	Thermal comfort				
	Thermal modelling	Conducting thermal modelling in accordance with CIBSE guidance (or assessment of the existing system performance by an engineer to inform future works in the case of Part 4 assessments)	1	1	
	Adaptation - for a projected climate change scenario	Where modelling demonstrates that systems are appropriate for a future climate change environment (or where not feasible identifying future adaptations in the case of a Part 3 or 4 assessment)	1	1	
	Thermal zoning and controls	Best practice zoning and appropriate occupant control	1	1	
Hea 05	Acoustic performance				
	Acoustic performance	Assessing scope of works against best practice criteria to determine impact on sound insulation, ambient noise levels and reverberation times.	3	2	
Hea 06	Safety and security				
	Security of site and building	Where a suitable qualified security specialist has assessed the security needs of the site and appropriate measures to address issues identified in the security needs assessment have been implemented.	1	1	
Total Credits Available & Awarded			19	11	

 Energy				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Ene 01	Reduction of energy use and carbon emissions					
		Reduction of energy use and carbon emissions	Measuring improvement in existing energy performance through using the BREEAM Ene01 assessment tools at the whole building or elemental approach as appropriate to scope of works.	15	9	Six credits required for Excellent
Ene 02	Energy monitoring					
		Sub-metering of major energy consuming systems	Where 90% of energy load is appropriately metered through energy metering systems	1	1	Mandatory requirement for Excellent.
		Sub-metering of high energy load and tenancy areas	Metering of tenanted or department/function areas	1	1	
Ene 03	External lighting					
		External lighting	Energy efficient external lighting	1	1	
Ene 04	Low carbon design					
		Passive design analysis	Passive design analysis and implementation of passive design measures	1	0	Due to the constraints of this development and the re-use of the existing development it has not been possible to award this credit at this stage.
		Free cooling	Implementation of free cooling measures	1	0	The above credit must be achieved to award this credit, therefore this credit has not been targeted.
		Low and zero carbon technologies	Low and zero carbon techology feasibility study	1	1	
Ene 06	Energy efficient transportation systems					
		Energy consumption	Size and number of newly specified transportation systems is optimised	1	1	
		Energy efficient measures	Specification of energy efficient measures for existing and newly specified transportation systems	1	1	

Ene 08	Energy efficient equipment					
		Energy efficient equipment	Measuring and reducing unregulated energy demands through use of energy efficient equipment	2	2	
Total Credits Available & Awarded				25	17	

 Transport				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Tra 01	Sustainable transport options					
		Accessibility index	Assessing the sites access to pubic transport facilities.	3	3	
		Alternative transport measures	Developing alternative transport measures where the site has poor pubic transport access.			
Tra 02	Proximity to amenities					
		Proximity to amenities	Assessing the sites access to basic amenites	1	1	
Tra 03	Cyclist facilities					
		Cycle storage	Provision of cycle storage spaces	1	1	
		Cylist facilities	Provision of cyclist facilities e.g. showers, lockers, drying facilities, changing facilities	1	1	
Tra 05	Travel plan					
		Travel plan	Development of a site specific travel plan with a package of measures to promote sustainable travel	1	1	
Total Credits Available & Awarded				7	7	

 Water				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Wat 01	Water consumption					
		Water consumption	Specification of water efficient equipment	5	3	One credit required for Excellent
Wat 02	Water monitoring					
		Water monitoring	Provision of water metering equipment	1	1	
Wat 03	Leak detection					
		Leak detection system	Specification of leak detection system on the incoming mains	1	1	
		Flow control devices	Providing flow control devices that regulate water supply to WC areas	1	1	
Total Credits Available & Awarded				8	6	

Materials				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Mat 01	Lifecycle impacts					
			Using robust Lifecycle assessment tools, specification of materials with robust environmental claims and re-using existing elements in situ.	6	4	
Mat 03	Responsible sourcing of materials					
		Sustainable procurement plan	Where the contractor has a sustainable procurement plan	1	1	Mandatory requirement for Excellent
		Responsible sourcing of materials	Recognising where a basic minimum number of material types have been responsibly sourced up to where products that have been responsibly sourced have been assessed and quantified.	3	1	
Mat 04	Insulation					
		Insulation	Use of insulation that has a low embodied impact	1	1	
Mat 05	Designing for durability and resilience					
			The use of suitable durability measures to protect vulnerable parts of the building and external parts of the building	1	1	
Mat 06	Material efficiency					
		Material efficiency	Where opportunities have been taken to optimise material use throughout refurbishment and fit-out (e.g. designing out waste).	1	1	
Total Credits Available & Awarded				13	9	

 Waste				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Was 01	Construction waste management					

		Pre-refurbishment audit	Where a pre-refurbishment audit has been conducted to identify materials that can be re-used and to set appropriate waste targets.	1	1	
		Re-use and direct recycling of materials	Where materials have been directly re-used or recycled	2	1	
		Resource efficiency	Acheivement of resource efficiency targets	3	2	
		Diversion of waste from landfill	Achievement of diversion from landfill targets	1	1	
Was 02	Recycled aggregates					
		Recycled aggregates	Recycling of high grade aggregate, use of secondary aggregate and aggregates in situ	1	0	This credit has not been targeted at this stage as material sourcing will be developed at detailed design stage, where opportunities to incorporate recycled aggregated will be explored.
Was 03	Operational waste					
		Operational waste	Provision of facilities for the storage of operational waste	1	1	
Was 05	Adaptation to climate change					
		Adaptation to climate change - structural and fabric resilience	Where a Climate change resilience study has been conducted to provide structural and fabric resilience to climate change	1	0	A thermal model will be developed which accounts for climate change, therefore a climate change adaptation strategy will be unnecassary as the design of the building will already accommodate anticipated climate change. The site is located in a low flood risk area.
		Responding to adaptation to climate change	Where a holistic approach has been adopted to make the building resilient to climate change	1	0	
Was 06	Functional adaptability					
		Functional adaptabiliy	Implementation of adaptability measures to accomodate future changes	1	0	Due to the nature of the refurbishment and the retention of the existing structure the functional adaptability of the development is limited and this credit is deemed to be unachievable.
Total Credits Available & Awarded				12	6	

 Land use and ecology				Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Le 02	Protection of ecological features					
		Protecting ecological value	Where features of ecological value have been protected throughout refurbishment or fit-out works	1	1	
Le 04	Ecological enhancement					
		Ecological enhancement	Where a suitably qualified ecologist has been consulted and their recommendations have been implemented for the enhancement of the sites ecological value	1	1	
Total Credits Available & Awarded				2	2	

		Pollution		Credits available	Part 1, 2, 3 & 4: Credits assumed	Comments
Issue ID	Issue title	Criteria	Summary			
Pol 01	Impact of refrigerants					
		Impact of refrigerants	Where the systems using refrigerants have Direct Effect Life Cycle equivalent emissions (DELC CO2e) that meet benchmark levels or of a GWP less than 10	1	1	
		Leak detection	Specification of leak detection and recovery systems	1	0	The opportunities to achieve this credit have been explored however it has been deemed unfeasible to achieve this credit.
Pol 02	NOx Emissions					
		NOx emissions	Achievement of Nox emission benchmarks for heating and hot water	3	0	Due to the energy strategy proposed this credit is not achievable.
Pol 03	Flood risk and reducing					
		Flood risk management	Where the refurbishment of fit-out zone has a low risk of flooding or implements flood resilience or resistance measures.	2	2	
		Surface water run-off	Where the project makes a neutral impact on surface water or reduces site runoff	2	1	
		Minimising watercourse pollution	Implementation of measures to reduce watercourse pollution	1	0	A drainage strategy will be developed at detailed design stage, however it is felt at this stage that this credit cannot be achieved given the limited opportunity to incorporate SuDs into the scheme.
Pol 04	Reduction of night time					
		Reducing night time light pollution	Where external lighting has been designed out or external lighting meets best practice	1	1	
Total Credits Available & Awarded				12	6	
Scheme Total Credits Available & Awarded					64.38%	