



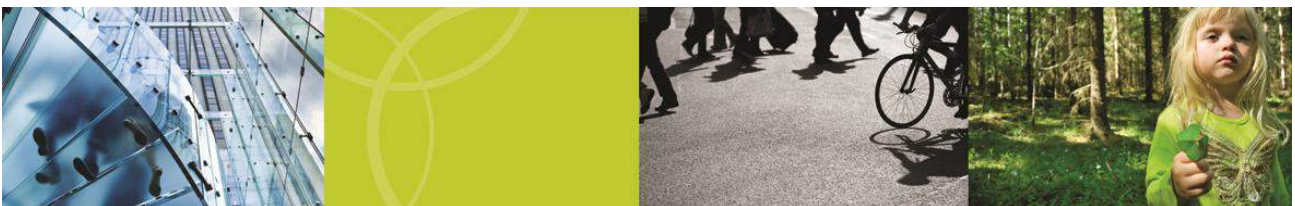
BREEAM 2012 Domestic Refurbishment Pre- Assessment Strategy Report

27 John Street & 21 John's Mews, London

For

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Chartered Architects and Historic Building Consultants

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Executive Summary

This document sets out the scores predicted during a BREEAM Domestic Refurbishment Pre-Assessment for the site known as 27, John Street & 21 John's Mews, located within the London Borough of Camden.

The pre-assessment outlines a strategy by which the proposed refurbishment and the new basement joining house to rear mews property can achieve an overall BREEAM rating of 'Excellent'.

Camden Policy Guidance 3 requires a minimum of an overall 'Excellent' rating to be achieved where refurbishment, conversion or a change of use is proposed. It is also encouraged to achieve 60% of the credits under the Energy and Water section, and 40% of the credits under the Materials section.

The current strategy achieves 60% of the un-weighted credits available in the Energy and Water section and 40% of the un-weighted credits in the Materials category. Full details of how these targets are achieved can be found on pages 15, 17 and 18 respectively.

This document represents the commitment to meeting the specified BREEAM level and to submitting evidence for formal certifications at Design Stage and Post Construction Review stage, conducted by our licensed BREEAM Domestic Refurbishment assessor.

The pre-assessment demonstrates that the development can achieve the following BREEAM Domestic Refurbishment rating:

Indicative Building Score: 70% = Indicative overall BREEAM rating: Excellent



1. Introduction

The proposal is for repairs and alterations to 27 John Street WC1N 2BX and 21 John's Mews WC1N 2PA including erection of rear extension and a new basement joining house to rear mews property.

27 John Street was built in circa 1812 as single house; the building is Grade II listed and forms part of a terrace of Georgian buildings in the Bloomsbury Conservation Area. The building was converted to offices in the 1970's and a mansard roof and rear extension was added and much of the interior, especially on the upper floors, was extensively altered and rebuilt.

21 John's Mews was originally built around the same time as 27 John Street; however, it was demolished and re-built in the 1970s when the main house was converted.

It is proposed to retain as much of the original features which survive in the house; including the floor layouts on the floors up to first floor and staircase. The modern extension to the rear of 27 John Street is proposed to be demolished and replaced with new extension which is more sympathetic to the original fabric.

The requirement for a BREEAM Domestic Refurbishment assessment has come as a result of requirements within Camden Policy Guidance 3. The pre-assessment has been undertaken using the BREEAM 2012 Domestic Refurbishment methodology which has replaced Ecohomes as the method for assessing the environmental performance of refurbishment projects. The following report demonstrates that the proposed development at 27, John Street & 21 John's Mews has the potential to meet the required BREEAM Domestic Refurbishment 'Excellent' rating. As a result of completing this pre-assessment specific issues, have been considered in the early design of the development to ensure compliance with this planning requirement.

At all times it must be remembered that BREEAM Domestic Refurbishment is an evidence-based methodology, and the credits cannot be awarded if the evidence is not provided in the format set out within the BREEAM Domestic Refurbishment guidance.



2. BREEAM Domestic Refurbishment Strategy: Achieving Excellent

2.1 Minimum Standards

Within the BREEAM Domestic Refurbishment guidance mandatory minimum performance standards have been set for a number of categories as shown in the table below. These minimum standards must be achieved in accordance with Table 1 for a development to achieve the relevant BREEAM Domestic Refurbishment Level. The remaining score is made up of tradable credits from the range of criteria listed in the guidance.

The proposed re-development at 27, John Street & 21 John's Mews, London demonstrates potential to meet all minimum standards to achieve an 'Excellent' rating.

Table 1 – Mandatory credit level requirements

Credit Description	Excellent
Ene 02: Energy Efficiency Rating Post Refurbishment	2.5 Credits
Wat 01: Internal Water use	2 Credits
Hea 05: Ventilation	1 Credit
Hea 06: Safety	1 Credit
Pol 03: Flooding	2 Credits
Mat 02: Responsible sourcing of materials	Criterion 3 only



2.2 Assumptions Made

CarbonPlan has provided an analysis of the proposed scheme based on drawings/confirmations provided by Donald Insall Associates and experience within the assessment schemes. The resultant strategy provides a holistic overview of the scheme and makes assumptions where required, given the outline detail of the information received to date.

Details of any assumptions and information on criteria needed to meet the credits are included in the Comments and Assumptions section of this report.

2.3 Indicative Strategy

The following pages detail the approach taken, providing the following scenarios:

Baseline Scenario

An overview of what the proposed scheme is designed to achieve under the BREEAM Domestic Refurbishment scheme. In this case it provides the main scenario that allows a BREEAM rating of 'Excellent' to be achieved. This provides a sound basis in identifying the most easily achievable credits that can be scored in the project.

Uplift Scenario

CarbonPlan has identified areas within the proposals that can be used to surpass the required scoring or where additional credit can be achieved in the unlikely circumstance that credits are not achieved for other issues. Where there is a potential opportunity this has been highlighted in green and a description of the additional requirements provided.

This early stage discussion of project design is critical in selecting the most appropriate strategy to secure the required BREEAM Domestic Refurbishment ratings outlined in this report.

Tables 2 to 10 below outline which BREEAM credits have been included in estimating the BREEAM ratings for the development. Credits have been allocated based on discussions with the client about their preferred strategy. Details of any assumptions and information on criteria needed to meet the credits are included in the 'Comments and assumptions' column of the tables. Details of the how the credit will not have an impact on the fabric of the listed building is also included in the Comments and Assumptions column. Table 10 shows the total credits achieved and resulting BREEAM ratings.



Table 2 Management section credits

MANAGEMENT SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Man 1 Home Users Guide	3	3	3	3 credits can be achieved as a Home Users Guide will be provided to the dwelling occupant covering all issues as set out in the 'Users Guide Contents list'.
Man 2 Responsible Construction Practices	2	2	2	Two credits are currently targeted as the principal contractor will use the Considerate Constructors Scheme and an overall score of 35-39 will be targeted with a minimum score of 7 in each section.
Man 3 Construction Site Impacts	1	1	1	One credit targeted on the basis that the site's energy and water use will be monitored during the construction process. The contractor will also commit to use only certified timber
Man 4 Security	2	0	0	<p>No credit is sought as 27 John Street is a listed building and falls within a conservation area.</p> <p>Recognising the limitations subject to buildings within a conservation area, the project team should work with their Local Authority conservation officer to deliver the standards as far as practically possible.</p> <p>One credit can be sought where retained external doors and windows will comply with min. security requirements as set out in CN6 and the newly added external door sets and windows will be appropriately certified</p> <p>CN6: External doors should be of good quality with working key locks and a strong frame, glazing where present should be double glazing. Putty or beading to glazed areas should be in good condition on the unexposed side of the door.</p>



				Accessible Windows should have a minimum of double glazing with working key locks. Window frame should be strong with no sign of warping
Man 5 Protection and Enhancement of Ecological Features	1	0	0	No credit is sought at the moment. However, for one credit to be awarded the site survey is carried out by a Suitably Qualified Ecologist to determine presence of ecological features.
Man 6 Project Management	2	2	2	One credit can be sought where the project manager will write a project implementation plan and hold an initiation meeting to assign individual and shared responsibilities amongst the project team including all trades on site. Two credits can be sought where a handover meeting will be arranged and a site inspection will be carried out within 3 months of occupation and longer term aftercare e.g., a helpline, nominated individual or other appropriate system to support building users for at least the first 12 months of occupation will be provided.
Section Credit Total	11.0	8.00	8.00	
Weighted Section Total	12.0%	8.73%	8.73%	



Table 3 Health and Well-being

HEALTH AND WELL-BEING SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Hea 1 Daylighting	2	2	2	<p>Two Credits can be awarded where new spaces created will meet a min average daylight factor for the following:</p> <p><i>Kitchen: 2%, living rooms, dining room and study achieve a minimum of at least 1.5%, and where 80% of the working plane in each new space including kitchens, living rooms, dining rooms and study, receive direct light from the sky.</i></p> <p><i>The extension should not reduce the daylighting levels in the kitchen, living room, dining room, & study of the neighbouring properties</i></p> <p>The proposal incorporates an internal light well which will deliver natural light and natural ventilation to the subterranean storey. Daylighting Calculations have to be undertaken to check compliance.</p>
Hea 2 Sound Insulation	4	2	2	<p>Two credits are awarded on the basis that a pre-completion testing is not possible as adjoining property remains occupied. A detailed assessment from the design team demonstrating that the design and construction work has been made in full accordance with Approved Document E is required.</p>
Hea 3 Volatile Organic Compounds	1	1	1	<p>One credit is targeted as all paints and varnishes to be used in the refurbishment will meet the requirements of BREEAM Domestic Refurb Criteria (Table 14) and also meet relevant European Directive standards.</p> <p>We don't envisage this credit to have an impact on the fabric of the listed building.</p>



Hea 4 Inclusive Design	2	0	0	Credit not targeted
Hea 5 Ventilation	2	2	2	Mandatory: Two credits are awarded at this stage on the basis that the ventilation to be provided for the dwelling will meet the requirements of Section 5 of Building Regs Part F in full. BREEAM Domestic Refurbishment requires a minimum level of background ventilation to be provided across the dwelling.
Hea 6 Safety	1	1	1	Mandatory: A carbon monoxide detector and alarm system will be installed. Compliant fire and carbon monoxide alarm system has to be provided for this. As the project does not involve electrical re-wiring the power supply for the smoke alarm and carbon monoxide alarm systems must be derived from a battery supply. We do not envisage battery operated units having an impact on the building fabric.
Section Credit Total	12	8.00	8.00	
Weighted Section Total	17.00%	11.33%	11.33%	



Table 4 Energy

ENERGY SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Ene 1 Improvement in Energy Efficiency Rating	6	3	4	<p>For 2 credits to be achieved a ≥ 26 improvement in Energy Efficiency Rating must be achieved as a result of refurbishment. Detailed SAP calculations are required at a later stage to confirm these scores.</p> <p>To improve the efficiency of the building, lagging of existing pipes are to be considered. Existing pipes can be lagged without causing damage to the fabric of the original building. The existing boiler can be replaced and it will not have an impact on the original fabric of the building.</p> <p>Potential Upgrade: 1 additional credit can be achieved if there is a ≥ 36 improvement in Energy Efficiency rating</p>
Ene 2 Energy Efficiency Rating Post Refurb	4	2.5	2.5	<p>Mandatory: A post-refurbishment Energy Efficiency Rating of 70 which equates to BREEAM excellent is to be achieved</p> <p>SAP calculations are required to confirm the targeted scores.</p> <p>To improve the efficiency of the building, lagging of existing pipes are to be considered. Existing pipes can be lagged without causing damage to the fabric of the original building. The existing boiler can be replaced and it will not have an impact on the original fabric of the building.</p>



Ene 3 Primary Energy Demand	7	5	6	It is assumed that a primary energy demand benchmark of $\leq 200 \text{ kWh/m}^2/\text{year}$ will be achieved post- refurbishment. There is a possibility of scoring additional credits for this issue. SAP calculation worksheets are required at a later stage to confirm the targeted scores.
Ene 4 Renewable Technologies	2	0	0	No low or zero carbon technologies will be installed.
Ene 5 Energy Labelled White Goods	2	2	2	All new appliances in the development will be recognised by the EU Energy Efficiency Labelling scheme (i.e. Fridge-freezers, washing machines and dishwashers). This will not have an impact on the listed building fabric
Ene 6 Drying Space	1	1	1	External drying space with fixings holding of 6m+ of drying line has to be provided. Adequate External Space: Enclosed secure space only accessible to the residents. Compliant spaces are private garden, roof terrace, or an openable balcony. External drying facilities will not have an impact on the listed building fabric.
Ene 7 Lighting	2	2	2	External Lighting: Energy Efficient Space Lighting and, where present, Energy Efficient Security Lighting will be provided. <u>Space Lighting and or Security Lighting:</u> The provision of external lighting is a BREEAM requirement. This will include all external lighting (including feature lighting & lighting to common areas). For the purpose of this credit areas include external door, front porch, patio, garage, garden, carports and any other outbuildings. If space or security lighting has already been fitted then changing it to comply with BREEAM requirements should not impact on the building fabric. Note: Free standing lighting can be used. Internal Lighting: Maximum average wattage across the total floor area of the dwelling will be 9 watts/m^2 .



				Replacing lamps with low energy lamps will not have an impact on the listed building
Ene 8 Display Energy Devices	2	2	2	Two credits are awarded on the basis that current electricity and primary heating fuel consumption data will be displayed to residents using a compliant device. A system comprising a self-charging sensor has to be fixed to the incoming mains supply/supplies, to measure and transmit energy consumption data to a visual display unit. We do not envisage this credit to have an impact on the fabric of the listed building
Ene 9 Cycle Storage	2	1	1	Space has to be provided for the storage of 2 cycles on the ground floor. There should be minimum width needed for a person pushing a bicycle (1.10m width), and 2.0m bike length for manoeuvring the cycle round corners. We do not envisage this credit to have an impact on the fabric of the listed building
Ene 10 Home Office	1	1	1	This credit is awarded on the basis that a suitable bedroom will be provided with sufficient space and services in accordance with the BREEAM Refurb criteria to allow occupants to set up a home office with adequate ventilation. Services: 2 double power sockets, telephone point, window, adequate ventilation Space: 1.8m wall length to allow a desk, chair, filing cabinet/bookshelf.



				The fitting of an additional BT socket may be required. This can be surface mounted. However, by way of compromise it is possible that a wireless telephone / internet connection can be used to prevent any unnecessary disturbance of the original fabric
Section Credit Total	29.0	19.50	21.50	
Weighted Section Total	43.00%	28.92%	31.88%	



Table 5 Water

WATER SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Wat 1 Internal Water Use	3	2	2	<p>There is a mandatory requirement for the water usage in the development to be less than 118 litre/person/day as calculated on the BREEAM Wat 1 calculator. This must be achieved to score an 'Excellent' rating.</p> <p>For this all bathroom and WC room fittings must have 3 litres per minute or less.</p> <p>In-line flow restrictors should be fitted to save water by limiting flow in the supply pipe.</p> <p>The fitting of restrictors should not have an impact on the building of fabric. We do not envisage any impact on the building fabric should any of the fittings need to be changed</p>
Wat 2 External Water Use	1	1	1	<p>A compliant rainwater collection system will be provided. A minimum volume of 200 litres to be provided where a water butt is to be supplied. If there is no planting, the volume requirement can be halved.</p> <p>We do not envisage this credit to have an impact on the fabric of the listed building</p>
Wat 3 Water Meter	1	1	1	<p>An appropriate water meter capable of recording and displaying consumption will be provided to all dwellings. If there is an existing water meter, 1 credit will be awarded by default where it meets the BREEAM criteria</p> <p>The meter should be a permanent feature secured within the home in a location visible to occupant (not within a cupboard) and capable of recording and displaying historic water consumption to allow water consumption to be monitored over time and should</p>



				display consumption either instantaneously or at half hourly intervals. We do not envisage this credit to have an impact on the fabric of the listed building
Section Credit Total	5.0	4.00	4.00	
Weighted Section Total	11.00%	8.80%	8.80%	



Table 6 Materials

MATERIALS SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Mat 1 Environmental Impact of Materials	25	16	16	Assessment of existing and new materials against the Green Guide will demonstrate the number of credits available in this category. Due to retained elements scoring highly in this category it is expected that at least 16 credits will be achieved We do not envisage this credit to have an impact on the fabric of the listed building
Mat 2 Responsible Sourcing of Materials	12	8	8	A conservative estimate of 8 credits has been awarded at this pre-assessment stage. Sourcing of materials from accredited suppliers will allow these credits to be achieved. Mandatory : The UK Government's timber procurement policy requires that all timber and wood-derived products must be from only: Independently verifiable legal and sustainable sources (OR) FLEGT (forest law enforcement, governance and trade)-licensed timber or equivalent sources
Mat 3 Insulation	8	6	8	Insulation materials with good Green Guide ratings from suppliers with responsible sourcing accreditation will be selected for installation in to this development. 6 credits can be achieved where more than 80% of the new thermal insulation used in the building elements will be responsibly sourced from suppliers with responsible sourcing accreditation.
Section Credit Total	45.00	30.00	32.00	
Weighted Section Total	8.00%	5.33%	5.68%	



Table 7 Waste

WASTE SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Was 1 Household Waste	2	1	1	<p>Camden Council run a compliant waste collection scheme, collecting a minimum of 3 recyclable materials. The storage requirement is as follows:</p> <ul style="list-style-type: none"> • internal recycling container • minimum 30 litre capacity • dedicated position in a cupboard. <p>We do not envisage this credit to have an impact on the fabric of the listed building</p>
Was 2 Refurbishment Site Waste Management	3	3	3	<p>Site Waste Management Plan (SWMP) must be in place.</p> <p>For projects over £300k, a level 2 SWMP will be developed in accordance with BREEAM criteria. To demonstrate a compliant SWMP for refurbishments over £300,000 the following must be met:</p> <ul style="list-style-type: none"> • A target benchmark for resource efficiency i.e. m³ of waste per £100,000 of project value. • Procedures and commitments for minimising non-hazardous construction waste in line with the benchmark and best practice • Specify waste minimisation actions relating to at least 3 key waste groups as referenced in Table 36 • Procedures for minimising hazardous waste



				<ul style="list-style-type: none"> • Procedures for sorting, reusing and recycling construction and demolition waste (if generated) • Procedures for measuring the amount of construction and demolition waste (if generated) diverted from land-fill. • Licence details for the waste carrier, and permit details for the site the waste is taken to, if waste is removed off-site. • The name or job title of the individual responsible for implementing the above.
Section Credit Total	5.0	4.0	4.0	
Weighted Section Total	3.0%	2.4%	2.4%	



Table 8 Pollution

POLLUTION SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Pol 1 NO _x Emissions	3	3	3	3 credits can be awarded on the basis that the new condensing boiler to be installed in the development will have a NO _x emission level of ≤40 mg/kWh. We do not envisage this credit to have an impact on the fabric of the listed building
Pol 2 Surface Water Run Off	3	1	1	This credit has been awarded on the basis that the refurbishment and extension will have neutral impact on surface water run-off from the site.
Pol 3 Flooding	2	2	2	Mandatory: The Environment Agency's website confirms the site to be in Flood Zone 1 – land assessed as having a less than 1 in 1000 annual probability of river or sea flooding. A flood risk assessment (FRA) has already been prepared to confirm the credits targeted.
Section Credit Total	8.00	6.00	6.00	
Weighted Section Total	6.0%	4.50%	4.50%	



Table 9 Innovation

INNOVATION SECTION	Credits Available	Current Target Excellent	Additional Uplift Scenario credits	Comments and Assumptions
Exemplary Performance	10	0	0	Credits not sought
Section Credit Total	10.00	0.00	0.00	
Weighted Section Total	10.0%	0.00%	0.00%	

Table 10 Total credits and ratings

	Credits available	Current Target Excellent	Additional Uplift Credits
Score	125	80	84
% Score	110%	70.0%	73.3%
BREEAM Domestic Refurb Rating	Outstanding	Excellent	Excellent



2.4 Comments and Notes

The following pages detail relevant key points for consideration in order to implement the BREEAM Domestic Refurbishment Strategy.

Ene 01 Improvement in Energy Efficiency Rating

In order to gain the above credits, the refurbishment must achieve a ≥ 26 improvement in the dwelling's Energy Efficiency Rating over the existing dwelling's Energy Efficiency Rating. To achieve this, the Energy Efficiency Rating before the refurbishment and after the refurbishment must be determined from either the Energy Performance Certificate using RdSAP April 2012 or from full SAP 2009. Once these have been determined the values will be entered into the BREEAM Domestic Refurbishment Energy Calculator to demonstrate the number of credits available.

Ene 02: Energy Efficiency Rating Post Refurbishment

As a result of the refurbishment an Energy Efficiency rating of ≥ 70 must be achieved in order to meet the minimum standards for an Excellent Rating. This issue is based solely on the energy efficiency rating of the building once the refurbishment has been completed. The required energy efficiency rating will be determined from the relevant SAP output.

Wat 01: Internal Water use

To achieve an Excellent rating the minimum standards of water consumption from the following:
All showers and bathroom taps must demonstrate a usage of less than 118 litres/person/day.

Hea 05: Ventilation

To achieve the allocated credits the ventilation system provided must meet the requirements of Section 5 of the Building Regulations Part F in full.

Hea 06: Safety

To achieve the minimum standards for Excellent the fire detection and alarm system must adhere to the following:

- If the property is supplied with mains gas or another fossil fuel, a carbon monoxide detector and alarm system must be installed.
- Where re-wiring is required as part of the refurbishment, a mains supplied fire detection and alarm system should be incorporated. If not, a battery operated system is applicable.

Pol 03: Flooding

From analysis of the Environment Agency's flood map the site is in Flood Zone 1 and has a low annual probability of flooding. In order to gain two credits a brief report must be carried out by the contractor's engineer. The report should include information obtained from the Environment Agency, Water Company, relevant statutory authorities, and locals.



Mat 02: Responsible sourcing of materials

Criterion 3 of this issue must be met to achieve the minimum standards for Excellent. Criterion 3 contains the following requirements:

- The UK Government's timber procurement policy requires that all timber and wood-derived products must be from only:
 - Independently verifiable legal and sustainable sources OR
 - FLEGT (forest law enforcement, governance and trade)-licensed timber or equivalent sources.



3. Conclusion

The BREEAM Domestic Refurbishment Pre-Assessment for the proposed refurbishment at 27, John Street & 21 John's Mews, London was carried out on 6th November 2014.

The estimate and strategy are based on information provided by the client and assumptions based on experience of carrying out projects of this nature. The strategy demonstrates how the development is able to meet the required 'Excellent rating under BREEAM Domestic Refurbishment 2012.

Camden Policy Guidance 3 requires a minimum of an overall 'Excellent' rating to be achieved where refurbishment, conversion or a change of use is proposed. It is also encouraged to achieve 60% of the credits under the Energy and Water section, and 40% of the credits under the Materials section

Overall Indicative Building Score: 70%

Indicative BREEAM Domestic Refurbishment rating: Excellent

The current strategy achieves the following minimum standards for the three BREEAM categories:

Category	Camden Council requirement (percentage)	Current score for 27 John Street & 21 John's Mews (percentage)
Energy	60	67.24
Water	60	80
Materials	40	66.66

All mandatory credits for an Excellent rating can be achieved. A strategy for achieving the required BREEAM Domestic Refurbishment rating should be finalised by the BREEAM assessor and design team prior to the detailed BREEAM design stage. This will ensure that the strategy is embedded from an early stage which will minimise any associate risk and help to ensure that the Design Stage and Post Construction Review stage BREEAM certifications are achieved.

